DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Revlon, Inc., Main Production Facility**
Facility Address: **55 Talmadge Road, Edison, New Jersey**
Facility EPA ID#: **NJD002520542**

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental indicators (EIs) are measures being used by the Resource Conservation and Recovery Act (RCRA) Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved) to track changes in the quality of the environment. The two EIs developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While final remedies remain the long-term objective of the RCRA Corrective Action program, the EIs are near-term objectives which are currently being used as program measures for the Government Performance and Results Act of 1993 (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI determination status codes should remain in the Resource Conservation and Recovery Act Information (RCRAInfo) national database system ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

The Revlon, Inc., (Revlon) Main Production Facility is located on a 63.2-acre parcel in Edison Township, Middlesex County, New Jersey. Prior to 1948, the site was used for agricultural purposes. The property was purchased by Johnson & Johnson, Inc., in 1948 and was used as a distribution center for its baby care products until 1956. Revlon purchased the property and began operations in 1956. Revlon's primary manufacturing operations consisted of cosmetic formulations and packaging of lipstick, dusting powder, fragrances, toiletries, nail enamel, and makeup. Raw materials used in manufacturing included natural materials, cosmetic formulations, and a variety of industrial chemicals. In 1985, Revlon entered into a merger agreement with Nicole Acquisition Company. The New Jersey Department of Environmental Protection (NJDEP) viewed this merger as a change of ownership and subjected the property to an investigation under the provisions of the New Jersey (NJ) Environmental Cleanup and Responsibility Act (ECRA). In 1992, Revlon ceased operations at the facility. As a result of the ECRA inspection, 23 areas of concern (AOCs) were identified, most of which have been issued no further action (NFA) determinations. AOCs 5 and 6, both of which have subsurface soil contaminated with arsenic, are capped with asphalt and included in a deed notice. As a result of past facility operations, groundwater is also contaminated at concentrations above the NJ Ground Water Quality Criteria (GWQC). The groundwater contamination is being remediated through operation of a groundwater extraction and treatment system. On July 25, 1999, a development company, Starwood Heller, LLC (Starwood Heller), purchased the property from Revlon. Currently, no manufacturing operations are conducted at this site. However, the facility is currently leased by several tenants for warehousing and office space. Starwood Heller is conducting remediation activities at the site with oversight from NJDEP and EPA.

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _X_ If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

Summary of AOCs: The AOCs listed below have been identified at the facility and are considered for this evaluation. A total of 23 AOCs were identified. Of these, all but two (AOCs 5 and 6) have received NFA determinations for soil. To facilitate investigation and remediation, areas of groundwater contamination have been combined into the Groundwater AOC, as outlined in the discussion below. Refer to Attachment 3 of the approved CA725 for Revlon (Ref. 5) for a map of the AOC locations.

AOC 1 Former Crusher, Dumpster, 4,000-Gallon Holding Tank, and Storm Drain Area: This AOC is located east of the hydrocarbon facility building. The holding tank, dumpster, and storm drain received crusher discharges. Concentrations of beryllium, diethylphthalate, and thallium were detected in the soil at concentrations above the NJ Residential Direct Contact Soil Cleanup Criteria (RDCSCC). However, upon the application of the NJDEP Compliance Averaging procedure, these contaminants in the soil were determined not to be a concern in this area. The Compliance Averaging procedure allows for the average contaminant concentration in an AOC to be used to determine compliance with remediation standards or the soil cleanup criteria, rather than the contaminant concentration of individual samples. The technical rules (at New Jersey Administrative Code [NJAC] 7:26E-4.9(c)3i) specify certain requirements for averaging data. NJDEP approved a NFA determination for soil on May 16, 1995. Shallow groundwater in this area was previously monitored at well MW-21-45, but monitoring was later discontinued due to a consistent lack of detection of groundwater constituents exceeding the NJ GWQC. AOC 1 should not be confused with Groundwater AOC 1, which includes AOCs 11, 12, and 13.

AOC 2 Stained Soil Adjacent to the East Side of the Main Manufacturing Building: Initial soil samples collected at AOC 2 contained volatile organic compounds (VOCs); however, the results of subsequent sampling events reported VOC concentrations below NJ RDCSCC. NJDEP approved a NFA determination for soil on May 16, 1995. AOC 2 was initially classified as a groundwater contamination source location. The primary contaminants of concern were vinyl chloride and trichloroethene, and more recent results (October 2003) also indicate 1,1-dichloroethene concentrations slightly above NJ GWQC. This AOC was determined not to be a source location, and well MW-22-45 was downgraded from a source monitoring well to a compliance monitoring well.

AOC 3 RCRA Drum Storage Pad and Underground Storage Tanks (USTs) 15 and 16: Analysis of initial soil samples from this area revealed thallium at concentrations above NJ RDCSCC. Revlon argued that the thallium contamination encountered in soil was naturally

occurring on a regional scale and not the result of site operations and activities. The NJDEP accepted the facility's position and approved a NFA determination for soil on May 16, 1995.

AOC 4 East Stained Paved Area: This AOC is located east of the main manufacturing building. Soil samples collected from this area were tested for metals and VOCs. The results showed that the concentrations of VOCs and metals in the soil did not exceed NJ RDCSCC. NJDEP approved a NFA determination for soil on May 16, 1995.

AOC 5 North Paved Area Adjacent to the Northwest Face of the Main Production Facility: This paved area extends from the centerline of the facility building to the north corner of the building. Soil samples collected from both surface and subsurface soil in this area contained arsenic concentrations. The arsenic concentrations in the soil are attributable to the use of historical fill material. Arsenic concentrations detected in surface soil were below the NJ RDCSCC; however, arsenic contamination detected in subsurface soil exceeded the NJ RDCSCC. This area is capped with asphalt, which minimizes the infiltration of water through the arsenic-contaminated soil and prevents human exposure. The soil contamination in this area has been addressed by a deed notice.

AOC 6 West Paved Area Adjacent to the Northwest Face of the Main Production Facility: This paved area extends from the centerline of the building to the west corner of the building. Soil samples collected from both surface and subsurface soil in this area contained arsenic concentrations. The arsenic contamination in the soil is attributable to the use of historical fill material. Arsenic contamination in surface soil was below the NJ RDCSCC; however, concentrations in subsurface soil exceeded the NJ RDCSCC. This area is capped with asphalt, which minimizes the infiltration of water through the arsenic-contaminated soil and also prevents human exposure. The soil contamination in this area has been addressed by a deed notice.

AOC 7 Holding Pit and Tank: Soil samples were collected from this area, and no constituents were reported above NJ RDCSCC. NJDEP approved a NFA determination for soil on November 17, 1993.

AOC 8 Northern Field Area: Analysis of initial soil samples collected from this area revealed that thallium was present at concentrations above NJ RDCSCC. Revlon argued that the thallium contamination encountered in soil was naturally occurring on a regional scale and not the result of site operations and activities. The NJDEP accepted this position and issued a NFA determination for soil on May 16, 1995.

AOC 9 Nail Enamel Building Area: Lead and thallium concentrations were detected in soil samples collected from this area. Revlon argued that the thallium contamination encountered in soil was naturally occurring on a regional scale and not the result of site operations and activities. NJDEP amended the RDCSCC for lead from 100 parts per million (ppm) to 400 ppm, which removed lead as a constituent of concern for this area. NJDEP approved a NFA determination for soil on October 7, 1996.

AOC 10 Raw Material Storage Pad: Analytical results from soil samples collected from this area were below NJ RDCSCC. NJDEP approved a NFA determination for soil on November 17, 1993.

AOC 11 Tank Farm 1: This tank farm is located on the west side of the manufacturing building. Soil samples collected from this area revealed that acetone was present above NJ RDCSCC; however, the results of subsequent soil sampling indicated that acetone concentrations were below NJ RDCSCC. NJDEP approved a NFA determination for soil on October 7, 1996. Groundwater samples from monitoring wells adjacent to this AOC (MW-24-45) contained elevated concentrations of acetone (8.01 ppm, April 1999 sampling event). The groundwater contamination at the site is being remediated through operation of a groundwater extraction and treatment system, which according to the latest remedial action progress report (February 2004) has decreased acetone concentrations to below the NJ GWQC of 700 µg/L. In accordance with the NJDEP-approved remedial action work plan (May 16, 1995), this AOC and AOCs 12 and 13 are collectively known as Groundwater AOC 1. This should not be confused with the previously described AOC 1 (former crusher, dumpster, holding tank, and storm drain) for soil.

AOC 12 Holding Pit Located between UST Farms 1 and 2: This AOC is located on the western side of the manufacturing building. Soil samples collected around this holding pit area exhibited concentrations of diethylphthalate above the NJ Impact to Groundwater Soil Cleanup Criteria (IGWCC). Based on the analysis of additional soil and water samples, it was determined that diethylphthalate did not impact site groundwater. However, the result for total organic compounds (TOCs) in the subsurface soil was above the NJ Soil Cleanup Criteria for TOCs of 10,000 ppm. TOC-impacted soil was excavated, and post-excavation soil samples collected from this area indicated that TOCs were below the Soil Cleanup Criteria of 10,000 ppm. NJDEP approved a NFA determination for soil on October 7, 1996. In accordance with the NJDEP-approved remedial action work plan (May 16, 1995), this AOC and AOCs 11 and 13 are collectively known as Groundwater AOC 1.

AOC 13 Aboveground Storage Tank (AST) and UST Farm 2: This AOC is located on the western side of the manufacturing building. Initial soil samples collected from this area revealed that acetone was present above NJ RDCSCC; however, subsequent soil sampling indicated that acetone is present below NJ RDCSCC. NJDEP approved a NFA determination for soil on October 7, 1996. This AOC is considered a source location for acetone contamination in groundwater. The groundwater contamination is being remediated through operation of a groundwater extraction and treatment system. In accordance with the NJDEP-approved remedial action work plan (May 16, 1995), this AOC and AOCs 11 and 12 are collectively known as Groundwater AOC 1.

AOC 14 Transformer Pad Area: Soil samples collected from this area contained concentrations of polychlorinated biphenyls (PCBs). Revlon excavated approximately 260 cubic yards of PCB-contaminated soil and collected post-excavation soil samples. After the application of NJDEP Compliance Averaging procedure, which allows for the average contaminant concentration in an area of concern to be used to determine compliance with remediation standards or the Soil Cleanup Criteria, rather than the contaminant concentration of individual samples, the concentrations of PCBs in the samples were below NJ RDCSCC. NJDEP approved a NFA determination for soil on July 28, 1994.

AOC 15 Area of the Pump House Building: This area includes a 180-gallon AST for diesel fuel oil storage and two 15,000-gallon USTs for No. 6 fuel oil storage. Analysis of soil samples collected from these areas identified total petroleum hydrocarbons (TPHs) in the soil. The two USTs were excavated and disposed of, and contaminated soil in the area of the 180-gallon AST

and the pump house building was removed. Analysis of post-excavation soil samples indicated TPH concentrations in soil below 400 ppm, which is below the NJ Soil Cleanup Criteria for TOC of 10,000 ppm. NJDEP approved a NFA determination for soil on October 7, 1996.

AOC 16 Outflow Area of the Storm Sewer System: Revlon proposed NFA for this area based upon the observations that the storm sewer system did not contain significant quantities of sediment and that the integrity of the storm sewer system was intact. NJDEP approved a NFA determination for soil on May 16, 1995.

AOC 17 Eastern Field Area: Analysis of soil samples collected from this area revealed concentrations of methylene chloride, thallium, and TPH. Revlon argued that the thallium contamination encountered in soil was naturally occurring on a regional scale and not the result of site operations and activities. The facility excavated the methylene chloride and TPH-contaminated soil. Analytical results of post-excavation sampling showed that the methylene chloride and TPH concentrations were below NJ RDCSCC and IGWCC. NJDEP approved a NFA determination for soil on October 7, 1996.

AOC 18 Storm Drain, Catch Basin, and Dumpster and Compactor System Area: Soil samples collected from this area indicated that beryllium was present above NJ RDCSCC. Beryllium concentrations in soil are naturally occurring in this region and arsenic contamination is not a concern in this area; therefore, NJDEP approved a NFA determination on October 7, 1996.

AOC 19 Settling Tank: One sediment and one liquid sample were collected from the settling tank. The results indicated that TPH and VOC concentrations were below NJ RDCSCC. NJDEP approved a NFA determination for soil on May 16, 1995.

AOC 20 Proposed Storm Drain Location: Because the storm drain was not constructed, characterization soil sampling of this area was not required. NJDEP approved a NFA determination for soil on May 16, 1995.

AOC 21 Storm Drain: This AOC is located in the area of the crusher, dumpster, and the paved shipping area. One sediment sample was collected from this area and tested for TPH and VOCs. The TPH concentrations were below the NJ Soil Cleanup Criteria for TOC of 10,000 ppm, and the VOCs concentrations in the sample were below NJ RDCSCC for VOCs of 1 ppm. NJDEP approved a NFA determination for soil on May 16, 1995.

AOC 22 Hazardous Waste Storage Pad Area: Analysis of soil samples collected from this area detected beryllium, cadmium, and lead. After application of NJDEP Compliance Averaging procedure, which allows for the average contaminant concentration in an area of concern to be used to determine compliance with remediation standards or the Soil Cleanup Criteria, rather than the contaminant concentration of individual samples, the concentrations of these contaminants in soil no longer exceeded NJ RDCSCC. Also, analysis of surface soil samples indicated that TPH concentrations were above the NJ Soil Cleanup Criteria for TOC of 10,000 ppm. The contaminated soil was excavated, and analysis of post-excavation soil samples revealed that TPH concentrations were below the NJ Soil Cleanup Criteria for TOC. NJDEP approved a NFA determination for soil on August 8, 1995.

AOC 23 AST 28 and Concrete Pad: Analysis of soil samples collected from this area revealed that no constituent concentrations exceeded NJ RDCSCC. NJDEP approved a NFA determination for soil on May 16, 1995.

References:

1. Ground Water Remedial Action, Year 2 Annual Progress Report. Prepared by DeMaximis, Inc. Dated January 1998.
2. Quarterly Compliance Monitoring Program Reports. Prepared by DeMaximis, Inc., (Year 3, Quarter 1) May 1998, (Year 3, Quarter 2) July 1998, (Year 3, Quarter 3) August 1998.
3. Remedial Investigation Report, AOCs #5 & #6. Prepared by Environmental Waste Management Associates, LLC. Dated February 1999.
4. Quarterly Groundwater Compliance Monitoring Program Reports. Prepared by Environmental Waste Management Associates, LLC., (Year 4, Quarter 1) March 1999, (Year 4, Quarter 2) April 1999, (Year 4, Quarter 3) June 1999.
5. RCRA Corrective Action Environmental Indicator Determination for Revlon, Inc. Main Production Facility (RCRIS Code CA725, Current Human Exposures Under Control). Prepared by Tetra Tech and EPA. Dated October 16, 2000.
6. Remedial Action Progress Report, Volumes 1 and 2. Prepared by EWMA. Dated February 2004.

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   _X_ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   ___ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

   ___ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Groundwater Conditions

The surface geology at the facility is characterized by overburden that consists of a 7- to 20-foot sequence of weathered red to red-brown clayey silt with varying amounts of shale fragments and sand (Ref. 1). The overburden is underlain by the Passaic formation. Groundwater underlying the facility occurs in three water-bearing zones within the Passaic formation. These zones are referred to as the shallow, intermediate, and deep zones. The shallow zone is comprised of weathered to highly weathered red siltstone that has low hydraulic conductivity and poor hydraulic connection with the underlying intermediate zone. The intermediate zone consists of red, hard siltstone that is 15 feet thick, but pinches out to the northwest. The intermediate zone has the highest hydraulic conductivity of the three saturated zones (Ref. 1). Available documents provide little information on the deep bedrock zone; however, it appears from well designations that wells that penetrate the deep zone extend to a maximum depth of 220 feet below ground surface (Ref. 2).

A groundwater extraction and treatment system was implemented on August 9, 1995, to remediate groundwater contamination in the shallow and intermediate zones. Quarterly progress reports have been submitted to the NJDEP since system startup. In 1995, the extraction system consisted of one recovery well (MW-16-120) completed in the intermediate zone. In February 2002, five more monitoring wells (MW-7-40, MW-24-45, MW-16-45, MW-14-42, and MW-13-40) were connected to the recovery system to pump contaminated groundwater, and an additional recovery well (RW-1-65) was completed in the shallow zone to improve system effectiveness (Ref. 2). Groundwater pumped from the seven wells is treated via solids filtration and air stripping before discharging to the Middlesex County Utility Authority sanitary sewer system in accordance with applicable permits.

Prior to operation of the groundwater extraction and treatment system, groundwater flow direction was towards the west and northwest in the shallow and intermediate zones, and north and northwest in the deep zone (Ref. 2). Water level data collected in 2003 indicate that groundwater in the shallow and intermediate zones generally flows radially inward towards the groundwater extraction and treatment system and that groundwater flow in the deep zone is generally towards the north (Ref. 2).

---

[1] "Contamination" and "contaminated" describe media containing contaminants (in any form, NAPL or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Groundwater Quality

Groundwater samples are collected from 15 on-site and 3 off-site wells on a quarterly basis (Ref. 2). Refer to Figures 2 and 8-1 of the Remedial Action Progress Report, dated February 2004, for an illustration of monitoring and recovery well locations (Ref. 2).

Groundwater contamination has been documented at the facility on the eastern and western portions of the manufacturing building. Table 1 presents the maximum concentrations reported in the shallow and intermediate zones during the most recent quarterly groundwater sampling event (October 2003) (Ref. 2). Only those concentrations that exceed NJ GWQC are included in the summary table. The primary constituents of concern are VOCs including acetone, benzene, 1,1-dichloroethene, 1,1-dichloroethane, methylene chloride, trichloroethene, 1,1,1-trichloroethane, trichlorofluoromethane, and vinyl chloride. As indicated in Table 1, contaminant concentrations in the shallow zone are generally one to two orders of magnitude greater than those reported in the intermediate zone. The deep zone is not currently being monitored for water quality. The extraction and treatment system targets the shallow and intermediate zones, since contaminant detections in the deep zone were not significant.

Table 1 - Maximum Contaminant Concentrations Detected in October 2003 (µg/L)

Saturated Zone	Constituent	Well I.D.	Well Type	Concentration	NJ GWQC
Shallow	Acetone	MW-13-40	Recovery	289,000	700
	1,1-dichloroethene	RW-1-65	Recovery	24,000	2
	1,1-dichloroethane	MW-24-45	Recovery	163	70
	Methylene chloride	MW-14-42	Recovery	22,300	2
	Trichloroethene	RW-1-65	Recovery	106,000	1
	1,1,1-trichloroethane	RW-1-65	Recovery	28,000	30
	Trichlorofluoromethane	RW-1-65	Recovery	197,000	2,000*
	Vinyl chloride	MW-16-45	Recovery	3,860	5
Intermediate	Acetone	MW-16-120	Recovery	6,550	700
	Benzene	MW-33-47	Monitoring	1.23	1
	1,1-dichloroethane	MW-13-92	Monitoring	76.4	70
	1,1-dichloroethene	MW-16-120	Recovery	360	2
	Trichloroethene	MW-16-120	Recovery	1,490	1
	1,1,1-trichloroethane	MW-17-155	Monitoring	219	30
	Trichlorofluoromethane	MW-16-120	Recovery	3,470	2,000*
	Vinyl chloride	MW-16-120	Recovery	128	5

Notes:
* = Interim Specific Criteria
µg/L = micrograms per liter
NJ GWQC = New Jersey Groundwater Quality Criteria or the Practical Quantitation Level (PQL), whichever is higher.

Maximum contaminant concentrations in the shallow groundwater zone at the facility on the western portion of the manufacturing building is defined by recovery well RW-1-65 and monitoring wells MW-13-40, MW-14-42, MW-16-45, and MW-24-45 (Table 1) (Ref. 2). Maximum contaminant concentrations in the intermediate zone occur in recovery well MW-16-120 and monitoring well MW-17-155, which are located a few hundred feet downgradient and to the northwest of the maximum concentrations in the shallow zone.

Shallow groundwater contamination on the eastern portion of the manufacturing building is reported in monitoring well MW-22-45, with 1,1-dichloroethene (16.6 µg/L), trichloroethene (485 µg/L), and vinyl chloride (10.7 µg/L) concentrations in excess of NJ GWQC (Ref. 2). Contaminant concentrations in this area are orders of magnitude lower than concentrations documented on the western portion of the manufacturing building in Table 1.

Impacts to shallow groundwater extend off site as evidenced by detections of 1,1-dichloroethene, trichloroethene, trichlorofluoromethane, and vinyl chloride above NJ GWQC in well MW-29-56. However, the lateral extent of contaminated shallow groundwater on the western portion of the manufacturing building appears to be limited. VOCs were not detected in downgradient well MW-27-50 (off site) and were below NJ GWQC in downgradient well MW-18-45 (on site). The intermediate zone underlying shallow well MW-29-56 also contains VOC concentrations in excess of NJ GWQC, as reported in intermediate well MW-29-98 (Ref. 2). The downgradient extent in the intermediate zone is defined by non-detect results for VOCs in downgradient well MW-27-150 (off site) and VOC data collected in downgradient wells at the Amerchol facility (Ref. 2). Data obtained from Amerchol are discussed in more detail in the Question 3 response.

References:

1. Remedial Action Workplan Addendum, Revlon Holdings, Inc - Main Production Facility, Edison, New Jersey, Case No. 85804. Prepared by Andrew Swanson and Stephen Fleischacker of Revlon. Dated August 1994.
2. Remedial Action Progress Report, Volumes 1 and 2. Prepared by EWMA. Dated February 2004.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

_X_ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2].

___ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

___ If unknown - skip to #8 and enter "IN" status code.

Rationale:

In the Remedial Action Progress Report submitted to NJDEP in February 2004, the facility reports that the groundwater extraction and treatment system is maintaining hydraulic control over contaminated groundwater at the site (Ref. 3). NJDEP is in agreement that the groundwater extraction system exerts hydraulic control both on site and in adjacent off-site areas (Ref. 4). Refer to Figures 8-1 and 8-2 of the Remedial Action Progress Report, dated February 2004, for an illustration of current groundwater contours in the shallow and intermediate zones, respectively (Ref. 3). In addition to continued operation of the groundwater extraction and treatment system, the facility has proposed expansion of the extraction and treatment system to include wells MW-13-40 and MW-24-45 (Ref. 3). This system refinement, which has received NJDEP approval (Ref. 4), should further enhance the effectiveness of groundwater remediation and hydraulic control.

As discussed in the response to Question 2, shallow groundwater contamination that extends off site to the west of the facility (reported in MW-29-56) appears to be limited in lateral extent as evidenced by non-detect results for VOCs in downgradient well MW-27-50 (off site) and VOC concentrations below NJ GWQC in downgradient well MW-18-45 (on site). Contaminated groundwater in the intermediate zone underlying shallow off-site well MW-29-56 (reported in MW-29-98) also appears to be limited in lateral extent as evidenced by non-detect results for VOCs in downgradient well MW-27-150 (off site).

Along the northern boundary of the facility, VOC concentrations in intermediate on-site wells MW-15-190 and MW-23-183 exceed NJ GWQC. EPA has expressed concern that groundwater contamination may have migrated off site prior to operation of the extraction and treatment system and is now beyond the capture zone of the extraction system (Ref. 4). Consequently, off-site delineation of contaminant concentrations may be incomplete (Ref. 1). Environmental Waste Management Associates (EWMA), the owner's consultant, responded by noting that there are a number of known contaminated sites in the area

[2] "Existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled or tested in the future for a physical verification that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation), allowing a limited area for natural attenuation.

that have the potential to impact existing off-site wells and any future sentinel wells (Ref. 2), which would make evaluation of any additional off-site data difficult. The EWMA response indicates that the area is heavily industrialized and that chlorinated VOC contamination has been documented at several of the surrounding facilities. To further address EPA's concerns regarding off-site contaminant delineation, NJDEP obtained historic (1987 and 1991) groundwater quality results from the Amerchol facility, located approximately 1,000 feet downgradient and northwest of the Revlon facility. The Amerchol facility manufactures health care products and is in NJDEP's Site Remediation Program. The historic results indicate that five Amerchol wells reported total VOC concentrations ranging from 6 to 158 µg/L. Refer to Figure 2 in the NJDEP letter to Starwood Heller dated July 29, 2004 for a site plan and well location map for the Amerchol facility (Ref. 4). Two of these wells (MW-4 and MW-6) also reported VOC detections in soil, which suggest an independent VOC source on the Amerchol property itself. Non-detected VOC results at two wells (MW-10 and replacement well MW-10A) at the upgradient edge of the Amerchol property (downgradient of Revlon) further suggests that contaminated groundwater from the Revlon facility has not impacted groundwater beneath Amerchol. NJDEP has evaluated these data and concluded that groundwater contamination from the Revlon facility does not exist in downgradient areas to the northwest. Consequently, no further delineation is required (Ref. 4).

References:

1. Letter to Christopher Richter, Environmental Waste Management Associates (EMWA), from Alan Staus, USEPA, Re: Former Revlon Main Production Facility, Edison, Middlesex County, NJ, EPA ID#002520542. Dated May 15, 2002.
2. Letter to Alan Straus, USEPA, from Robert DenBleyker, EWMA, Re: Other Chlorinated VOC Sites Proximal to Revlon Facility, 55 Talmadge Road, Edison, New Jersey, ISRA Case No's 85804 and 98331, EWMA Case No. 200307. Dated February 13, 2003.
3. Remedial Action Progress Report, Volumes 1 and 2. Prepared by EWMA. Dated February 2004.
4. Letter to Scott Heller, Starwood Heller, from Michael Justiniano, NJDEP, Re: Revlon, Inc - Former Main Production Facility (Revlon), 55 Talmadge Road, Edison Township, Middlesex County, ISRA Case #E85804. Dated July 29, 2004.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

___ If yes - continue after identifying potentially affected surface water bodies.

_X_ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination"does not enter surface water bodies.

___ If unknown - skip to #8 and enter "IN" status code.

Rationale:

The nearest major surface water body to the site is the Raritan River, located approximately three miles to the southwest. As discussed in the responses to Questions 2 and 3, the groundwater extraction system has created local groundwater flowpaths towards the extraction wells in the shallow and intermediate zones. Groundwater flow direction outside of the extraction system's radius of influence is towards the north and northwest and away from the Raritan River. The VOC groundwater plume does not discharge to downgradient surface water bodies.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or ecosystems at these concentrations)?

___ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or ecosystem.

___ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

___ If unknown - enter "IN" status code in #8.

Rationale:

Not applicable. See the response to Question 4.

[3]As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

___ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment[5], appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialist, including an ecologist) adequately protective of receiving surface water, sediments, and ecosystems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

___ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or ecosystem.

___ If unknown - skip to 8 and enter "IN" status code.

Rationale:

Not applicable. See the response to Question 4.

[4]Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, an appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5]The study of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field, and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface water, sediment, or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

___ If no - enter "NO" status code in #8.

___ If unknown - enter "IN" status code in #8.

Rationale:

Groundwater quality and flow direction have been monitored at on-site and off-site locations since the groundwater extraction and treatment system was implemented on August 9, 1995. The monitoring program consists of quarterly groundwater sampling at 15 on-site and 3 off-site wells (Ref. 1). The on-site wells consist of nine shallow and six intermediate wells, and the off-site wells consist of one shallow and two intermediate wells. Two on-site shallow wells (MW-15-40 and MW-18-45), an off-site shallow well (MW-27-50), and an off-site intermediate well (MW-27-150) were removed from the quarterly groundwater quality monitoring program due to lack of significant contamination. All groundwater samples are analyzed for VOCs (VO+10) including acetone and ethanol. Wells currently included in the groundwater monitoring program are listed in Table 2 below.

Table 2 - Wells Currently Included in the Quarterly Groundwater Quality Monitoring Program

	Onsite Monitoring Wells	Offsite Monitoring Wells
Shallow Monitoring Wells	MW-7-40, MW-12-67, MW-13-40, MW-14-42, MW-16-45, MW-17-45, MW-22-45, MW-24-45, RW-1-65	MW-29-56
Intermediate Monitoring Wells	MW-13-92, MW-14-130, MW-15-190, MW-16-120, MW-17-155, MW-23-183	MW-29-98, MW-33-47

Groundwater levels also continue to be measured at existing on and off site shallow, intermediate, and deep wells. According to the latest Remedial Action Progress Report, the monitoring program is ongoing and will continue on a quarterly basis (Ref. 1).

References:

1. Remedial Action Progress Report, Volumes 1 and 2. Prepared by EWMA. Dated February 2004.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_X_ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Revlon Inc. Main Production Facility, EPA ID# NJD002520542, located at 55 Talmadge Road, Edison, New Jersey. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

___ NO - Unacceptable migration of contaminated groundwater is observed or expected.

___ IN - More information is needed to make a determination.

Completed by: _____ Date:_____

Lucas Kingston
Hydrogeologist
Booz Allen Hamilton

Reviewed by: _____ Date:_____

Michele Benchouk
Environmental Consultant
Booz Allen Hamilton

_____ Date:_____

Alan Straus, Project Manager
RCRA Programs Branch
EPA Region 2

_____ Date:_____

Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: Original sigbed by: Date: 9/30/2004

Adolph Everett, Chief
RCRA Programs Branch
EPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the USEPA Region 2, RCRA Records Center, located at 290 Broadway, New York, New York.

Contact telephone and e-mail numbers:

Mr. Alan Straus
U.S. Environmental Protection Agency - Region 2
290 Broadway
New York, NY 10007-1866
Ph: (212) 637-4167
E-mail: straus.alan@epa.gov

Attachments

The following attachment has been provided to support this EI determination.

- Attachment 1 Summary of Media Impacts Table

Attachment 1
Summary of Media Impacts Table
Revlon, Inc., Main Production Facility

AREA OF CONCERN	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
AOC 1: Crusher, dumpster, holding tank, and storm drain area	No	No	No	No	No	No	No	NA	VOCs
AOC 2: Stained soil on east side of Manufacturing Bldg.	Yes	No	No	No	No	No	No	GW Monitoring	VOCs
AOC 3: RCRA drum storage pad and USTs 15 & 16	No	No	No	No	No	No	No	NA	NA
AOC 4: Stained paved area east of Manufacturing Bldg.	No	No	No	No	No	No	No	NA	NA
AOC 5: North paved area adjacent to northwest face of Bldg. From centerline to north corner	No	No	Yes	No	No	Yes	No	Addressed by Deed Notice	Arsenic
AOC 6: West paved area adjacent to northwest face of Bldg. From centerline to west corner	No	No	Yes	No	No	Yes	No	Addressed by Deed Notice	Arsenic
AOC 7: Holding pit and tank	No	No	No	No	No	No	No	NA	NA
AOC 8: Northern field area	No	No	No	No	No	No	No	NA	NA
AOC 9: Nail enamel building area	No	No	No	No	No	No	No	NA	NA
AOC 10: Raw material storage pad	No	No	No	No	No	No	No	NA	NA
AOC 11: Tank farm 1	Yes	No	No	No	No	No	No	GW Extraction and Treatment System	VOCs
AOC 12: Holding pit between USTs 1 & 2	No	No	No	No	No	Yes	No	Excavated Contaminated Soil	TOC
AOC 13: Tank farm 2	Yes	No	No	No	No	No	No	GW Extraction and Treatment System	VOCs

Attachment 1
Summary of Media Impacts Table
Revlon, Inc., Main Production Facility

AREA OF CONCERN	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
AOC 14: Transformer pad area	No	No	No	No	No	No	No	Excavated Contaminated Soil	PCBs
AOC 15: Area of the pump house bldg.	No	No	No	No	No	No	No	Excavated Contaminated Soil	TPH
AOC 16: Outflow area from storm sewer	No	No	No	No	No	No	No	NA	NA
AOC 17: Eastern field area	No	No	No	No	No	No	No	Excavated Contaminated Soil	Methylene chloride and TPHs
AOC 18: Storm drain, catch basin, and dumpster and compactor system area	No	No	No	No	No	No	No	NA	NA
AOC 19: Settling tank	No	No	No	No	No	No	No	NA	NA
AOC 20: Proposed storm drain location	No	No	No	No	No	No	No	NA	NA
AOC 21: Storm drain located in the area of crusher/dumpster and paved shipping area	No	No	No	No	No	No	No	NA	NA
AOC 22: Hazardous waste storage pad area	No	No	No	No	No	No	No	Excavated Contaminated Soil	TPH
AOC 23: AST 28 and concrete pad	No	No	No	No	No	No	No	NA	NA

Notes:
PCB = Polychlorinated biphenyl
TCE = Trichloroethene
TOC = Total Organic Carbon
TPH = Total petroleum hydrocarbons