

大気降下物による多摩川流域への 汚 染 有 機 物 の 負 荷

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1. はじめに

人間活動により大気に放出された多種類の有機物は、最終的には大気降下物（湿性及び乾性降下物）として、陸域や水域にもたらされる。大気圏を通しての汚染物質の輸送は広範囲に及び、人間活動の少ない地域にもその影響があると考えられる。よって、汚染有機物の評価は、その化合物の質と共に移動量を把握することが必要である。

化石燃料燃焼などにより生成する多環芳香族炭化水素は、発がん性をもつことから、様々な環境における挙動についての多くの研究がなされてきた。しかし、大気降下物によりもたらされる多環芳香族炭化水素の分布、発生源やその降下機構に関するデータはあまり多くない(Gjessing et al., 1984; Harrison and Johnson, 1985; McVeety and Hites, 1988; Hewitt and Rashed, 1990, 1991; Brostrom-Lunden et al., 1994; Leister and Baker, 1944; Takada et al., 1991; 山根ら, 1993; 森永ら, 1994; 高田・小倉, 1995)。また、河川への大気降下物による汚染有機物の負荷は、降下物が直接河川に負荷する以外に、地表面に降下して非特定汚染源に堆積した粉塵(例えば、路上粉塵)が降雨時に表面流出水として河川に流れることによる負荷も大きいと考えられる(伊藤ら, 1990)。

そこで、本研究では 1) 多摩川上流域から下流域にかけてと都心の7地点で大気降下物を一ヶ月ごとに採取し、多環芳香族炭化水素以外に化石燃料由来の脂肪族炭化水素の降下量の分布、季節変化やそれらの発生源について考察すること、2) 湿性降下物の割合などを明らかにすること、3) 多摩川流域への大気降下物によるこれらの炭化水素類の負荷について考察すること、4) 路上粉塵とその可能な起源物質としてのアスファルト、タイヤ粒子中の同様な炭化水素類の分析し、大気降下物との違いを明らかにすることや、道路脇の降下物の分析から自動車等の影響を検討することを目的とした。

2. 調査地域及び試料採取

2-1 大気降下物試料

大気降下物の試料採取地点を図1に示す。採取地点は小倉(1988)の報告書を参考に設定した。多摩川沿いに上流から小河内貯水池管理事務所(西多摩郡奥多摩町)、小作浄水場(西多摩郡羽村町)、稲城中央文化センター(稲城市東長沼)、川崎市公害監視センター(川崎区宮本町)の4地点と新宿区役所(新宿区歌舞伎町)、目黒区役所(目黒区中央町)及び桐蔭学園横浜大学(横浜市青葉区)の計7地点で採取した。降下物の採取装置は、小河内

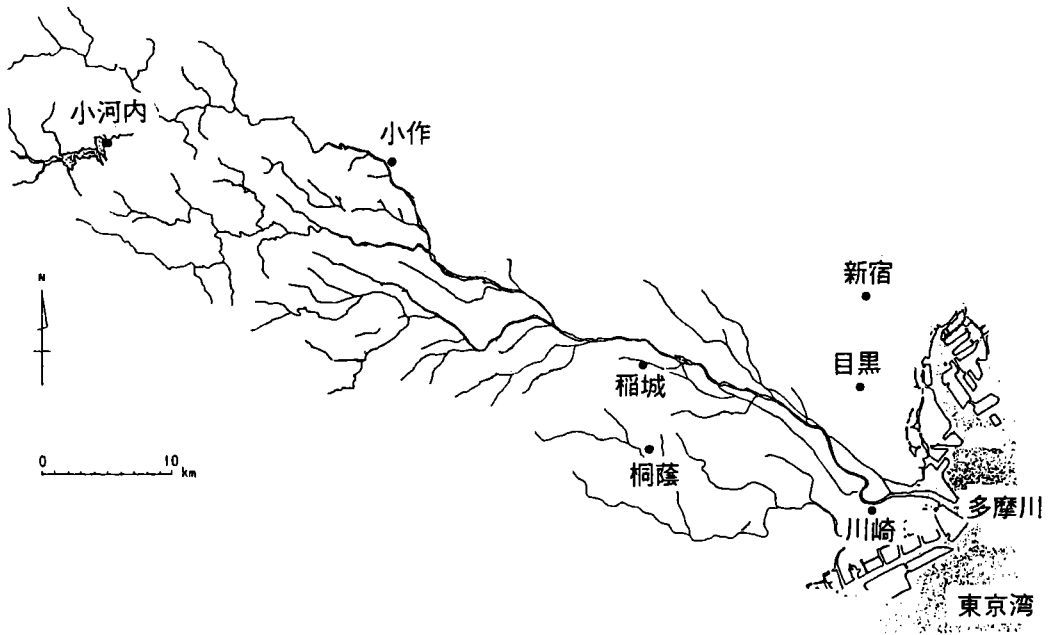


図1. 試料採取地点

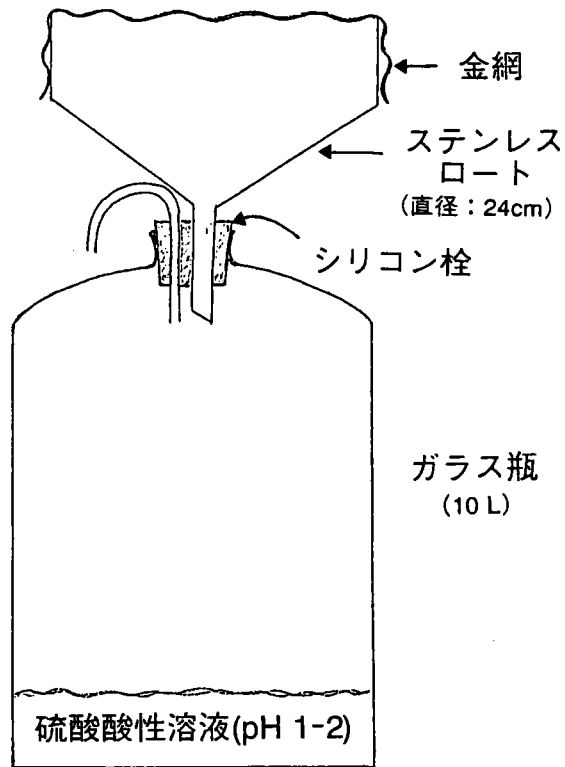


図2. 試料採取装置

では事務所前の草地上に設置し、その他の地点では屋上(地表から十数m~二十数m程度)で周辺に障害物や工場の煙突等のない場所に設置した。各地点とも1993年5月か6月から採取を開始し、小作浄水場(以下小作)は1994年5月まで、新宿区役所(以下新宿)と目黒区役所(以下目黒)は1995年5月まで、小河内貯水池管理事務所(以下小河内)、稲城中央文化センター(以下稲城)、川崎市公害監視センター(以下川崎)及び桐蔭学園横浜大学(以下桐蔭)は1996年3月まで行った。

試料採取装置を図2に示す。直径24cmのステンレスロートの備えた10Lガラス瓶の中に生物の繁殖を抑えるため硫酸酸性溶液(pH=1)を1L入れ、有機物の光分解を防ぐために瓶を青色画用紙と黒色ビニール袋で覆った。瓶は約1カ月で交換し試料を採取した。このように採取した降水物を全降水物(湿性降水物+乾性降水物)とし、降雨時のみ同様の瓶にて採取した試料は、湿性降水物とした。

2-2 路上粉塵試料

路上粉塵は、桐蔭周辺の国道16号、246号、青葉台駅前、横浜総合病院前や小河内周辺道路と関戸橋の路上から採取した。路上粉塵は、小型ハンディータイプの掃除機(吸引流量15l/min)にガラス製のトラップを装着し、そこに加熱済みの石英繊維フィルター(Whatman、GF/C)を挟んで、フィルター上に採取した。採取装置は、東京農工大学農学部土壌水圏環境学講座からお借りした。

2-3 路上脇降水物試料

先に示した全降水物試料装置を、多摩川に架かる関戸橋(全長375.8m)下り車線脇の多摩市側と府中側の2箇所を設置し、1994年7月~9月と1995年2月~4月の6箇月間採取した。この車線は歩道がなく人為的に直接異物を装置に混入される可能性の少ない場所である。関戸橋は、府中側から多摩側へ一日約1万から1万5千台の交通量がある。

2-4 アスファルト試料

路上粉塵試料を採取した国道16号と小河内のアスファルト路上脇の2箇所において、金属棒を使用して路面下約1cm付近より採取した。採取したアスファルトは細かく砕き、その内13~20gを抽出試料とした。

2-5 タイヤ粒子

自家用車2台のタイヤの表面を削り取り試料とした。タイヤの表面はあらかじめジクロロメタンで洗浄した後、約100mgを抽出試料とした。

3. 分析方法

3-1 脂肪族及び多環芳香族炭化水素類の分画

降下物試料溶液は加熱済みのガラス繊維濾紙(GF/C)で吸引濾過することで溶存態と懸濁態に分けた。濾紙上の懸濁態は凍結後、真空乾燥機(TAITEC, VD-80)で凍結乾燥し、ジクロロメタンで8時間のソックスレー抽出を行った。溶存態はODSミニカラム(Waters ENV IC18)により固相抽出を行いDCM35mlで溶出した。懸濁態および溶存態からの抽出物を濃縮し、5%の蒸留水を添加した不活性シリカゲルカラム(Wako No.923; 100-200mesh; 1cm i.d x 9cm)に添加した。n-ヘキサン/ジクロロメタン(3:1 v/v)約20mlで流出させた。流出液はロータリーエバポレーターで蒸発乾固し、n-ヘキサンで溶解し活性シリカゲルカラム(BioRad Biosil, 100mesh; 0.4cm i.d x 18cm or Wako No.923; 100-200mesh; 0.4cm i.d x 18cm)に添加した。n-ヘキサンを18~22ml流し、はじめの4~5mlは脂肪族炭化水素(AHs)分画、残りをアルキルベンゼン分画として採取した。その後、n-ヘキサン/ジクロロメタン(3:1 v/v)8~10mlで多環芳香族炭化水素(PAHs)画分を得た。この画分はさらに蒸発乾固し0.5mlジクロロメタン/メタノール(1:1 v/v)に溶解し、Sephadex LH-20カラム(Pharmacia Fine Chemical; 1.0cm i.d x 23cm)に添加した。ジクロロメタン/メタノール(1:1 v/v)を20~22ml流し、はじめの10mlを捨て次の10~12mlをPAHs画分とした。

AHs画分およびPAHs画分は、エバポレーターで約0.5mlに濃縮し、1mlアンプルに移し替え、窒素気流下で蒸発乾固した。内部標準物質として、AHs画分中にはTetracosane D-50(C₂₄D₅₀)を含むn-ヘキサン100 μ l、PAHs画分中には1-ChlorotetradecaneとOctacosaneを含むイソオクタン50 μ lで定容した。ここから1~2 μ lをキャピラリーガスクロマトグラフに注入し定量した。

路上粉塵試料、アスファルトとタイヤ粒子試料は、それぞれジクロロメタンで8時間のソックスレー抽出を行い、抽出物を降下物と同様にシリカゲル等により精製し、AHs画分およびPAHs画分を得た。

3-2 ガスクロマトグラフおよびガスクロマトグラフ/質量分析計

ガスクロマトグラフの分析条件を以下に示した。

使用機種：島津 GC-14A カラム：DB-5(0.25mm×30m)

キャリアーガス：ヘリウム

メイクアップガス：AHs画分の分析—窒素、PAHs画分の分析—ヘリウム

試料注入：スプリットレスモード

昇温条件：AHsは、60°Cで1分間保持後、120°Cまで30°C/min、310°Cまで6°C/minで昇温後、42分間保持。

PAHsは、60°Cで1分間保持後、150°Cまで30°C/min、310°Cまで4°C/minで昇温後、16分間保持。

ガスクロマトグラフ/質量分析計の分析条件を以下に示す。

使用機種：日本電子MS-GCG06ガスクロマトグラフ装置付き

JMS-DX302二重収束型質量分析計

カラム：DB-5(0.25mm×30m) キャリヤーガス：ヘリウム

試料注入：スプリットレスモード

昇温条件：AHsは、60°Cで1分間保持後、120°Cまで32°C/min、300°Cまで8°C/minで昇温後、50分間保持。

PAHsは、60°Cで1分間保持後、150°Cまで32°C/min、300°Cまで4°C/minで昇温後、20分間保持。

イオン化電圧：70eV、イオン源温度：250°C、イオン化電流：300 μ A

AHs画分中のn-アルカンの同定は、標準物質(炭素数12~30、32~34、36、40のn-アルカンの)の保持時間と比較して行った。GC注入内部標準物質はTetracosane d-50(n-C₂₄D₅₀)を用い面積を比較した。ホパンは、n-C₂₉H₆₀の質量数85とホパンの質量数191の強度の比較により行った。また、UCM炭化水素の定量は、n-C₂₀~n-C₃₅アルカンの範囲の保持時間のベースラインより上のn-アルカンのピークを除いた面積をn-C₂₄D₅₀の応答の比較により行った。

PAHsの同定は、12種類のPAHs標準物質(Dibenzothiophene、Phenanthrene、Anthracene、2-Methylphenanthrene、Fluoranthene、Pyrene、Benz[a]anthracene、Chrysene、Benzo[e]pyrene、Benzo[a]pyrene、Perylene、Benzo[ghi]perylene)を用い、その保持時間、マススペクトルの

比較により行った。その他のPAHsは文献(Takada et al., 1990)によるRetention Indexとマススペクトルの解釈から行った。Pyreneより保持時間の短いPAHsについては1-Chlorotetradecane(IS-1)を、Benz[a]anthraceneより保持時間の長いPAHsについてはOctacosane(IS-2)をGC注入内部標準物質として用い、それぞれのPAHsと内部標準の高さを比較した。標準物質がないPAHs及びn-アルカンについては、構造が比較的類似し、クロマトグラム上でピークが近い標準物質に換算し定量した。

4. 結果及び考察

4-1 降下物中の炭化水素類の組成と起源

図3に代表的な全降下物中のAHs画分およびPAHs画分のガスクロマトグラムを示す。

(a) AHs画分

AHs画分中では、炭素数14~42までのn-アルカン、炭素数29~33のホパンが検出され、ガスクロマトグラム上にはhumpも現れた。炭素数19以下のn-アルカンは、降下物の試料水の処理で使用するODSミニカラム(Waters ENV IC18)から多少混入することがわかっているため、n-アルカンは炭素数20以上を定量した。また、ガスクロマトグラム上のhumpは、個々のピークとして分離できない分岐または環状炭化水素の異性体の複雑な混合物(UCM:Unresolved Complex Mixture)である。

表1から表7(付録)に各地点におけるAHs画分(n-アルカン、UCM炭化水素、ホパン)の定量結果を示す。

降下物中のn-アルカン

大気中のn-アルカンの主な起源は、化石燃料燃焼由来(奇数偶数炭素数の量的差がない分布)と陸上植物のワックス由来(炭素数27、29、31などの奇数炭素数が多い分布)とがあると考えられてきた(Simoneit and Mazurek, 1982 ; Simoneit, 1984 ; Gagosian, 1986)。n-アルカンの分布の特徴を示す指標にCPI(Carbon Preference Index : 奇数炭素数を持つn-アルカン濃度を偶数炭素数のn-アルカン濃度で割った値)が用いられ、前者のCPI値は1に近い値を示すのに対し、後者は5~10の値の範囲を示すことが知られている。図3のガスクロマトグラムが示すように川崎での全降下物中のn-アルカンは、秋季から冬季にかけて明確に二山分布を示す。すなわち、前半の炭素数20~26のn-アルカン(LMW n-アルカン)

は奇数偶数炭素数の量的差がない分布(CPI=1.10)で後半の炭素数26以上では奇数優位の分布(CPI=1.43)であり、化石燃料由来と陸上植物由来の両者のn-アルカンが寄与していることがわかる。これに対し、春季から夏季では後半の奇数優位の分布が主体となる。このような傾向は、都心に近い地点ほどはっきり現れる。非都市域の小河内でのn-アルカンは、春季など植物活動の盛んな時期にはアルケンを含めた炭素数23~33の奇数優位

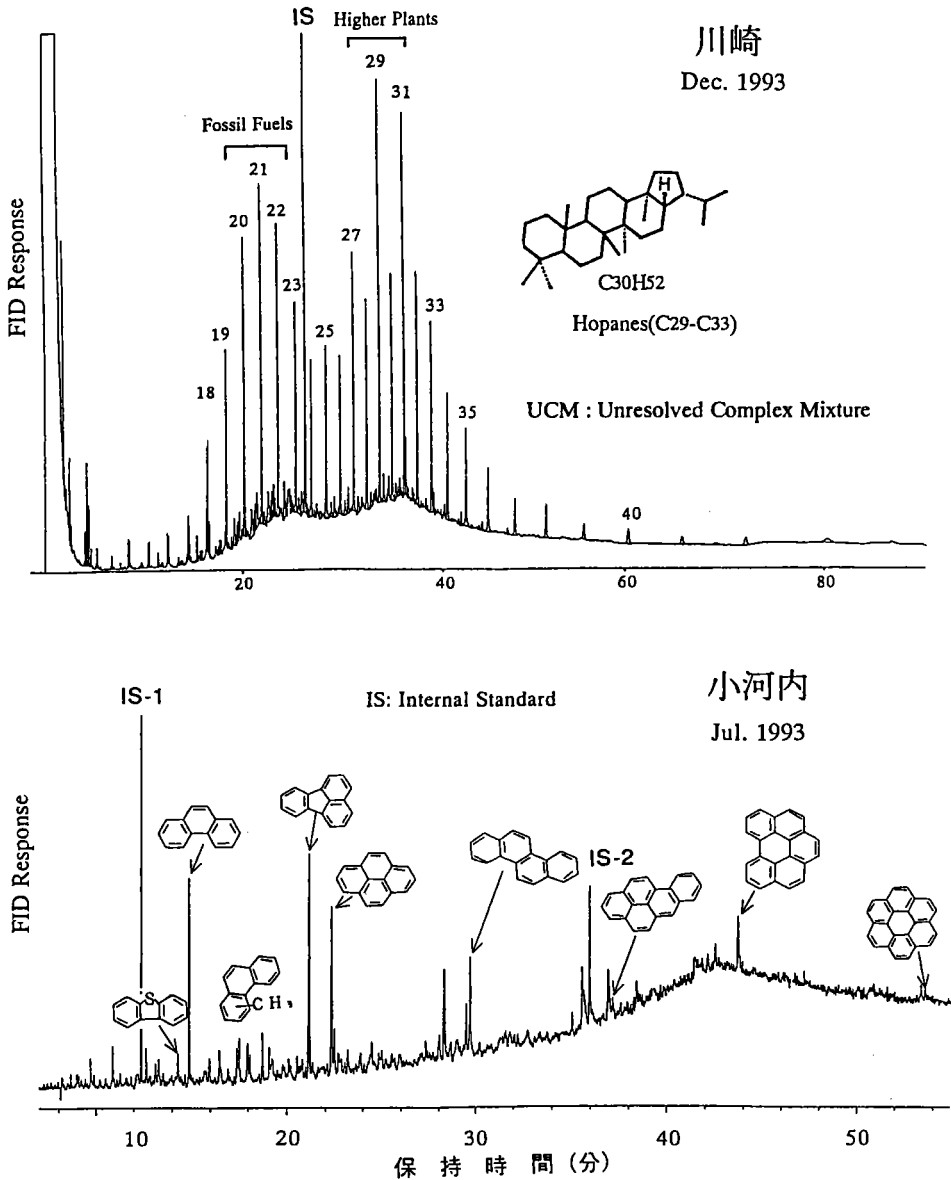


図3. 全降下物中の代表的なAHsおよびPAHs画分のガスクロマトグラム

(CPI=6~13)のn-アルカンがほとんどを占め、それ以外の時期でもCPI値の大きな奇数優位(CPI=2~5)の分布を示し、ほとんどが陸上植物由来のものであろうと考えられる。

LMW n-アルカンの降下量は、20~1257($\mu\text{g}/\text{m}^2/\text{month}$)の範囲で得られた。月別の降下量の年間変化を図4に示す。先ほど述べたように小河内での植物活動の盛んな時期は、降下量が非常に多くなっている。その他の地点では明確な季節変化は認められなかった。

降下物中のUCM炭化水素

UCM炭化水素のhumpもn-アルカンと同様秋季から冬季にかけ、川崎では二山分布をしている(図3)。これに対し、春季から夏季にかけては後半のhumpが非常に大きい一山分布を示す。この傾向は、都心で強く郊外から非都市域に向かうほど不明確になる。UCM炭化水素は原油中に存在し(Tissot and Welte, 1984)、大気中のそれは内燃機関などの燃焼過程における石油の不完全燃焼により大気に放出されたものであり、自動車の排ガスの中にもその存在が報告されている(Simoneit, 1984; Rogge et al., 1993)が、先に示したUCM炭化水素の二山分布のそれぞれの起源を特定することは困難である。しかし、前半の分布は秋季から冬季に現れることから、暖房等の化石燃料の影響によるものかもしれない。

UCM炭化水素の月別降下量の年間変化を図5に示す。UCM炭化水素の降下量は249~6080($\mu\text{g}/\text{m}^2/\text{month}$)の範囲であった。川崎におけるUCM炭化水素の降下量は月により約20倍の違いが認められた。新宿や目黒においての降下量も5~6倍の変化が見られた。川崎、新宿や目黒におけるUCM炭化水素は夏季に高い傾向を示し、しかも毎月の変動のジグザグは各地点と類似していた。川崎と各地点の降下量との相関係数は0.36~0.88で、川崎から遠距離の地点ほど係数は小さかった。このことから、UCM炭化水素の発生源の主体は川崎に隣接する京浜工業地帯と考えられる。また、降下量が多い夏季は電力需要も大きい時期でもあり発電に要する化石燃料の使用量との関連があるのかもしれない。

降下物中のホパン

大気中のホパンは潤滑油に由来し(河村ら、1994)、自動車エンジンの排気ガス中にも検出されている(Rogge et al., 1993)。図6に全降下物中の代表的なホパンのマスキロマトグラム(M/Z 191)を示す。炭素数29~33のホパンは炭素数31~35のn-アルカンの間に存在

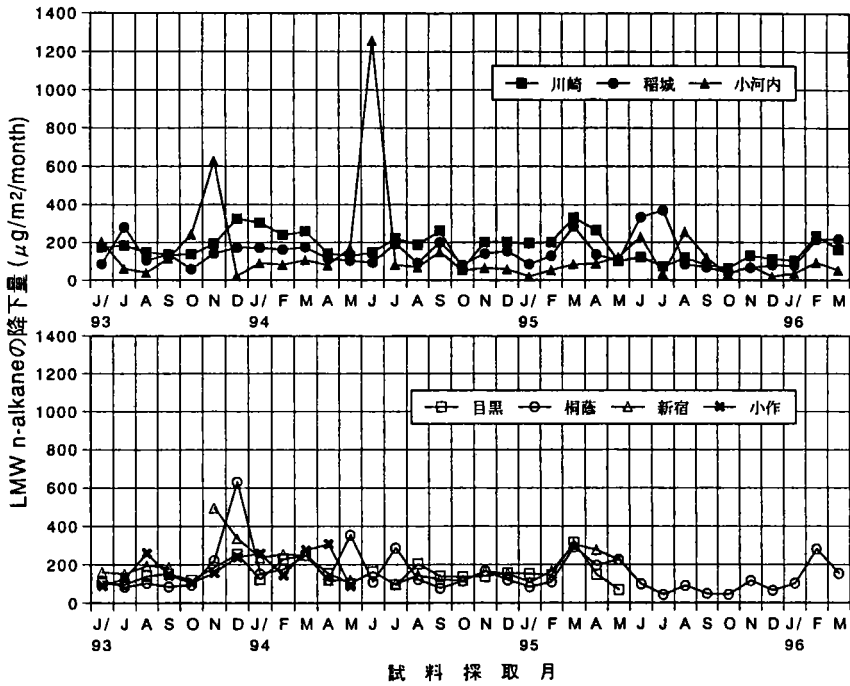


図4. LMW-n-アルカンの月別降下量の年間変化

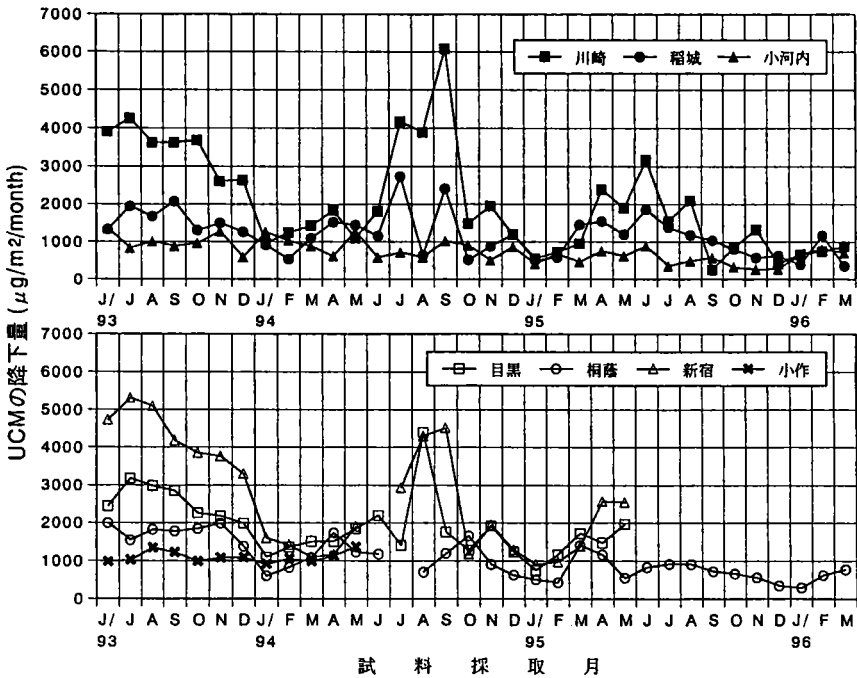


図5. UCM炭化水素の月別降下量の年間変化

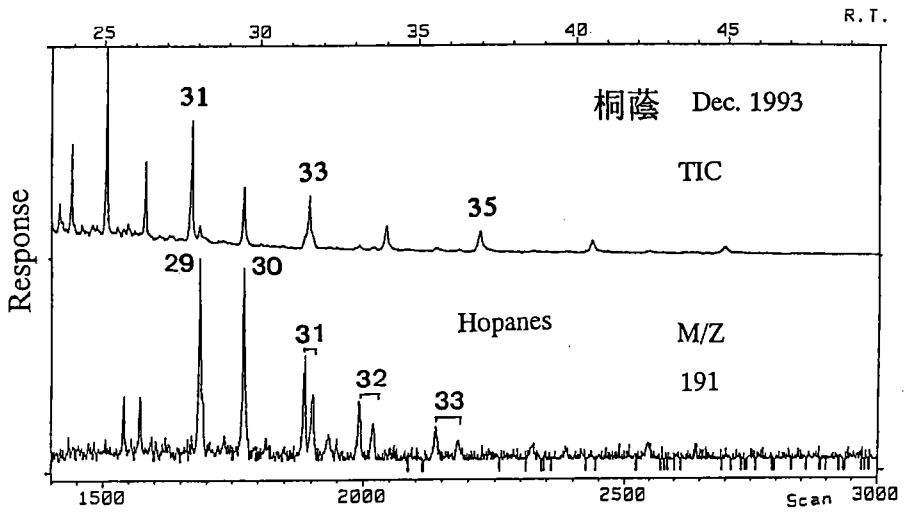


図6. AHs画分中のホパンのマスクロマトグラム(M/Z 191)

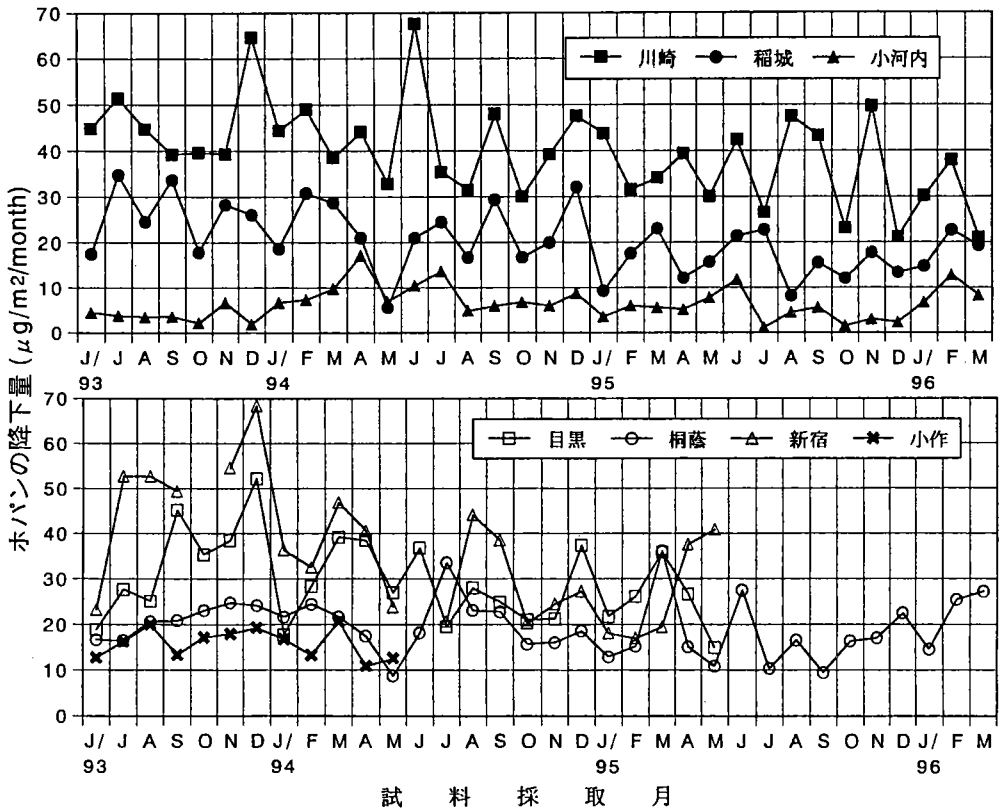


図7. ホパンの月別降下量の年間変化

する。このマスクロマトグラムは河村ら(1994)の潤滑油及びエアロゾルからのものと類似し、成分のマススペクトルの比較でもよく一致した。よって、本研究の全降下物中のホパンは明らかに化石燃料から由来するものである。炭素数29から炭素数33へと減少するホパンの組成は、どの試料でもほぼ同様であった。

ホパンの月別降下量の年間変化を図7に示す。ホパンの降下量は1~68($\mu\text{g}/\text{m}^2/\text{month}$)の範囲で得られた。図に示すように、川崎>稲城>小河内の順で明らかに降下量が減少していることがわかる。また、川崎におけるホパンの降下量の毎月の変動のジグザグは新宿や目黒とやや類似しているがその他の地点では認められなかった。しかし、ホパンの降下量が最も多い地点が川崎であることやその組成が他の地点とほぼ類似していることなどから、発生源の主体はやはり京浜工業地帯であろうと考えられる。

(b) PAHs画分

PAHs画分中では、硫黄化合物やアルキル同族体など22種類の化合物が同定された。図3に示すように、ベンゼン環が3~6個縮合したPAHsが主に検出され、アルキル基がないPAHsがアルキル同族体に比べ優位であり、典型的な燃焼起源の組成であった。特に、化石燃料の燃焼が主な発生源といわれるPAHsの合計を Σ COMB PAHs(Fluoranthene, Pyrene, Benzo[ghi]fluoranthene, Benz[a]anthracene, Chrysene, Benzo[j]fluoranthene, Benzo[k]-fluoranthene, Benzo[e] pyrene, Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene, Benzo[ghi]perylene)として示した。表8から表14(付録)に各地点におけるPAHs画分の結果をそれぞれ示す。

降下物中の Σ COMB PAHs

Σ COMB PAHsの月別降下量の年間変化を図8に示す。 Σ COMB PAHsの降下量は6~471($\mu\text{g}/\text{m}^2/\text{month}$)の範囲で得られた。川崎における Σ COMB PAHsの降下量の変動は非常に大きかった。しかし、この変動のジグザグはホパンやUCM炭化水素とはやや異なっていた。その他の地点では明確な季節変化などは認められなかった。

各地点のベンゾ[e]ピレンに対するベンゾ[a]ピレンの比(以下BaP/BeP比)の平均値を図9に示す。ベンゾ[a]ピレンはベンゾ[e]ピレンに比べ光分解を受けやすいことが知られており(Behymer and Hites, 1988; Nielsen, 1984)、BaP/BeP比が低いほどより長く大気を浮遊していたと考えられる。今回の全降下物のPAHs中のBaP/BeP比が、川崎(0.90

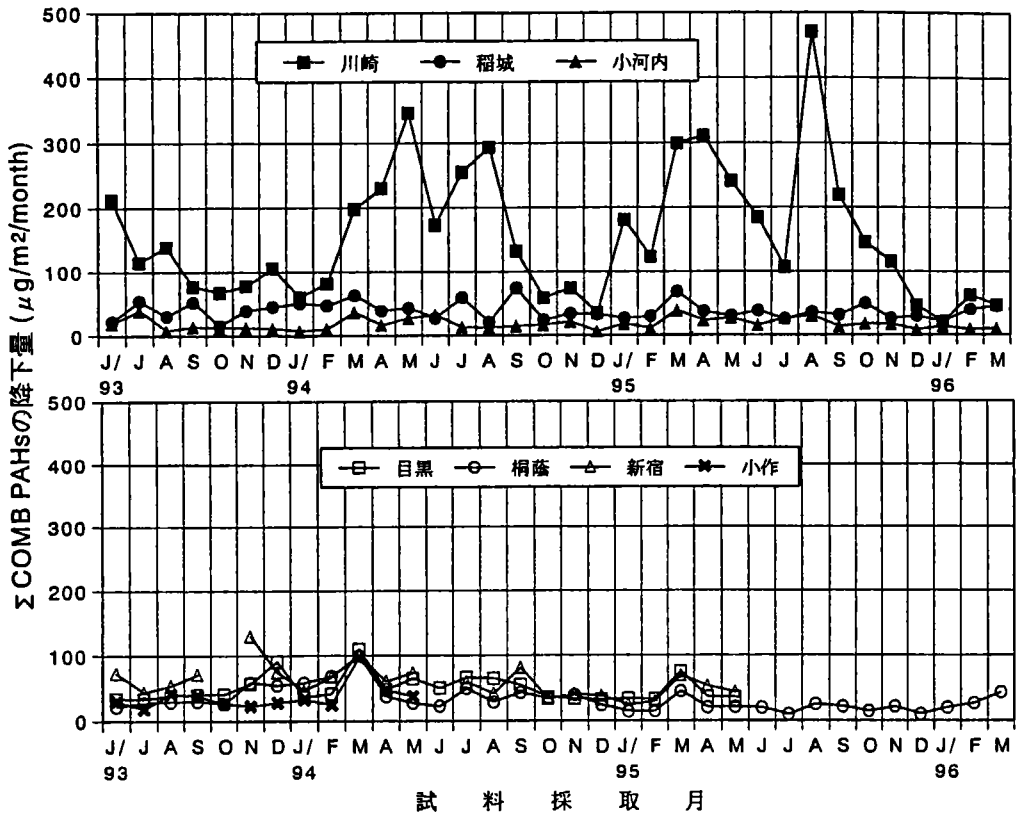


図 8. Σ COMB PAHsの月別降下量の年間変化

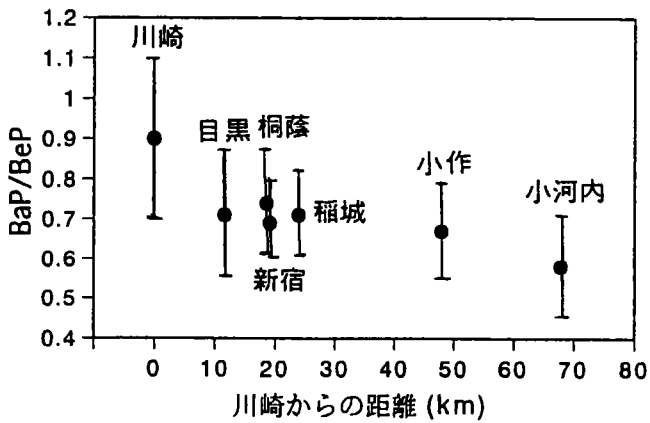


図 9. 川崎を起点とした各採取地点のBeP/BaP比の平均値

± 0.19)から目黒(0.71 ± 0.16)、桐蔭(0.74 ± 0.13)、新宿(0.69 ± 0.10)、稲城(0.71 ± 0.10)へとやや低い値になり、さらに小作(0.67 ± 0.12)、小河内(0.58 ± 0.13)でより低い値であった。よって、川崎は他の地点に比べ発生源に最も近いと考えられ、そこから放出されたPAHsは大気を浮遊して小作や小河内まで運ばれたと考えられる。

PAHsの発生源を推定する指標として用いられるフェナンスレンに対するメチルフェナンスレンの比(以下MP/P比)は、PAHsの生成温度が低い場合には大きな値をとることが知られており、自動車などの移動発生源では3.6~6.1(Takada,1991)、固定発生源では0.5程度(Takada et al.,1990)であると報告されている。全降下物の各地点でのMP/Pの平均値を図10に示した。やや新宿の値は高いが(0.55 ± 0.08)、どの地点においても0.46~0.51と低い値であった。つまり各地点の降下物中のPAHsは主に固定発生源より放出されたものと考えられる。

以上のように、各地点に降下するいずれの炭化水素もその主要な発生源は固定発生源(京浜工業地帯)であると想定された。しかし、都心の新宿や目黒などはMP/P比などの値から判断して、他の地点に比べ自動車関連の発生源の影響をかなり受けていると予想され

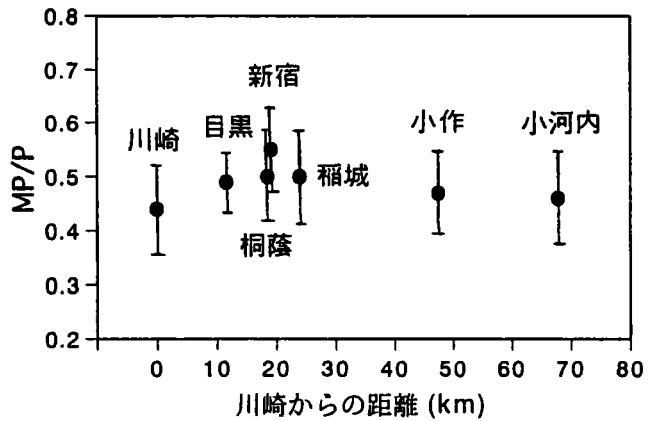


図10. 川崎を起点とした各採取地点のMP/P比の平均値

る。また、各炭化水素の降下量の年間の変動のジグザグの要因について、気象データ(アメダスなど)との比較を行ったが、その要因となる結果は現在まで得られていない。

4-2 湿性降下物の寄与

降雨による炭化水素類の地表への輸送における寄与はどの程度であるかを推定するために、湿性降下物の全降下物に対する割合を求めた。湿性降下物は、桐蔭にて1993年11月と12月、1994年12月、1995年7月から1996年2月まで採取した。

表15に全降下物に対する湿性降下物の割合(%)と降水データを示す。また、表16と表17(付録)に詳細な定量値を示す。各炭化水素の湿性降下物の割合は、LMW n-アルカンで

30~80%、ホパンで33~63%、UCM炭化水素で33~95%、 Σ COMB PAHsで41~80%の範囲で得られた。降水量は一般的に冬季に少なく夏季に多い。冬季の降水量に対する各炭化水素の湿性降下物の割合は、一部を除き降水量が多いほうがその割合が高い傾向が認められた。また、冬季は平均的に乾性降下物の割合が高い。これに対し、夏季は降水量もそれほど多くないにもかかわらずどの化合物も湿性降下物の割合が非常に高く、乾性降下物はほとんど寄与しない。各化合物の湿性降下量と降水量や降水日数との関連を詳細に検討したが、相関関係は希薄であった。

Yamazaki et al.(1982)は、大阪市の大気中の低分子のPAHsはほとんどガス相に存在し、その濃度はエアロゾル態と異なり年間を通してほぼ一定であったと報告している。よって、降雨時のPAHsの全降下量には、ガス相に含まれているPAHsの雨滴による取り込みによる寄与が重要であろう。また、PAHsが吸着しているエアロゾルの雨滴による降下やすでに雲粒に含まれているPAHsの降下など、降雨時の地表への降下機構はこれらの要因が複雑に絡み合っていると考えられる。降雨時の降下機構を明らかにするためには、年間を通しての湿性降下物の割合の変化や降水中、降雨前後のエアロゾル中の濃度の測定など多くの課題を検討しなければならない。

表15 全降下物に対する湿性降下物の割合と降水データ

| | Nov. /93 | Dec. /93 | Dec. /94 | Aug. /95 | Sep. /95 | Oct. /95 | Nov. /95 | Dec. /95 | Jan. /96 | Feb. /96 |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 試料採取日数(日) | 29 | 31 | 28 | 38 | 31 | 33 | 28 | 31 | 30 | 30 |
| 降水量(mm) | 208 | 61 | 19 | 51 | 208 | 35 | 60 | 1.5 | 16 | 39 |
| 降水日数(1mm以上) | 7 | 8 | 5 | 7 | 7 | 5 | 7 | 3 | 6 | 7 |
| LMW n-alkane (%) | 58 | 30 | 50 | 73 | 80 | N.D. | 43 | 60 | 60 | 56 |
| Hopane (%) | 44 | 35 | 33 | 83 | 63 | N.D. | 44 | 27 | 41 | 56 |
| UCM hydrocarbon(%) | 68 | 49 | 54 | 95 | 59 | N.D. | 52 | 33 | 63 | 81 |
| Σ COMB PAHs (%) | 65 | 58 | 52 | 83 | 41 | 52 | 57 | 67 | 49 | 52 |

4-3 多摩川流域への大気降下物による汚染有機物の負荷

図11に川崎からの距離で示した各地点に対するホパン、UCM炭化水素と Σ COMB PAHsの月平均降下量を示した。植物活動の激しい春先や紅葉時期には炭素数23~33と広範囲の奇数のn-アルカンが大量に放出されることにより、小作や小河内のように陸上植物の影響を特に受けやすい地点では、植物由来の低分子のn-アルカンが加わったために、LMW n-アルカンの平均降下量が都市域よりかえって高くなってしまったと考えら

れる。その他の炭化水素類はどれも小河内に向かって減少する傾向を示しているが、その減少の度合いに違いがある。ホパンやUCM炭化水素は川崎から小河内に向かって緩やか減少するのに対し、 Σ COMB PAHsは川崎から稲城、小作へと指数関数的に減少して行き、約70km離れた小河内では川崎の降下量の9分の1程度まで少なくなっている。また、どの炭化水素の月平均降下量の減少傾向からも特に新宿が飛び出ているのは、先に述べたように、固定発生源からの影響に加えて、新宿周辺からの移動発生源(自動車)からの寄与が大きいためかも知れない。

今回の降下物の測定を基に、多摩川の流域面積(1240

km²)から、各炭化水素の多摩川流域への降下物からの直接の負荷量を見積ることを試みる。n-アルカン、ホパンとUCM炭化水素は、図11の月平均降下量の減少傾向から考えて、稲城の降下量を多摩川流域の平均降下量として計算した。稲城における各炭化水素の平均降下量、LMW n-アルカン($146 \pm 79 \mu\text{g}/\text{m}^2/\text{month}$)、ホパン($20 \pm 7 \mu\text{g}/\text{m}^2/\text{month}$)、UCM炭化水素($1186 \pm 579 \mu\text{g}/\text{m}^2/\text{month}$)を用いると、多摩川流域への負荷量は、n-アルカンで $2.17 \pm 0.12 \text{ ton/year}$ 、ホパンで $0.30 \pm 0.10 \text{ ton/year}$ 、UCM炭化水素で 17.65 ± 8.62

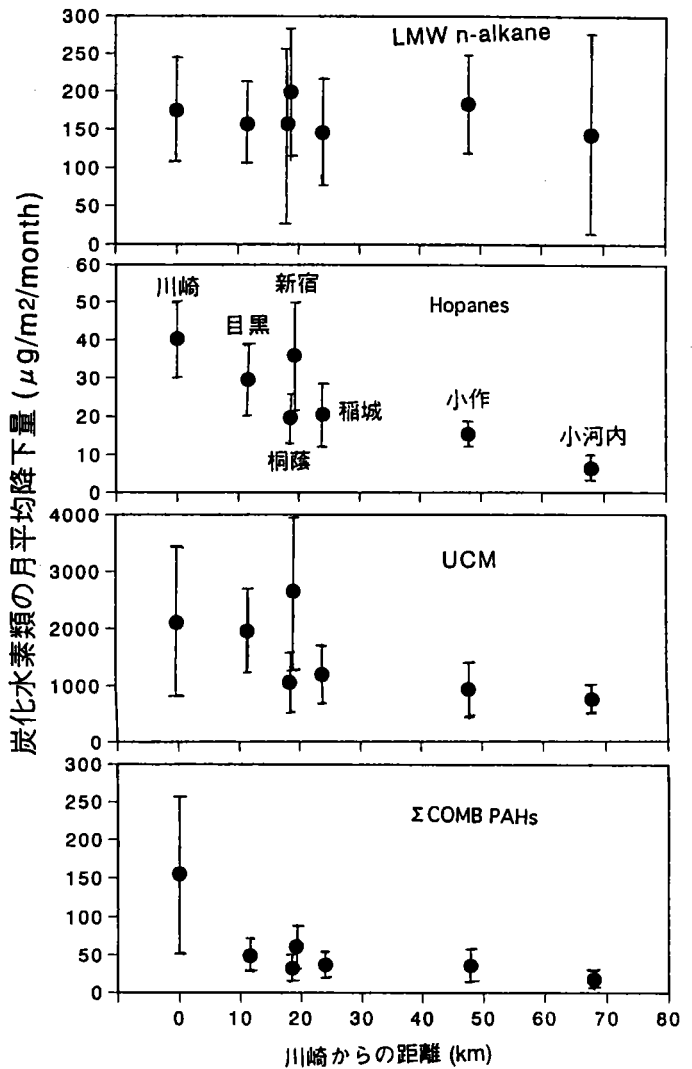


図11. 川崎を起点とした各採取地点の炭化水素類の月平均降下量

ton/yearと見積られた。

Σ COMB PAHsの月平均降下量は川崎から小河内に向かって指数関数的に減少している(図11)。しかし、川崎の高い降下量が負荷する流域面積はかなり少ないと予想されるため、先と同様に稲城の Σ COMB PAHsの月平均降下量を多摩川流域の平均降下量としても大きく異なることはないと考えた。稲城の Σ COMB PAHsの平均降下量($38 \pm 14 \mu\text{g}/\text{m}^2/\text{month}$)から同様に計算すると、多摩川流域への負荷量は $0.57 \pm 0.21 \text{ ton/year}$ となった。

しかしながら、各炭化水素の平均降下量の川崎から小河内への減少傾向の違いを反映したより正確な負荷量の見積りを検討する必要がある。

4-4 路上粉塵、アスファルト、タイヤ粒子及び関戸橋脇降下物

表18と表19に路上粉塵、アスファルト、タイヤ粒子及び関戸橋脇降下物の分析結果を示す。すでに、Takadaら(1990)は、東京地域の路上粉塵中にかなりの量のPAHsが分布することを明らかにしている。交通量の激しい場所での路上粉塵中のAHs画分の炭化水素(n-アルカン、ホパンやUCM炭化水素)の濃度はそうでない場所でのそれより高い値を示し、CPI値も1に近く、車の影響が大きいことがわかった。また、交通量の激しい場所での路上粉塵中のPAHsの濃度およびMP/P比も高い値であるのに対し、交通量の少ない道路上の路上粉塵のPAHsの分布は全降下物のそれと類似し、Takadaら(1990)の結果と一致した。アスファルトやタイヤ粒子中の各炭化水素類の結果では、ホパンやUCM炭化水素が相対的に多いことやCPIが1に近くMP/P比が高いという化石燃料由来の特徴を持つことがわかった。また、ガスクロマトグラムの比較から、交通量の激しい場所での路上粉塵は、アスファルトやタイヤ粒子の影響を受けていることがうかがわれた。

関戸橋脇の降下物中の各炭化水素類は、CPI値やMP/P比から明らかに自動車等の影響を受けていることがわかる。その降下量は、最も関戸橋に近い地点である稲城の全降下物中の平均降下量の数十倍以上にも達した。この関戸橋脇の降下物は、通常ならその大半が関戸橋の路上粉塵として堆積してゆくことを考えると、路上粉塵の流出時の負荷量がいかに大きいかが予想される。

以上のことから、交通量の激しい道路上の路上粉塵は、自動車由来の汚染有機物の影響を大きく受けており、降水時における路上粉塵の河川への負荷、特に橋からの直接の負荷は非常に大きいと予想される。よって、路上粉塵による多摩川流域への負荷量を見

積ることは今後の重要な課題である。

表18 路上粉塵、アスファルト、タイヤ粒子及び関戸橋脇全降下物中の
n-アルカン、ホパンとUCM炭化水素

| | Total ($\mu\text{g/g}$) | CPI (C20-C36) | ホパン ($\mu\text{g/g}$) | UCM | Total ($\text{mg}/\text{m}^2/\text{month}$) | CPI (C20-C36) | ホパン ($\text{mg}/\text{m}^2/\text{month}$) | UCM |
|----------|------------------------------|------------------|----------------------------|-------|--|------------------|--|------------|
| 路上粉塵 | | | | | 関戸橋脇全降下物 | | | |
| 青葉台駅周辺 | 40.6 | 1.13 | 3.3 | 83.7 | 多摩側 | | | |
| 横浜総合病院周辺 | 33.7 | 1.33 | 3.4 | 99.8 | 94.7 | 6.09 | 1.12 | 0.67 18.16 |
| 小河内ダム周辺 | 11.2 | 1.68 | 1.3 | 16.7 | 94.8 | 9.36 | 1.12 | 0.94 24.26 |
| 国道246 | 20.8 | 0.99 | 2.5 | 135.8 | 94.9 | 8.39 | 1.13 | 1.04 21.31 |
| 国道16 | 94.5 | 1.03 | 13.9 | 165.5 | 95.2 | 20.65 | 1.10 | 1.11 32.32 |
| 関戸橋 1 | 60.7 | 1.03 | 2.1 | 121.2 | 95.3 | 13.33 | 1.04 | 0.87 20.56 |
| 関戸橋 2 | 34.7 | 0.99 | 3.2 | 100.5 | 95.4 | 11.53 | 0.98 | 0.75 19.33 |
| 関戸橋 3 | 40.5 | 1.03 | 1.4 | 109.8 | 府中側 | | | |
| 関戸橋 4 | 44.9 | 1.10 | 1.8 | 120.3 | 94.7 | 35.15 | 1.04 | 3.92 83.38 |
| | | | | | 94.8 | 35.79 | 1.01 | 3.17 78.91 |
| アスファルト 1 | 40.4 | 0.98 | 13.7 | 565.1 | 94.9 | 14.50 | 1.05 | 1.52 50.83 |
| アスファルト 2 | 12.0 | 0.99 | 3.6 | 68.8 | 95.2 | 28.18 | 1.15 | 1.10 48.12 |
| タイヤ粒子 1 | 1827 | 1.14 | 164.9 | 6375 | 95.3 | 32.69 | 0.92 | 1.59 53.62 |
| タイヤ粒子 2 | 1441 | 1.03 | 616.9 | 6907 | 95.4 | 40.84 | 0.92 | 1.24 59.11 |

表19 路上粉塵、アスファルト、タイヤ粒子及び関戸橋脇全降下物中の
多環芳香族炭化水素

| | ΣCOMB ($\mu\text{g/g}$) | MP/P | (Flu+Pyr)/ $\Sigma\text{COMB}(\%)$ | ΣCOMB ($\text{mg}/\text{m}^2/\text{month}$) | MP/P | (Flu+Pyr)/ $\Sigma\text{COMB}(\%)$ |
|----------|--|------|---------------------------------------|--|------|---------------------------------------|
| 路上粉塵 | | | | 関戸橋脇全降下物 | | |
| 青葉台駅周辺 | 1.38 | 1.10 | 33 | 多摩側 | | |
| 横浜総合病院周辺 | 0.96 | 0.71 | 32 | 94.7 | 0.29 | 0.99 35 |
| 小河内ダム周辺 | 1.10 | 0.60 | 47 | 94.8 | 0.29 | 1.17 39 |
| 国道246 | 5.90 | 1.10 | 39 | 94.9 | 0.24 | 0.86 43 |
| 国道16 | 6.53 | 1.28 | 34 | 95.2 | 0.87 | 0.66 44 |
| 関戸橋 1 | 2.77 | 2.90 | 37 | 95.3 | 0.62 | 0.58 47 |
| 関戸橋 2 | 2.76 | 2.11 | 18 | 95.4 | 0.42 | 0.61 40 |
| 関戸橋 3 | 2.16 | 2.40 | 27 | 府中側 | | |
| 関戸橋 4 | 1.55 | 2.00 | 25 | 94.7 | 1.08 | 2.16 30 |
| | | | | 94.8 | 2.06 | 2.87 26 |
| アスファルト 1 | 0.98 | 2.10 | 43 | 94.9 | 0.87 | 2.46 25 |
| アスファルト 2 | 0.82 | 2.20 | 50 | 95.2 | 1.30 | 0.94 26 |
| タイヤ粒子 1 | 28.35 | 2.01 | 20 | 95.3 | 1.29 | 1.17 28 |
| タイヤ粒子 2 | 45.11 | 1.34 | 16 | 95.4 | 1.12 | 1.00 26 |

Flu: Fluoranthene Pyr: Pyrene

5. まとめ

1) 1993年5月から1996年3月までの7地点で採取した大気降下物の分析から、AHs画分中では、化石燃料由来のLMW n-アルカン(C20~C26)、ホパン(C29~C33)とUCM炭化水素が検出された。また、PAHs画分中では、硫黄化合物やアルキル同族体など22種類の化合物が同定され、典型的な燃焼起源の組成であった。

2) 各炭化水素の降下量は、LMW n-アルカンは20~1257、UCMは249~6080、ホパン

は1~68、 Σ COMB PAHsは6~471($\mu\text{g}/\text{m}^2/\text{month}$)の範囲で定量された。年間の月別降下量の変動は川崎や都心の新宿や目黒で観察された。しかし、その変動のジグザグは化合物により違いがみられた。その他の地点では明瞭な季節変化などは認められなかった。

3) 各炭化水素類の月平均降下量は多摩川流域に沿い川崎が最も多いこと、BaP/BeP比が川崎(0.90 ± 0.19)で高く、小河内(0.58 ± 0.13)に向かって低くなっていること、どの地点のMP/P比も固定発生源に近い低い値($0.46 \sim 0.51$)であること、などからこれらの主要な発生源は川崎に隣接する固定発生源(京浜工業地帯)であると考えられる。しかし、新宿などの都市域では、都市域周辺の自動車等の発生源からの寄与も大きいと予想される。

4) 湿性降下物の割合は夏季では非常に高いのに対し、冬季では乾性降下物の割合が高い結果が得られた。

5) 稲城の各炭化水素の月平均降下量を多摩川流域(流域面積 1240km^2)の平均降下量とし、多摩川流域への降下物による負荷量を見積ると、LMW n-アルカンは 2.17 ± 0.12 ton/year、ホパンは 0.30 ± 0.10 ton/year、UCMは 17.65 ± 8.62 ton/year、 Σ COMB PAHsは 0.57 ± 0.21 ton/yearとなった。

6) 交通量の激しい場所での路上粉塵や降下物は自動車からの影響が予想以上に大きいことが確認された。よって、降水時における路上粉塵の多摩川流域への汚染有機物の負荷はかなり大きいと考えられ、路上粉塵による負荷量を見積ることが重要であろう。

6. 謝 辞

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8. 付 録

採取地点(7地点)ごとの全降下物中の炭化水素類の定量値と
湿性降下物の割合に関する定量値

表1 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(川崎)

| Carbon Number | No.1 | | | | | | | | | | | | |
|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | May./93 | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | |
| C20 | 34.1 | 29.7 | 19.2 | 26.4 | 14.2 | 14.3 | 20.1 | 54.6 | 49.7 | 47.0 | 38.9 | 14.1 | |
| C21 | 14.7 | 12.8 | 11.8 | 9.8 | 11.2 | 11.4 | 26.9 | 64.0 | 56.0 | 48.6 | 47.6 | 14.6 | |
| C22 | 25.5 | 22.2 | 25.3 | 20.1 | 18.7 | 18.9 | 32.4 | 54.9 | 46.9 | 38.2 | 48.2 | 15.7 | |
| C23 | 19.7 | 17.1 | 22.7 | 14.8 | 18.9 | 19.1 | 27.1 | 39.3 | 32.2 | 26.1 | 40.3 | 19.2 | |
| C24 | 32.1 | 28.0 | 35.7 | 24.9 | 21.8 | 22.0 | 25.9 | 33.8 | 39.2 | 28.8 | 25.4 | 20.6 | |
| C25 | 41.5 | 36.1 | 35.5 | 28.3 | 28.7 | 29.0 | 32.4 | 43.4 | 40.6 | 25.6 | 18.8 | 31.5 | |
| C26 | 31.9 | 27.8 | 32.7 | 24.0 | 22.4 | 22.7 | 26.7 | 35.0 | 37.8 | 24.8 | 38.6 | 26.3 | |
| C27 | 70.1 | 61.0 | 48.2 | 36.0 | 36.8 | 37.2 | 38.6 | 55.5 | 50.4 | 36.0 | 45.9 | 57.4 | |
| C28 | 36.6 | 31.9 | 33.9 | 28.7 | 25.1 | 25.4 | 44.7 | 48.9 | 49.0 | 38.0 | 38.2 | 36.8 | |
| C29 | 116.9 | 101.7 | 67.6 | 64.6 | 54.3 | 54.9 | 62.6 | 99.9 | 92.4 | 67.0 | 58.5 | 89.7 | |
| C30 | 40.0 | 34.8 | 37.1 | 31.3 | 25.8 | 26.1 | 37.4 | 48.4 | 50.4 | 37.8 | 36.3 | 44.2 | |
| C31 | 97.2 | 84.6 | 62.3 | 58.4 | 49.0 | 49.6 | 56.1 | 89.8 | 84.7 | 61.2 | 50.3 | 81.8 | |
| C32 | 63.7 | 55.4 | 58.2 | 52.6 | 42.4 | 42.9 | 60.9 | 76.8 | 67.9 | 59.2 | 40.4 | 55.0 | |
| C33 | 68.0 | 59.2 | 58.5 | 54.3 | 46.6 | 47.1 | 50.8 | 75.7 | 44.1 | 36.6 | 37.8 | 57.1 | |
| C34 | 48.2 | 42.0 | 42.7 | 39.4 | 29.9 | 30.3 | 35.9 | 53.0 | 40.6 | 41.6 | 27.9 | 38.9 | |
| C35 | 45.3 | 39.4 | 36.7 | 35.9 | 27.3 | 27.6 | 32.1 | 55.4 | 39.9 | 35.2 | 21.7 | 33.9 | |
| C36 | 37.7 | 32.8 | 31.5 | 29.3 | 22.3 | 22.6 | 24.1 | 37.2 | 50.4 | 28.2 | 17.8 | 26.6 | |
| C37 | 24.8 | 21.6 | 22.2 | 19.7 | 16.2 | 16.4 | 15.6 | 22.6 | 13.3 | 15.0 | 10.6 | 18.8 | |
| C38 | 26.2 | 22.8 | 14.6 | 23.0 | 15.8 | 16.0 | 17.3 | 24.3 | 9.1 | 18.4 | 10.9 | 18.0 | |
| C39 | 15.2 | 13.2 | 17.6 | 13.0 | 12.5 | 12.6 | 8.8 | 13.2 | 4.2 | 7.4 | 6.1 | 11.0 | |
| C40 | 19.8 | 17.2 | 9.3 | 16.8 | 13.6 | 13.8 | 10.1 | 17.2 | 5.2 | 7.4 | 6.7 | 11.6 | |
| Total (μg/m ³ /month) | 909.2 | 791.3 | 723.3 | 651.3 | 553.5 | 559.9 | 686.5 | 1042.9 | 904.0 | 728.1 | 666.9 | 722.8 | |
| LMW(ΣC20-C26) | 199.5 | 173.7 | 182.9 | 148.3 | 135.9 | 137.4 | 191.5 | 325.0 | 302.4 | 239.1 | 257.8 | 142.0 | |
| LMW/Total | 0.22 | 0.22 | 0.25 | 0.23 | 0.25 | 0.25 | 0.28 | 0.31 | 0.33 | 0.33 | 0.39 | 0.20 | |
| LMW CPI(C20-C26) | 0.84 | 0.84 | 0.81 | 0.75 | 1.00 | 1.01 | 1.06 | 1.10 | 0.99 | 0.99 | 0.95 | 1.17 | |
| HMW CPI(C26-C36) | 1.78 | 1.78 | 1.34 | 1.40 | 1.47 | 1.47 | 1.18 | 1.43 | 1.24 | 1.16 | 1.26 | 1.59 | |
| Total CPI(C20-C36) | 1.51 | 1.51 | 1.18 | 1.21 | 1.34 | 1.33 | 1.14 | 1.32 | 1.15 | 1.10 | 1.13 | 1.49 | |
| UCM hydrocarbon* | 3588.5 | 3911.1 | 4266.1 | 3619.6 | 3624.3 | 3680.7 | 2602.9 | 2638.1 | 959.6 | 1240.3 | 1424.3 | 1830.4 | |
| Hopanes(C29-C33)* | 51.7 | 44.9 | 51.4 | 44.8 | 39.2 | 39.6 | 39.3 | 64.6 | 44.4 | 49.0 | 38.5 | 44.1 | |

* (μg/m³/month) LMW: Low Molecular Weight, HMW: High Molecular Weight, CPI: Carbon Preference Index

| Carbon Number | No.2 | | | | | | | | | | | | |
|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | |
| C20 | 11.6 | 14.4 | 34.2 | 26.3 | 13.2 | 5.3 | 23.6 | 29.2 | 41.1 | 38.6 | 63.6 | 33.0 | |
| C21 | 10.3 | 13.0 | 19.9 | 17.3 | 13.8 | 5.4 | 29.4 | 34.9 | 36.1 | 40.1 | 65.0 | 40.1 | |
| C22 | 12.3 | 16.2 | 28.3 | 31.7 | 22.8 | 8.5 | 34.3 | 34.8 | 31.3 | 34.6 | 61.0 | 39.8 | |
| C23 | 16.7 | 20.5 | 12.5 | 24.6 | 27.9 | 8.3 | 27.5 | 26.2 | 21.3 | 24.1 | 45.6 | 39.0 | |
| C24 | 19.8 | 21.5 | 42.8 | 29.3 | 42.4 | 13.3 | 23.3 | 22.3 | 18.4 | 22.6 | 38.5 | 32.3 | |
| C25 | 36.6 | 34.9 | 39.1 | 29.0 | 63.5 | 12.0 | 31.2 | 30.0 | 22.4 | 20.4 | 32.2 | 49.7 | |
| C26 | 20.5 | 26.0 | 43.8 | 29.2 | 77.3 | 9.5 | 32.0 | 24.5 | 24.6 | 20.8 | 24.4 | 30.2 | |
| C27 | 87.4 | 61.9 | 66.6 | 37.5 | 137.4 | 19.7 | 48.3 | 43.5 | 55.8 | 40.9 | 56.0 | 93.4 | |
| C28 | 23.7 | 38.0 | 56.2 | 33.8 | 108.2 | 12.2 | 42.9 | 32.5 | 30.3 | 26.4 | 31.2 | 35.5 | |
| C29 | 106.4 | 97.4 | 125.6 | 74.1 | 192.1 | 31.0 | 84.4 | 78.8 | 55.9 | 46.9 | 55.1 | 131.6 | |
| C30 | 24.5 | 50.4 | 63.9 | 41.4 | 97.8 | 14.5 | 53.1 | 37.2 | 30.8 | 28.3 | 28.6 | 44.3 | |
| C31 | 48.9 | 94.5 | 105.5 | 78.2 | 207.1 | 25.8 | 81.9 | 67.6 | 76.6 | 47.9 | 50.6 | 96.3 | |
| C32 | 30.8 | 70.1 | 84.7 | 56.7 | 94.2 | 17.4 | 73.2 | 45.5 | 42.1 | 36.6 | 34.1 | 61.7 | |
| C33 | 29.8 | 69.8 | 82.7 | 64.4 | 104.5 | 18.0 | 73.0 | 47.1 | 50.9 | 35.6 | 32.3 | 71.0 | |
| C34 | 19.6 | 55.6 | 72.8 | 50.8 | 70.8 | 14.1 | 61.5 | 37.0 | 35.1 | 28.8 | 27.8 | 60.7 | |
| C35 | 16.5 | 49.8 | 63.0 | 51.8 | 60.4 | 13.8 | 53.8 | 40.2 | 41.4 | 24.4 | 27.0 | 55.6 | |
| C36 | 13.3 | 42.4 | 51.6 | 42.4 | 46.4 | 10.2 | 48.6 | 40.4 | 30.3 | 18.7 | 22.0 | 43.4 | |
| C37 | 9.5 | 28.5 | 37.3 | 34.8 | 37.5 | 8.3 | 39.2 | 48.0 | 42.4 | 18.9 | 26.5 | 45.3 | |
| C38 | 9.1 | 33.0 | 28.6 | 32.7 | 31.5 | 8.8 | 41.5 | 65.9 | 38.6 | 16.6 | 25.1 | 42.1 | |
| C39 | 5.0 | 21.4 | 12.3 | 21.5 | 18.7 | 5.3 | 29.7 | 42.0 | 30.3 | 9.3 | 19.2 | 24.0 | |
| C40 | 5.5 | 30.4 | 16.1 | 26.9 | 22.9 | 8.9 | 37.8 | 56.1 | 26.6 | 10.7 | 15.3 | 29.8 | |
| Total (μg/m ³ /month) | 557.8 | 889.7 | 1087.5 | 834.4 | 1490.4 | 270.3 | 970.2 | 883.7 | 782.3 | 591.2 | 781.1 | 1098.8 | |
| LMW(ΣC20-C26) | 127.8 | 146.5 | 220.6 | 187.4 | 260.9 | 62.3 | 201.3 | 201.9 | 195.2 | 201.2 | 330.3 | 264.1 | |
| LMW/Total | 0.23 | 0.16 | 0.20 | 0.22 | 0.18 | 0.23 | 0.21 | 0.23 | 0.25 | 0.34 | 0.42 | 0.24 | |
| LMW CPI(C20-C26) | 1.33 | 1.19 | 0.65 | 0.80 | 1.04 | 0.88 | 1.03 | 1.09 | 0.98 | 0.98 | 1.01 | 1.24 | |
| HMW CPI(C26-C36) | 2.50 | 1.51 | 1.36 | 1.40 | 1.62 | 1.59 | 1.26 | 1.50 | 1.69 | 1.40 | 1.53 | 1.88 | |
| Total CPI(C20-C36) | 2.15 | 1.45 | 1.18 | 1.23 | 1.49 | 1.38 | 1.21 | 1.37 | 1.45 | 1.24 | 1.27 | 1.68 | |
| UCM hydrocarbon | 1093.5 | 1811.9 | 4180.1 | 3901.8 | 6080.2 | 1485.4 | 1949.7 | 1195.9 | 557.4 | 721.1 | 952.6 | 2395.3 | |
| Hopanes(C29-C33) | 32.9 | 67.6 | 35.4 | 31.5 | 48.0 | 30.1 | 39.2 | 47.6 | 43.8 | 31.6 | 34.1 | 39.4 | |

No.3

| Carbon Number | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C20 | 15.9 | 7.2 | 7.4 | 12.8 | 8.5 | 6.4 | 18.1 | 27.7 | 21.5 | 43.5 | 23.8 |
| C21 | 7.3 | 7.1 | 5.6 | 8.1 | 6.9 | 7.1 | 18.3 | 23.9 | 19.5 | 51.3 | 26.2 |
| C22 | 10.7 | 12.1 | 9.2 | 14.3 | 10.8 | 8.7 | 13.1 | 16.8 | 14.8 | 40.1 | 26.3 |
| C23 | 13.1 | 18.8 | 10.1 | 13.3 | 9.8 | 7.6 | 13.0 | 9.9 | 11.5 | 27.0 | 23.5 |
| C24 | 9.9 | 24.1 | 14.2 | 21.5 | 14.9 | 15.2 | 19.8 | 11.8 | 9.7 | 24.9 | 21.2 |
| C25 | 30.1 | 30.2 | 15.2 | 28.2 | 16.7 | 10.2 | 24.0 | 12.0 | 13.4 | 26.1 | 23.8 |
| C26 | 14.2 | 23.3 | 11.3 | 20.6 | 13.1 | 8.4 | 23.3 | 10.4 | 13.0 | 21.9 | 17.4 |
| C27 | 86.3 | 72.6 | 34.8 | 72.2 | 43.2 | 27.9 | 107.0 | 34.5 | 23.8 | 33.5 | 24.8 |
| C28 | 20.8 | 31.2 | 13.7 | 32.5 | 19.0 | 13.5 | 38.0 | 18.0 | 18.3 | 26.5 | 17.5 |
| C29 | 94.3 | 87.7 | 39.7 | 105.6 | 60.4 | 34.9 | 134.7 | 47.5 | 43.2 | 56.8 | 34.4 |
| C30 | 23.4 | 29.5 | 13.0 | 36.5 | 23.4 | 16.6 | 46.5 | 21.3 | 21.7 | 29.3 | 16.1 |
| C31 | 59.4 | 71.0 | 33.3 | 104.2 | 63.2 | 37.0 | 185.9 | 47.1 | 49.7 | 63.6 | 32.5 |
| C32 | 34.8 | 51.0 | 23.1 | 53.2 | 36.9 | 28.0 | 64.3 | 27.0 | 25.1 | 33.6 | 15.8 |
| C33 | 40.4 | 53.0 | 23.1 | 63.8 | 50.7 | 29.7 | 86.8 | 30.5 | 27.3 | 42.6 | 14.7 |
| C34 | 31.6 | 42.4 | 19.0 | 46.2 | 32.3 | 24.4 | 40.6 | 20.3 | 19.9 | 26.2 | 10.7 |
| C35 | 30.4 | 35.9 | 15.4 | 47.1 | 31.2 | 21.5 | 36.3 | 19.0 | 20.4 | 25.6 | 9.9 |
| C36 | 22.2 | 31.0 | 13.0 | 35.7 | 20.9 | 16.7 | 24.0 | 12.9 | 12.6 | 17.3 | 7.1 |
| C37 | 24.6 | 26.1 | 13.0 | 42.3 | 26.5 | 16.9 | 24.1 | 11.7 | 13.0 | 18.4 | 6.5 |
| C38 | 22.2 | 33.2 | 11.6 | 36.7 | 15.9 | 14.3 | 21.1 | 11.9 | 11.8 | 11.9 | 4.4 |
| C39 | 15.4 | 16.6 | 6.8 | 19.1 | 11.6 | 4.3 | 14.1 | 6.2 | 6.8 | 5.9 | 2.9 |
| C40 | 15.4 | 21.0 | 5.4 | 13.6 | 6.6 | 2.9 | 11.8 | 3.3 | 7.4 | 5.9 | 6.5 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 622.4 | 725.0 | 337.9 | 827.5 | 522.5 | 352.2 | 964.8 | 423.7 | 404.4 | 632.0 | 366.0 |
| LMW(Σ C20-C26) | 101.2 | 122.8 | 73.0 | 118.8 | 80.7 | 63.6 | 129.6 | 112.5 | 103.4 | 234.8 | 162.3 |
| LMW/Total | 0.16 | 0.17 | 0.22 | 0.14 | 0.15 | 0.18 | 0.13 | 0.27 | 0.26 | 0.37 | 0.44 |
| LMW CPI(C20-C26) | 1.42 | 1.12 | 0.95 | 0.95 | 0.92 | 0.80 | 1.03 | 0.99 | 1.07 | 1.08 | 1.08 |
| HMW CPI(C26-C36) | 2.42 | 1.77 | 1.81 | 2.00 | 1.94 | 1.59 | 2.58 | 1.82 | 1.68 | 1.64 | 1.62 |
| Total CPI(C20-C36) | 2.20 | 1.62 | 1.56 | 1.78 | 1.71 | 1.39 | 2.27 | 1.54 | 1.50 | 1.41 | 1.36 |
| UCM hydrocarbon | 1898.3 | 3167.8 | 1546.8 | 2099.0 | 248.7 | 855.6 | 1329.6 | 405.2 | 668.6 | 738.6 | 880.1 |
| Hopanes(C29-C33) | 30.1 | 42.4 | 26.5 | 47.5 | 43.3 | 23.1 | 49.7 | 21.2 | 30.2 | 37.9 | 21.0 |

表2 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(目黒)

| | | | | | | | | | | | | | No.1 |
|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|------|
| Carbon Number | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | May/94 | |
| C20 | 11.7 | 8.8 | 25.7 | 13.6 | 7.5 | 14.5 | 39.5 | 16.9 | 43.3 | 31.7 | 9.4 | 6.8 | |
| C21 | 7.0 | 5.7 | 8.2 | 9.5 | 9.6 | 20.6 | 48.9 | 21.6 | 46.9 | 39.6 | 11.3 | 7.2 | |
| C22 | 12.7 | 10.7 | 23.7 | 18.5 | 13.7 | 24.8 | 43.2 | 20.6 | 38.3 | 43.9 | 13.4 | 8.5 | |
| C23 | 12.3 | 12.3 | 3.1 | 22.8 | 16.4 | 25.2 | 32.0 | 14.8 | 25.7 | 34.1 | 23.7 | 14.4 | |
| C24 | 15.9 | 21.5 | 27.4 | 24.8 | 21.0 | 27.7 | 25.4 | 17.2 | 26.1 | 36.0 | 17.6 | 15.1 | |
| C25 | 26.6 | 22.2 | 26.1 | 36.1 | 29.8 | 40.8 | 36.0 | 16.0 | 23.0 | 30.6 | 43.8 | 34.2 | |
| C26 | 17.6 | 16.1 | 26.9 | 26.4 | 20.9 | 32.8 | 29.2 | 16.0 | 25.6 | 32.0 | 34.6 | 16.0 | |
| C27 | 44.0 | 32.4 | 41.1 | 42.0 | 37.5 | 52.7 | 50.5 | 27.8 | 35.2 | 36.8 | 74.9 | 70.5 | |
| C28 | 22.6 | 27.3 | 22.4 | 30.2 | 48.8 | 25.3 | 38.9 | 20.1 | 29.8 | 32.2 | 37.2 | 19.7 | |
| C29 | 57.9 | 72.3 | 55.9 | 61.6 | 87.3 | 62.0 | 95.1 | 51.4 | 59.9 | 54.2 | 112.1 | 103.3 | |
| C30 | 23.6 | 25.0 | 24.0 | 29.6 | 45.9 | 24.9 | 38.2 | 21.7 | 33.0 | 31.7 | 29.7 | 22.6 | |
| C31 | 45.5 | 52.7 | 52.4 | 57.3 | 72.2 | 49.8 | 76.4 | 41.0 | 51.2 | 47.2 | 82.1 | 55.3 | |
| C32 | 24.7 | 25.6 | 37.1 | 39.3 | 42.9 | 44.8 | 51.9 | 26.1 | 38.6 | 37.7 | 37.4 | 30.9 | |
| C33 | 28.1 | 26.8 | 43.0 | 43.6 | 42.0 | 42.7 | 54.1 | 27.7 | 37.2 | 35.6 | 44.5 | 34.5 | |
| C34 | 17.5 | 17.8 | 27.5 | 29.3 | 29.3 | 28.2 | 34.7 | 16.8 | 29.7 | 26.5 | 27.3 | 21.3 | |
| C35 | 15.5 | 15.9 | 26.7 | 30.3 | 24.9 | 23.9 | 30.6 | 15.6 | 25.4 | 23.4 | 25.4 | 20.0 | |
| C36 | 12.2 | 12.7 | 22.4 | 23.9 | 18.8 | 18.1 | 22.6 | 11.2 | 19.9 | 16.9 | 18.2 | 15.3 | |
| C37 | 8.4 | 9.0 | 15.7 | 15.9 | 13.0 | 12.6 | 15.6 | 7.5 | 11.6 | 10.1 | 12.2 | 11.6 | |
| C38 | 9.0 | 9.5 | 18.2 | 16.6 | 12.8 | 12.5 | 15.6 | 7.8 | 14.7 | 10.9 | 12.2 | 10.7 | |
| C39 | 7.0 | 5.2 | 10.7 | 9.8 | 8.0 | 7.5 | 9.2 | 4.2 | 7.5 | 5.8 | 7.6 | 6.8 | |
| C40 | 3.6 | 5.8 | 13.8 | 10.4 | 8.5 | 8.1 | 10.7 | 5.1 | 10.6 | 6.2 | 7.8 | 7.2 | |
| Total (μg/m ³ /month) | 423.4 | 435.3 | 552.0 | 591.5 | 610.8 | 599.5 | 797.7 | 407.1 | 633.2 | 623.1 | 682.4 | 531.9 | |
| LMW(ΣC20-C26) | 103.8 | 97.3 | 141.1 | 151.7 | 118.9 | 186.4 | 253.6 | 123.1 | 228.9 | 247.9 | 153.8 | 102.2 | |
| LMW/Total | 0.25 | 0.22 | 0.26 | 0.26 | 0.19 | 0.31 | 0.32 | 0.30 | 0.36 | 0.40 | 0.23 | 0.19 | |
| LMW CPI(C20-C26) | 1.07 | 0.91 | 0.48 | 1.09 | 1.16 | 1.15 | 1.13 | 0.97 | 0.97 | 0.93 | 1.58 | 1.62 | |
| HMW CPI(C26-C36) | 1.85 | 1.82 | 1.62 | 1.53 | 1.41 | 1.56 | 1.62 | 1.66 | 1.36 | 1.30 | 2.15 | 2.57 | |
| Total CPI(C20-C36) | 1.62 | 1.55 | 1.20 | 1.40 | 1.36 | 1.41 | 1.45 | 1.42 | 1.21 | 1.14 | 1.98 | 2.34 | |
| UCM hydrocarbon | 2446.7 | 3180.9 | 2983.4 | 2851.9 | 2261.8 | 2181.3 | 1987.8 | 1101.4 | 1360.4 | 1509.5 | 1513.3 | 1846.9 | |
| Hopanes(C29-C33) | 18.9 | 27.7 | 25.2 | 45.2 | 35.4 | 38.5 | 52.2 | 17.8 | 28.4 | 39.2 | 38.5 | 27.0 | |

| | | | | | | | | | | | | | No.2 |
|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|------|
| Carbon Number | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | May/95 | |
| C20 | 11.5 | 9.8 | 20.1 | 16.4 | 10.0 | 9.8 | 22.1 | 24.9 | 32.3 | 44.4 | 13.9 | 4.3 | |
| C21 | 13.9 | 7.8 | 16.3 | 21.4 | 10.8 | 14.9 | 27.0 | 25.5 | 33.8 | 55.4 | 19.5 | 4.6 | |
| C22 | 20.9 | 10.2 | 26.9 | 24.5 | 16.3 | 17.4 | 27.0 | 21.5 | 20.9 | 55.9 | 19.7 | 6.7 | |
| C23 | 23.4 | 9.9 | 30.7 | 20.5 | 19.6 | 18.1 | 23.1 | 18.4 | 14.8 | 47.8 | 21.4 | 10.7 | |
| C24 | 28.6 | 22.9 | 36.8 | 17.5 | 22.8 | 21.3 | 16.8 | 19.2 | 12.1 | 45.6 | 20.2 | 8.0 | |
| C25 | 37.5 | 19.4 | 37.5 | 21.1 | 33.3 | 28.5 | 21.0 | 21.5 | 17.5 | 37.7 | 30.8 | 24.5 | |
| C26 | 26.1 | 15.2 | 35.3 | 18.1 | 23.1 | 28.3 | 19.9 | 21.3 | 14.6 | 28.3 | 22.9 | 10.2 | |
| C27 | 63.9 | 33.3 | 48.9 | 28.3 | 60.7 | 37.6 | 33.9 | 49.0 | 37.4 | 63.2 | 69.5 | 69.3 | |
| C28 | 32.1 | 19.6 | 37.5 | 20.9 | 22.6 | 32.0 | 27.6 | 28.1 | 21.1 | 37.7 | 23.6 | 13.3 | |
| C29 | 105.8 | 55.3 | 87.4 | 49.6 | 74.9 | 52.9 | 165.4 | 55.1 | 44.3 | 67.7 | 85.3 | 71.2 | |
| C30 | 37.3 | 21.6 | 35.6 | 20.0 | 34.1 | 32.4 | 35.2 | 29.6 | 24.4 | 32.7 | 22.3 | 12.7 | |
| C31 | 116.7 | 59.3 | 101.6 | 45.1 | 68.6 | 47.7 | 91.2 | 56.2 | 40.3 | 63.1 | 60.7 | 40.1 | |
| C32 | 50.4 | 31.6 | 41.5 | 26.7 | 41.7 | 34.4 | 52.2 | 50.6 | 30.0 | 41.1 | 29.8 | 18.0 | |
| C33 | 58.2 | 37.9 | 49.1 | 39.3 | 53.3 | 37.8 | 62.3 | 58.7 | 28.8 | 43.5 | 39.4 | 21.5 | |
| C34 | 45.0 | 33.0 | 27.5 | 23.7 | 32.8 | 26.5 | 68.0 | 66.2 | 21.7 | 31.3 | 21.3 | 14.4 | |
| C35 | 46.5 | 38.4 | 29.9 | 31.5 | 36.7 | 29.1 | 76.7 | 57.8 | 17.5 | 28.5 | 24.0 | 12.6 | |
| C36 | 33.8 | 32.9 | 20.3 | 36.5 | 36.2 | 28.4 | 86.4 | 49.3 | 13.9 | 19.2 | 14.6 | 9.2 | |
| C37 | 26.7 | 25.5 | 15.5 | 39.6 | 34.0 | 24.0 | 67.4 | 45.4 | 11.9 | 16.2 | 12.3 | 7.3 | |
| C38 | 27.9 | 29.6 | 16.0 | 54.1 | 37.7 | 28.3 | 84.8 | 37.9 | 14.1 | 14.8 | 11.9 | 7.1 | |
| C39 | 15.2 | 34.5 | 10.7 | 46.3 | 33.5 | 20.4 | 54.4 | 21.3 | 9.2 | 8.1 | 7.3 | 4.0 | |
| C40 | 15.5 | 27.3 | 12.2 | 55.6 | 37.2 | 24.3 | 69.0 | 18.9 | 10.5 | 8.9 | 7.3 | 3.5 | |
| Total (μg/m ³ /month) | 836.9 | 575.0 | 737.3 | 656.7 | 739.9 | 594.1 | 1131.4 | 776.4 | 471.1 | 791.1 | 577.7 | 373.2 | |
| LMW(ΣC20-C26) | 161.9 | 95.2 | 203.6 | 139.5 | 135.9 | 138.3 | 156.9 | 152.3 | 146.0 | 315.1 | 148.4 | 89.0 | |
| LMW/Total | 0.19 | 0.17 | 0.28 | 0.21 | 0.18 | 0.23 | 0.14 | 0.20 | 0.31 | 0.40 | 0.26 | 0.18 | |
| LMW CPI(C20-C26) | 1.11 | 0.82 | 0.93 | 1.06 | 1.16 | 1.09 | 1.10 | 1.03 | 1.20 | 1.03 | 1.24 | 1.85 | |
| HMW CPI(C26-C36) | 2.01 | 1.73 | 1.87 | 1.64 | 1.83 | 1.33 | 1.86 | 1.33 | 1.51 | 1.60 | 2.41 | 3.15 | |
| Total CPI(C20-C36) | 1.77 | 1.50 | 1.54 | 1.45 | 1.66 | 1.26 | 1.68 | 1.25 | 1.40 | 1.34 | 2.01 | 2.83 | |
| UCM hydrocarbon | 2197.7 | 2406.5 | 4397.6 | 1758.1 | 1279.7 | 1217.6 | 1243.0 | 754.1 | 1167.5 | 1724.5 | 1476.4 | 1967.7 | |
| Hopanes(C29-C33) | 36.8 | 19.6 | 28.0 | 24.9 | 21.0 | 21.3 | 37.4 | 21.8 | 26.2 | 35.9 | 26.7 | 15.0 | |

表3 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(桐蔭)

| Carbon Number | No.1 | | | | | | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | |
| C20 | 15.3 | 7.2 | 14.3 | 9.7 | 10.6 | 12.0 | 31.5 | 11.0 | 28.4 | 26.0 | 7.9 | |
| C21 | 6.1 | 10.7 | 3.8 | 4.2 | 4.6 | 23.1 | 38.4 | 15.0 | 29.2 | 33.2 | 12.7 | |
| C22 | 12.8 | 8.2 | 11.7 | 9.1 | 10.1 | 19.2 | 36.7 | 14.2 | 22.4 | 39.2 | 8.9 | |
| C23 | 16.5 | 11.6 | 9.2 | 13.7 | 15.1 | 55.5 | 59.8 | 20.8 | 20.6 | 34.1 | 23.7 | |
| C24 | 16.3 | 13.0 | 18.6 | 10.8 | 11.9 | 23.6 | 95.6 | 23.2 | 23.6 | 32.2 | 11.8 | |
| C25 | 31.0 | 18.7 | 24.9 | 24.8 | 27.3 | 48.4 | 178.6 | 54.6 | 31.4 | 46.5 | 40.9 | |
| C26 | 18.6 | 13.7 | 21.4 | 13.1 | 14.4 | 40.0 | 191.2 | 13.4 | 20.6 | 36.9 | 15.9 | |
| C27 | 55.8 | 32.0 | 58.7 | 32.8 | 36.2 | 89.4 | 293.4 | 95.2 | 58.8 | 66.3 | 59.0 | |
| C28 | 25.2 | 13.3 | 23.0 | 17.8 | 19.6 | 58.9 | 223.5 | 44.4 | 29.2 | 46.4 | 23.8 | |
| C29 | 100.2 | 44.6 | 95.1 | 62.8 | 69.2 | 218.3 | 301.2 | 171.2 | 136.0 | 114.5 | 97.7 | |
| C30 | 22.6 | 16.0 | 29.4 | 19.9 | 22.0 | 37.2 | 168.7 | 52.8 | 13.0 | 32.0 | 17.0 | |
| C31 | 66.7 | 31.1 | 61.3 | 54.4 | 59.9 | 107.7 | 198.3 | 94.8 | 74.4 | 47.1 | 51.6 | |
| C32 | 32.4 | 16.9 | 28.9 | 24.7 | 27.2 | 54.7 | 108.5 | 42.0 | 38.6 | 15.6 | 19.9 | |
| C33 | 32.1 | 16.6 | 32.4 | 26.7 | 29.4 | 56.1 | 90.7 | 56.6 | 49.0 | 12.6 | 19.6 | |
| C34 | 20.7 | 10.0 | 18.4 | 17.7 | 19.4 | 28.6 | 45.9 | 19.8 | 24.0 | 10.7 | 12.1 | |
| C35 | 17.6 | 9.3 | 19.5 | 15.7 | 17.3 | 22.6 | 34.4 | 27.6 | 37.2 | 10.0 | 14.4 | |
| C36 | 12.7 | 7.3 | 17.0 | 13.0 | 14.3 | 18.8 | 25.5 | 11.6 | 49.6 | 6.7 | 8.3 | |
| C37 | 8.8 | 4.6 | 8.4 | 7.7 | 8.4 | 16.2 | 18.3 | 9.8 | 12.6 | 3.6 | 5.4 | |
| C38 | 9.8 | 5.4 | 9.8 | 9.6 | 10.5 | 8.6 | 12.4 | 9.6 | 3.6 | 3.4 | 5.0 | |
| C39 | 7.4 | 4.4 | 7.2 | 6.1 | 6.7 | 6.8 | 10.2 | 8.0 | 3.6 | 2.4 | 3.7 | |
| C40 | 6.8 | 3.5 | 6.5 | 6.5 | 7.2 | 5.6 | 10.0 | 18.6 | 5.4 | 2.9 | 3.7 | |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 535.4 | 298.1 | 519.5 | 400.8 | 441.3 | 951.1 | 2172.8 | 814.2 | 711.2 | 622.3 | 463.0 | |
| LMW($\Sigma\text{C}20\text{-C}26$) | 116.6 | 83.1 | 103.9 | 85.4 | 94.0 | 221.8 | 631.8 | 152.2 | 176.2 | 248.1 | 121.8 | |
| LMW/Total | 0.22 | 0.28 | 0.20 | 0.21 | 0.21 | 0.23 | 0.29 | 0.19 | 0.25 | 0.40 | 0.26 | |
| LMW CPI(C20-C26) | 1.17 | 1.31 | 0.79 | 1.37 | 1.37 | 1.93 | 1.27 | 1.82 | 1.16 | 1.11 | 2.41 | |
| HMW CPI(C26-C36) | 2.34 | 2.01 | 2.25 | 2.07 | 2.07 | 2.37 | 1.42 | 2.60 | 2.57 | 2.01 | 2.86 | |
| Total CPI(C20-C36) | 2.01 | 1.78 | 1.83 | 1.89 | 1.89 | 2.24 | 1.33 | 2.42 | 2.08 | 1.59 | 2.72 | |
| UCM hydrocarbon | 1994.2 | 1549.1 | 1823.1 | 1781.2 | 1841.6 | 1987.5 | 1384.1 | 603.6 | 830.5 | 1091.9 | 1734.0 | |
| Hopanes(C29-C33) | 16.7 | 16.5 | 20.7 | 20.9 | 23.1 | 24.8 | 24.2 | 21.7 | 24.5 | 21.7 | 17.5 | |

No.2

| Carbon Number | No.2 | | | | | | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 |
| C20 | 6.3 | 5.3 | 32.5 | 16.9 | 7.1 | 4.8 | 10.7 | 12.5 | 14.2 | 18.3 | 32.4 | 13.8 |
| C21 | 8.7 | 3.3 | 24.4 | 7.3 | 5.0 | 7.3 | 13.5 | 15.5 | 12.9 | 18.8 | 40.0 | 20.8 |
| C22 | 7.7 | 5.5 | 33.7 | 16.6 | 8.0 | 9.1 | 16.7 | 17.5 | 10.5 | 16.5 | 48.9 | 18.8 |
| C23 | 130.9 | 23.9 | 41.2 | 15.6 | 9.4 | 16.0 | 21.8 | 17.4 | 9.5 | 13.4 | 47.4 | 42.6 |
| C24 | 13.9 | 12.1 | 40.9 | 14.5 | 16.0 | 18.8 | 14.1 | 13.4 | 9.2 | 11.7 | 40.8 | 20.4 |
| C25 | 170.1 | 46.0 | 70.6 | 28.6 | 16.7 | 38.4 | 70.6 | 28.8 | 17.2 | 16.8 | 45.7 | 58.1 |
| C26 | 15.8 | 13.8 | 42.7 | 24.4 | 15.4 | 20.8 | 20.4 | 14.7 | 11.2 | 13.9 | 35.7 | 21.6 |
| C27 | 120.2 | 73.9 | 59.2 | 45.6 | 33.4 | 90.6 | 151.3 | 38.5 | 27.0 | 26.7 | 59.2 | 100.7 |
| C28 | 15.5 | 18.9 | 72.0 | 32.3 | 21.0 | 38.2 | 15.4 | 19.0 | 14.9 | 16.3 | 36.4 | 30.0 |
| C29 | 110.5 | 123.6 | 253.5 | 127.9 | 71.4 | 145.2 | 90.2 | 70.9 | 47.1 | 45.4 | 108.2 | 162.6 |
| C30 | 13.2 | 23.6 | 69.8 | 33.9 | 26.0 | 33.5 | 9.9 | 20.6 | 14.0 | 16.9 | 36.5 | 26.9 |
| C31 | 50.8 | 77.0 | 237.2 | 100.7 | 70.6 | 118.6 | 55.7 | 56.5 | 39.3 | 43.9 | 94.9 | 102.9 |
| C32 | 14.9 | 26.8 | 102.8 | 38.6 | 37.9 | 41.3 | 25.6 | 23.5 | 13.8 | 16.7 | 35.3 | 32.7 |
| C33 | 13.6 | 31.6 | 110.6 | 52.9 | 55.9 | 50.5 | 14.8 | 34.0 | 19.3 | 20.9 | 44.5 | 51.5 |
| C34 | 8.3 | 18.8 | 92.7 | 29.7 | 53.3 | 31.9 | 11.6 | 18.0 | 10.7 | 12.4 | 26.5 | 30.9 |
| C35 | 8.8 | 18.7 | 147.7 | 37.2 | 64.3 | 27.7 | 10.2 | 22.4 | 12.7 | 15.0 | 35.8 | 40.8 |
| C36 | 5.3 | 13.5 | 58.8 | 30.3 | 72.0 | 13.9 | 5.6 | 11.6 | 7.6 | 7.3 | 18.1 | 23.6 |
| C37 | 4.0 | 10.7 | 43.7 | 28.6 | 67.8 | 10.5 | 3.8 | 11.1 | 8.5 | 7.0 | 18.8 | 20.7 |
| C38 | 3.6 | 12.0 | 50.5 | 39.9 | 89.2 | 17.9 | 4.6 | 10.0 | 7.2 | 5.7 | 15.3 | 20.3 |
| C39 | 3.3 | 6.8 | 35.6 | 34.0 | 65.3 | 19.6 | 3.1 | 6.2 | 4.6 | 3.0 | 8.2 | 10.7 |
| C40 | 2.5 | 7.4 | 44.5 | 44.3 | 67.9 | 18.3 | 3.3 | 6.1 | 4.4 | 3.2 | 8.7 | 12.0 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 727.9 | 573.2 | 1664.6 | 799.8 | 873.6 | 772.9 | 572.9 | 468.2 | 315.5 | 349.6 | 836.9 | 861.9 |
| LMW($\Sigma\text{C}20\text{-C}26$) | 353.4 | 109.9 | 286.0 | 123.9 | 77.6 | 115.2 | 167.8 | 119.8 | 84.6 | 109.2 | 290.9 | 195.9 |
| LMW/Total | 0.49 | 0.19 | 0.17 | 0.15 | 0.09 | 0.15 | 0.29 | 0.26 | 0.27 | 0.31 | 0.35 | 0.23 |
| LMW CPI(C20-C26) | 9.69 | 2.76 | 1.22 | 1.00 | 0.89 | 1.58 | 2.31 | 1.39 | 1.23 | 1.11 | 1.08 | 2.15 |
| HMW CPI(C26-C36) | 4.90 | 3.19 | 2.08 | 2.25 | 1.67 | 2.67 | 4.31 | 2.36 | 2.32 | 2.09 | 2.13 | 3.21 |
| Total CPI(C20-C36) | 6.45 | 3.09 | 1.89 | 1.95 | 1.54 | 2.44 | 3.51 | 2.05 | 1.95 | 1.72 | 1.67 | 2.90 |
| UCM hydrocarbon | 1234.1 | 1185.6 | N.D. | 709.3 | 1197.0 | 1655.5 | 914.8 | 628.6 | 500.5 | 431.9 | 1413.7 | 1162.5 |
| Hopanes(C29-C33) | 8.8 | 18.2 | 33.6 | 23.1 | 22.8 | 15.8 | 16.1 | 18.6 | 13.0 | 15.3 | 36.2 | 15.2 |

| Carbon Number | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C20 | 11.4 | 3.0 | 4.1 | 11.8 | 7.9 | 3.5 | 8.6 | 8.4 | 20.6 | 40.8 | 15.1 |
| C21 | 15.4 | 17.4 | 2.4 | 5.0 | 3.4 | 3.6 | 8.3 | 7.8 | 14.3 | 52.7 | 17.6 |
| C22 | 11.1 | 5.0 | 4.1 | 8.8 | 5.3 | 3.7 | 7.8 | 6.1 | 11.8 | 47.1 | 18.5 |
| C23 | 68.3 | 28.8 | 2.0 | 11.9 | 5.4 | 6.3 | 15.2 | 8.3 | 11.8 | 36.6 | 23.3 |
| C24 | 16.1 | 8.4 | 8.4 | 15.6 | 6.1 | 3.2 | 11.5 | 6.8 | 10.0 | 31.0 | 21.0 |
| C25 | 86.8 | 26.4 | 13.9 | 22.8 | 11.5 | 16.5 | 46.7 | 19.2 | 21.0 | 40.8 | 32.1 |
| C26 | 17.3 | 10.8 | 9.1 | 15.0 | 8.5 | 6.8 | 17.9 | 9.5 | 12.8 | 32.0 | 25.7 |
| C27 | 88.0 | 38.0 | 23.6 | 38.6 | 30.1 | 77.2 | 195.7 | 90.6 | 78.7 | 65.1 | 51.9 |
| C28 | 17.2 | 12.6 | 10.0 | 19.7 | 11.8 | 20.0 | 41.8 | 23.6 | 20.4 | 36.5 | 31.9 |
| C29 | 93.4 | 57.1 | 42.1 | 86.1 | 124.2 | 88.8 | 225.1 | 131.3 | 89.9 | 103.8 | 106.3 |
| C30 | 10.3 | 12.5 | 9.7 | 21.3 | 13.2 | 19.2 | 45.3 | 23.9 | 18.7 | 34.9 | 29.3 |
| C31 | 33.6 | 41.9 | 24.5 | 64.6 | 51.0 | 73.6 | 204.7 | 102.2 | 61.9 | 94.2 | 71.7 |
| C32 | 85.1 | 15.5 | 10.3 | 24.2 | 14.1 | 27.3 | 48.0 | 25.0 | 19.2 | 32.7 | 24.4 |
| C33 | 9.7 | 17.5 | 11.7 | 34.0 | 20.0 | 39.3 | 72.1 | 41.7 | 34.0 | 51.5 | 36.3 |
| C34 | 3.5 | 13.0 | 7.5 | 16.7 | 16.1 | 22.0 | 33.1 | 16.3 | 16.5 | 23.5 | 16.5 |
| C35 | 3.0 | 11.3 | 8.3 | 17.1 | 12.6 | 27.0 | 41.7 | 24.2 | 18.6 | 29.7 | 21.4 |
| C36 | 1.5 | 9.3 | 4.9 | 13.7 | 13.7 | 13.9 | 20.0 | 9.3 | 7.5 | 13.4 | 9.7 |
| C37 | 1.4 | 8.4 | 5.5 | 10.7 | 12.2 | 5.8 | 15.1 | 6.9 | 7.7 | 13.7 | 9.1 |
| C38 | 1.1 | 7.7 | 4.9 | 10.6 | 18.9 | 17.1 | 18.4 | 9.1 | 8.7 | 13.8 | 7.3 |
| C39 | 1.3 | 4.1 | 3.4 | 6.2 | 12.6 | 24.7 | 11.3 | 5.3 | 4.8 | 5.9 | 4.6 |
| C40 | 0.7 | 4.9 | 6.5 | 7.7 | 19.6 | 6.3 | 9.0 | 4.8 | 4.1 | 5.0 | 4.3 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 575.7 | 353.8 | 216.9 | 462.0 | 418.0 | 505.7 | 1097.2 | 580.2 | 493.1 | 804.6 | 577.9 |
| LMW(Σ C20-C26) | 226.3 | 99.9 | 44.0 | 90.9 | 48.1 | 43.6 | 116.0 | 66.0 | 102.3 | 281.0 | 153.4 |
| LMW/Total | 0.39 | 0.28 | 0.20 | 0.20 | 0.12 | 0.09 | 0.11 | 0.11 | 0.21 | 0.35 | 0.27 |
| LMW CPI(C20-C26) | 4.13 | 3.69 | 0.97 | 1.05 | 1.04 | 2.24 | 2.20 | 1.62 | 1.24 | 1.14 | 1.23 |
| HMW CPI(C26-C36) | 1.82 | 2.61 | 2.48 | 2.50 | 3.60 | 3.10 | 3.95 | 3.97 | 3.33 | 2.30 | 2.41 |
| Total CPI(C20-C36) | 2.39 | 2.84 | 2.02 | 2.09 | 3.01 | 3.00 | 3.69 | 3.55 | 2.68 | 1.80 | 2.01 |
| UCM hydrocarbon | 551.3 | 836.0 | 918.8 | 911.6 | 727.0 | 665.1 | 562.0 | 342.6 | 290.8 | 622.0 | 778.9 |
| Hopanes(C29-C33) | 10.9 | 27.5 | 10.4 | 16.6 | 9.5 | 16.4 | 17.1 | 22.5 | 14.7 | 25.5 | 27.3 |

表4 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(新宿)

| Carbon Number | No.1 | | | | | | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | May/94 |
| C20 | 17.0 | 26.7 | 25.8 | 17.4 | N.D. | 24.8 | 53.2 | 34.6 | 51.1 | 33.4 | 12.9 | 11.9 |
| C21 | 13.0 | 12.0 | 11.8 | 12.4 | N.D. | 49.2 | 64.9 | 45.5 | 53.1 | 38.9 | 13.8 | 8.7 |
| C22 | 20.2 | 22.1 | 26.6 | 22.1 | N.D. | 70.3 | 56.3 | 40.3 | 43.9 | 39.8 | 14.5 | 11.0 |
| C23 | 21.8 | 17.3 | 22.1 | 23.6 | N.D. | 92.5 | 40.4 | 30.5 | 31.3 | 35.1 | 19.4 | 12.0 |
| C24 | 23.9 | 17.4 | 36.6 | 30.6 | N.D. | 76.8 | 35.5 | 27.8 | 17.5 | 32.6 | 12.2 | 15.2 |
| C25 | 42.4 | 29.5 | 36.9 | 43.3 | N.D. | 96.9 | 42.0 | 29.2 | 27.7 | 35.2 | 25.5 | 44.1 |
| C26 | 21.9 | 27.0 | 33.8 | 37.2 | N.D. | 83.4 | 42.4 | 27.0 | 29.4 | 31.4 | 19.2 | 17.0 |
| C27 | 57.0 | 45.5 | 43.3 | 52.8 | N.D. | 95.4 | 65.5 | 43.4 | 35.6 | 34.5 | 40.2 | 67.9 |
| C28 | 25.5 | 31.4 | 38.7 | 41.7 | N.D. | 88.1 | 62.4 | 33.1 | 43.4 | 32.1 | 26.7 | 17.9 |
| C29 | 80.3 | 76.0 | 82.0 | 73.6 | N.D. | 120.2 | 122.8 | 67.2 | 54.1 | 46.7 | 61.5 | 74.8 |
| C30 | 24.5 | 36.1 | 37.1 | 41.2 | N.D. | 96.6 | 59.9 | 32.0 | 17.8 | 26.5 | 27.7 | 18.9 |
| C31 | 46.7 | 80.9 | 71.0 | 73.8 | N.D. | 117.3 | 107.2 | 59.2 | 62.2 | 36.9 | 55.1 | 46.6 |
| C32 | 24.7 | 45.1 | 44.0 | 49.2 | N.D. | 88.9 | 68.3 | 39.3 | 40.0 | 28.4 | 35.8 | 25.4 |
| C33 | 24.7 | 48.9 | 46.8 | 51.4 | N.D. | 79.5 | 68.8 | 60.2 | 40.0 | 25.2 | 40.0 | 28.8 |
| C34 | 15.3 | 32.6 | 29.2 | 33.9 | N.D. | 51.7 | 42.5 | 23.8 | 26.4 | 16.4 | 24.6 | 18.2 |
| C35 | 13.6 | 30.3 | 28.0 | 31.3 | N.D. | 52.1 | 40.0 | 24.5 | 21.5 | 11.4 | 22.2 | 15.3 |
| C36 | 10.0 | 24.5 | 20.9 | 24.7 | N.D. | 24.9 | 27.6 | 15.5 | 13.1 | 9.0 | 16.3 | 11.6 |
| C37 | 7.5 | 17.0 | 14.4 | 16.9 | N.D. | 11.2 | 18.2 | 10.5 | 10.3 | 5.5 | 11.6 | 8.7 |
| C38 | 6.9 | 18.8 | 16.0 | 17.5 | N.D. | 11.9 | 19.4 | 10.8 | 8.3 | 5.4 | 11.2 | 7.5 |
| C39 | 4.2 | 11.9 | 8.8 | 12.5 | N.D. | 7.6 | 15.3 | 8.4 | 6.3 | 4.2 | 6.5 | 4.6 |
| C40 | 4.0 | 13.3 | 9.2 | 13.1 | N.D. | 8.6 | 18.7 | 6.2 | 5.9 | 3.1 | 6.9 | 5.1 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 505.1 | 664.3 | 683.0 | 720.2 | N.D. | 1347.9 | 1071.3 | 669.0 | 638.9 | 531.7 | 503.8 | 471.2 |
| LMW($\Sigma\text{C}20\text{-C}26$) | 160.2 | 152.0 | 193.6 | 186.6 | N.D. | 493.9 | 334.7 | 234.9 | 254.0 | 246.4 | 117.5 | 119.9 |
| LMW/Total | 0.32 | 0.23 | 0.28 | 0.26 | N.D. | 0.37 | 0.31 | 0.35 | 0.40 | 0.46 | 0.23 | 0.25 |
| LMW CPI(C20-C26) | 1.22 | 0.89 | 0.76 | 1.01 | N.D. | 1.21 | 1.06 | 1.07 | 1.12 | 1.04 | 1.38 | 1.60 |
| HMW CPI(C26-C36) | 2.10 | 1.65 | 1.54 | 1.44 | N.D. | 1.23 | 1.51 | 1.71 | 1.44 | 1.26 | 1.65 | 2.47 |
| Total CPI(C20-C36) | 1.77 | 1.43 | 1.27 | 1.31 | N.D. | 1.21 | 1.35 | 1.45 | 1.31 | 1.16 | 1.58 | 2.20 |
| UCM hydrocarbon | 4732.1 | 5314.4 | 5095.8 | 4178.1 | N.D. | 3765.1 | 3303.9 | 1600.3 | 1416.8 | 1098.5 | 1166.7 | 1898.5 |
| Hopanes(C29-C33) | 23.2 | 52.7 | 52.7 | 49.4 | N.D. | 54.5 | 68.3 | 36.4 | 32.6 | 46.9 | 40.6 | 23.8 |

| Carbon Number | No.2 | | | | | | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--|
| | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | May/95 | |
| C20 | 11.6 | 20.2 | 12.5 | 9.5 | 12.8 | 17.1 | 19.1 | 33.0 | 40.6 | 28.8 | 24.9 | |
| C21 | 11.3 | 10.1 | 14.6 | 9.1 | 19.0 | 23.6 | 22.0 | 37.0 | 55.2 | 41.6 | 18.4 | |
| C22 | 15.0 | 20.5 | 20.4 | 14.4 | 24.0 | 27.3 | 18.4 | 31.8 | 57.9 | 45.9 | 30.7 | |
| C23 | 13.3 | 18.0 | 19.6 | 16.5 | 22.9 | 22.4 | 9.9 | 18.2 | 48.2 | 46.3 | 33.0 | |
| C24 | 17.3 | 24.2 | 17.1 | 24.4 | 21.8 | 21.6 | 13.1 | 15.2 | 39.2 | 37.1 | 36.7 | |
| C25 | 16.1 | 25.7 | 21.0 | 22.8 | 32.9 | 22.0 | 14.3 | 16.2 | 35.1 | 46.5 | 47.6 | |
| C26 | 14.5 | 25.5 | 17.4 | 20.0 | 30.0 | 19.0 | 10.9 | 14.3 | 28.6 | 29.7 | 32.1 | |
| C27 | 25.3 | 45.1 | 26.0 | 38.7 | 44.5 | 33.5 | 30.6 | 42.6 | 55.4 | 80.3 | 125.5 | |
| C28 | 20.2 | 35.1 | 17.1 | 27.2 | 36.6 | 26.1 | 18.9 | 25.4 | 29.8 | 32.8 | 34.6 | |
| C29 | 40.1 | 76.3 | 44.3 | 70.6 | 73.9 | 94.8 | 39.6 | 44.0 | 54.7 | 87.2 | 112.1 | |
| C30 | 22.8 | 37.8 | 20.7 | 32.2 | 42.6 | 27.1 | 17.4 | 22.3 | 26.9 | 29.1 | 32.1 | |
| C31 | 39.9 | 65.1 | 41.5 | 63.0 | 68.2 | 61.3 | 38.6 | 44.3 | 48.7 | 71.9 | 77.1 | |
| C32 | 30.6 | 46.8 | 30.4 | 42.3 | 50.9 | 35.2 | 21.9 | 27.3 | 31.1 | 42.0 | 43.2 | |
| C33 | 32.5 | 51.5 | 34.1 | 47.0 | 51.5 | 39.1 | 24.8 | 29.0 | 33.2 | 46.2 | 47.7 | |
| C34 | 28.9 | 35.9 | 19.6 | 33.9 | 39.3 | 26.3 | 16.5 | 20.9 | 24.3 | 29.8 | 35.7 | |
| C35 | 27.1 | 36.7 | 18.4 | 34.2 | 37.7 | 27.9 | 14.6 | 18.4 | 22.2 | 27.6 | 27.6 | |
| C36 | 23.1 | 31.4 | 11.8 | 24.8 | 28.7 | 17.8 | 10.6 | 13.5 | 15.8 | 18.5 | 23.3 | |
| C37 | 20.9 | 24.4 | 10.1 | 20.7 | 21.2 | 12.0 | 9.3 | 12.3 | 13.9 | 16.2 | 18.4 | |
| C38 | 20.2 | 29.4 | 10.5 | 18.7 | 21.9 | 12.0 | 9.0 | 11.7 | 13.1 | 15.0 | 19.5 | |
| C39 | 14.8 | 21.3 | 12.3 | 15.4 | 17.7 | 10.0 | 5.9 | 7.5 | 9.1 | 9.5 | 11.1 | |
| C40 | 17.5 | 23.4 | 7.5 | 14.6 | 19.1 | 8.8 | 6.4 | 7.9 | 10.5 | 9.2 | 11.4 | |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 463.0 | 704.4 | 426.9 | 600.0 | 717.2 | 584.9 | 371.8 | 492.8 | 693.1 | 791.2 | 842.7 | |
| LMW($\Sigma\text{C}20\text{-C}26$) | 99.1 | 144.2 | 122.6 | 116.7 | 163.4 | 153.0 | 107.7 | 165.7 | 304.8 | 275.9 | 223.4 | |
| LMW/Total | 0.21 | 0.20 | 0.29 | 0.19 | 0.23 | 0.26 | 0.29 | 0.34 | 0.44 | 0.35 | 0.27 | |
| LMW CPI(C20-C26) | 0.90 | 0.80 | 1.05 | 0.91 | 1.13 | 1.02 | 1.00 | 1.03 | 1.05 | 1.20 | 1.03 | |
| HMW CPI(C26-C36) | 1.36 | 1.49 | 1.61 | 1.60 | 1.39 | 1.93 | 1.73 | 1.62 | 1.60 | 1.99 | 2.25 | |
| Total CPI(C20-C36) | 1.24 | 1.31 | 1.42 | 1.43 | 1.32 | 1.62 | 1.47 | 1.39 | 1.33 | 1.66 | 1.82 | |
| UCM hydrocarbon | 2933.6 | 4300.9 | 4516.2 | 1179.0 | 1942.3 | 1296.1 | 907.7 | 973.5 | 1382.1 | 2572.5 | 2547.4 | |
| Hopanes(C29-C33) | 20.7 | 44.1 | 38.5 | 20.3 | 24.5 | 27.3 | 18.1 | 17.0 | 19.5 | 37.6 | 40.8 | |

表5 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(稲城)

No.1

| Carbon Number | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C20 | 9.0 | 15.7 | 8.4 | 13.2 | 4.6 | 10.0 | 24.1 | 24.4 | 25.1 | 21.2 | 6.6 |
| C21 | 4.7 | 28.4 | 4.6 | 7.4 | 4.5 | 17.9 | 28.0 | 29.4 | 26.0 | 25.3 | 9.7 |
| C22 | 8.2 | 13.5 | 10.5 | 14.6 | 7.1 | 18.9 | 25.1 | 29.4 | 20.9 | 27.0 | 8.9 |
| C23 | 15.1 | 72.3 | 11.9 | 19.6 | 7.6 | 24.6 | 19.2 | 22.0 | 20.2 | 25.1 | 21.3 |
| C24 | 9.5 | 22.3 | 20.3 | 20.2 | 9.2 | 17.9 | 24.4 | 25.0 | 25.3 | 21.5 | 10.7 |
| C25 | 29.8 | 103.5 | 25.6 | 37.3 | 13.7 | 29.1 | 25.6 | 24.2 | 28.9 | 27.2 | 38.4 |
| C26 | 11.6 | 24.4 | 23.8 | 25.5 | 12.3 | 23.5 | 25.4 | 17.1 | 15.3 | 27.2 | 19.0 |
| C27 | 67.4 | 120.0 | 43.5 | 67.5 | 24.9 | 44.6 | 39.4 | 29.1 | 30.4 | 34.2 | 90.0 |
| C28 | 14.9 | 27.5 | 26.4 | 29.7 | 16.6 | 29.4 | 31.4 | 21.4 | 22.5 | 30.0 | 28.4 |
| C29 | 113.4 | 93.0 | 87.9 | 115.2 | 39.0 | 80.4 | 63.1 | 61.1 | 57.3 | 63.7 | 150.0 |
| C30 | 15.6 | 25.1 | 25.8 | 35.1 | 17.5 | 30.9 | 27.4 | 20.1 | 25.4 | 34.0 | 27.9 |
| C31 | 60.8 | 46.3 | 72.2 | 86.4 | 35.9 | 64.8 | 42.1 | 44.3 | 48.6 | 64.6 | 64.3 |
| C32 | 18.2 | 28.2 | 29.6 | 43.2 | 23.0 | 36.3 | 28.7 | 15.1 | 19.5 | 42.4 | 15.3 |
| C33 | 23.4 | 27.9 | 35.2 | 53.6 | 25.8 | 41.4 | 25.9 | 13.1 | 15.6 | 34.5 | 23.6 |
| C34 | 12.2 | 18.0 | 19.4 | 30.3 | 15.7 | 24.3 | 18.1 | 9.3 | 13.6 | 30.8 | 11.8 |
| C35 | 12.1 | 16.8 | 20.4 | 30.8 | 14.8 | 23.8 | 14.0 | 9.7 | 13.2 | 27.1 | 14.5 |
| C36 | 8.2 | 12.6 | 13.2 | 23.4 | 11.5 | 16.1 | 12.5 | 6.0 | 10.0 | 18.8 | 8.0 |
| C37 | 4.7 | 7.5 | 10.1 | 16.8 | 8.5 | 11.8 | 6.6 | 3.9 | 6.2 | 11.4 | 5.5 |
| C38 | 5.7 | 9.2 | 10.4 | 17.4 | 8.9 | 1.3 | 8.9 | 3.3 | 5.0 | 11.7 | 5.5 |
| C39 | 2.9 | 4.8 | 7.2 | 11.6 | 5.5 | 6.5 | 6.0 | 1.6 | 5.0 | 6.8 | 3.0 |
| C40 | 3.2 | 6.1 | 7.6 | 13.2 | 7.2 | 8.0 | 6.4 | 1.2 | 4.0 | 6.7 | 3.5 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 450.6 | 723.1 | 514.0 | 712.0 | 313.8 | 561.5 | 502.3 | 410.7 | 438.0 | 591.2 | 565.9 |
| LMW($\Sigma\text{C}20\text{-C}26$) | 87.9 | 280.1 | 105.1 | 137.8 | 59.0 | 141.9 | 171.8 | 171.5 | 161.7 | 174.5 | 114.6 |
| LMW/Total | 0.20 | 0.39 | 0.20 | 0.19 | 0.19 | 0.25 | 0.34 | 0.42 | 0.37 | 0.30 | 0.20 |
| LMW CPI(C20-C26) | 1.78 | 3.68 | 0.92 | 1.20 | 1.07 | 1.36 | 0.98 | 1.01 | 1.14 | 1.07 | 2.22 |
| HMW CPI(C26-C36) | 3.92 | 2.60 | 2.17 | 2.17 | 1.66 | 1.81 | 1.49 | 2.04 | 1.76 | 1.40 | 3.54 |
| Total CPI(C20-C36) | 3.31 | 2.94 | 1.81 | 1.93 | 1.52 | 1.68 | 1.30 | 1.53 | 1.50 | 1.30 | 3.18 |
| UCM hydrocarbon | 1328.4 | 1945.7 | 1669.0 | 2074.4 | 1297.4 | 1497.8 | 1261.9 | 907.2 | 533.2 | 1094.0 | 1521.8 |
| Hopanes(C29-C33) | 17.5 | 34.8 | 24.6 | 33.7 | 17.9 | 28.3 | 26.1 | 18.6 | 30.8 | 28.7 | 21.0 |

No.2

| Carbon Number | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C20 | 3.5 | 5.8 | 16.0 | 9.9 | 13.3 | 5.2 | 8.9 | 16.5 | 19.8 | 25.8 | 34.2 | 8.7 |
| C21 | 3.9 | 5.4 | 15.3 | 4.2 | 10.7 | 5.5 | 11.4 | 22.3 | 15.1 | 26.5 | 42.7 | 17.0 |
| C22 | 4.0 | 8.3 | 23.9 | 9.0 | 20.4 | 8.3 | 14.0 | 24.3 | 10.6 | 22.5 | 48.0 | 17.4 |
| C23 | 17.6 | 14.4 | 30.7 | 9.2 | 22.1 | 10.1 | 25.6 | 22.9 | 9.0 | 13.5 | 45.5 | 28.8 |
| C24 | 8.9 | 13.8 | 33.7 | 9.9 | 35.8 | 15.0 | 17.1 | 25.8 | 8.2 | 11.3 | 46.0 | 14.4 |
| C25 | 52.7 | 29.8 | 41.5 | 30.0 | 48.4 | 21.3 | 39.5 | 25.2 | 12.6 | 16.7 | 40.9 | 36.4 |
| C26 | 14.1 | 16.2 | 31.6 | 19.7 | 49.7 | 17.1 | 25.1 | 18.0 | 10.7 | 12.7 | 27.6 | 13.9 |
| C27 | 114.5 | 64.5 | 77.0 | 79.2 | 123.0 | 39.3 | 63.8 | 38.3 | 31.2 | 47.3 | 91.9 | 36.7 |
| C28 | 18.7 | 21.1 | 45.1 | 26.3 | 72.5 | 25.3 | 28.9 | 23.7 | 13.4 | 15.9 | 30.0 | 15.3 |
| C29 | 190.2 | 124.4 | 147.7 | 94.0 | 316.8 | 85.3 | 109.1 | 69.5 | 32.4 | 44.6 | 87.2 | 67.8 |
| C30 | 18.8 | 20.1 | 43.3 | 26.6 | 80.6 | 75.7 | 47.8 | 27.3 | 11.8 | 19.6 | 31.5 | 18.7 |
| C31 | 2.7 | 89.2 | 130.6 | 69.7 | 304.6 | 35.0 | 107.3 | 62.4 | 25.9 | 40.4 | 73.4 | 45.8 |
| C32 | 16.7 | 25.3 | 43.6 | 26.2 | 95.9 | 45.3 | 55.6 | 32.2 | 14.4 | 22.2 | 42.5 | 18.4 |
| C33 | 19.5 | 37.4 | 54.0 | 34.3 | 131.1 | 24.8 | 63.6 | 40.5 | 15.4 | 24.0 | 45.6 | 24.0 |
| C34 | 10.9 | 21.6 | 32.2 | 16.8 | 78.9 | 27.7 | 45.9 | 26.8 | 9.5 | 15.8 | 33.8 | 14.4 |
| C35 | 12.9 | 25.2 | 37.8 | 18.7 | 85.1 | 19.6 | 39.9 | 34.4 | 9.4 | 15.5 | 34.1 | 16.6 |
| C36 | 7.2 | 18.5 | 23.3 | 13.0 | 59.5 | 20.1 | 30.1 | 19.4 | 6.1 | 10.6 | 22.3 | 9.7 |
| C37 | 5.5 | 16.3 | 19.4 | 10.7 | 53.4 | 16.6 | 22.6 | 15.7 | 4.8 | 9.9 | 19.6 | 6.8 |
| C38 | 4.6 | 18.5 | 18.4 | 10.1 | 54.2 | 15.0 | 22.7 | 15.7 | 5.1 | 11.8 | 13.7 | 8.1 |
| C39 | 3.8 | 13.2 | 15.6 | 8.7 | 38.1 | 13.7 | 16.2 | 11.1 | 2.5 | 10.3 | 9.0 | 4.1 |
| C40 | 3.1 | 15.1 | 16.2 | 8.6 | 33.2 | 16.2 | 18.6 | 13.4 | 2.0 | 15.1 | 5.9 | 4.0 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 533.8 | 604.1 | 896.9 | 534.8 | 1727.3 | 542.1 | 813.7 | 585.4 | 269.9 | 432.0 | 825.4 | 427.0 |
| LMW($\Sigma\text{C}20\text{-C}26$) | 104.7 | 93.7 | 192.7 | 91.9 | 200.4 | 82.5 | 141.6 | 155.0 | 86.0 | 129.0 | 284.9 | 136.6 |
| LMW/Total | 0.20 | 0.16 | 0.21 | 0.17 | 0.12 | 0.15 | 0.17 | 0.26 | 0.32 | 0.30 | 0.35 | 0.32 |
| LMW CPI(C20-C26) | 3.64 | 1.54 | 1.08 | 1.32 | 0.97 | 1.10 | 1.64 | 1.05 | 1.10 | 1.09 | 1.03 | 1.91 |
| HMW CPI(C26-C36) | 4.50 | 3.23 | 2.33 | 2.64 | 2.51 | 1.06 | 1.86 | 1.90 | 1.99 | 2.02 | 2.04 | 2.43 |
| Total CPI(C20-C36) | 4.25 | 2.82 | 1.96 | 2.33 | 2.22 | 1.06 | 1.82 | 1.61 | 1.66 | 1.66 | 1.60 | 2.24 |
| UCM hydrocarbon | 1445.1 | 1157.1 | 2734.9 | 636.0 | 2412.2 | 509.0 | 872.8 | 800.6 | 496.0 | 572.7 | 1453.0 | 1542.8 |
| Hopanes(C29-C33) | 5.6 | 21.0 | 24.5 | 16.8 | 29.4 | 16.8 | 20.0 | 32.2 | 9.3 | 17.6 | 23.0 | 12.2 |

| Carbon Number | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C20 | 5.1 | 2.9 | 1.5 | 5.1 | 3.5 | 3.0 | 6.5 | 12.8 | 13.6 | 33.8 | 37.8 |
| C21 | 7.5 | 5.0 | 3.3 | 5.5 | 3.5 | 4.3 | 5.1 | 10.8 | 12.1 | 39.6 | 42.4 |
| C22 | 7.9 | 8.3 | 9.3 | 9.6 | 5.0 | 5.0 | 4.8 | 8.9 | 8.6 | 31.0 | 38.1 |
| C23 | 18.2 | 178.8 | 36.1 | 11.7 | 7.6 | 5.1 | 12.1 | 9.1 | 8.9 | 30.3 | 31.0 |
| C24 | 11.1 | 19.2 | 70.3 | 13.5 | 13.3 | 6.6 | 7.3 | 14.2 | 6.9 | 25.1 | 25.1 |
| C25 | 42.0 | 102.0 | 117.4 | 25.0 | 22.0 | 9.6 | 22.6 | 16.3 | 18.4 | 33.3 | 26.6 |
| C26 | 13.6 | 17.3 | 130.7 | 13.8 | 13.4 | 5.8 | 8.9 | 7.5 | 10.6 | 21.0 | 17.4 |
| C27 | 135.8 | 118.0 | 300.0 | 92.4 | 69.5 | 31.2 | 67.8 | 49.6 | 45.1 | 37.5 | 32.9 |
| C28 | 15.9 | 20.3 | 148.5 | 30.4 | 18.8 | 7.9 | 12.9 | 10.2 | 17.8 | 21.4 | 16.0 |
| C29 | 143.6 | 86.3 | 229.5 | 136.4 | 77.0 | 36.0 | 88.9 | 41.2 | 69.1 | 47.4 | 47.4 |
| C30 | 13.7 | 21.2 | 108.0 | 29.1 | 18.2 | 12.7 | 18.6 | 14.5 | 18.9 | 17.8 | 15.2 |
| C31 | 58.7 | 64.0 | 129.2 | 88.4 | 62.1 | 32.9 | 58.1 | 28.8 | 63.0 | 42.4 | 45.6 |
| C32 | 16.9 | 30.6 | 72.3 | 32.3 | 24.1 | 19.6 | 22.6 | 15.4 | 18.9 | 16.8 | 14.6 |
| C33 | 23.1 | 34.4 | 59.2 | 44.7 | 33.0 | 23.4 | 27.4 | 16.5 | 28.7 | 19.7 | 19.7 |
| C34 | 12.4 | 23.8 | 37.6 | 23.3 | 19.1 | 18.1 | 16.0 | 11.8 | 14.2 | 11.1 | 9.1 |
| C35 | 13.3 | 21.3 | 28.5 | 26.4 | 19.4 | 15.7 | 17.5 | 9.4 | 17.6 | 12.9 | 16.0 |
| C36 | 8.8 | 16.8 | 18.7 | 17.8 | 14.3 | 13.2 | 10.4 | 8.1 | 7.2 | 6.0 | 6.1 |
| C37 | 7.8 | 16.5 | 16.8 | 20.1 | 15.0 | 12.2 | 9.3 | 10.3 | 7.4 | 6.0 | 15.1 |
| C38 | 7.5 | 16.6 | 14.0 | 17.9 | 14.6 | 12.5 | 9.3 | 7.7 | 6.6 | 4.7 | 5.8 |
| C39 | 4.8 | 10.8 | 9.7 | 13.8 | 10.4 | 7.8 | 5.8 | 4.1 | 3.9 | 1.7 | 5.8 |
| C40 | 1.5 | 10.1 | 8.1 | 12.6 | 10.0 | 7.8 | 6.0 | 5.3 | 3.9 | 2.5 | 5.8 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 569.2 | 824.2 | 1548.7 | 869.8 | 473.8 | 290.4 | 437.9 | 312.5 | 401.2 | 461.8 | 473.3 |
| LMW(Σ C20-C26) | 105.4 | 333.5 | 368.6 | 84.2 | 68.3 | 39.4 | 67.3 | 79.6 | 79.1 | 214.1 | 218.3 |
| LMW/Total | 0.19 | 0.40 | 0.24 | 0.13 | 0.14 | 0.14 | 0.15 | 0.25 | 0.20 | 0.46 | 0.46 |
| LMW CPI(C20-C26) | 2.44 | 7.89 | 1.34 | 1.32 | 1.28 | 1.20 | 2.02 | 1.10 | 1.43 | 1.24 | 1.11 |
| HMW CPI(C26-C36) | 5.35 | 2.87 | 1.72 | 2.97 | 2.78 | 2.06 | 3.26 | 2.44 | 2.85 | 2.00 | 2.44 |
| Total CPI(C20-C36) | 4.49 | 4.06 | 1.54 | 2.64 | 2.44 | 1.89 | 3.01 | 1.96 | 2.48 | 1.61 | 1.68 |
| UCM hydrocarbon | 1202.4 | 1856.3 | 1381.8 | 1179.7 | 1039.6 | 797.9 | 573.3 | 619.6 | 383.3 | 1166.2 | 355.8 |
| Hopanes(C29-C33) | 15.8 | 21.4 | 22.8 | 8.2 | 15.6 | 12.1 | 17.8 | 13.4 | 14.8 | 22.7 | 19.3 |

表6 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(小作)

| Carbon Number | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | May/94 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| C20 | 13.2 | 13.9 | 13.1 | 8.3 | 3.8 | 6.1 | 12.4 | 16.0 | 16.2 | 26.0 | 10.1 | 4.9 |
| C21 | 3.9 | 4.6 | 6.0 | 5.1 | 4.7 | 14.1 | 24.9 | 23.8 | 16.7 | 41.0 | 23.2 | 4.2 |
| C22 | 8.6 | 12.1 | 12.6 | 8.5 | 6.6 | 14.1 | 17.2 | 26.0 | 14.9 | 37.9 | 17.7 | 6.6 |
| C23 | 8.0 | 19.3 | 54.6 | 33.7 | 12.7 | 34.3 | 43.3 | 33.3 | 27.2 | 51.1 | 87.9 | 16.6 |
| C24 | 10.9 | 20.1 | 22.1 | 19.7 | 20.6 | 17.2 | 30.0 | 43.5 | 18.8 | 27.7 | 22.1 | 8.5 |
| C25 | 29.1 | 39.0 | 116.5 | 50.5 | 36.2 | 56.7 | 72.6 | 60.1 | 35.3 | 50.8 | 125.5 | 35.2 |
| C26 | 15.0 | 20.4 | 34.1 | 17.5 | 20.1 | 14.9 | 38.6 | 53.3 | 15.4 | 39.7 | 19.8 | 11.8 |
| C27 | 65.3 | 45.0 | 126.9 | 48.9 | 73.3 | 87.7 | 162.0 | 79.0 | 45.6 | 85.2 | 184.1 | 76.0 |
| C28 | 17.5 | 30.5 | 44.1 | 18.9 | 24.9 | 31.9 | 83.7 | 50.0 | 15.6 | 43.5 | 27.0 | 11.5 |
| C29 | 94.9 | 54.3 | 90.6 | 63.6 | 87.8 | 76.4 | 178.6 | 123.0 | 65.7 | 140.9 | 180.8 | 99.5 |
| C30 | 18.9 | 26.4 | 40.7 | 23.5 | 25.5 | 16.3 | 65.0 | 48.0 | 13.6 | 37.3 | 69.5 | 15.2 |
| C31 | 59.6 | 40.3 | 71.7 | 56.2 | 64.8 | 65.2 | 181.9 | 66.5 | 46.5 | 129.2 | 55.0 | 50.1 |
| C32 | 17.6 | 32.3 | 43.5 | 32.0 | 26.3 | 26.3 | 46.8 | 33.2 | 21.2 | 63.1 | 14.1 | 13.8 |
| C33 | 22.0 | 25.2 | 38.0 | 31.4 | 31.8 | 35.7 | 54.9 | 36.3 | 10.4 | 86.4 | 16.4 | 21.0 |
| C34 | 11.5 | 11.0 | 21.9 | 19.0 | 15.4 | 39.1 | 21.5 | 18.3 | 13.1 | 48.3 | 8.7 | 10.0 |
| C35 | 10.7 | 9.9 | 25.3 | 21.2 | 17.6 | 43.7 | 43.3 | 26.0 | 16.3 | 61.5 | 12.9 | 10.7 |
| C36 | 8.0 | 7.3 | 16.3 | 12.3 | 10.1 | 29.8 | 30.0 | 11.4 | 9.2 | 33.8 | 5.7 | 6.0 |
| C37 | 7.3 | 6.3 | 12.3 | 9.7 | 6.9 | 15.3 | 25.3 | 9.7 | 8.2 | 25.7 | 4.6 | 4.5 |
| C38 | 6.3 | 4.9 | 10.6 | 7.2 | 7.3 | 12.3 | 19.0 | 7.3 | 6.3 | 18.7 | 3.2 | 4.0 |
| C39 | 6.0 | 3.1 | 8.2 | 5.3 | 5.3 | 11.0 | 16.6 | 6.2 | 4.2 | 16.2 | 3.4 | 2.1 |
| C40 | 4.6 | 3.1 | 6.9 | 3.8 | 4.3 | 8.6 | 15.0 | 4.1 | 2.1 | 12.3 | 6.6 | 1.5 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 438.9 | 429.0 | 816.1 | 496.3 | 506.0 | 656.7 | 1182.6 | 775.0 | 422.6 | 1076.3 | 898.3 | 413.7 |
| LMW(Σ C20-C26) | 88.7 | 129.4 | 259.0 | 143.3 | 104.7 | 157.4 | 239.0 | 256.0 | 144.5 | 274.2 | 306.3 | 87.8 |
| LMW/Total | 0.20 | 0.30 | 0.32 | 0.29 | 0.21 | 0.24 | 0.20 | 0.33 | 0.34 | 0.25 | 0.34 | 0.21 |
| LMW CPI(C20-C26) | 1.22 | 1.28 | 3.14 | 2.20 | 1.43 | 2.54 | 2.00 | 1.16 | 1.60 | 1.46 | 4.36 | 2.44 |
| HMW CPI(C26-C36) | 3.29 | 1.54 | 2.01 | 2.04 | 2.57 | 2.28 | 2.47 | 1.84 | 2.44 | 2.20 | 3.41 | 4.34 |
| Total CPI(C20-C36) | 2.66 | 1.45 | 2.27 | 2.08 | 2.25 | 2.34 | 2.35 | 1.57 | 2.11 | 1.97 | 3.67 | 3.78 |
| UCM hydrocarbon | 983.0 | 1017.0 | 1342.9 | 1222.9 | 988.5 | 1080.6 | 1085.1 | 908.3 | 1061.3 | 983.1 | 1132.8 | 1368.9 |
| Hopanes(C29-Q33) | 12.7 | 16.3 | 20.0 | 13.4 | 17.2 | 18.0 | 19.3 | 16.8 | 13.3 | 14.7 | 10.9 | 12.6 |

表7 全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量(小河内)

| | | | | | | | | | | | | | No.1 | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|------|--|
| Carbon Number | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | | | |
| C20 | 14.9 | 2.5 | 2.9 | 3.4 | 2.8 | 4.1 | 1.2 | 4.6 | 5.4 | 6.1 | 3.8 | | | |
| C21 | 12.2 | 8.1 | 2.3 | 3.0 | 19.6 | 286.0 | 1.6 | 9.8 | 6.7 | 10.3 | 5.0 | | | |
| C22 | 10.4 | 1.9 | 3.0 | 3.0 | 4.5 | 14.5 | 1.7 | 12.2 | 7.2 | 12.6 | 5.6 | | | |
| C23 | 39.9 | 19.4 | 8.2 | 17.4 | 159.7 | 177.5 | 5.1 | 17.3 | 13.5 | 18.7 | 20.9 | | | |
| C24 | 18.0 | 3.3 | 7.5 | 10.6 | 10.9 | 18.6 | 2.4 | 18.8 | 15.4 | 14.2 | 6.7 | | | |
| C25 | 86.1 | 23.9 | 13.7 | 17.2 | 37.1 | 114.5 | 6.8 | 20.6 | 23.0 | 29.4 | 27.0 | | | |
| C26 | 23.2 | 3.3 | 2.2 | 61.1 | 7.3 | 12.1 | 3.0 | 10.1 | 11.7 | 16.9 | 9.6 | | | |
| C27 | 106.1 | 27.8 | 21.5 | 44.4 | 39.0 | 124.9 | 9.6 | 26.2 | 54.0 | 54.8 | 43.7 | | | |
| C28 | 27.8 | 4.3 | 7.0 | 12.2 | 9.2 | 15.5 | 4.1 | 10.2 | 14.6 | 17.7 | 12.4 | | | |
| C29 | 104.2 | 16.1 | 24.9 | 17.7 | 22.7 | 231.5 | 12.0 | 34.4 | 56.4 | 56.0 | 66.7 | | | |
| C30 | 22.7 | 3.9 | 8.5 | 10.5 | 6.1 | 54.1 | 3.2 | 8.8 | 12.4 | 14.5 | 10.2 | | | |
| C31 | 53.1 | 6.1 | 18.2 | 20.7 | 14.4 | 190.1 | 8.9 | 21.6 | 36.2 | 35.7 | 19.2 | | | |
| C32 | 20.9 | 3.8 | 9.3 | 9.7 | 6.7 | 8.3 | 4.5 | 11.5 | 15.2 | 17.9 | 4.6 | | | |
| C33 | 25.3 | 3.6 | 12.6 | 11.8 | 9.1 | 182.7 | 6.2 | 15.8 | 26.5 | 22.9 | 6.9 | | | |
| C34 | 12.6 | 2.4 | 7.0 | 6.5 | 3.2 | 12.1 | 3.3 | 7.2 | 9.8 | 12.2 | 3.2 | | | |
| C35 | 13.2 | 2.2 | 10.4 | 8.9 | 4.7 | 20.6 | 4.6 | 13.3 | 19.0 | 18.2 | 7.2 | | | |
| C36 | 8.2 | 2.2 | 5.2 | 4.4 | 3.5 | 10.0 | 2.4 | 2.4 | 6.4 | 9.3 | 2.1 | | | |
| C37 | 4.6 | 1.9 | 3.9 | 3.2 | 2.3 | 15.6 | 1.8 | 1.3 | 3.9 | 6.8 | 1.4 | | | |
| C38 | 5.3 | 1.8 | 4.1 | 3.8 | 2.4 | 8.9 | 2.0 | 1.2 | 3.3 | 6.9 | 1.4 | | | |
| C39 | 2.7 | 1.0 | 2.6 | 2.8 | 2.0 | 7.0 | 1.0 | 0.7 | 2.7 | 4.9 | 1.7 | | | |
| C40 | 3.1 | 0.9 | 3.6 | 2.0 | 1.9 | 6.2 | 0.9 | 0.5 | 2.8 | 5.4 | 0.9 | | | |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 614.5 | 140.4 | 178.6 | 274.3 | 369.1 | 1514.7 | 86.3 | 246.5 | 346.1 | 391.4 | 260.2 | | | |
| LMW($\Sigma\text{C20-C26}$) | 204.7 | 62.4 | 39.8 | 115.7 | 241.9 | 627.3 | 21.8 | 91.4 | 82.9 | 108.2 | 78.6 | | | |
| LMW/Total | 0.33 | 0.44 | 0.22 | 0.42 | 0.66 | 0.41 | 0.25 | 0.37 | 0.24 | 0.28 | 0.30 | | | |
| LMW CPI(C20-C26) | 2.93 | 6.36 | 1.86 | 1.36 | 10.71 | 14.16 | 2.22 | 1.32 | 1.40 | 1.56 | 2.85 | | | |
| HMW CPI(C26-C36) | 3.05 | 3.26 | 2.47 | 1.71 | 2.95 | 7.42 | 2.32 | 2.55 | 3.15 | 2.49 | 4.01 | | | |
| Total CPI(C20-C36) | 2.99 | 4.25 | 2.30 | 1.20 | 6.00 | 9.34 | 2.28 | 1.98 | 2.55 | 2.16 | 3.56 | | | |
| UCM hydrocarbon | 1355.3 | 825.1 | 1006.3 | 880.9 | 958.1 | 1275.0 | 583.3 | 1261.3 | 1026.7 | 876.3 | 612.7 | | | |
| Hopananes(C29-C33) | 4.5 | 3.8 | 3.5 | 3.6 | 2.2 | 6.7 | 1.9 | 6.7 | 7.4 | 9.8 | 17.2 | | | |

| | | | | | | | | | | | | | No.2 | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|--|
| Carbon Number | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | | |
| C20 | 3.6 | 16.5 | 5.5 | 0.9 | 4.2 | 4.9 | 2.1 | 1.5 | 1.3 | 3.7 | 4.6 | 3.9 | | |
| C21 | 24.7 | 285.7 | 6.8 | 9.8 | 3.1 | 2.7 | 3.4 | 3.9 | 1.2 | 5.3 | 8.1 | 5.6 | | |
| C22 | 3.8 | 22.6 | 8.3 | 3.3 | 4.9 | 3.7 | 6.0 | 5.0 | 1.3 | 6.8 | 10.8 | 4.0 | | |
| C23 | 31.4 | 484.7 | 6.8 | 10.8 | 40.7 | 8.5 | 10.8 | 13.8 | 4.6 | 9.4 | 15.6 | 28.8 | | |
| C24 | 10.7 | 16.2 | 12.9 | 9.4 | 14.4 | 7.6 | 11.0 | 9.3 | 2.4 | 6.7 | 13.5 | 6.9 | | |
| C25 | 77.3 | 408.9 | 27.4 | 26.3 | 64.5 | 15.0 | 19.9 | 18.2 | 7.3 | 13.4 | 20.4 | 32.6 | | |
| C26 | 19.1 | 23.2 | 13.7 | 8.7 | 18.7 | 10.4 | 12.4 | 6.8 | 1.6 | 7.8 | 12.2 | 7.5 | | |
| C27 | 176.6 | 309.1 | 77.3 | 57.6 | 91.3 | 40.4 | 28.5 | 26.5 | 18.1 | 30.2 | 41.7 | 67.8 | | |
| C28 | 16.1 | 26.5 | 29.3 | 13.2 | 25.8 | 13.3 | 13.3 | 7.9 | 3.6 | 10.9 | 13.5 | 9.2 | | |
| C29 | 144.0 | 196.3 | 100.8 | 77.8 | 116.4 | 43.2 | 32.1 | 28.3 | 14.4 | 27.3 | 40.0 | 81.2 | | |
| C30 | 8.2 | 22.3 | 27.1 | 21.1 | 30.8 | 12.5 | 11.8 | 7.9 | 3.1 | 11.3 | 11.2 | 9.7 | | |
| C31 | 55.3 | 241.6 | 73.8 | 67.5 | 82.4 | 31.6 | 27.5 | 32.7 | 9.9 | 36.7 | 28.8 | 23.3 | | |
| C32 | 3.6 | 2.0 | 16.9 | 24.4 | 27.3 | 14.6 | 10.9 | 7.7 | 3.8 | 17.6 | 10.9 | 8.0 | | |
| C33 | 19.1 | 2.2 | 37.0 | 58.9 | 40.4 | 21.4 | 12.4 | 13.5 | 6.1 | 24.7 | 17.6 | 16.0 | | |
| C34 | 5.1 | 16.4 | 21.0 | 22.0 | 17.2 | 11.6 | 5.7 | 5.4 | 3.1 | 18.5 | 8.5 | 6.6 | | |
| C35 | 11.2 | 20.0 | 38.3 | 42.9 | 25.5 | 16.4 | 6.4 | 7.6 | 4.8 | 17.7 | 15.9 | 13.5 | | |
| C36 | 3.4 | 13.4 | 12.6 | 13.8 | 11.8 | 10.4 | 3.0 | 3.4 | 2.2 | 14.7 | 5.3 | 4.3 | | |
| C37 | 2.4 | 11.3 | 9.0 | 8.7 | 9.6 | 9.9 | 3.2 | 3.2 | 2.2 | 13.8 | 5.1 | 4.1 | | |
| C38 | 3.1 | 5.6 | 9.8 | 14.1 | 10.0 | 13.5 | 2.8 | 3.1 | 2.0 | 13.6 | 5.7 | 3.8 | | |
| C39 | 1.6 | 6.1 | 7.0 | 10.1 | 8.3 | 10.7 | 2.6 | 2.0 | 1.2 | 7.7 | 3.0 | 2.0 | | |
| C40 | 1.5 | 4.5 | 8.6 | 13.3 | 9.4 | 11.9 | 3.3 | 1.9 | 1.3 | 8.4 | 2.4 | 3.9 | | |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 621.8 | 2135.1 | 549.9 | 514.6 | 656.7 | 314.2 | 229.1 | 209.6 | 95.5 | 306.2 | 294.8 | 342.7 | | |
| LMW($\Sigma\text{C20-C26}$) | 170.6 | 1257.8 | 81.4 | 69.2 | 150.5 | 52.8 | 65.6 | 58.5 | 19.7 | 53.1 | 85.2 | 89.3 | | |
| LMW/Total | 0.27 | 0.59 | 0.15 | 0.13 | 0.23 | 0.17 | 0.29 | 0.28 | 0.21 | 0.17 | 0.29 | 0.26 | | |
| LMW CPI(C20-C26) | 5.67 | 20.17 | 1.36 | 2.82 | 3.73 | 1.41 | 1.47 | 1.99 | 2.55 | 1.48 | 1.37 | 4.08 | | |
| HMW CPI(C26-C36) | 9.48 | 9.03 | 3.05 | 3.32 | 3.06 | 2.45 | 2.18 | 3.20 | 3.44 | 1.97 | 2.74 | 5.13 | | |
| Total CPI(C20-C36) | 7.70 | 13.52 | 2.87 | 3.22 | 3.16 | 2.21 | 1.91 | 2.76 | 3.22 | 1.86 | 2.20 | 4.80 | | |
| UCM hydrocarbon | 1283.3 | 578.7 | 715.9 | 581.4 | 1020.2 | 901.3 | 507.4 | 866.8 | 408.2 | 676.6 | 462.9 | 751.6 | | |
| Hopananes(C29-C33) | 7.0 | 10.5 | 13.7 | 4.9 | 6.0 | 6.8 | 6.0 | 8.8 | 3.6 | 6.0 | 5.6 | 5.2 | | |

| Carbon Number | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| C20 | 3.6 | 4.0 | 3.2 | 3.3 | 2.1 | 4.3 | 1.5 | 1.1 | 2.8 | 14.9 | 4.9 |
| C21 | 12.2 | 8.2 | 1.1 | 0.6 | 32.9 | 1.4 | 26.0 | 2.4 | 3.6 | 10.9 | 5.5 |
| C22 | 4.2 | 4.6 | 1.0 | 1.1 | 4.3 | 3.0 | 2.5 | 1.2 | 3.2 | 12.6 | 5.6 |
| C23 | 31.5 | 57.0 | 8.0 | 13.3 | 26.5 | 3.0 | 21.9 | 3.9 | 6.7 | 15.6 | 9.7 |
| C24 | 12.6 | 10.0 | 6.3 | 13.7 | 11.5 | 5.4 | 3.9 | 1.7 | 4.5 | 11.9 | 7.4 |
| C25 | 48.8 | 127.4 | 12.6 | 213.8 | 33.6 | 9.9 | 18.4 | 7.2 | 9.5 | 17.5 | 12.7 |
| C26 | 9.6 | 16.6 | 3.2 | 8.5 | 7.8 | 4.0 | 1.4 | 2.8 | 6.5 | 10.4 | 8.0 |
| C27 | 81.8 | 166.3 | 31.3 | 74.8 | 103.3 | 36.6 | 53.1 | 15.2 | 15.3 | 34.2 | 23.0 |
| C28 | 9.8 | 22.5 | 4.8 | 15.9 | 4.2 | 4.6 | 6.8 | 4.0 | 8.3 | 12.3 | 9.5 |
| C29 | 81.0 | 77.6 | 22.6 | 103.6 | 66.8 | 23.6 | 49.3 | 15.5 | 23.1 | 53.3 | 35.3 |
| C30 | 11.8 | 16.7 | 3.6 | 13.4 | 4.5 | 6.9 | 5.5 | 3.9 | 8.0 | 11.5 | 9.0 |
| C31 | 34.4 | 41.5 | 14.4 | 43.7 | 46.1 | 17.4 | 33.5 | 10.9 | 22.5 | 66.8 | 28.6 |
| C32 | 9.9 | 17.5 | 6.5 | 12.2 | 10.3 | 5.6 | 5.9 | 3.7 | 6.6 | 11.0 | 8.5 |
| C33 | 22.2 | 20.0 | 8.1 | 24.5 | 20.1 | 10.9 | 16.3 | 6.3 | 14.1 | 28.9 | 18.6 |
| C34 | 8.5 | 12.4 | 5.0 | 9.7 | 11.3 | 4.3 | 4.5 | 2.5 | 5.2 | 7.0 | 6.7 |
| C35 | 13.1 | 11.6 | 5.2 | 19.7 | 15.2 | 7.1 | 8.8 | 4.5 | 9.8 | 12.5 | 16.4 |
| C36 | 5.2 | 7.4 | 3.5 | 6.5 | 6.7 | 3.1 | 3.0 | 1.3 | 2.8 | 4.5 | 5.2 |
| C37 | 5.3 | 7.6 | 2.7 | 7.7 | 5.3 | 2.7 | 2.6 | 1.2 | 3.3 | 4.9 | 5.0 |
| C38 | 5.6 | 7.0 | 4.5 | 6.1 | 6.1 | 2.6 | 2.7 | 1.1 | 4.1 | 4.7 | 3.9 |
| C39 | 3.7 | 5.9 | 1.9 | 4.4 | 2.7 | 1.7 | 1.6 | 0.6 | 1.8 | 3.6 | 2.4 |
| C40 | 4.7 | 4.4 | 3.0 | 2.9 | 2.7 | 1.8 | 1.3 | 0.6 | 1.7 | 4.5 | 2.7 |
| Total ($\mu\text{g}/\text{m}^3/\text{month}$) | 419.5 | 646.2 | 152.5 | 599.4 | 424.0 | 159.9 | 270.5 | 91.4 | 163.3 | 353.6 | 228.5 |
| LMW(Σ C20-C26) | 122.5 | 227.8 | 35.4 | 254.3 | 118.7 | 31.0 | 75.6 | 20.1 | 36.8 | 93.8 | 53.9 |
| LMW/Total | 0.29 | 0.35 | 0.23 | 0.42 | 0.28 | 0.19 | 0.28 | 0.22 | 0.23 | 0.27 | 0.24 |
| LMW CPI(C20-C26) | 4.02 | 8.26 | 2.07 | 11.18 | 4.57 | 1.14 | 8.45 | 2.91 | 1.65 | 1.19 | 1.44 |
| HMW CPI(C26-C36) | 4.92 | 3.92 | 3.51 | 4.54 | 6.70 | 3.83 | 6.47 | 3.27 | 2.60 | 3.99 | 3.03 |
| Total CPI(C20-C36) | 4.59 | 4.81 | 3.06 | 6.22 | 5.92 | 2.93 | 6.94 | 3.17 | 2.32 | 2.79 | 2.51 |
| UCM hydrocarbon | 620.6 | 887.7 | 352.2 | 490.8 | 576.1 | 324.2 | 263.6 | 267.3 | 652.5 | 812.6 | 701.3 |
| Hopanes(C29-C33) | 7.8 | 11.9 | 1.1 | 4.5 | 5.6 | 1.5 | 3.0 | 2.3 | 6.8 | 12.8 | 8.3 |

表8 全降下物中の多環芳香族炭化水素の降下量（川崎）

| PAHs | No.1 | | | | | | | | | | | | |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | May./93 | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | |
| 1 Dibenzothiophene | 0.5 | 1.1 | 1.2 | 0.9 | 0.9 | 0.9 | 1.4 | 1.9 | 1.0 | 3.9 | 3.3 | 1.9 | |
| 2 Phenanthrene | 11.2 | 21.3 | 14.5 | 10.9 | 7.6 | 9.7 | 13.1 | 24.4 | 16.7 | 25.8 | 50.7 | 36.1 | |
| 3 Anthracene | 0.5 | 1.5 | 0.5 | 0.7 | 0.5 | 0.8 | 1.1 | 1.9 | 0.9 | 1.2 | 3.5 | 3.4 | |
| 4 Methylbenzothiophene | 1.0 | 1.7 | 1.2 | 1.1 | 0.9 | 1.2 | 1.5 | 1.5 | 2.3 | 2.7 | 4.8 | 2.5 | |
| 5 Methylbenzothiophene | 0.5 | 0.8 | 1.2 | 0.5 | 0.8 | 0.8 | 1.2 | 1.9 | 2.1 | 2.7 | 5.1 | 1.9 | |
| 6 3-Methylphenanthrene | 1.0 | 1.7 | 1.4 | 1.0 | 0.8 | 1.0 | 1.6 | 2.4 | 1.9 | 3.2 | 5.4 | 2.6 | |
| 7 2-Methylphenanthrene | 1.3 | 2.5 | 2.0 | 1.4 | 1.2 | 1.4 | 1.9 | 3.2 | 2.3 | 3.4 | 7.4 | 4.4 | |
| 8 9-Methylphenanthrene | 1.2 | 2.5 | 1.5 | 1.4 | 0.8 | 1.1 | 0.7 | 3.0 | 1.8 | 1.9 | 7.9 | 3.7 | |
| 9 1-Methylphenanthrene | 0.8 | 1.0 | 1.0 | 0.7 | 0.8 | 0.8 | 1.5 | 2.3 | 1.5 | 2.3 | 4.9 | 2.2 | |
| 10 Fluoranthene | 16.2 | 27.3 | 15.7 | 14.7 | 8.4 | 9.8 | 11.4 | 21.2 | 13.3 | 18.3 | 43.9 | 39.9 | |
| 11 Pyrene | 13.8 | 23.6 | 13.2 | 13.6 | 7.5 | 8.8 | 10.6 | 17.6 | 11.7 | 16.2 | 44.6 | 39.8 | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.5 | 0.8 | 0.7 | 0.4 | 0.5 | 0.5 | 0.8 | 1.4 | 0.6 | 1.1 | 2.6 | 1.6 | |
| 13 Benzo[ghi]fluoranthene | 7.1 | 11.1 | 6.8 | 7.2 | 4.5 | 5.0 | 4.8 | 4.4 | 3.8 | 3.2 | 5.2 | 3.2 | |
| 14 Benz[a]anthracene | 6.2 | 12.4 | 5.1 | 8.2 | 3.4 | 2.5 | 2.6 | 3.7 | 2.5 | 3.9 | 7.5 | 12.6 | |
| 15 Chrysene | 14.1 | 21.2 | 13.2 | 14.4 | 9.1 | 10.0 | 9.6 | 9.8 | 5.7 | 7.1 | 13.9 | 18.4 | |
| 16 Benzo[j]fluoranthene | 13.3 | 21.3 | 11.3 | 12.5 | 7.0 | 4.4 | 4.9 | 8.6 | 3.4 | 4.8 | 19.7 | 63.7 | |
| 17 Benzo[k]fluoranthene | 11.1 | 20.0 | 10.3 | 12.2 | 5.7 | 3.6 | 4.0 | 8.1 | 2.1 | 3.0 | 19.3 | 17.9 | |
| 18 Benzo[e]pyrene | 12.6 | 19.4 | 11.7 | 14.6 | 8.0 | 7.9 | 9.9 | 8.5 | 4.7 | 5.9 | 13.5 | 14.3 | |
| 19 Benzo[a]pyrene | 9.9 | 16.3 | 8.4 | 12.7 | 6.8 | 5.2 | 6.7 | 8.0 | 3.7 | 6.1 | 11.3 | 10.1 | |
| 20 Perylene | 3.6 | 4.2 | 2.0 | 2.1 | 1.8 | 1.4 | 1.9 | 1.0 | 0.9 | 1.2 | 2.6 | 2.2 | |
| 21 Indeno[1,2,3-cd]pyrene | 10.8 | 21.0 | 10.5 | 14.0 | 6.4 | 4.4 | 5.2 | 5.8 | 4.2 | 6.4 | 7.5 | 4.7 | |
| 22 Benzo[ghi]perylene | 12.2 | 19.3 | 9.1 | 14.9 | 10.0 | 5.9 | 8.1 | 9.5 | 4.9 | 6.6 | 12.2 | 5.5 | |
| Total PAHs (μg/mt/month) | 149.1 | 251.9 | 142.1 | 160.2 | 93.1 | 86.9 | 104.2 | 150.1 | 91.9 | 131.0 | 296.4 | 292.2 | |
| Σ COMB PAHs (μg/mt/month) | 127.2 | 212.9 | 114.9 | 139.0 | 76.8 | 67.5 | 77.6 | 105.4 | 59.9 | 81.5 | 198.4 | 230.0 | |
| MP/P ratio* | 0.38 | 0.36 | 0.41 | 0.42 | 0.48 | 0.43 | 0.43 | 0.44 | 0.45 | 0.55 | 0.50 | 0.36 | |
| BaP/BeP ratio | 0.79 | 0.84 | 0.72 | 0.87 | 0.84 | 0.66 | 0.68 | 0.94 | 0.77 | 1.03 | 0.83 | 0.71 | |
| (Flu+Pyr)/Σ COMB (%) | 24 | 24 | 25 | 20 | 21 | 27 | 28 | 37 | 42 | 42 | 45 | 35 | |
| (Phe+Flu+Pyr)/(Phe+Σ COMB) (%) | 30 | 31 | 33 | 26 | 28 | 37 | 39 | 49 | 54 | 56 | 56 | 44 | |

* MP/P : Methylphenanthrene/Phenanthrene

| PAHs | No.2 | | | | | | | | | | | | |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | |
| 1 Dibenzothiophene | 2.8 | 1.0 | 1.6 | 1.3 | 1.4 | 0.0 | 0.8 | 0.7 | 6.1 | 1.0 | 1.3 | 2.6 | |
| 2 Phenanthrene | 41.4 | 19.5 | 24.5 | 23.6 | 13.4 | 8.7 | 11.9 | 6.1 | 56.4 | 18.4 | 45.9 | 34.1 | |
| 3 Anthracene | 5.3 | 2.5 | 2.8 | 2.6 | 1.4 | 1.0 | 0.9 | 0.5 | 1.1 | 1.1 | 1.4 | 3.0 | |
| 4 Methylbenzothiophene | 2.8 | 1.2 | 3.5 | 1.4 | 2.6 | 1.3 | 0.7 | 1.1 | 15.3 | 1.0 | 1.7 | 0.4 | |
| 5 Methylbenzothiophene | 2.0 | 0.9 | 1.3 | 0.8 | 1.1 | 0.8 | 0.9 | 0.9 | 10.7 | 1.7 | 3.0 | 2.6 | |
| 6 3-Methylphenanthrene | 3.6 | 1.5 | 2.4 | 2.0 | 1.3 | 1.1 | 1.3 | 0.7 | 4.4 | 2.8 | 4.6 | 3.2 | |
| 7 2-Methylphenanthrene | 5.2 | 2.2 | 3.4 | 2.8 | 1.8 | 1.0 | 1.5 | 1.0 | 5.9 | 2.6 | 5.2 | 3.8 | |
| 8 9-Methylphenanthrene | 5.6 | 2.2 | 3.2 | 2.7 | 1.3 | 1.1 | 1.4 | 1.1 | 5.9 | 2.0 | 4.2 | 3.5 | |
| 9 1-Methylphenanthrene | 2.8 | 1.2 | 2.1 | 1.5 | 1.1 | 1.3 | 1.2 | 0.7 | 4.4 | 2.3 | 3.6 | 2.9 | |
| 10 Fluoranthene | 49.0 | 31.8 | 42.3 | 36.7 | 16.9 | 9.5 | 14.7 | 9.1 | 37.2 | 21.8 | 46.9 | 42.6 | |
| 11 Pyrene | 49.4 | 29.3 | 42.2 | 30.6 | 12.7 | 8.5 | 11.9 | 7.9 | 29.0 | 21.8 | 41.8 | 50.8 | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 4.5 | 2.2 | 3.3 | 3.1 | 1.5 | 0.6 | 0.7 | 0.4 | 1.7 | 2.0 | 3.7 | 4.2 | |
| 13 Benzo[ghi]fluoranthene | 9.2 | 4.0 | 7.4 | 8.5 | 5.8 | 1.3 | 2.0 | 1.1 | 5.4 | 8.3 | 15.4 | 14.5 | |
| 14 Benz[a]anthracene | 24.5 | 13.3 | 19.4 | 18.3 | 5.2 | 1.7 | 2.2 | 0.9 | 3.7 | 4.3 | 12.1 | 14.8 | |
| 15 Chrysene | 29.5 | 18.9 | 25.6 | 26.4 | 10.8 | 3.2 | 5.5 | 2.4 | 10.8 | 12.3 | 34.9 | 39.0 | |
| 16 Benzo[j]fluoranthene | 45.2 | 15.2 | 22.9 | 25.9 | 11.7 | 4.1 | 4.5 | 1.3 | 10.5 | 9.2 | 28.5 | 25.7 | |
| 17 Benzo[k]fluoranthene | 36.8 | 9.9 | 14.8 | 19.5 | 6.7 | 2.3 | 3.5 | 1.1 | 6.3 | 5.5 | 17.1 | 15.4 | |
| 18 Benzo[e]pyrene | 35.8 | 12.5 | 21.0 | 24.3 | 14.0 | 5.0 | 5.7 | 2.0 | 19.8 | 7.4 | 20.2 | 20.0 | |
| 19 Benzo[a]pyrene | 35.8 | 14.4 | 21.7 | 30.4 | 11.3 | 3.5 | 4.1 | 1.3 | 15.5 | 6.7 | 12.7 | 20.7 | |
| 20 Perylene | 5.2 | 1.3 | 3.6 | 3.7 | 1.4 | 1.8 | 1.6 | 0.8 | 3.8 | 2.0 | 1.5 | 6.3 | |
| 21 Indeno[1,2,3-cd]pyrene | 18.5 | 11.6 | 16.9 | 36.7 | 12.2 | 7.2 | 9.2 | 2.1 | 18.2 | 11.6 | 38.3 | 33.0 | |
| 22 Benzo[ghi]perylene | 13.0 | 11.9 | 20.9 | 36.6 | 25.2 | 12.2 | 9.9 | 5.8 | 24.3 | 14.4 | 31.9 | 34.6 | |
| Total PAHs (μg/mt/month) | 428.0 | 208.5 | 306.8 | 339.1 | 160.9 | 77.1 | 96.2 | 48.9 | 298.3 | 160.2 | 375.9 | 377.5 | |
| Σ COMB PAHs (μg/mt/month) | 346.7 | 172.7 | 255.2 | 293.8 | 132.4 | 58.5 | 73.3 | 35.0 | 180.7 | 123.3 | 299.8 | 311.0 | |
| MP/P ratio | 0.42 | 0.37 | 0.46 | 0.38 | 0.41 | 0.52 | 0.45 | 0.56 | 0.36 | 0.53 | 0.38 | 0.39 | |
| BaP/BeP ratio | 1.00 | 1.15 | 1.03 | 1.25 | 0.81 | 0.69 | 0.72 | 0.65 | 0.78 | 0.89 | 0.63 | 1.04 | |
| (Flu+Pyr)/Σ COMB (%) | 28 | 35 | 33 | 23 | 22 | 31 | 36 | 48 | 37 | 35 | 30 | 30 | |
| (Phe+Flu+Pyr)/(Phe+Σ COMB) (%) | 36 | 42 | 39 | 29 | 29 | 40 | 45 | 56 | 52 | 44 | 39 | 37 | |

| PAHs | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 Dibenzothiophene | 1.0 | 0.4 | 1.6 | 1.3 | 0.7 | 0.6 | 1.3 | 4.2 | 0.4 | 0.9 | 0.8 |
| 2 Phenanthrene | 8.6 | 8.3 | 9.8 | 28.4 | 16.2 | 9.7 | 10.6 | 12.7 | 6.2 | 12.8 | 17.3 |
| 3 Anthracene | 0.3 | 0.5 | 0.9 | 1.4 | 0.4 | 0.4 | 0.8 | 1.0 | 0.5 | 0.8 | 1.5 |
| 4 Methylidibenzothiophene | 5.1 | 0.8 | 2.4 | 0.3 | 0.2 | 0.8 | 0.1 | 0.4 | 0.4 | 0.7 | 1.1 |
| 5 Methylidibenzothiophene | 0.6 | 0.8 | 0.4 | 0.9 | 0.7 | 0.6 | 0.3 | 1.3 | 0.7 | 1.5 | 1.5 |
| 6 3-Methylphenanthrene | 1.2 | 0.9 | 0.8 | 3.1 | 1.6 | 1.2 | 1.0 | 1.0 | 0.6 | 1.1 | 1.4 |
| 7 2-Methylphenanthrene | 2.2 | 1.2 | 1.1 | 4.3 | 1.8 | 1.2 | 1.3 | 1.0 | 0.7 | 1.5 | 1.5 |
| 8 9-Methylphenanthrene | 1.5 | 0.9 | 0.8 | 3.3 | 1.6 | 1.2 | 1.3 | 1.0 | 0.7 | 1.2 | 1.6 |
| 9 1-Methylphenanthrene | 1.2 | 1.2 | 1.3 | 2.4 | 1.3 | 1.8 | 1.5 | 1.3 | 0.5 | 1.1 | 1.1 |
| 10 Fluoranthene | 29.0 | 21.8 | 15.9 | 47.9 | 22.4 | 9.6 | 15.4 | 9.2 | 8.3 | 21.2 | 14.2 |
| 11 Pyrene | 34.5 | 22.3 | 15.0 | 53.9 | 26.5 | 10.3 | 17.7 | 9.5 | 5.5 | 13.9 | 11.1 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 3.4 | 2.5 | 1.6 | 7.1 | 3.3 | 1.3 | 1.8 | 0.8 | 0.3 | 0.7 | 0.7 |
| 13 Benzo[ghi]fluoranthene | 8.0 | 7.8 | 3.8 | 13.1 | 6.8 | 3.9 | 5.4 | 3.0 | 0.9 | 3.1 | 2.4 |
| 14 Benz[a]anthracene | 14.2 | 9.2 | 5.1 | 22.5 | 11.0 | 2.9 | 7.2 | 1.5 | 0.3 | 1.4 | 1.9 |
| 15 Chrysene | 28.9 | 21.3 | 11.4 | 60.2 | 21.4 | 7.3 | 11.3 | 3.8 | 1.2 | 3.9 | 3.6 |
| 16 Benzo[j]fluoranthene | 23.2 | 17.3 | 10.0 | 45.2 | 21.3 | 6.5 | 11.2 | 3.8 | 0.8 | 3.0 | 3.8 |
| 17 Benzo[k]fluoranthene | 13.9 | 10.4 | 6.0 | 27.1 | 12.8 | 3.9 | 6.7 | 2.3 | 1.0 | 3.0 | 3.8 |
| 18 Benzo[e]pyrene | 17.5 | 12.4 | 8.0 | 38.6 | 17.2 | 5.7 | 9.0 | 2.8 | 0.7 | 2.1 | 1.7 |
| 19 Benzo[a]pyrene | 21.4 | 14.4 | 6.5 | 46.3 | 21.2 | 5.3 | 11.0 | 2.3 | 0.5 | 1.7 | 1.5 |
| 20 Perylene | 3.5 | 4.3 | 1.2 | 7.0 | 2.1 | 2.0 | 1.4 | 1.5 | 0.4 | 0.9 | 0.9 |
| 21 Indeno[1,2,3-cd]pyrene | 23.5 | 24.6 | 12.5 | 60.2 | 29.8 | 79.0 | 2.6 | 3.3 | 0.5 | 6.9 | 0.7 |
| 22 Benzo[ghi]perylene | 27.2 | 23.1 | 12.5 | 55.7 | 29.8 | 11.3 | 18.2 | 4.9 | 0.7 | 1.6 | 1.8 |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 269.8 | 206.3 | 129.0 | 530.0 | 249.6 | 166.2 | 137.0 | 72.2 | 31.9 | 84.9 | 75.6 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 241.2 | 184.4 | 106.9 | 470.6 | 219.8 | 145.6 | 115.5 | 46.2 | 20.5 | 61.8 | 46.3 |
| MP/P ratio | 0.71 | 0.52 | 0.41 | 0.46 | 0.39 | 0.55 | 0.49 | 0.33 | 0.40 | 0.38 | 0.33 |
| BaP/BeP ratio | 1.23 | 1.16 | 0.81 | 1.20 | 1.24 | 0.93 | 1.23 | 0.81 | 0.76 | 0.81 | 0.87 |
| (Flu+Pyr)/ Σ COMB (%) | 26 | 24 | 29 | 22 | 22 | 14 | 29 | 40 | 67 | 57 | 55 |
| (Phe+Flu+Pyr)/ (Phe+ Σ COMB) (%) | 29 | 27 | 35 | 26 | 28 | 19 | 35 | 53 | 75 | 64 | 67 |

表9 全降下物中の多環芳香族炭化水素の降下量(目黒)

| PAHs | No.1 | | | | | | | | | | | | | |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|
| | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | May./94 | | |
| 1 Dibenzothiophene | 0.2 | 0.5 | 0.8 | 0.6 | 0.5 | 1.3 | 1.4 | 0.3 | 1.3 | 1.8 | 0.6 | 1.4 | | |
| 2 Phenanthrene | 3.2 | 5.6 | 6.2 | 5.5 | 8.0 | 12.5 | 23.0 | 7.5 | 17.2 | 28.3 | 10.4 | 14.6 | | |
| 3 Anthracene | 0.3 | 0.2 | 0.4 | 0.4 | 0.3 | 0.5 | 0.6 | 0.2 | 0.4 | 1.5 | 0.9 | 1.6 | | |
| 4 Methylidibenzothiophene | 0.5 | 0.5 | 1.4 | 0.7 | 0.6 | 1.3 | 1.5 | 0.4 | 1.1 | 2.4 | 1.3 | 1.0 | | |
| 5 Methylidibenzothiophene | 0.4 | 0.5 | 0.9 | 1.0 | 0.6 | 1.3 | 2.1 | 0.7 | 2.3 | 3.5 | 0.6 | 1.0 | | |
| 6 3-Methylphenanthrene | 0.4 | 0.6 | 0.7 | 0.6 | 0.6 | 1.5 | 2.4 | 0.7 | 1.9 | 3.4 | 1.1 | 1.5 | | |
| 7 2-Methylphenanthrene | 0.5 | 0.7 | 0.8 | 0.8 | 1.0 | 1.8 | 3.3 | 0.9 | 2.3 | 4.2 | 1.6 | 1.7 | | |
| 8 9-Methylphenanthrene | 0.5 | 0.7 | 0.8 | 0.6 | 0.9 | 1.6 | 2.9 | 0.8 | 2.1 | 4.2 | 1.3 | 2.0 | | |
| 9 1-Methylphenanthrene | 0.4 | 0.5 | 0.5 | 0.5 | 0.8 | 1.1 | 2.3 | 0.7 | 1.7 | 2.9 | 0.8 | 1.0 | | |
| 10 Fluoranthene | 4.5 | 5.9 | 5.9 | 6.0 | 8.1 | 12.2 | 22.2 | 7.0 | 10.2 | 26.6 | 10.7 | 11.0 | | |
| 11 Pyrene | 6.4 | 6.8 | 5.6 | 4.6 | 7.1 | 10.5 | 21.6 | 7.5 | 9.5 | 25.1 | 10.7 | 11.9 | | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.5 | 0.3 | 0.4 | 0.5 | 0.4 | 0.4 | 0.7 | 0.4 | 0.6 | 2.0 | 0.8 | 0.7 | | |
| 13 Benzo[ghi]fluoranthene | 1.6 | 1.6 | 1.8 | 2.2 | 2.4 | 2.8 | 4.3 | 1.2 | 2.3 | 8.5 | 2.1 | 2.0 | | |
| 14 Benz[a]anthracene | 0.9 | 1.0 | 1.5 | 1.2 | 1.0 | 1.5 | 2.8 | 0.8 | 1.0 | 3.6 | 1.8 | 3.6 | | |
| 15 Chrysene | 3.3 | 3.2 | 3.7 | 4.4 | 4.7 | 5.5 | 8.5 | 2.3 | 3.1 | 8.5 | 4.3 | 5.3 | | |
| 16 Benzo[j]fluoranthene | 2.8 | 1.9 | 2.7 | 2.9 | 1.8 | 3.6 | 4.5 | 1.3 | 1.9 | 9.8 | 5.0 | 7.0 | | |
| 17 Benzo[k]fluoranthene | 3.1 | 2.1 | 3.0 | 3.2 | 2.0 | 3.1 | 5.0 | 7.9 | 1.2 | 7.0 | 3.2 | 8.3 | | |
| 18 Benzo[e]pyrene | 2.8 | 2.6 | 3.7 | 3.5 | 3.5 | 4.8 | 5.2 | 2.0 | 2.5 | 6.4 | 3.5 | 5.6 | | |
| 19 Benzo[a]pyrene | 2.5 | 1.4 | 2.1 | 2.2 | 2.7 | 3.3 | 5.0 | 1.2 | 2.3 | 5.0 | 2.3 | 5.1 | | |
| 20 Perylene | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.5 | 0.2 | 0.2 | 1.0 | 0.4 | 0.3 | | |
| 21 Indeno[1,2,3-cd]pyrene | 2.9 | 2.8 | 3.6 | 4.1 | 2.7 | 3.5 | 5.0 | 2.0 | 3.3 | 4.3 | 1.5 | 2.5 | | |
| 22 Benzo[ghi]perylene | 3.5 | 3.9 | 5.4 | 6.1 | 4.5 | 6.0 | 6.8 | 3.1 | 4.4 | 4.9 | 2.5 | 2.7 | | |
| Total PAHs ($\mu\text{g}/\text{m}^2/\text{month}$) | 41.6 | 43.5 | 52.2 | 51.5 | 54.4 | 80.2 | 131.4 | 49.1 | 72.8 | 165.1 | 67.4 | 91.5 | | |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^2/\text{month}$) | 34.2 | 33.2 | 39.1 | 40.3 | 40.6 | 56.7 | 90.8 | 36.2 | 41.5 | 109.8 | 47.7 | 64.8 | | |
| MP/P ratio | 0.56 | 0.44 | 0.45 | 0.45 | 0.41 | 0.48 | 0.47 | 0.41 | 0.55 | 0.52 | 0.46 | 0.42 | | |
| BaP/BeP ratio | 0.89 | 0.53 | 0.58 | 0.63 | 0.78 | 0.72 | 0.96 | 0.62 | 0.92 | 0.79 | 0.66 | 0.91 | | |
| (Flu+Pyr)/ Σ COMB (%) | 32 | 38 | 29 | 26 | 37 | 40 | 48 | 40 | 47 | 47 | 45 | 35 | | |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 38 | 47 | 39 | 35 | 48 | 51 | 59 | 50 | 63 | 58 | 55 | 47 | | |

| PAHs | No.2 | | | | | | | | | | | | | |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|
| | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | May./95 | | |
| 1 Dibenzothiophene | 0.6 | 0.8 | 0.8 | 0.4 | 1.1 | 0.4 | 0.4 | 0.4 | 8.9 | 0.5 | 0.5 | 0.1 | | |
| 2 Phenanthrene | 8.9 | 10.5 | 10.5 | 5.6 | 6.0 | 5.9 | 4.4 | 9.5 | 9.6 | 24.3 | 5.6 | 6.8 | | |
| 3 Anthracene | 1.0 | 1.4 | 0.9 | 0.8 | 0.9 | 0.4 | 0.3 | 0.4 | 1.5 | 1.7 | 0.5 | 0.6 | | |
| 4 Methylidibenzothiophene | 0.7 | 1.3 | 0.9 | 0.8 | 1.3 | 1.7 | 0.8 | 0.1 | 0.6 | 1.0 | 0.1 | 0.5 | | |
| 5 Methylidibenzothiophene | 0.6 | 0.8 | 0.9 | 0.5 | 0.8 | 0.9 | 0.6 | 1.1 | 0.8 | 1.8 | 0.2 | 0.4 | | |
| 6 3-Methylphenanthrene | 1.1 | 0.7 | 1.3 | 0.4 | 0.8 | 0.7 | 0.5 | 1.2 | 1.0 | 2.6 | 0.8 | 0.9 | | |
| 7 2-Methylphenanthrene | 1.3 | 1.2 | 1.5 | 0.9 | 1.0 | 0.8 | 0.5 | 1.5 | 1.6 | 3.2 | 1.2 | 1.2 | | |
| 8 9-Methylphenanthrene | 1.4 | 2.0 | 1.5 | 0.9 | 0.7 | 0.7 | 0.7 | 1.4 | 1.0 | 2.4 | 0.8 | 0.8 | | |
| 9 1-Methylphenanthrene | 0.9 | 1.5 | 1.0 | 0.6 | 0.6 | 0.7 | 0.3 | 1.0 | 0.8 | 1.9 | 0.7 | 0.9 | | |
| 10 Fluoranthene | 9.2 | 8.8 | 12.6 | 9.1 | 5.7 | 6.4 | 6.1 | 10.3 | 8.2 | 20.4 | 8.2 | 6.9 | | |
| 11 Pyrene | 5.7 | 8.8 | 9.3 | 8.2 | 4.5 | 4.4 | 5.8 | 7.4 | 6.6 | 12.7 | 4.9 | 5.1 | | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.8 | 0.9 | 0.7 | 0.5 | 0.7 | 0.3 | 6.0 | 0.3 | 0.3 | 0.6 | 0.2 | 0.3 | | |
| 13 Benzo[ghi]fluoranthene | 4.2 | 5.0 | 5.4 | 4.0 | 3.0 | 1.4 | 3.6 | 1.9 | 3.7 | 4.2 | 2.1 | 1.7 | | |
| 14 Benz[a]anthracene | 2.0 | 2.8 | 2.3 | 1.6 | 1.5 | 0.5 | 0.6 | 0.8 | 1.0 | 2.4 | 1.5 | 1.2 | | |
| 15 Chrysene | 4.7 | 5.6 | 6.0 | 4.4 | 3.4 | 1.6 | 2.4 | 2.2 | 2.2 | 5.9 | 3.1 | 3.0 | | |
| 16 Benzo[j]fluoranthene | 4.3 | 5.9 | 6.2 | 5.0 | 1.7 | 2.4 | 1.4 | 1.9 | 1.8 | 6.0 | 3.1 | 3.3 | | |
| 17 Benzo[k]fluoranthene | 3.1 | 3.3 | 3.2 | 3.5 | 0.8 | 0.8 | 0.9 | 1.2 | 1.1 | 3.6 | 1.9 | 2.0 | | |
| 18 Benzo[e]pyrene | 4.0 | 6.0 | 4.9 | 4.4 | 4.4 | 7.8 | 1.9 | 1.7 | 2.2 | 4.8 | 2.6 | 2.8 | | |
| 19 Benzo[a]pyrene | 2.8 | 6.0 | 3.5 | 3.2 | 4.4 | 3.0 | 1.3 | 0.9 | 1.2 | 3.0 | 1.6 | 1.9 | | |
| 20 Perylene | 0.2 | 1.0 | 1.0 | 0.7 | 0.8 | 0.5 | 0.7 | 0.2 | 0.8 | 0.5 | 0.3 | 0.3 | | |
| 21 Indeno[1,2,3-cd]pyrene | 4.5 | 7.4 | 4.7 | 4.6 | 4.5 | 3.7 | 3.1 | 2.1 | 2.0 | 6.5 | 3.6 | 3.9 | | |
| 22 Benzo[ghi]perylene | 5.7 | 6.8 | 6.6 | 6.9 | 2.1 | 1.7 | 5.2 | 2.8 | 2.8 | 6.2 | 3.6 | 4.3 | | |
| Total PAHs ($\mu\text{g}/\text{m}^2/\text{month}$) | 67.8 | 88.3 | 85.7 | 66.9 | 50.5 | 46.5 | 47.4 | 50.3 | 59.7 | 116.0 | 47.1 | 48.8 | | |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^2/\text{month}$) | 50.2 | 66.3 | 64.8 | 54.9 | 35.8 | 33.7 | 32.3 | 33.3 | 32.8 | 75.4 | 36.2 | 36.0 | | |
| MP/P ratio | 0.53 | 0.50 | 0.51 | 0.49 | 0.52 | 0.49 | 0.46 | 0.53 | 0.46 | 0.42 | 0.62 | 0.56 | | |
| BaP/BeP ratio | 0.70 | 0.99 | 0.71 | 0.72 | 0.99 | 0.38 | 0.68 | 0.52 | 0.52 | 0.62 | 0.64 | 0.67 | | |
| (Flu+Pyr)/ Σ COMB (%) | 30 | 26 | 34 | 32 | 28 | 32 | 37 | 53 | 45 | 44 | 36 | 33 | | |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 40 | 37 | 43 | 38 | 39 | 42 | 44 | 64 | 58 | 58 | 45 | 44 | | |

表10 全降下物中の多環芳香族炭化水素の降下量（桐蔭）

| PAHs | No.1 | | | | | | | | | | | | |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | May./93 | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | |
| 1 Dibenzothiophene | 0.3 | 0.4 | 0.4 | 0.2 | 0.3 | 0.1 | 0.2 | 0.7 | 0.8 | 1.5 | 3.3 | 0.5 | |
| 2 Phenanthrene | 3.3 | 2.6 | 4.1 | 3.5 | 3.2 | 3.8 | 10.4 | 13.0 | 16.3 | 22.1 | 32.1 | 8.5 | |
| 3 Anthracene | 0.4 | 0.3 | 0.2 | 0.1 | 0.2 | 0.2 | 0.6 | 0.8 | 0.7 | 0.5 | 1.5 | 1.0 | |
| 4 Methyl dibenzothiophene | 0.5 | 0.5 | 0.7 | 0.6 | 0.6 | 0.4 | 0.9 | 0.9 | 0.8 | 1.7 | 2.3 | 0.6 | |
| 5 Methyl dibenzothiophene | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.9 | 1.4 | 2.8 | 3.3 | 0.5 | |
| 6 3-Methylphenanthrene | 0.4 | 0.4 | 0.5 | 0.4 | 0.3 | 0.5 | 0.8 | 1.1 | 1.5 | 2.2 | 2.6 | 0.5 | |
| 7 2-Methylphenanthrene | 0.4 | 0.4 | 0.6 | 0.4 | 0.4 | 0.5 | 2.1 | 1.3 | 5.0 | 3.0 | 3.5 | 0.9 | |
| 8 9-Methylphenanthrene | 0.4 | 0.5 | 0.6 | 0.5 | 0.6 | 0.5 | 1.2 | 1.8 | 1.8 | 3.2 | 3.9 | 0.7 | |
| 9 1-Methylphenanthrene | 0.8 | 0.7 | 0.5 | 0.5 | 0.6 | 0.4 | 0.9 | 1.4 | 2.0 | 4.6 | 3.2 | 2.2 | |
| 10 Fluoranthene | 2.7 | 2.6 | 3.7 | 2.8 | 4.3 | 4.4 | 9.3 | 11.7 | 15.4 | 20.7 | 28.3 | 8.5 | |
| 11 Pyrene | 2.6 | 2.4 | 3.4 | 3.3 | 3.8 | 4.4 | 9.2 | 13.4 | 15.4 | 16.9 | 23.2 | 9.2 | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.1 | 0.4 | 0.4 | 0.4 | 0.6 | 0.5 | 0.8 | 1.3 | 0.6 | 0.7 | 1.9 | 0.5 | |
| 13 Benzo[ghi]fluoranthene | 1.0 | 2.2 | 1.7 | 1.5 | 1.1 | 1.6 | 0.6 | 2.5 | 3.2 | 3.8 | 4.4 | 1.9 | |
| 14 Benz[a]anthracene | 0.6 | 0.6 | 0.8 | 1.0 | 1.0 | 0.8 | 2.0 | 1.6 | 1.1 | 2.2 | 3.3 | 1.4 | |
| 15 Chrysene | 2.0 | 2.4 | 3.4 | 3.0 | 3.7 | 3.1 | 9.8 | 4.9 | 0.7 | 5.4 | 8.4 | 2.7 | |
| 16 Benzo[j]fluoranthene | 1.6 | 2.4 | 1.8 | 2.6 | 2.7 | 1.5 | 2.3 | 2.6 | 3.9 | 2.6 | 6.0 | 3.2 | |
| 17 Benzo[k]fluoranthene | 1.3 | 0.9 | 1.8 | 2.1 | 2.2 | 1.2 | 1.9 | 2.1 | 2.1 | 1.9 | 4.4 | 1.8 | |
| 18 Benzo[e]pyrene | 1.6 | 2.2 | 2.5 | 3.0 | 2.7 | 3.1 | 11.2 | 5.1 | 5.4 | 3.4 | 10.8 | 2.8 | |
| 19 Benzo[a]pyrene | 0.9 | 1.5 | 1.9 | 2.1 | 1.6 | 2.3 | 6.0 | 3.8 | 3.7 | 2.3 | 6.1 | 2.4 | |
| 20 Perylene | 0.3 | 0.6 | 0.2 | 0.3 | 0.3 | 0.7 | 0.2 | 0.6 | 0.7 | 0.5 | 0.9 | 0.3 | |
| 21 Indeno[1,2,3-cd]pyrene | 1.2 | 1.6 | 3.2 | 3.4 | 2.8 | 1.7 | 1.2 | 2.9 | 0.5 | 3.4 | 2.4 | 1.5 | |
| 22 Benzo[ghi]perylene | 1.9 | 2.6 | 3.6 | 4.5 | 4.2 | 2.0 | 5.2 | 3.7 | 6.8 | 5.6 | 3.0 | 2.1 | |
| Total PAHs (μg/m ³ /month) | 24.4 | 28.7 | 36.4 | 36.4 | 37.3 | 34.1 | 77.1 | 78.1 | 89.6 | 111.2 | 158.5 | 53.5 | |
| ΣCOMB PAHs (μg/m ³ /month) | 17.2 | 21.6 | 27.8 | 29.2 | 30.0 | 26.2 | 58.7 | 54.4 | 58.1 | 68.3 | 100.1 | 37.3 | |
| MP/P ratio | 0.58 | 0.74 | 0.54 | 0.48 | 0.58 | 0.49 | 0.47 | 0.44 | 0.63 | 0.55 | 0.41 | 0.50 | |
| BaP/BeP ratio | 0.57 | 0.69 | 0.77 | 0.72 | 0.58 | 0.76 | 0.53 | 0.74 | 0.69 | 0.67 | 0.56 | 0.84 | |
| (Flu+Pyr)/ΣCOMB (%) | 30 | 23 | 26 | 21 | 27 | 34 | 32 | 46 | 53 | 55 | 51 | 47 | |
| (Phe+Flu+Pyr)/(Phe+ΣCOMB)(%) | 41 | 32 | 35 | 29 | 34 | 42 | 42 | 57 | 63 | 66 | 63 | 57 | |

| PAHs | No.2 | | | | | | | | | | | | |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | |
| 1 Dibenzothiophene | 0.1 | 0.1 | 0.8 | 0.5 | 0.3 | 0.6 | 0.3 | 0.8 | 1.1 | 0.5 | 1.9 | 0.4 | |
| 2 Phenanthrene | 4.6 | 4.5 | 9.4 | 5.2 | 7.9 | 6.9 | 9.3 | 3.3 | 3.6 | 2.8 | 10.4 | 3.8 | |
| 3 Anthracene | 0.2 | 0.6 | 0.9 | 0.4 | 1.0 | 0.9 | 1.1 | 0.5 | 0.7 | 0.4 | 0.2 | 1.1 | |
| 4 Methyl dibenzothiophene | 0.6 | 0.3 | 1.4 | 0.5 | 0.5 | 1.8 | 0.5 | 1.1 | 0.2 | 0.3 | 1.3 | 0.7 | |
| 5 Methyl dibenzothiophene | 0.7 | 0.3 | 0.8 | 0.6 | 0.4 | 0.4 | 0.5 | 0.6 | 0.3 | 0.3 | 1.0 | 0.5 | |
| 6 3-Methylphenanthrene | 0.6 | 0.5 | 0.8 | 0.5 | 0.4 | 0.7 | 0.8 | 0.3 | 0.5 | 0.3 | 0.9 | 0.4 | |
| 7 2-Methylphenanthrene | 0.6 | 0.6 | 1.2 | 0.7 | 0.8 | 0.9 | 1.0 | 0.5 | 0.5 | 0.5 | 1.2 | 0.5 | |
| 8 9-Methylphenanthrene | 0.8 | 0.5 | 0.9 | 0.6 | 0.6 | 0.9 | 1.3 | 0.7 | 0.7 | 0.3 | 1.2 | 0.4 | |
| 9 1-Methylphenanthrene | 0.5 | 0.6 | 1.4 | 0.9 | 2.2 | 0.7 | 0.9 | 0.4 | 0.7 | 0.3 | 1.2 | 0.7 | |
| 10 Fluoranthene | 5.6 | 4.2 | 8.7 | 3.5 | 6.4 | 5.7 | 9.0 | 5.6 | 3.8 | 3.3 | 12.2 | 5.7 | |
| 11 Pyrene | 6.0 | 4.5 | 7.5 | 2.9 | 5.8 | 5.5 | 8.5 | 5.2 | 2.6 | 2.1 | 7.2 | 4.0 | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.4 | 0.2 | 0.8 | 0.3 | 0.4 | 0.4 | 0.3 | 0.8 | 0.3 | 0.2 | 0.9 | 0.4 | |
| 13 Benzo[ghi]fluoranthene | 1.5 | 1.9 | 5.6 | 3.1 | 4.1 | 2.6 | 3.2 | 2.7 | 0.7 | 0.8 | 2.8 | 1.6 | |
| 14 Benz[a]anthracene | 0.8 | 1.0 | 2.2 | 0.9 | 1.8 | 1.1 | 1.3 | 0.5 | 0.2 | 1.0 | 0.9 | 0.7 | |
| 15 Chrysene | 2.0 | 2.2 | 6.3 | 3.4 | 4.6 | 2.9 | 3.5 | 2.2 | 0.7 | 1.1 | 4.7 | 1.5 | |
| 16 Benzo[j]fluoranthene | 2.3 | 1.5 | 4.6 | 3.1 | 3.7 | 2.2 | 2.2 | 1.0 | 1.4 | 0.8 | 3.5 | 1.0 | |
| 17 Benzo[k]fluoranthene | 1.4 | 0.9 | 2.6 | 1.8 | 2.3 | 1.8 | 1.4 | 0.5 | 1.0 | 0.8 | 2.1 | 1.0 | |
| 18 Benzo[e]pyrene | 1.6 | 1.6 | 3.4 | 2.3 | 3.0 | 3.1 | 3.3 | 1.6 | 0.5 | 0.6 | 2.1 | 0.5 | |
| 19 Benzo[a]pyrene | 1.4 | 1.5 | 2.8 | 1.6 | 2.8 | 2.5 | 2.2 | 1.1 | 0.4 | 0.4 | 1.5 | 0.3 | |
| 20 Perylene | 0.3 | 0.5 | 0.5 | 1.0 | 0.9 | 0.4 | 0.8 | 0.4 | 0.1 | 0.1 | 0.6 | 0.5 | |
| 21 Indeno[1,2,3-cd]pyrene | 3.3 | 1.4 | 3.1 | 2.8 | 3.8 | 2.3 | 2.0 | 1.1 | 1.6 | 2.5 | 5.2 | 1.6 | |
| 22 Benzo[ghi]perylene | 1.4 | 1.8 | 2.8 | 3.0 | 4.8 | 3.9 | 2.7 | 2.4 | 1.2 | 1.1 | 2.6 | 2.2 | |
| Total PAHs (μg/m ³ /month) | 36.7 | 31.1 | 68.4 | 39.6 | 58.3 | 47.9 | 56.0 | 33.1 | 22.6 | 20.5 | 65.4 | 29.6 | |
| ΣCOMB PAHs (μg/m ³ /month) | 27.2 | 22.4 | 49.5 | 28.6 | 43.0 | 33.5 | 39.2 | 23.9 | 14.1 | 14.4 | 44.8 | 20.1 | |
| MP/P ratio | 0.56 | 0.49 | 0.46 | 0.50 | 0.48 | 0.44 | 0.43 | 0.57 | 0.66 | 0.53 | 0.43 | 0.56 | |
| BaP/BeP ratio | 0.86 | 0.93 | 0.80 | 0.70 | 0.92 | 0.82 | 0.68 | 0.70 | 0.78 | 0.56 | 0.73 | 0.63 | |
| (Flu+Pyr)/ΣCOMB (%) | 43 | 39 | 33 | 23 | 28 | 33 | 44 | 45 | 48 | 37 | 43 | 48 | |
| (Phe+Flu+Pyr)/(Phe+ΣCOMB)(%) | 51 | 49 | 43 | 35 | 40 | 45 | 55 | 52 | 57 | 48 | 54 | 56 | |

| PAHs | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 Dibenzothiophene | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.5 |
| 2 Phenanthrene | 4.9 | 2.6 | 2.0 | 4.4 | 4.0 | 3.9 | 5.5 | 3.6 | 6.0 | 7.4 | 12.2 |
| 3 Anthracene | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.7 | 2.6 | 0.8 |
| 4 Methylidibenzothiophene | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.7 | 1.0 | 0.7 |
| 5 Methylidibenzothiophene | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.4 | 0.4 | 1.2 | 1.4 | 0.9 |
| 6 3-Methylphenanthrene | 0.4 | 0.3 | 0.3 | 0.6 | 0.4 | 0.3 | 0.6 | 0.5 | 0.6 | 0.7 | 1.0 |
| 7 2-Methylphenanthrene | 0.7 | 0.3 | 0.4 | 0.5 | 0.5 | 0.4 | 0.7 | 0.5 | 0.8 | 0.9 | 1.4 |
| 8 9-Methylphenanthrene | 0.6 | 0.3 | 0.4 | 0.6 | 0.6 | 0.4 | 0.7 | 0.5 | 0.8 | 1.0 | 1.6 |
| 9 1-Methylphenanthrene | 0.6 | 0.3 | 0.4 | 0.3 | 0.4 | 0.3 | 0.6 | 0.4 | 0.7 | 0.8 | 1.2 |
| 10 Fluoranthene | 3.7 | 2.1 | 1.5 | 3.8 | 3.5 | 2.6 | 4.8 | 2.2 | 4.0 | 7.0 | 10.8 |
| 11 Pyrene | 2.8 | 1.9 | 1.0 | 3.2 | 3.3 | 2.2 | 4.0 | 1.7 | 3.0 | 5.8 | 8.9 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.5 | 0.2 | 0.2 | 0.3 | 0.2 | 0.1 | 3.9 | 0.5 | 0.3 | 0.6 | 0.5 |
| 13 Benzo[ghi]fluoranthene | 0.7 | 0.5 | 0.7 | 1.5 | 1.2 | 0.9 | 1.3 | 0.5 | 0.8 | 1.2 | 1.2 |
| 14 Benz[a]anthracene | 0.4 | 0.2 | 0.1 | 1.0 | 1.1 | 0.5 | 0.5 | 0.3 | 0.5 | 0.4 | 0.3 |
| 15 Chrysene | 0.9 | 0.7 | 0.7 | 2.8 | 2.2 | 1.5 | 1.5 | 0.6 | 1.2 | 1.4 | 1.4 |
| 16 Benzo[j]fluoranthene | 0.9 | 0.8 | 0.7 | 1.8 | 1.8 | 1.2 | 1.4 | 0.6 | 0.9 | 1.3 | 1.3 |
| 17 Benzo[k]fluoranthene | 0.9 | 0.8 | 0.7 | 1.5 | 1.2 | 0.9 | 1.3 | 0.6 | 1.4 | 1.3 | 1.3 |
| 18 Benzo[e]pyrene | 1.6 | 3.0 | 1.4 | 2.2 | 1.5 | 1.2 | 1.3 | 0.5 | 1.9 | 0.7 | 5.3 |
| 19 Benzo[a]pyrene | 0.7 | 2.7 | 1.3 | 1.5 | 1.4 | 1.2 | 0.8 | 0.5 | 1.2 | 0.5 | 4.0 |
| 20 Perylene | 0.2 | 0.3 | 0.4 | 0.2 | 0.1 | 0.6 | 0.6 | 0.1 | 0.0 | 0.1 | 1.1 |
| 21 Indeno[1,2,3-cd]pyrene | 4.3 | 4.9 | 1.4 | 2.8 | 1.8 | 1.1 | 1.6 | 1.1 | 2.4 | 5.2 | 7.5 |
| 22 Benzo[ghi]perylene | 3.9 | 1.9 | 1.1 | 3.1 | 2.3 | 1.1 | 2.4 | 1.5 | 2.4 | 1.6 | 0.8 |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 29.5 | 24.9 | 15.8 | 33.3 | 28.5 | 21.6 | 34.7 | 17.0 | 31.6 | 43.6 | 64.4 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 20.7 | 19.5 | 9.6 | 25.1 | 21.3 | 14.5 | 21.0 | 10.0 | 19.5 | 26.4 | 42.9 |
| MP/P ratio | 0.45 | 0.47 | 0.76 | 0.46 | 0.44 | 0.39 | 0.47 | 0.51 | 0.48 | 0.46 | 0.42 |
| BaP/BeP ratio | 0.45 | 0.89 | 0.91 | 0.68 | 0.91 | 0.98 | 0.65 | 0.90 | 0.62 | 0.73 | 0.76 |
| (Flu+Pyr)/ Σ COMB (%) | 31 | 20 | 26 | 28 | 32 | 33 | 42 | 38 | 36 | 48 | 46 |
| (Pha+Flu+Pyr)/(Pha+ Σ COMB)(%) | 44 | 30 | 39 | 38 | 43 | 47 | 54 | 55 | 51 | 60 | 58 |

表11 全降下物中の多環芳香族炭化水素の降下量（新宿）

| PAHs | No.1 | | | | | | | | | | | | | |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|
| | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | May./94 | | |
| 1 Dibenzothiophene | 0.6 | 0.5 | 0.9 | 1.1 | N.D. | 1.6 | 1.3 | 0.6 | 1.1 | 2.7 | 0.7 | 1.3 | | |
| 2 Phenanthrene | 8.2 | 5.7 | 8.1 | 10.8 | N.D. | 16.1 | 15.9 | 9.5 | 17.4 | 29.7 | 19.7 | 10.1 | | |
| 3 Anthracene | 0.9 | 1.0 | 0.5 | 0.6 | N.D. | 2.5 | 0.7 | 0.4 | 0.6 | 1.2 | 1.2 | 0.9 | | |
| 4 Methylidibenzothiophene | 0.9 | 0.5 | 1.5 | 1.1 | N.D. | 2.5 | 2.8 | 1.0 | 2.1 | 3.1 | 1.7 | 1.9 | | |
| 5 Methylidibenzothiophene | 0.9 | 0.5 | 1.0 | 1.0 | N.D. | 1.1 | 1.9 | 1.4 | 2.1 | 3.4 | 1.3 | 3.0 | | |
| 6 3-Methylphenanthrene | 0.9 | 0.8 | 1.2 | 1.0 | N.D. | 3.0 | 2.8 | 1.5 | 2.0 | 3.6 | 2.4 | 1.2 | | |
| 7 2-Methylphenanthrene | 1.3 | 1.2 | 1.6 | 1.4 | N.D. | 2.9 | 3.7 | 1.8 | 0.5 | 4.6 | 2.6 | 1.7 | | |
| 8 9-Methylphenanthrene | 1.0 | 0.7 | 1.1 | 1.3 | N.D. | 2.8 | 2.7 | 1.6 | 2.1 | 4.1 | 2.2 | 1.8 | | |
| 9 1-Methylphenanthrene | 0.7 | 0.7 | 0.8 | 1.3 | N.D. | 2.2 | 2.5 | 1.3 | 1.8 | 2.2 | 1.8 | 0.9 | | |
| 10 Fluoranthene | 9.5 | 5.3 | 6.3 | 10.7 | N.D. | 17.3 | 18.0 | 9.7 | 13.9 | 23.8 | 13.5 | 8.6 | | |
| 11 Pyrene | 7.7 | 7.6 | 5.6 | 10.3 | N.D. | 16.3 | 15.2 | 8.1 | 12.6 | 19.5 | 13.8 | 8.8 | | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.4 | 0.5 | 0.6 | 1.0 | N.D. | 1.7 | 1.9 | 0.7 | 1.3 | 2.0 | 1.0 | 0.5 | | |
| 13 Benzo[ghi]fluoranthene | 4.1 | 2.5 | 2.8 | 3.6 | N.D. | 10.0 | 3.8 | 2.3 | 3.1 | 8.7 | 2.6 | 2.5 | | |
| 14 Benz[a]anthracene | 0.6 | 1.3 | 1.5 | 2.7 | N.D. | 5.8 | 2.4 | 2.2 | 2.9 | 3.0 | 1.9 | 1.4 | | |
| 15 Chrysene | 8.3 | 5.1 | 5.6 | 7.1 | N.D. | 19.1 | 7.7 | 3.9 | 5.4 | 7.8 | 4.4 | 2.8 | | |
| 16 Benzo[j]fluoranthene | 5.6 | 2.8 | 4.0 | 4.8 | N.D. | 9.2 | 3.6 | 2.5 | 3.7 | 9.3 | 6.3 | 19.6 | | |
| 17 Benzo[k]fluoranthene | 6.4 | 3.1 | 4.5 | 5.5 | N.D. | 8.2 | 4.1 | 1.6 | 2.5 | 6.0 | 4.0 | 10.9 | | |
| 18 Benzo[e]pyrene | 7.9 | 3.4 | 6.1 | 6.1 | N.D. | 10.2 | 4.9 | 3.6 | 5.2 | 7.2 | 4.8 | 8.1 | | |
| 19 Benzo[a]pyrene | 5.5 | 2.2 | 4.0 | 4.4 | N.D. | 7.7 | 3.5 | 2.9 | 4.8 | 5.2 | 3.6 | 7.1 | | |
| 20 Perylene | 0.7 | 0.2 | 0.4 | 0.3 | N.D. | 0.6 | 0.2 | 0.2 | 0.2 | 0.4 | 0.2 | 0.3 | | |
| 21 Indeno[1,2,3-cd]pyrene | 6.9 | 4.7 | 6.5 | 6.9 | N.D. | 15.4 | 5.7 | 4.7 | 6.6 | 4.1 | 2.5 | 1.4 | | |
| 22 Benzo[ghi]perylene | 10.1 | 5.9 | 8.0 | 9.0 | N.D. | 10.4 | 5.7 | 4.7 | 6.2 | 6.4 | 3.0 | 2.2 | | |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 88.9 | 56.1 | 72.6 | 92.2 | N.D. | 166.6 | 110.9 | 66.0 | 98.1 | 158.1 | 95.0 | 97.0 | | |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 72.6 | 43.9 | 54.9 | 71.2 | N.D. | 129.6 | 74.5 | 46.1 | 67.0 | 101.0 | 60.4 | 73.5 | | |
| MP/P ratio | 0.47 | 0.58 | 0.58 | 0.47 | N.D. | 0.67 | 0.74 | 0.66 | 0.55 | 0.49 | 0.45 | 0.55 | | |
| BaP/BeP ratio | 0.70 | 0.64 | 0.65 | 0.72 | N.D. | 0.75 | 0.72 | 0.81 | 0.93 | 0.72 | 0.74 | 0.88 | | |
| (Flu+Pyr)/ Σ COMB (%) | 24 | 29 | 22 | 29 | N.D. | 26 | 45 | 38 | 40 | 43 | 45 | 24 | | |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 31 | 38 | 32 | 39 | N.D. | 34 | 54 | 49 | 52 | 56 | 59 | 33 | | |

| PAHs | No.2 | | | | | | | | | | | | | |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|--|
| | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | May./95 | | | |
| 1 Dibenzothiophene | 1.1 | 0.4 | 1.4 | 0.7 | 0.9 | 0.5 | 0.4 | 0.3 | 0.6 | 0.4 | 0.4 | | | |
| 2 Phenanthrene | 10.7 | 6.4 | 10.0 | 5.4 | 7.1 | 7.4 | 8.1 | 7.9 | 18.6 | 14.5 | 10.7 | | | |
| 3 Anthracene | 1.9 | 0.6 | 1.0 | 0.7 | 0.7 | 0.5 | 0.5 | 0.7 | 1.0 | 1.1 | 1.0 | | | |
| 4 Methylidibenzothiophene | 1.6 | 0.6 | 1.0 | 1.3 | 3.0 | 0.9 | 0.2 | 0.1 | 0.1 | 0.1 | 0.9 | | | |
| 5 Methylidibenzothiophene | 0.8 | 0.6 | 0.9 | 0.3 | 0.8 | 0.8 | 0.9 | 0.5 | 1.4 | 1.0 | 0.9 | | | |
| 6 3-Methylphenanthrene | 1.1 | 0.7 | 1.0 | 0.8 | 1.1 | 0.9 | 1.2 | 1.0 | 2.0 | 1.6 | 1.2 | | | |
| 7 2-Methylphenanthrene | 1.6 | 0.9 | 1.3 | 0.9 | 1.1 | 1.0 | 1.3 | 1.2 | 2.8 | 2.1 | 1.9 | | | |
| 8 9-Methylphenanthrene | 2.0 | 0.8 | 1.4 | 1.1 | 1.2 | 1.1 | 0.9 | 0.7 | 2.2 | 1.9 | 0.9 | | | |
| 9 1-Methylphenanthrene | 1.2 | 0.6 | 1.0 | 0.7 | 0.8 | 0.9 | 0.7 | 2.2 | 2.0 | 1.1 | 1.6 | | | |
| 10 Fluoranthene | 7.7 | 5.9 | 13.6 | 5.2 | 6.5 | 7.8 | 7.8 | 8.1 | 17.6 | 12.3 | 7.5 | | | |
| 11 Pyrene | 8.1 | 5.1 | 11.5 | 4.4 | 5.2 | 7.3 | 5.1 | 6.9 | 12.9 | 9.5 | 5.8 | | | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 1.1 | 0.5 | 1.3 | 0.4 | 0.8 | 0.6 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | | | |
| 13 Benzo[ghi]fluoranthene | 2.9 | 3.4 | 7.5 | 2.3 | 2.3 | 4.6 | 1.4 | 2.5 | 3.8 | 3.0 | 2.1 | | | |
| 14 Benz[a]anthracene | 2.1 | 1.4 | 3.2 | 1.0 | 1.0 | 1.0 | 0.6 | 0.6 | 2.4 | 1.9 | 1.4 | | | |
| 15 Chrysene | 3.2 | 3.8 | 8.3 | 2.6 | 2.6 | 3.0 | 1.3 | 1.9 | 5.9 | 4.4 | 3.5 | | | |
| 16 Benzo[j]fluoranthene | 4.4 | 3.5 | 6.0 | 2.4 | 5.9 | 1.8 | 1.5 | 1.3 | 5.6 | 4.1 | 3.9 | | | |
| 17 Benzo[k]fluoranthene | 4.4 | 2.0 | 4.2 | 1.4 | 1.4 | 1.0 | 0.9 | 0.8 | 3.4 | 2.5 | 2.3 | | | |
| 18 Benzo[e]pyrene | 5.6 | 3.3 | 6.0 | 2.7 | 1.5 | 2.6 | 1.5 | 1.5 | 4.4 | 3.6 | 3.3 | | | |
| 19 Benzo[a]pyrene | 4.3 | 2.0 | 4.1 | 1.6 | 0.9 | 1.5 | 0.8 | 1.0 | 2.6 | 2.3 | 2.4 | | | |
| 20 Perylene | 0.3 | 0.7 | 0.9 | 0.7 | 0.3 | 0.9 | 0.2 | 0.2 | 0.4 | 0.5 | 0.5 | | | |
| 21 Indeno[1,2,3-cd]pyrene | 5.6 | 4.3 | 6.9 | 3.4 | 5.8 | 3.1 | 1.4 | 1.9 | 5.1 | 4.5 | 4.7 | | | |
| 22 Benzo[ghi]perylene | 11.2 | 6.9 | 10.1 | 6.7 | 6.9 | 4.1 | 1.8 | 2.6 | 5.6 | 5.0 | 6.6 | | | |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 82.7 | 54.2 | 102.6 | 46.7 | 57.7 | 53.4 | 38.5 | 44.0 | 100.8 | 77.6 | 63.8 | | | |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 59.4 | 41.6 | 81.4 | 33.6 | 40.0 | 37.9 | 24.1 | 29.2 | 69.2 | 52.9 | 43.5 | | | |
| MP/P ratio | 0.54 | 0.46 | 0.48 | 0.67 | 0.58 | 0.52 | 0.50 | 0.64 | 0.49 | 0.47 | 0.52 | | | |
| BaP/BeP ratio | 0.76 | 0.59 | 0.69 | 0.58 | 0.58 | 0.60 | 0.55 | 0.66 | 0.60 | 0.64 | 0.71 | | | |
| (Flu+Pyr)/ Σ COMB (%) | 27 | 27 | 31 | 28 | 29 | 40 | 54 | 52 | 44 | 41 | 31 | | | |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 38 | 36 | 38 | 38 | 40 | 50 | 65 | 62 | 56 | 54 | 44 | | | |

表12 全降下物中の多環芳香族炭化水素の降下量（稲城）

| PAHs | No.1 | | | | | | | | | | | |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | May./93 | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 |
| 1 Dibenzothiophene | 0.3 | 0.3 | 0.9 | 0.3 | 0.5 | 0.4 | 0.7 | 0.6 | 0.5 | 0.5 | 1.1 | 0.9 |
| 2 Phenanthrene | 1.7 | 1.7 | 9.3 | 4.3 | 10.3 | 2.9 | 10.3 | 11.1 | 8.6 | 8.3 | 17.0 | 7.3 |
| 3 Anthracene | 0.7 | 0.3 | 0.5 | 0.1 | 0.5 | 0.5 | 0.3 | 0.3 | 0.4 | 0.3 | 0.5 | 0.5 |
| 4 Methylidibenzothiophene | 0.7 | 0.5 | 1.4 | 0.6 | 0.5 | 0.3 | 0.8 | 1.1 | 0.6 | 0.6 | 1.8 | 1.0 |
| 5 Methylidibenzothiophene | 0.4 | 0.3 | 0.7 | 0.4 | 0.8 | 0.3 | 0.8 | 0.8 | 0.8 | 1.0 | 1.4 | 0.5 |
| 6 3-Methylphenanthrene | 0.3 | 0.4 | 0.9 | 0.5 | 1.0 | 0.4 | 1.1 | 1.2 | 1.0 | 1.1 | 1.6 | 0.8 |
| 7 2-Methylphenanthrene | 0.3 | 0.3 | 1.2 | 0.6 | 1.2 | 0.3 | 1.2 | 1.5 | 1.4 | 0.2 | 2.1 | 1.0 |
| 8 9-Methylphenanthrene | 0.2 | 0.2 | 1.0 | 0.8 | 1.1 | 0.4 | 1.3 | 1.4 | 1.3 | 1.2 | 2.9 | 0.9 |
| 9 1-Methylphenanthrene | 0.3 | 0.2 | 1.0 | 0.6 | 1.0 | 0.3 | 1.0 | 0.8 | 1.0 | 1.1 | 1.2 | 0.8 |
| 10 Fluoranthene | 2.1 | 2.9 | 6.9 | 3.8 | 11.0 | 3.1 | 7.3 | 10.6 | 11.6 | 11.4 | 15.6 | 8.3 |
| 11 Pyrene | 1.6 | 2.2 | 9.7 | 3.5 | 9.1 | 2.4 | 5.9 | 9.8 | 10.7 | 9.5 | 12.3 | 8.4 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.1 | 0.3 | 0.6 | 0.4 | 0.7 | 0.3 | 0.5 | 1.0 | 0.3 | 0.4 | 0.8 | 0.4 |
| 13 Benzo[ghi]fluoranthene | 0.9 | 1.5 | 2.2 | 1.5 | 2.6 | 0.8 | 2.5 | 2.1 | 3.3 | 2.2 | 3.2 | 1.2 |
| 14 Benz[a]anthracene | 0.4 | 0.8 | 1.5 | 0.6 | 1.0 | 0.5 | 1.0 | 1.2 | 1.1 | 0.9 | 1.2 | 1.6 |
| 15 Chrysene | 1.9 | 3.0 | 4.3 | 3.0 | 5.3 | 1.5 | 5.0 | 4.2 | 4.2 | 4.1 | 4.3 | 2.5 |
| 16 Benzo[j]fluoranthene | 1.0 | 1.8 | 3.9 | 2.0 | 3.5 | 0.7 | 2.5 | 2.0 | 2.6 | 2.9 | 5.3 | 4.0 |
| 17 Benzo[k]fluoranthene | 0.8 | 1.4 | 2.9 | 1.5 | 2.7 | 0.5 | 1.9 | 0.9 | 2.4 | 2.1 | 4.1 | 2.3 |
| 18 Benzo[e]pyrene | 2.4 | 1.8 | 4.9 | 3.4 | 3.5 | 1.8 | 4.4 | 3.3 | 3.7 | 3.1 | 3.4 | 3.3 |
| 19 Benzo[a]pyrene | 1.7 | 1.1 | 3.6 | 2.1 | 2.2 | 1.3 | 3.2 | 2.7 | 2.8 | 2.6 | 2.6 | 2.6 |
| 20 Perylene | 0.3 | 0.1 | 0.9 | 0.5 | 0.3 | 0.1 | 0.3 | 0.1 | 0.2 | 0.4 | 0.3 | 0.3 |
| 21 Indeno[1,2,3-cd]pyrene | 2.2 | 2.2 | 5.6 | 4.0 | 5.8 | 1.1 | 5.3 | 3.2 | 4.2 | 4.0 | 4.9 | 1.5 |
| 22 Benzo[ghi]perylene | 3.1 | 3.5 | 8.4 | 4.8 | 5.9 | 2.0 | 5.4 | 4.7 | 4.1 | 3.9 | 5.8 | 2.9 |
| Total PAHs (μg/m/month) | 23.1 | 26.4 | 72.1 | 39.4 | 70.4 | 21.8 | 62.4 | 64.8 | 66.7 | 61.7 | 93.4 | 53.2 |
| Σ COMB PAHs (μg/m/month) | 17.9 | 22.0 | 53.9 | 30.3 | 52.4 | 15.7 | 39.0 | 44.9 | 50.7 | 46.7 | 62.7 | 38.7 |
| MP/P ratio | 0.59 | 0.61 | 0.44 | 0.58 | 0.41 | 0.44 | 0.44 | 0.44 | 0.53 | 0.55 | 0.46 | 0.47 |
| BaP/BeP ratio | 0.71 | 0.62 | 0.72 | 0.63 | 0.63 | 0.72 | 0.72 | 0.82 | 0.77 | 0.84 | 0.77 | 0.77 |
| (Flu+Pyr)/Σ COMB (%) | 20 | 23 | 31 | 24 | 38 | 35 | 34 | 45 | 44 | 45 | 45 | 43 |
| (Phe+Flu+Pyr)/(Phe+Σ COMB) (%) | 27 | 28 | 41 | 34 | 49 | 45 | 48 | 56 | 52 | 53 | 56 | 52 |

| PAHs | No.2 | | | | | | | | | | | |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 |
| 1 Dibenzothiophene | 0.4 | 0.3 | 0.4 | 0.3 | 0.8 | 0.3 | 0.5 | 0.8 | 0.4 | 0.4 | 0.6 | 1.1 |
| 2 Phenanthrene | 6.6 | 4.9 | 12.0 | 4.7 | 13.5 | 6.3 | 8.6 | 6.0 | 11.0 | 8.2 | 26.4 | 12.1 |
| 3 Anthracene | 0.9 | 0.5 | 1.3 | 0.4 | 1.6 | 0.7 | 0.9 | 0.5 | 0.3 | 0.7 | 1.7 | 0.7 |
| 4 Methylidibenzothiophene | 0.9 | 0.3 | 1.1 | 0.6 | 1.2 | 0.9 | 1.1 | 1.5 | 0.1 | 0.1 | 0.1 | 0.2 |
| 5 Methylidibenzothiophene | 0.6 | 0.2 | 0.5 | 0.2 | 0.8 | 0.3 | 0.5 | 0.9 | 1.1 | 1.5 | 1.9 | 0.5 |
| 6 3-Methylphenanthrene | 0.8 | 0.7 | 0.9 | 0.6 | 1.5 | 0.8 | 0.9 | 0.8 | 1.5 | 1.1 | 2.7 | 1.0 |
| 7 2-Methylphenanthrene | 1.0 | 0.8 | 1.5 | 0.9 | 2.0 | 1.0 | 1.1 | 0.8 | 1.8 | 1.3 | 3.6 | 1.5 |
| 8 9-Methylphenanthrene | 0.9 | 0.9 | 1.2 | 0.8 | 1.5 | 0.9 | 1.0 | 1.0 | 1.8 | 1.3 | 3.0 | 1.2 |
| 9 1-Methylphenanthrene | 0.5 | 0.7 | 1.1 | 0.7 | 1.4 | 0.8 | 0.9 | 0.6 | 1.2 | 0.9 | 2.2 | 1.4 |
| 10 Fluoranthene | 7.2 | 4.2 | 10.4 | 3.3 | 14.3 | 4.9 | 7.8 | 8.4 | 8.9 | 10.2 | 20.7 | 9.9 |
| 11 Pyrene | 9.0 | 3.6 | 9.2 | 2.6 | 9.1 | 3.7 | 6.4 | 7.2 | 6.8 | 6.4 | 12.3 | 6.6 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.4 | 0.3 | 0.9 | 0.2 | 1.2 | 0.3 | 0.3 | 0.6 | 0.2 | 0.2 | 0.4 | 0.2 |
| 13 Benzo[ghi]fluoranthene | 1.5 | 1.4 | 3.2 | 1.0 | 4.2 | 1.2 | 1.4 | 2.1 | 0.8 | 1.6 | 3.2 | 2.1 |
| 14 Benz[a]anthracene | 1.3 | 1.1 | 2.9 | 0.8 | 2.9 | 0.9 | 1.1 | 1.0 | 0.5 | 0.6 | 2.0 | 1.3 |
| 15 Chrysene | 2.5 | 3.0 | 7.0 | 2.2 | 9.9 | 2.6 | 3.0 | 3.4 | 1.8 | 1.8 | 5.2 | 3.3 |
| 16 Benzo[j]fluoranthene | 3.0 | 2.4 | 5.3 | 1.9 | 8.1 | 1.6 | 1.9 | 2.0 | 1.4 | 1.6 | 5.1 | 2.7 |
| 17 Benzo[k]fluoranthene | 2.3 | 1.3 | 3.0 | 1.0 | 4.5 | 0.8 | 0.9 | 1.2 | 0.8 | 0.9 | 3.0 | 1.6 |
| 18 Benzo[e]pyrene | 2.3 | 2.2 | 4.8 | 1.7 | 5.3 | 1.7 | 3.1 | 1.5 | 1.3 | 1.3 | 3.7 | 2.3 |
| 19 Benzo[a]pyrene | 1.9 | 1.7 | 4.0 | 1.4 | 4.0 | 1.1 | 2.5 | 1.1 | 1.0 | 0.8 | 2.5 | 1.7 |
| 20 Perylene | 0.2 | 0.2 | 0.2 | 0.6 | 1.7 | 0.1 | 0.9 | 0.7 | 0.2 | 0.1 | 0.4 | 0.4 |
| 21 Indeno[1,2,3-cd]pyrene | 7.7 | 2.9 | 3.8 | 1.7 | 5.2 | 2.8 | 1.9 | 1.5 | 1.4 | 1.7 | 5.2 | 2.6 |
| 22 Benzo[ghi]perylene | 3.7 | 3.2 | 5.2 | 2.9 | 6.5 | 2.6 | 3.6 | 3.3 | 1.7 | 2.2 | 5.2 | 2.9 |
| Total PAHs (μg/m/month) | 55.5 | 36.7 | 80.0 | 30.5 | 101.0 | 36.1 | 50.3 | 46.7 | 46.0 | 45.1 | 111.1 | 57.3 |
| Σ COMB PAHs (μg/m/month) | 42.3 | 26.9 | 58.8 | 20.5 | 74.0 | 23.7 | 33.6 | 32.6 | 26.4 | 29.2 | 68.1 | 37.0 |
| MP/P ratio | 0.49 | 0.62 | 0.39 | 0.64 | 0.48 | 0.55 | 0.45 | 0.54 | 0.57 | 0.56 | 0.44 | 0.43 |
| BaP/BeP ratio | 0.84 | 0.77 | 0.84 | 0.82 | 0.75 | 0.65 | 0.80 | 0.74 | 0.81 | 0.57 | 0.66 | 0.74 |
| (Flu+Pyr)/Σ COMB (%) | 38 | 29 | 33 | 29 | 32 | 36 | 42 | 48 | 60 | 57 | 48 | 45 |
| (Phe+Flu+Pyr)/(Phe+Σ COMB) (%) | 47 | 40 | 45 | 42 | 42 | 50 | 54 | 56 | 72 | 66 | 63 | 58 |

| PAHs | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 Dibenzothiophene | 0.1 | 0.2 | 0.1 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.8 | 0.5 | 0.4 |
| 2 Phenanthrene | 8.8 | 7.8 | 7.9 | 6.2 | 7.3 | 17.8 | 12.2 | 11.9 | 6.8 | 11.5 | 9.4 |
| 3 Anthracene | 0.6 | 0.6 | 0.5 | 0.7 | 0.5 | 2.2 | 0.8 | 1.3 | 0.5 | 0.7 | 0.8 |
| 4 Methylbenzothiophene | 0.1 | 0.1 | 0.2 | 1.2 | 0.3 | 0.1 | 0.2 | 0.7 | 0.5 | 0.7 | 0.7 |
| 5 Methylbenzothiophene | 0.4 | 0.5 | 0.5 | 0.4 | 0.5 | 1.2 | 0.7 | 0.7 | 0.7 | 1.8 | 0.8 |
| 6 3-Methylphenanthrene | 1.1 | 1.0 | 1.0 | 0.8 | 0.9 | 1.3 | 0.9 | 0.8 | 0.7 | 1.0 | 1.0 |
| 7 2-Methylphenanthrene | 1.3 | 1.5 | 1.5 | 0.7 | 1.1 | 2.0 | 1.3 | 1.2 | 0.8 | 1.6 | 1.2 |
| 8 9-Methylphenanthrene | 1.1 | 1.0 | 1.2 | 1.0 | 0.9 | 1.7 | 1.3 | 1.1 | 0.7 | 1.2 | 1.4 |
| 9 1-Methylphenanthrene | 1.8 | 1.0 | 1.1 | 0.7 | 0.7 | 1.6 | 1.2 | 1.6 | 0.8 | 1.4 | 1.1 |
| 10 Fluoranthene | 6.9 | 6.8 | 4.6 | 4.7 | 6.7 | 11.6 | 7.0 | 9.0 | 5.0 | 9.4 | 11.8 |
| 11 Pyrene | 5.3 | 5.2 | 3.6 | 3.8 | 5.8 | 9.3 | 6.5 | 6.8 | 3.3 | 5.9 | 7.7 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.2 | 0.3 | 0.1 | 0.3 | 0.3 | 0.2 | 0.1 | 0.2 | 0.2 | 0.5 | 0.7 |
| 13 Benzo[ghi]fluoranthene | 1.1 | 1.1 | 1.3 | 1.5 | 1.3 | 2.3 | 1.4 | 1.9 | 0.8 | 1.6 | 1.9 |
| 14 Benz[a]anthracene | 1.0 | 1.3 | 0.7 | 1.0 | 1.0 | 1.4 | 0.8 | 1.1 | 0.2 | 0.6 | 0.7 |
| 15 Chrysene | 2.6 | 3.8 | 2.1 | 3.4 | 2.5 | 2.7 | 1.6 | 2.2 | 0.8 | 1.9 | 2.0 |
| 16 Benzo[j]fluoranthene | 2.5 | 3.9 | 2.5 | 4.2 | 2.6 | 2.4 | 1.5 | 1.7 | 1.1 | 4.7 | 3.5 |
| 17 Benzo[k]fluoranthene | 1.5 | 2.4 | 1.5 | 2.5 | 1.6 | 1.5 | 0.9 | 1.0 | 1.1 | 4.7 | 3.0 |
| 18 Benzo[e]pyrene | 2.1 | 3.1 | 1.8 | 3.3 | 2.1 | 2.1 | 1.4 | 1.6 | 2.8 | 1.8 | 2.5 |
| 19 Benzo[a]pyrene | 1.2 | 1.8 | 1.3 | 1.7 | 1.3 | 1.7 | 1.1 | 1.2 | 1.7 | 1.0 | 1.9 |
| 20 Perylene | 0.1 | 0.3 | 0.1 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 1.3 | 0.5 | 0.3 |
| 21 Indeno[1,2,3-cd]pyrene | 2.6 | 4.1 | 2.6 | 4.5 | 3.1 | 6.6 | 1.6 | 1.4 | 2.3 | 4.6 | 6.4 |
| 22 Benzo[ghi]perylene | 3.2 | 4.4 | 2.9 | 4.9 | 3.3 | 7.6 | 2.3 | 1.4 | 2.6 | 3.4 | 4.0 |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 45.5 | 52.1 | 39.0 | 48.1 | 44.3 | 77.8 | 45.0 | 49.1 | 35.7 | 60.8 | 63.2 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 29.9 | 38.0 | 25.0 | 35.4 | 31.3 | 49.1 | 26.0 | 29.2 | 21.8 | 39.6 | 45.4 |
| MP/P ratio | 0.61 | 0.57 | 0.60 | 0.51 | 0.50 | 0.37 | 0.38 | 0.40 | 0.45 | 0.45 | 0.50 |
| BaP/BeP ratio | 0.58 | 0.57 | 0.73 | 0.53 | 0.62 | 0.78 | 0.80 | 0.78 | 0.62 | 0.57 | 0.76 |
| (Flu+Pyr)/ Σ COMB (%) | 41 | 32 | 33 | 24 | 40 | 43 | 52 | 54 | 38 | 39 | 43 |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 54 | 43 | 49 | 35 | 51 | 58 | 67 | 67 | 53 | 52 | 53 |

表13 全降下物中の多環芳香族炭化水素の降下量 (小作)

| PAHs | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | May/94 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 1 Dibenzothiophene | 0.3 | 0.1 | 0.5 | 0.4 | 0.3 | 0.4 | 0.2 | 1.0 | 0.5 | 1.5 | 0.6 | 0.3 |
| 2 Phenanthrene | 3.3 | 2.3 | 6.2 | 4.6 | 3.6 | 5.2 | 5.2 | 8.9 | 8.0 | 30.4 | 12.5 | 9.8 |
| 3 Anthracene | 0.2 | 0.1 | 0.2 | 0.3 | 0.2 | 0.3 | 0.5 | 0.3 | 0.2 | 1.9 | 1.9 | 0.6 |
| 4 Methylidibenzothiophene | 0.4 | 0.2 | 0.8 | 0.5 | 0.4 | 0.7 | 0.6 | 0.7 | 0.6 | 1.8 | 0.9 | 0.9 |
| 5 Methylidibenzothiophene | 0.4 | 0.3 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 2.3 | 1.0 | 1.9 | 0.6 | 0.6 |
| 6 3-Methylphenanthrene | 0.3 | 0.2 | 0.6 | 0.4 | 0.3 | 0.5 | 0.9 | 0.7 | 0.7 | 3.1 | 1.0 | 1.4 |
| 7 2-Methylphenanthrene | 0.4 | 0.4 | 0.9 | 0.5 | 0.4 | 0.5 | 0.5 | 1.0 | 1.0 | 4.0 | 1.3 | 1.9 |
| 8 9-Methylphenanthrene | 0.4 | 0.5 | 0.8 | 0.6 | 0.4 | 0.6 | 0.7 | 1.6 | 1.2 | 4.4 | 1.6 | 1.7 |
| 9 1-Methylphenanthrene | 0.3 | 0.2 | 0.6 | 0.4 | 0.4 | 0.5 | 0.5 | 0.7 | 0.7 | 2.0 | 1.3 | 0.9 |
| 10 Fluoranthene | 3.7 | 2.3 | 5.2 | 4.4 | 3.3 | 3.8 | 6.8 | 8.9 | 7.4 | 26.8 | 10.2 | 8.1 |
| 11 Pyrene | 3.0 | 2.0 | 4.7 | 3.9 | 3.3 | 3.6 | 5.3 | 7.8 | 5.9 | 17.3 | 10.6 | 7.9 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.3 | 0.3 | 0.7 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 0.3 | 1.5 | 0.9 | 0.5 |
| 13 Benzo[ghi]fluoranthene | 1.7 | 1.1 | 2.4 | 1.7 | 1.5 | 1.2 | 1.6 | 2.6 | 1.4 | 5.6 | 2.3 | 1.1 |
| 14 Benz[a]anthracene | 0.9 | 0.2 | 1.3 | 1.1 | 0.8 | 0.7 | 0.7 | 1.5 | 0.8 | 3.3 | 1.2 | 1.2 |
| 15 Chrysene | 3.4 | 1.7 | 4.8 | 3.5 | 3.0 | 2.3 | 3.2 | 3.8 | 2.3 | 7.9 | 4.9 | 2.6 |
| 16 Benzo[j]fluoranthene | 2.8 | 0.7 | 2.6 | 5.5 | 1.7 | 1.2 | 0.9 | 2.0 | 1.3 | 6.7 | 3.8 | 3.3 |
| 17 Benzo[k]fluoranthene | 2.4 | 0.6 | 3.1 | 4.7 | 1.5 | 1.0 | 0.8 | 1.2 | 0.9 | 5.5 | 2.6 | 2.1 |
| 18 Benzo[e]pyrene | 2.7 | 1.7 | 3.3 | 2.9 | 3.3 | 2.7 | 1.5 | 1.2 | 1.2 | 5.7 | 2.3 | 3.2 |
| 19 Benzo[a]pyrene | 1.6 | 1.4 | 2.3 | 1.6 | 1.5 | 1.8 | 1.0 | 0.9 | 0.8 | 4.6 | 1.5 | 2.5 |
| 20 Perylene | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 1.0 | 0.4 | 0.2 |
| 21 Indeno[1,2,3-cd]pyrene | 3.1 | 2.7 | 5.0 | 3.6 | 2.1 | 1.5 | 2.6 | 1.2 | 1.1 | 5.9 | 3.2 | 2.2 |
| 22 Benzo[ghi]perylene | 4.6 | 3.7 | 6.6 | 5.1 | 4.1 | 2.9 | 2.8 | 1.3 | 1.4 | 7.8 | 4.3 | 3.0 |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 36.4 | 22.8 | 53.2 | 46.8 | 33.1 | 32.3 | 37.6 | 49.9 | 38.8 | 150.6 | 69.7 | 55.9 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 29.8 | 17.9 | 41.2 | 38.1 | 26.1 | 22.6 | 27.3 | 32.3 | 24.5 | 97.1 | 46.9 | 37.1 |
| MP/P ratio | 0.42 | 0.58 | 0.46 | 0.43 | 0.41 | 0.41 | 0.51 | 0.45 | 0.55 | 0.44 | 0.40 | 0.59 |
| BaP/BaP ratio | 0.58 | 0.86 | 0.70 | 0.55 | 0.45 | 0.87 | 0.68 | 0.73 | 0.68 | 0.81 | 0.82 | 0.79 |
| (Flu+Pyr)/ Σ COMB (%) | 22 | 24 | 24 | 22 | 25 | 33 | 44 | 52 | 54 | 45 | 44 | 43 |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 30 | 33 | 34 | 30 | 34 | 45 | 53 | 62 | 66 | 58 | 56 | 55 |

表14 全降下物中の多環芳香族炭化水素の降下量（小河内）

| | | | | | | | | | | | | | No.1 | |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|--|
| PAHs | May./93 | Jun./93 | Jul./93 | Aug./93 | Sep./93 | Oct./93 | Nov./93 | Dec./93 | Jan./94 | Feb./94 | Mar./94 | Apr./94 | | |
| 1 Dibenzothiophene | 0.1 | 0.1 | 0.7 | 0.1 | 0.2 | 0.1 | 0.1 | 0.5 | 0.2 | 0.2 | 1.9 | 0.1 | | |
| 2 Phenanthrene | 1.1 | 1.4 | 8.4 | 1.1 | 2.0 | 1.2 | 2.0 | 1.9 | 2.0 | 3.0 | 11.1 | 5.9 | | |
| 3 Anthracene | 0.6 | 0.3 | 0.4 | 0.1 | 0.3 | 0.4 | 0.2 | 0.3 | 0.2 | 0.3 | 0.9 | 0.4 | | |
| 4 Methylidibenzothiophene | 0.3 | 0.4 | 0.9 | 0.3 | 0.5 | 0.4 | 0.5 | 0.7 | 0.6 | 0.2 | 0.6 | 0.3 | | |
| 5 Methylidibenzothiophene | 0.3 | 0.3 | 0.7 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.2 | 0.6 | 0.5 | | |
| 6 3-Methylphenanthrene | 0.4 | 0.3 | 0.9 | 0.1 | 0.3 | 0.1 | 0.3 | 0.2 | 0.3 | 0.1 | 0.5 | 0.4 | | |
| 7 2-Methylphenanthrene | 0.3 | 0.2 | 0.7 | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 1.2 | 0.5 | | |
| 8 9-Methylphenanthrene | 0.1 | 0.2 | 0.9 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.9 | 0.3 | | |
| 9 1-Methylphenanthrene | 0.1 | 0.1 | 0.6 | 0.1 | 0.2 | 0.1 | 0.4 | 0.4 | 0.1 | 0.2 | 1.4 | 0.8 | | |
| 10 Fluoranthene | 1.5 | 2.0 | 6.1 | 0.9 | 1.7 | 1.2 | 1.4 | 2.0 | 1.8 | 2.7 | 9.2 | 4.4 | | |
| 11 Pyrene | 1.2 | 2.2 | 4.1 | 0.6 | 1.7 | 1.4 | 1.5 | 2.0 | 2.0 | 1.9 | 6.6 | 2.8 | | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.2 | 0.2 | 1.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 1.1 | 1.1 | 0.4 | | |
| 13 Benzo[ghi]fluoranthene | 0.6 | 1.0 | 2.0 | 0.5 | 0.7 | 0.8 | 0.7 | 0.6 | 0.2 | 0.7 | 2.2 | 0.8 | | |
| 14 Benz[a]anthracene | 0.3 | 0.6 | 1.3 | 0.3 | 0.6 | 1.2 | 0.4 | 0.2 | 0.3 | 0.3 | 1.1 | 0.5 | | |
| 15 Chrysene | 1.1 | 2.1 | 4.0 | 1.0 | 1.5 | 1.8 | 1.3 | 1.1 | 0.5 | 0.9 | 3.1 | 1.3 | | |
| 16 Benzo[j]fluoranthene | 0.9 | 1.1 | 3.2 | 0.6 | 1.2 | 0.7 | 0.7 | 0.5 | 0.4 | 0.9 | 2.9 | 1.2 | | |
| 17 Benzo[k]fluoranthene | 0.4 | 0.9 | 3.2 | 0.4 | 0.9 | 0.5 | 0.7 | 0.4 | 0.2 | 0.5 | 1.7 | 0.7 | | |
| 18 Benzo[e]pyrene | 1.1 | 3.3 | 3.4 | 1.0 | 1.5 | 1.9 | 2.2 | 1.0 | 0.5 | 0.7 | 2.2 | 1.0 | | |
| 19 Benzo[a]pyrene | 0.8 | 1.1 | 1.8 | 0.4 | 0.7 | 1.0 | 1.1 | 0.8 | 0.4 | 0.6 | 1.2 | 0.5 | | |
| 20 Perylene | 0.2 | 0.4 | 0.5 | 0.1 | 0.2 | 0.3 | 0.6 | 0.4 | 0.1 | 0.2 | 0.2 | 0.1 | | |
| 21 Indeno[1,2,3-cd]pyrene | 0.9 | 2.2 | 4.7 | 1.1 | 1.6 | 0.8 | 1.0 | 1.1 | 0.4 | 0.6 | 2.4 | 1.8 | | |
| 22 Benzo[ghi]perylene | 2.1 | 2.7 | 5.3 | 1.7 | 2.1 | 1.3 | 1.6 | 1.6 | 0.6 | 0.6 | 3.9 | 1.5 | | |
| Total PAHs (μg/㎡/month) | 14.7 | 22.7 | 54.9 | 11.2 | 18.6 | 16.0 | 17.7 | 16.3 | 11.7 | 16.4 | 56.8 | 26.3 | | |
| ΣCOMB PAHs (μg/㎡/month) | 11.0 | 19.0 | 39.1 | 8.5 | 14.1 | 12.7 | 12.6 | 11.3 | 7.3 | 10.4 | 36.5 | 16.5 | | |
| MP/P ratio | 0.79 | 0.52 | 0.37 | 0.43 | 0.40 | 0.48 | 0.60 | 0.52 | 0.47 | 0.55 | 0.36 | 0.34 | | |
| BaP/BeP ratio | 0.76 | 0.32 | 0.53 | 0.44 | 0.46 | 0.51 | 0.50 | 0.78 | 0.72 | 0.79 | 0.56 | 0.52 | | |
| (Flu+Pyr)/ΣCOMB (%) | 24 | 22 | 26 | 18 | 24 | 21 | 23 | 35 | 52 | 44 | 43 | 43 | | |
| (Phe+Flu+Pyr)/(Phe+ΣCOMB) (%) | 31 | 27 | 39 | 27 | 33 | 27 | 34 | 45 | 62 | 56 | 57 | 58 | | |

| | | | | | | | | | | | | | No.2 | |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|--|
| PAHs | May./94 | Jun./94 | Jul./94 | Aug./94 | Sep./94 | Oct./94 | Nov./94 | Dec./94 | Jan./95 | Feb./95 | Mar./95 | Apr./95 | | |
| 1 Dibenzothiophene | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 | | |
| 2 Phenanthrene | 6.1 | 6.8 | 3.7 | 2.7 | 4.3 | 7.1 | 6.0 | 1.6 | 3.3 | 2.7 | 12.1 | 3.4 | | |
| 3 Anthracene | 0.4 | 0.8 | 0.5 | 0.1 | 0.5 | 0.4 | 0.8 | 0.1 | 0.2 | 0.2 | 0.6 | 0.2 | | |
| 4 Methylidibenzothiophene | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 0.1 | 0.7 | 0.5 | 1.2 | 1.1 | | |
| 5 Methylidibenzothiophene | 0.3 | 0.5 | 1.0 | 0.1 | 0.3 | 0.7 | 0.5 | 0.1 | 0.5 | 0.5 | 1.2 | 0.2 | | |
| 6 3-Methylphenanthrene | 0.4 | 0.4 | 0.1 | 0.2 | 0.4 | 0.1 | 0.5 | 0.2 | 0.3 | 0.3 | 0.7 | 0.3 | | |
| 7 2-Methylphenanthrene | 1.0 | 1.2 | 0.5 | 0.4 | 0.8 | 0.8 | 0.6 | 0.2 | 0.4 | 0.3 | 1.1 | 0.5 | | |
| 8 9-Methylphenanthrene | 0.6 | 0.6 | 0.3 | 0.3 | 0.5 | 0.2 | 0.8 | 0.3 | 0.5 | 0.4 | 1.0 | 0.3 | | |
| 9 1-Methylphenanthrene | 0.5 | 1.0 | 0.7 | 0.2 | 0.4 | 1.5 | 1.1 | 0.2 | 0.2 | 0.2 | 1.7 | 0.5 | | |
| 10 Fluoranthene | 6.3 | 6.7 | 2.7 | 2.4 | 3.3 | 3.4 | 5.2 | 1.3 | 4.2 | 3.7 | 11.6 | 4.5 | | |
| 11 Pyrene | 4.3 | 5.6 | 2.2 | 2.0 | 3.0 | 2.8 | 4.1 | 1.0 | 3.9 | 2.2 | 7.9 | 4.4 | | |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.6 | 0.8 | 0.5 | 0.3 | 0.4 | 0.4 | 0.5 | 0.1 | 0.1 | 0.1 | 0.6 | 0.4 | | |
| 13 Benzo[ghi]fluoranthene | 1.4 | 1.8 | 1.0 | 0.6 | 0.9 | 0.8 | 1.0 | 0.2 | 1.5 | 0.7 | 1.3 | 1.4 | | |
| 14 Benz[a]anthracene | 0.8 | 1.1 | 0.4 | 0.4 | 0.6 | 0.5 | 0.6 | 0.2 | 0.7 | 0.1 | 1.0 | 0.5 | | |
| 15 Chrysene | 2.4 | 2.9 | 1.5 | 1.0 | 1.5 | 0.9 | 1.1 | 0.5 | 2.2 | 0.9 | 3.3 | 2.5 | | |
| 16 Benzo[j]fluoranthene | 2.8 | 3.2 | 1.2 | 1.3 | 1.2 | 1.0 | 0.9 | 0.5 | 1.4 | 0.5 | 3.4 | 1.7 | | |
| 17 Benzo[k]fluoranthene | 1.7 | 1.9 | 0.4 | 0.8 | 0.7 | 0.6 | 0.6 | 0.4 | 0.4 | 0.2 | 2.0 | 1.1 | | |
| 18 Benzo[e]pyrene | 2.1 | 2.5 | 0.6 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 | 0.9 | 0.8 | 2.8 | 1.4 | | |
| 19 Benzo[a]pyrene | 1.1 | 1.5 | 0.3 | 0.5 | 0.5 | 0.3 | 0.4 | 0.5 | 0.6 | 0.5 | 1.7 | 0.9 | | |
| 20 Perylene | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.4 | 1.0 | 0.1 | | |
| 21 Indeno[1,2,3-cd]pyrene | 2.1 | 2.4 | 1.1 | 1.1 | 1.0 | 2.5 | 2.8 | 0.4 | 0.8 | 0.5 | 1.5 | 2.5 | | |
| 22 Benzo[ghi]perylene | 1.9 | 2.7 | 1.5 | 1.5 | 1.0 | 2.8 | 3.5 | 0.7 | 0.7 | 0.8 | 2.4 | 1.9 | | |
| Total PAHs (μg/㎡/month) | 37.2 | 44.8 | 20.4 | 17.1 | 22.3 | 27.9 | 32.2 | 9.6 | 23.6 | 16.6 | 60.1 | 30.0 | | |
| ΣCOMB PAHs (μg/㎡/month) | 26.9 | 32.3 | 12.8 | 12.3 | 14.4 | 16.3 | 20.9 | 6.2 | 17.3 | 10.9 | 38.7 | 22.7 | | |
| MP/P ratio | 0.41 | 0.48 | 0.45 | 0.45 | 0.45 | 0.37 | 0.48 | 0.52 | 0.43 | 0.45 | 0.37 | 0.45 | | |
| BaP/BeP ratio | 0.52 | 0.58 | 0.44 | 0.52 | 0.62 | 0.49 | 0.56 | 0.87 | 0.67 | 0.68 | 0.60 | 0.64 | | |
| (Flu+Pyr)/ΣCOMB (%) | 39 | 38 | 39 | 35 | 43 | 38 | 45 | 37 | 47 | 53 | 50 | 39 | | |
| (Phe+Flu+Pyr)/(Phe+ΣCOMB) (%) | 51 | 49 | 52 | 47 | 56 | 57 | 57 | 50 | 55 | 63 | 62 | 47 | | |

| PAHs | May./95 | Jun./95 | Jul./95 | Aug./95 | Sep./95 | Oct./95 | Nov./95 | Dec./95 | Jan./96 | Feb./96 | Mar./96 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 Dibenzothiophene | 0.4 | 0.3 | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | 0.1 | 0.3 | 0.3 | 0.2 |
| 2 Phenanthrene | 5.7 | 3.7 | 7.4 | 6.4 | 3.2 | 5.7 | 3.3 | 3.5 | 7.9 | 2.7 | 3.9 |
| 3 Anthracene | 0.5 | 0.4 | 0.9 | 0.8 | 0.2 | 0.6 | 0.4 | 0.2 | 0.3 | 0.3 | 0.7 |
| 4 Methylbenzothiophene | 0.8 | 0.4 | 0.5 | 0.4 | 0.7 | 0.5 | 0.7 | 0.3 | 0.3 | 0.4 | 0.5 |
| 5 Methylbenzothiophene | 0.4 | 0.2 | 0.3 | 0.3 | 0.1 | 0.4 | 0.2 | 0.1 | 0.3 | 0.4 | 0.3 |
| 6 3-Methylphenanthrene | 0.4 | 0.2 | 0.3 | 0.7 | 0.3 | 0.3 | 0.2 | 0.3 | 0.5 | 0.2 | 0.6 |
| 7 2-Methylphenanthrene | 0.8 | 0.7 | 1.1 | 1.0 | 0.6 | 0.9 | 0.4 | 0.6 | 1.0 | 0.3 | 0.5 |
| 8 9-Methylphenanthrene | 0.5 | 0.4 | 0.6 | 0.9 | 0.4 | 0.4 | 0.2 | 0.2 | 1.1 | 0.3 | 0.5 |
| 9 1-Methylphenanthrene | 0.5 | 0.7 | 1.3 | 0.6 | 0.3 | 1.4 | 0.7 | 0.5 | 0.8 | 0.4 | 0.4 |
| 10 Fluoranthene | 5.3 | 2.2 | 4.3 | 4.8 | 2.0 | 3.5 | 2.8 | 2.4 | 1.6 | 1.6 | 1.9 |
| 11 Pyrene | 6.2 | 2.6 | 4.3 | 5.9 | 2.0 | 3.6 | 2.6 | 2.2 | 1.3 | 0.9 | 1.5 |
| 12 Benzo[b]naphtho[2,1-d]-thiophene | 0.4 | 0.1 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 | 0.1 | 0.1 | 0.1 |
| 13 Benzo[ghi]fluoranthene | 1.4 | 0.7 | 1.2 | 0.9 | 0.9 | 0.9 | 0.9 | 0.5 | 0.3 | 0.2 | 1.8 |
| 14 Benz[a]anthracene | 0.7 | 0.5 | 0.8 | 1.1 | 0.6 | 0.8 | 0.6 | 0.3 | 0.3 | 0.2 | 0.3 |
| 15 Chrysene | 2.8 | 1.4 | 2.5 | 1.9 | 1.4 | 1.8 | 1.8 | 0.4 | 0.3 | 0.2 | 0.3 |
| 16 Benzo[j]fluoranthene | 1.2 | 2.0 | 1.2 | 2.9 | 1.1 | 1.2 | 1.4 | 0.4 | 1.7 | 1.2 | 1.0 |
| 17 Benzo[k]fluoranthene | 1.1 | 1.3 | 1.0 | 1.7 | 0.9 | 0.8 | 0.7 | 0.3 | 1.7 | 0.8 | 1.0 |
| 18 Benzo[e]pyrene | 1.8 | 1.7 | 4.7 | 4.7 | 1.5 | 1.6 | 1.6 | 0.3 | 1.7 | 1.2 | 0.7 |
| 19 Benzo[a]pyrene | 0.9 | 1.0 | 3.1 | 2.5 | 1.2 | 1.1 | 1.0 | 0.2 | 0.7 | 0.7 | 0.4 |
| 20 Perylene | 0.2 | 0.2 | 1.0 | 0.5 | 0.4 | 0.2 | 0.3 | 0.0 | 0.8 | 0.6 | 0.2 |
| 21 Indeno[1,2,3-cd]pyrene | 2.6 | 0.8 | 1.5 | 1.7 | 0.8 | 1.2 | 2.1 | 0.8 | 2.8 | 0.6 | 0.4 |
| 22 Benzo[ghi]perylene | 2.8 | 1.5 | 1.5 | 2.1 | 0.6 | 1.2 | 1.4 | 0.6 | 0.9 | 0.9 | 1.1 |
| Total PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 37.3 | 22.8 | 39.9 | 42.2 | 19.7 | 28.4 | 23.5 | 14.3 | 26.5 | 14.5 | 18.2 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3/\text{month}$) | 26.7 | 15.7 | 26.1 | 30.1 | 13.0 | 17.6 | 16.9 | 8.4 | 13.2 | 8.6 | 10.3 |
| MP/P ratio | 0.38 | 0.54 | 0.44 | 0.49 | 0.52 | 0.53 | 0.43 | 0.43 | 0.44 | 0.43 | 0.51 |
| BaP/BeP ratio | 0.49 | 0.62 | 0.66 | 0.53 | 0.78 | 0.71 | 0.63 | 0.53 | 0.41 | 0.56 | 0.54 |
| (Flu+Pyr)/ Σ COMB (%) | 43 | 31 | 33 | 36 | 31 | 41 | 32 | 55 | 22 | 29 | 32 |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 53 | 44 | 48 | 47 | 45 | 55 | 43 | 68 | 51 | 46 | 51 |

表16 湿性降下物と全降下物中のn-アルカン、UCM炭化水素、ホパンの降下量と割合(%)

| n-alkane Carbon Number | Nov./93 | | | Dec./93 | | | Dec./94 | | | Aug./95 | | | Sep./95 | | | No.1 |
|----------------------------|---------|--------|----|---------|--------|----|---------|-------|----|---------|--------|----|---------|-------|----|------|
| | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | |
| C20 | 10.2 | 12.0 | 85 | 18.1 | 31.5 | 58 | 4.9 | 12.5 | 39 | 6.3 | 14.9 | 42 | 4.6 | 7.9 | 58 | |
| C21 | 11.9 | 23.1 | 51 | 24.0 | 38.4 | 62 | 6.9 | 15.5 | 45 | 5.0 | 6.3 | 79 | 2.3 | 3.4 | 69 | |
| C22 | 18.0 | 19.2 | 94 | 26.8 | 36.7 | 73 | 9.0 | 17.5 | 51 | 7.0 | 11.1 | 63 | 3.6 | 5.3 | 68 | |
| C23 | 26.5 | 55.5 | 48 | 25.8 | 59.8 | 43 | 8.0 | 17.4 | 46 | 11.6 | 15.1 | 77 | 4.3 | 5.4 | 79 | |
| C24 | 23.6 | 29.7 | 79 | 45.4 | 95.6 | 47 | 10.2 | 13.4 | 76 | 13.8 | 19.8 | 70 | 5.2 | 6.1 | 85 | |
| C25 | 54.7 | 119.6 | 46 | 29.6 | 178.6 | 17 | 11.5 | 28.8 | 40 | 24.7 | 28.9 | 85 | 11.3 | 11.5 | 98 | |
| C26 | 29.4 | 40.0 | 73 | 22.9 | 191.2 | 12 | 9.0 | 14.7 | 61 | 15.2 | 19.0 | 80 | 7.3 | 8.5 | 86 | |
| C27 | 105.3 | 216.7 | 49 | 38.9 | 293.4 | 13 | 16.0 | 38.5 | 42 | 42.5 | 48.9 | 87 | 25.8 | 30.1 | 88 | |
| C28 | 38.8 | 58.9 | 66 | 24.3 | 223.5 | 11 | 9.3 | 19.0 | 49 | 24.9 | 26.0 | 96 | 11.8 | 12.6 | 94 | |
| C29 | 134.6 | 218.3 | 62 | 55.1 | 301.2 | 18 | 29.3 | 70.9 | 41 | 92.4 | 109.2 | 85 | 66.1 | 124.2 | 53 | |
| C30 | 37.2 | 39.5 | 94 | 21.2 | 168.7 | 13 | 7.9 | 20.6 | 38 | 21.4 | 27.0 | 79 | 12.2 | 13.2 | 93 | |
| C31 | 107.7 | 123.6 | 87 | 37.8 | 198.3 | 19 | 20.8 | 56.5 | 37 | 72.2 | 81.8 | 88 | 43.1 | 51.0 | 84 | |
| C32 | 44.0 | 54.7 | 80 | 21.9 | 108.5 | 20 | 7.4 | 23.5 | 31 | 21.4 | 30.7 | 70 | 11.7 | 14.1 | 83 | |
| C33 | 54.1 | 56.1 | 96 | 23.5 | 90.7 | 26 | 10.7 | 34.0 | 31 | 41.8 | 43.0 | 97 | 18.7 | 20.0 | 93 | |
| C34 | 22.7 | 28.6 | 79 | 13.6 | 45.9 | 30 | 4.7 | 18.0 | 26 | 16.3 | 21.2 | 77 | 15.8 | 16.8 | 94 | |
| C35 | 27.6 | 35.8 | 77 | 12.9 | 34.4 | 38 | 8.0 | 22.4 | 36 | 17.5 | 21.6 | 81 | 10.7 | 12.6 | 85 | |
| C36 | 14.0 | 16.2 | 86 | 10.6 | 29.6 | 36 | 3.2 | 11.6 | 28 | 12.6 | 17.3 | 73 | 7.9 | 13.7 | 58 | |
| C37 | 11.2 | 13.5 | 83 | 9.8 | 19.0 | 52 | 2.8 | 11.1 | 25 | 10.4 | 13.6 | 77 | 5.1 | 12.2 | 42 | |
| C38 | 10.5 | 12.1 | 87 | 8.8 | 18.3 | 47 | 2.8 | 10.0 | 28 | 11.4 | 13.4 | 85 | 7.9 | 18.9 | 42 | |
| C39 | 10.9 | 12.9 | 84 | 7.3 | 15.1 | 48 | 2.3 | 6.2 | 37 | 7.6 | 7.8 | 99 | 5.7 | 12.6 | 45 | |
| C40 | 8.7 | 9.2 | 95 | 6.3 | 13.2 | 48 | 1.8 | 6.1 | 30 | 9.6 | 9.8 | 98 | 5.4 | 11.1 | 48 | |
| Total (μg/m ³) | 801.4 | 1195.2 | 67 | 484.5 | 2191.6 | 22 | 186.5 | 468.2 | 40 | 485.7 | 586.1 | 83 | 286.3 | 411.2 | 70 | |
| LMW(ΣC20-C26) | 174.2 | 299.1 | 58 | 192.5 | 631.8 | 30 | 59.5 | 119.8 | 50 | 83.6 | 115.0 | 73 | 38.5 | 48.1 | 80 | |
| HMW(ΣC27-C40) | 627.2 | 896.1 | 70 | 292.0 | 1559.8 | 19 | 127.0 | 348.4 | 36 | 402.1 | 471.1 | 85 | 247.9 | 363.1 | 68 | |
| LMW/Total | 0.22 | 0.25 | | 0.40 | 0.29 | | 0.32 | 0.26 | | 0.17 | 0.20 | | 0.13 | 0.12 | | |
| UCM hydrocarbon | 1355.2 | 1987.5 | 68 | 682.1 | 1384.1 | 49 | 342.0 | 628.6 | 54 | 1655.0 | 1735.1 | 95 | 427.1 | 727.0 | 59 | |
| Hopanes(C29-C33) | 11.0 | 24.8 | 44 | 15.9 | 45.0 | 35 | 9.6 | 29.2 | 33 | 17.5 | 21.0 | 83 | 6.0 | 9.5 | 63 | |

| n-alkane Carbon Number | Nov./95 | | | Dec./95 | | | Jan./95 | | | Feb./95 | | | No.2 |
|----------------------------|---------|--------|----|---------|-------|----|---------|-------|----|---------|-------|----|------|
| | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | |
| C20 | 4.6 | 8.0 | 58 | 7.9 | 8.6 | 92 | 10.5 | 20.6 | 51 | 26.9 | 40.8 | 66 | |
| C21 | 3.4 | 7.7 | 44 | 6.8 | 8.1 | 84 | 5.3 | 14.3 | 37 | 30.6 | 52.7 | 58 | |
| C22 | 4.2 | 7.2 | 58 | 5.4 | 6.3 | 86 | 7.8 | 11.8 | 66 | 25.1 | 47.1 | 53 | |
| C23 | 5.8 | 14.2 | 41 | 4.6 | 8.6 | 53 | 6.6 | 11.8 | 56 | 20.3 | 36.6 | 55 | |
| C24 | 7.8 | 10.8 | 72 | 5.6 | 7.0 | 80 | 9.4 | 10.0 | 94 | 20.5 | 31.0 | 66 | |
| C25 | 12.3 | 43.6 | 28 | 5.8 | 19.8 | 29 | 11.1 | 21.0 | 53 | 18.5 | 40.8 | 45 | |
| C26 | 8.7 | 16.7 | 52 | 4.7 | 9.8 | 48 | 10.7 | 12.8 | 84 | 14.2 | 32.0 | 44 | |
| C27 | 48.4 | 182.7 | 26 | 17.6 | 93.6 | 19 | 31.0 | 78.7 | 39 | 25.6 | 65.1 | 39 | |
| C28 | 14.7 | 39.0 | 38 | 7.6 | 24.4 | 31 | 12.9 | 20.4 | 63 | 15.7 | 38.5 | 43 | |
| C29 | 10.3 | 210.1 | 5 | 28.9 | 135.7 | 21 | 30.7 | 89.9 | 34 | 43.4 | 103.8 | 42 | |
| C30 | 16.6 | 42.3 | 39 | 9.4 | 24.7 | 38 | 11.7 | 18.7 | 63 | 14.8 | 34.9 | 42 | |
| C31 | 69.3 | 191.0 | 36 | 28.5 | 105.6 | 27 | 25.2 | 61.9 | 41 | 38.4 | 94.2 | 41 | |
| C32 | 17.6 | 44.8 | 39 | 10.5 | 25.9 | 41 | 10.6 | 19.2 | 55 | 13.3 | 32.7 | 41 | |
| C33 | 28.1 | 67.3 | 42 | 14.4 | 43.1 | 33 | 13.8 | 34.0 | 41 | 20.5 | 51.5 | 40 | |
| C34 | 14.0 | 30.9 | 45 | 7.8 | 16.8 | 46 | 7.4 | 16.5 | 45 | 10.2 | 23.5 | 43 | |
| C35 | 17.5 | 38.9 | 45 | 9.8 | 25.0 | 39 | 8.2 | 18.6 | 44 | 11.6 | 29.7 | 39 | |
| C36 | 9.3 | 18.6 | 50 | 5.3 | 9.7 | 55 | 3.9 | 7.5 | 52 | 7.6 | 13.4 | 57 | |
| C37 | 6.5 | 14.1 | 46 | 4.8 | 7.1 | 68 | 5.3 | 7.7 | 69 | 6.8 | 13.7 | 49 | |
| C38 | 8.8 | 17.2 | 51 | 7.7 | 9.4 | 82 | 3.7 | 8.7 | 43 | 8.4 | 13.8 | 61 | |
| C39 | 5.8 | 10.5 | 55 | 5.2 | 5.5 | 95 | 4.3 | 4.8 | 90 | 3.6 | 5.9 | 61 | |
| C40 | 6.2 | 8.4 | 74 | 4.8 | 4.9 | 98 | 1.6 | 4.1 | 39 | 3.5 | 5.0 | 71 | |
| Total (μg/m ³) | 319.9 | 1024.0 | 31 | 203.1 | 599.6 | 34 | 231.7 | 493.0 | 47 | 379.2 | 804.6 | 47 | |
| LMW(ΣC20-C26) | 46.8 | 108.2 | 43 | 40.8 | 68.2 | 60 | 61.4 | 102.3 | 60 | 156.1 | 281.0 | 56 | |
| HMW(ΣC27-C40) | 273.1 | 915.8 | 30 | 162.3 | 531.4 | 31 | 170.3 | 390.7 | 44 | 223.1 | 523.6 | 43 | |
| LMW/Total | 0.15 | 0.11 | | 0.20 | 0.11 | | 0.26 | 0.21 | | 0.41 | 0.35 | | |
| UCM hydrocarbon | 270.3 | 524.5 | 52 | 117.2 | 354.0 | 33 | 184.5 | 290.8 | 63 | 501.2 | 622.0 | 81 | |
| Hopanes(C29-C33) | 7.0 | 16.0 | 44 | 6.3 | 23.2 | 27 | 6.1 | 14.7 | 41 | 14.3 | 25.5 | 56 | |

表17 湿性降下物と全降下物中の多環芳香族炭化水素の降下量と割合(%)

| PAHs | No.1 | | | | | | | | | | | | | | |
|---|---------|------|----|---------|------|----|---------|------|----|---------|------|----|---------|------|----|
| | Nov./93 | | | Dec./93 | | | Dec./94 | | | Aug./95 | | | Sep./95 | | |
| | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 |
| Phenanthrene | 7.8 | 10.4 | 75 | 9.9 | 14.1 | 70 | 2.0 | 3.3 | 61 | 4.5 | 5.5 | 82 | 2.8 | 4.0 | 69 |
| Anthracene | 0.2 | 0.6 | 38 | 0.4 | 0.8 | 47 | 0.2 | 0.5 | 40 | 0.5 | 0.5 | 90 | 0.2 | 0.4 | 54 |
| Fluoranthene | 6.6 | 9.3 | 71 | 8.8 | 13.4 | 66 | 3.5 | 5.6 | 62 | 3.8 | 4.8 | 80 | 1.7 | 3.5 | 47 |
| Pyrene | 6.2 | 9.2 | 68 | 6.9 | 11.7 | 59 | 3.0 | 5.2 | 58 | 3.0 | 4.1 | 74 | 1.4 | 3.3 | 43 |
| Benzo[ghi]fluoranthene | 2.3 | 3.6 | 65 | 1.4 | 2.5 | 54 | 1.5 | 2.7 | 55 | 1.6 | 1.9 | 88 | 0.8 | 1.2 | 64 |
| Benzo[a]anthracene | 1.4 | 2.0 | 70 | 1.0 | 1.6 | 60 | 0.2 | 0.5 | 37 | 1.0 | 1.3 | 80 | 0.3 | 1.1 | 24 |
| Chrysene | 2.9 | 3.8 | 75 | 2.8 | 4.9 | 57 | 1.3 | 2.2 | 58 | 3.3 | 3.5 | 93 | 0.9 | 2.2 | 40 |
| Benzo[j]fluoranthene | 1.6 | 2.3 | 68 | 1.3 | 2.1 | 60 | 0.4 | 1.0 | 39 | 3.5 | 3.6 | 98 | 0.7 | 1.8 | 40 |
| Benzo[k]fluoranthene | 1.3 | 1.9 | 67 | 1.5 | 2.6 | 55 | 0.5 | 1.2 | 43 | 2.0 | 2.2 | 91 | 0.4 | 1.2 | 36 |
| Benzo[e]pyrene | 2.1 | 3.2 | 65 | 3.0 | 5.1 | 59 | 0.5 | 1.6 | 31 | 2.5 | 2.8 | 91 | 0.6 | 1.5 | 39 |
| Benzo[a]pyrene | 1.5 | 2.5 | 60 | 1.6 | 3.3 | 49 | 0.2 | 0.7 | 31 | 1.6 | 1.9 | 83 | 0.5 | 1.4 | 36 |
| Indeno[1,2,3-cd]pyrene | 1.4 | 2.2 | 61 | 1.4 | 2.9 | 49 | 0.5 | 1.1 | 48 | 3.0 | 3.6 | 85 | 0.6 | 1.8 | 32 |
| Benzo[ghi]perylene | 2.3 | 5.2 | 43 | 1.7 | 3.7 | 45 | 0.9 | 2.4 | 36 | 2.3 | 3.9 | 59 | 0.9 | 2.3 | 40 |
| Total PAHs ($\mu\text{g}/\text{m}^3$) | 37.5 | 56.2 | 67 | 41.5 | 66.7 | 60 | 14.7 | 27.9 | 53 | 32.6 | 39.4 | 83 | 11.7 | 25.7 | 45 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3$) | 29.5 | 45.2 | 65 | 31.2 | 53.9 | 58 | 12.5 | 24.2 | 52 | 27.6 | 33.3 | 83 | 8.7 | 21.3 | 41 |
| (Flu+Pyr)/ Σ COMB (%) | 44 | 41 | | 50 | 47 | | 52 | 45 | | 25 | 26 | | 36 | 32 | |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 55 | 51 | | 62 | 57 | | 58 | 50 | | 35 | 36 | | 50 | 42 | |

| PAHs | No.2 | | | | | | | | | | | | | | |
|---|---------|------|----|---------|------|----|---------|------|----|---------|------|----|---------|------|----|
| | Oct./95 | | | Nov./95 | | | Dec./95 | | | Jan./96 | | | Feb./96 | | |
| | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 | 湿性 | 全降下物 | 割合 |
| Phenanthrene | 3.6 | 4.3 | 85 | 3.8 | 5.1 | 75 | 2.8 | 3.7 | 76 | 4.5 | 6.0 | 75 | 4.6 | 7.4 | 62 |
| Anthracene | 0.3 | 0.4 | 82 | 0.3 | 0.4 | 68 | 0.3 | 0.4 | 77 | 0.5 | 0.7 | 68 | 1.0 | 2.6 | 38 |
| Fluoranthene | 1.5 | 2.9 | 52 | 2.1 | 4.5 | 47 | 1.8 | 2.2 | 81 | 2.3 | 4.0 | 58 | 4.8 | 7.0 | 69 |
| Pyrene | 1.5 | 2.4 | 63 | 2.6 | 3.8 | 69 | 1.3 | 1.7 | 72 | 2.0 | 3.0 | 67 | 3.0 | 4.8 | 63 |
| Benzo[ghi]fluoranthene | 0.8 | 1.0 | 76 | 0.8 | 1.2 | 66 | 0.4 | 0.5 | 76 | 0.5 | 0.8 | 61 | 0.7 | 1.2 | 53 |
| Benzo[a]anthracene | 0.4 | 0.5 | 70 | 0.3 | 0.5 | 59 | 0.2 | 0.3 | 73 | 0.2 | 0.5 | 40 | 0.3 | 0.4 | 71 |
| Chrysene | 0.9 | 1.6 | 52 | 0.8 | 1.4 | 58 | 0.5 | 0.8 | 82 | 0.5 | 1.2 | 43 | 0.9 | 1.4 | 63 |
| Benzo[j]fluoranthene | 0.7 | 1.4 | 51 | 0.7 | 1.3 | 55 | 0.5 | 0.7 | 80 | 0.3 | 0.9 | 38 | 0.7 | 1.3 | 50 |
| Benzo[k]fluoranthene | 0.6 | 1.0 | 59 | 0.7 | 1.2 | 57 | 0.4 | 0.6 | 63 | 0.6 | 1.4 | 45 | 0.7 | 1.3 | 49 |
| Benzo[e]pyrene | 0.5 | 1.4 | 37 | 0.7 | 1.2 | 59 | 0.4 | 0.5 | 75 | 0.7 | 1.9 | 39 | 0.3 | 0.7 | 48 |
| Benzo[a]pyrene | 0.4 | 1.3 | 30 | 0.5 | 0.8 | 64 | 0.3 | 0.5 | 59 | 0.5 | 1.2 | 43 | 0.2 | 0.5 | 44 |
| Indeno[1,2,3-cd]pyrene | 0.5 | 1.2 | 38 | 0.7 | 1.5 | 47 | 0.6 | 1.2 | 52 | 1.0 | 2.4 | 42 | 1.2 | 5.2 | 23 |
| Benzo[ghi]perylene | 0.6 | 1.2 | 50 | 1.2 | 2.2 | 54 | 0.6 | 1.5 | 40 | 0.8 | 2.4 | 34 | 0.3 | 1.6 | 22 |
| Total PAHs ($\mu\text{g}/\text{m}^3$) | 12.1 | 20.6 | 59 | 15.2 | 25.1 | 61 | 10.0 | 14.4 | 70 | 14.4 | 26.1 | 55 | 18.7 | 35.4 | 53 |
| Σ COMB PAHs ($\mu\text{g}/\text{m}^3$) | 8.2 | 15.9 | 52 | 11.1 | 19.6 | 57 | 6.9 | 10.3 | 67 | 9.5 | 19.5 | 49 | 13.1 | 25.4 | 52 |
| (Flu+Pyr)/ Σ COMB (%) | 36 | 33 | | 42 | 42 | | 44 | 38 | | 45 | 36 | | 60 | 46 | |
| (Phe+Flu+Pyr)/(Phe+ Σ COMB) (%) | 54 | 46 | | 56 | 53 | | 58 | 53 | | 61 | 50 | | 67 | 54 | |

「^{たいきこうかぶつ}大気降下物による^{たまがわりのいき}多摩川流域への^{おせんゆうきぶつ}汚染有機物の
^{ふかかん}負荷に関する^{けんきゅう}研究」 (研究助成・A類 NO. 177)

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