DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA725)
Current Human Exposures 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 (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) 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 "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "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 "Current Human Exposures Under Control" EI is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRAInfo national database 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 Incorporated (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 their baby care products from 1948 to 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 make-ups. 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 NJDEP considered this merger a change of ownership and thus subjected the property to an investigation under the provisions of the NJ Environmental Cleanup and Responsibility Act (ECRA). In 1992 Revlon ceased operations at this facility. As a result of the ECRA inspection, 23 Areas of Concern (AOCs) were identified, many of which have subsequently been issued no further action notices. The remaining AOCs are #5 and #6, which have subsurface soil contamination with arsenic. As a result of past facility operations the groundwater is contaminated at concentrations above the NJDEP Ground Water Quality Standards, which is being addressed by way of a groundwater extraction and treatment system. On July 25, 1999, Starwood Heller, LLC purchased the property from Revlon. Currently, there are no operations at this site and the buildings remain unoccupied. Starwood Heller, LLC is conducting remediation activities at the site with oversight by NJDEP.

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, 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 #6 and enter "IN" (more information needed) status code.

Summary of AOC's: The AOCs listed below have been identified at the facility and are considered for this evaluation. See Attachment # 3 for map of AOCs.

AOC #1: (Former crusher, dumpster and 4,000 gallon holding tank for crusher discharges and storm drain area located east of the hydrocarbon facility building.) Beryllium (Be), thallium (Tl) and diethylphthalate were encountered in the soil above the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC). However, upon the application of the NJDEP Compliance Averaging Procedure, these contaminants were determined not a concern, in soil, in this area. The Compliance Averaging Procedure 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 technical rules at N.J.A.C. 7:26E-4.9(c)3i, specify certain requirements for averaging data. NJDEP approved a no further action determination for soils on May 16, 1995. This AOC is not to be confused with AOC #1 for groundwater which is described later in AOC #11, #12 and #13.

AOC #2: (Stained soils adjacent to the east side of the main manufacturing building.) Initial soil samples taken in this area detected volatile organic compounds (VOCs), however, subsequent sampling events showed VOC levels below NJDEP RDCSCC. AOC #2 was initially classified as a groundwater contamination source location. The primary contaminants of concern were vinyl chloride and trichloroethene. It was subsequently determined that AOC #2 is not a source location and well MW-22-45 has been downgraded from a source monitoring well to a compliance monitoring well. NJDEP approved an no further action determination for soil on May 16, 1995.

AOC #3: (RCRA drum storage pad and underground storage tanks (USTs) #15 and #16.) Initial soil sampling from this area revealed thallium (Tl) at concentrations above NJDEP RDCSCC. Revlon, Inc. claimed that the Tl contamination encountered in site soils was due to a naturally occurring regional Tl condition. Sampling from source monitoring well MW-21-45 has been discontinued due to a consistent lack of detection of groundwater contaminants exceeding the NJDEP Ground Water Quality Criteria. The NJDEP accepted the facility's position that the Tl was naturally occurring and approved a no further action determination for soil on May 16, 1995.

AOC #4: (Stained paved area located east of the main manufacturing building.) Soil samples taken from this area were tested for VOCs and metals. The results showed that the levels of VOCs and metals in the soil did not exceed NJDEP RDCSCC. NJDEP approved a no further action determination for soil on May 16, 1995.

AOC #5: (Paved area adjacent to the northwest face of the Main Production Facility from the centerline of the building to the north corner of the building.) Soil samples taken from this area detected arsenic contamination in both surface and subsurface soils. The arsenic contamination in the soils is attributed to the use of historic fill material. Arsenic contamination in surface soils was found to be below the NJDEP RDCSCC, however, arsenic contamination encountered in subsurface soils still exceed the NJDEP RDCSCC. This area is capped with cement and asphalt which prevents the infiltration of water through the arsenic contaminated soil and also prevents any human exposures. The soil contamination in this area has been addressed by a deed notice.

AOC #6: (Paved area adjacent to the northwest face of the Main Production Facility from the centerline of the building to the west corner of the building.) Soil samples taken from this area showed arsenic in both surface and subsurface soils. The arsenic contamination in the soils is attributed to the use of historic fill material. Arsenic contamination in surface soils was found to be below the NJDEP RDCSCC, however, arsenic contamination encountered in subsurface soils still exceed the NJDEP RDCSCC. This area is capped with cement and asphalt which prevents the infiltration of water through the Arsenic contaminated soil and also prevents any human exposures. The soil contamination in this area has been addressed by a deed notice.

AOC #7: (Holding pit and tank.) Soil samples were taken from this area and no contaminants were encountered above NJDEP RDCSCC. NJDEP approved a no further action determination for soil on November 17, 1993.

AOC #8: (Northern field area.) Initial soil sampling from this area revealed that thallium (Tl) was present at concentrations above NJDEP RDCSCC. Revlon, Inc. claimed that the Tl contamination in site soils was due to a naturally occurring regional Tl condition. The NJDEP accepted this and issued a no further action determination for soils on May 16, 1995.

AOC #9: (Nail enamel building area.) Concentrations of Tl and lead (Pb) were found in soil samples collected from this area. It was determined that the Tl contamination was due to a naturally occurring regional Tl condition. After the NJDEP amended the RDCSCC for Pb from 100 parts per million (ppm) to 400 ppm, Pb was no longer a concern in this area. NJDEP approved a no further action determination for soils on October 7, 1996.

AOC #10: (Raw material storage pad.) All results from soil samples collected from this area were below NJDEP RDCSCC. NJDEP approved a no further action determination for soil on November 17, 1993.

AOC #11: (Tank farm #1 located on the western side of the manufacturing building.) Soil samples collected from this area revealed that 2-propanone was present above NJDEP RDCSCC. However, subsequent soil sampling indicated that 2-propanone concentrations were below NJDEP RDCSCC. NJDEP approved a no further action determination for soil on October 7, 1996. However, groundwater samples from monitoring wells adjacent to this AOC (MW-24-45) show elevated levels of 2-Propanone (8,010 ppb, April 1999). The groundwater contamination at the site is being addressed by the groundwater extraction and treatment system.

In accordance with the NJDEP approved Remedial Action Workplan (May 16, 1995), this AOC along with AOCs #12 and #13 are collectively being referred to as AOC #1 for groundwater contamination. This should not be confused with previously described AOC #1 (Former crusher, dumpster) for soil.

AOC #12: (Holding pit located between underground storage tank farms #1 and #2 located on the western side of the manufacturing building.) Soil samples collected around this holding pit area exhibited concentrations of diethylphthalate above NJDEP Impact to Groundwater Soil Cleanup Criteria. Additional soil and water samples were collected and it was determined that diethylphthalate did not impact site groundwater. However, Total Organic Compounds were encountered in the subsurface soils above the NJDEP Soil Cleanup Criteria Total Organic Compound (TOC) Cap of 10,000 ppm. TOC impacted soils were excavated and post-excavation soil samples taken from this area indicated that TOCs were below the 10,000 ppm cap. NJDEP approved a no further action determination for soil on October 7, 1996.

In accordance with the NJDEP approved Remedial Action Workplan (May 16, 1995), this AOC along with AOCs #11 and #13 are collectively being referred to as AOC #1 for groundwater contamination. This should not be confused with previously described AOC #1 (Former crusher, dumpster) for soil.

AOC #13: (Aboveground and underground storage tank farm #2 located on the western side of the manufacturing building.) Initial soil samples collected from this area revealed that 2-propanone was present above NJDEP RDCSCC. However, subsequent soil sampling indicates that 2-propanone is present below NJDEP RDCSCC. This AOC is still considered a source location for 2-propanone groundwater contamination. NJDEP approved a no further action determination for soil on October 7, 1996. The groundwater contamination at the site is being addressed by the groundwater extraction and treatment system.

In accordance with the NJDEP approved Remedial Action Workplan (May 16, 1995), this AOC along with AOCs #11 and #12 are collectively being referred to as AOC #1 for groundwater contamination. This should not be confused with previously described AOC #1 (Former crusher, dumpster) for soil.

AOC #14: (Transformer pad area.) Soil samples collected from this area detected polychlorinated biphenyls (PCBs). Revlon, Inc. 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, it was determined that the levels of PCBs in the samples were below NJDEP RDCSCC. NJDEP approved a no further action determination for soil on July 28, 1994.

AOC #15: (Area of the pump house building, including an aboveground 180 gallon diesel fuel oil storage tank and two 15,000 gallon #6 fuel oil underground storage tanks.) Soil samples collected from these areas showed total petroleum hydrocarbons (TPHs). The two underground storage tanks were excavated and removed and all contaminated soil in the areas of the 180 gallon aboveground storage tank and the Pump House Building were also removed. Post-excavation soil samples showed TPH levels in soil below 400 ppm, which is below the NJDEP Soil Cleanup Criteria Total Organic Compound cap of 10,000 ppm. NJDEP approved a no further action determination for soil on October 7, 1996.

AOC #16: (Outflow area of the storm sewer system.) Revlon, Inc. proposed no further action 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 no further action determination for soil on May 16, 1995.

AOC #17: (Eastern field area.) Soil samples taken from this area detected Thallium (Tl), TPH and methylene chloride. The Tl found at the site was due to a naturally occurring regional Tl condition and the TPH and methylene chloride contaminated soils were excavated. Post-excavation samples showed that the TPH and methylene chloride concentrations were below NJDEP RDCSCC and Impact to Groundwater Soil Cleanup Criteria. NJDEP approved a no further action determination for soil on October 7, 1996.

AOC #18: (Storm drain, catch basin and dumpster/compactor system area.) Soil samples taken from this area indicated that beryllium was present above NJDEP RDCSCC. However, NJDEP accepted Revlon, Inc's request for no further action on October 7, 1996 due to findings that beryllium levels in soil are naturally occurring and that arsenic contamination is not a concern in this area.

AOC #19: (Settling tank.) One sediment and one liquid sample were taken from the Settling Tank. The results showed that VOC and TPH concentrations were below NJDEP RDCSCC. NJDEP approved a no further action determination for soil on May 16, 1995.

AOC #20: (Proposed storm drain location.) Because the storm drain was never constructed, this area was never characterized as an Area of Environmental Concern. Therefore, characterization soil sampling of this area was not required. NJDEP approved a no further action determination for soil on May 16, 1995.

AOC #21: (Storm drain located in the area of the crusher/dumpster and paved shipping area.) One sediment sample was taken from this area and tested for VOCs and TPHs. The VOCs were below NJDEP RDCSCC for VOCs of 1 ppm, and the TPH concentrations were below the NJDEP Total Organic Compound cap of 10,000 ppm. NJDEP approved a no further action determination for soil on May 16, 1995.

AOC #22: (Hazardous waste storage pad area.) Soil samples taken from this area detected lead, cadmium and beryllium. 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 were shown not to exceed NJDEP RDCSCC. Also, surface soil samples indicated TPH concentrations which were above NJDEP Total Organic Compound cap of 10,000 ppm. The contaminated soil was excavated and post-excavation soil samples revealed that TPH levels were below the NJDEP Total Organic Compound cap. NJDEP approved a no further action determination for soil on August 8, 1995.

AOC #23: (Aboveground storage tank #28 and concrete pad.) All soil samples taken from this area revealed levels which did not exceed NJDEP RDCSCC. NJDEP approved a no further action determination for soil on May 16, 1995.

Reference(s):

(1) Remedial Investigation Report – AOC's #5 & #6, February 1999, Environmental Waste Management Associates, LLC.
(2) Ground Water Remedial Action – Year 2 Annual Progress Report, January 1998, DeMaximis, Inc.
(3) Quarterly Compliance Monitoring Program Report (Year3/Quarter1) May 1998, (Year3/Quarter2) July 1998, (Year3/Quarter3) August 1998, DeMaximis, Inc.
(4) Quarterly GW Compliance Monitoring Program Report (Year4/Quarter1) March 1999, (Year4/Quarter2) April 1999, (Year4/Quarter3) June 1999, Environmental Waste Management Associates, LLC.
(5) Site Map, February 1999, Environmental Waste Management Associates, LLC.

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	**Yes**	**No**	**?**	**Rationale/Key Contaminants**
Groundwater	X			AOCs #1,#3,#11,#12 and #13 Vinyl Chloride, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,1,1-Trichloroethane, Trichloroethene, 2-Propanone (Acetone)
Air (indoors)[2]	X			1,1-Dichloroethene, Trichloroethene, Vinyl Chloride
Surface Soil (e.g. < 2 ft.)		X		
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g. > 2 ft.)	X			AOC's #5 & #6 Arsenic
Air (outdoors)		X		

_____ If no (for all media) - skip to #6, and enter YE, status code after providing or citing appropriate levels, and referencing sufficient supporting documentation demonstrating that these levels are not exceeded.

__X__ If yes (for any media) - continue after identifying key contaminants in each contaminated medium, citing appropriate levels (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter IN status code.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Rationale:

Groundwater: Groundwater at the facility is present in three water-bearing units beneath the site. These units include the shallow zone, intermediate and deep zones. These units are hydraulically connected but exhibit different hydraulic characteristics such as flow direction and velocity. Groundwater flow at the facility is generally from east to west. Groundwater is contaminated at the site on the eastern, central and western portions of the facility in the shallow, intermediate and deep zones. As a result, a groundwater extraction and treatment system was implemented on August 9, 1995 and progress reports have been submitted to the NJDEP each quarter since. The extraction well for the groundwater extraction system is MW-16-120, and this well is screened in the intermediate zone. Groundwater in the intermediate zone flows towards the extraction well. Groundwater in the shallow zone also flows towards the extraction well, however, there is westerly flow component on the western edge of the site. Groundwater flow in the deep zone is generally from south to north. According to the USGS, the nearest major surface water body to the site is the Raritan River that is located approximately 3 miles southwest.

Based on the Quarterly Groundwater Compliance Monitoring Program Report (April 1999), the contaminants listed in the table below are still present at levels above the NJDEP Ground Water Quality Criteria (GWQC) for Class IIA groundwaters. Based on the latest monitoring reports submitted to NJDEP, the facility reports that the groundwater extraction and treatment system is maintaining hydraulic control over the contaminated groundwater zones at the site. Although groundwater elevations continue to be monitored in the deep zone at the facility (to determine the effectiveness of the extraction well), current groundwater quality data for the deep zone is not being collected. The tables below summarize the groundwater contaminants, the most recently detected concentrations and the respective GWQC. Monitoring wells MW-29-56 (screened in the shallow zone) and MW-29-98 (screened in the intermediate zone) were selected and shown below because they are located off-site, are the furthest monitoring points downgradient of the tank farms (Groundwater AOC #1) with current data and represent both the shallow and intermediate zones. It is believed that these wells are within the capture zone of the extraction well. The NJDEP is requiring Starwood Heller, LLC to fully delineate the extent of the capture zone, especially within the vicinity of MW-33-47 and MW-34-47 which are located further south from MW-29-56 and MW-29-98.

Contaminant	Concentration (MW-29-56)	Concentration (MW-29-98)	NJDEP GWQC
Vinyl chloride	6.12	8.33	5
1,1-Dichloroethene	ND	21	2
1,1-Dichloroethane	2.14	23.4	70
1,1,1-Trichloroethane	ND	ND	30
Trichloroethene	11.1	140	1
Acetone	ND	ND	700

Note: ND = Not Detected. Also, all concentrations shown above are in µg/L (ppb)

See Attachment #4 for monitoring well location map.

Attachment #1 (Summary of Media Impacts Table) shows AOCs which impacted groundwater. See Attachment #2 (Corrective Action Status Sheet) for a summary of corrective action measures implemented at this site.

Air (indoors): Indoor air quality can be adversely impacted in structures located above and adjacent to groundwater contaminated with volatile contaminants. VOCs exist in the groundwater beneath the Revlon facility. The Johnson and Ettinger Model for Subsurface Vapor Intrusion into Buildings indicates the possibility of unacceptable indoor air quality in the manufacturing building at this facility due to contaminants in groundwater beneath the building. The contaminants of concern are 1,1-dichloroethene, trichloroethene and vinyl chloride. Two on-site wells containing VOCs in excess of NJDEP GWQC were evaluated using the Johnson-Ettinger model to determine if there were potential indoor air risks on-site. In April 1999, vinyl chloride was detected in MW-22-45 at 230 ppb. This well was selected to determine if shallow contaminated groundwater in the eastern portion of the facility, which flows in a westerly direction under the building, is impacting indoor air quality. The Johnson-Ettinger model results indicate an incremental risk of 1.2×10^{-4}. However, the incremental risk of 1.2×10^{-4} is at the lower end of the EPA risk management range of 1×10^{-6} to 1×10^{-4}, and the full extent of the vinyl chloride contamination is unknown in this area, therefore, the possibility of unacceptable indoor air quality exists.

Since groundwater generally flows from east to west, one monitoring well in the shallow zone on the western side of the building was also selected to determine if groundwater flowing beneath the facility may be impacting indoor air quality. In January 1999, 1,1-dichloroethene was detected in MW-14-42 at 3,590 ppb. The Johnson-Ettinger model results indicate an incremental risk of 9.3×10^{-4} which is not within the EPA risk management range of 1×10^{-6} to 1×10^{-4} (see Attachment #5 for 1,1-dichloroethene results). Therefore, the possibility of unacceptable indoor air quality exists. However, there are currently no manufacturing operations being conducted at the Revlon facility and the building is currently not occupied, therefore, indoor air exposures are not a concern on site.

Since there is an apartment complex located approximately 1,000 feet west of the facility, results from the model were used to determine if indoor air risks would be present in the apartments. Since groundwater quality data does not exist at the apartment complex, data from MW-29-56, which is located off-site and closest to the apartment complex, was used to represent the groundwater concentrations in the shallow zone beneath the complex. It should be noted that MW-29-56 is located within the capture zone of the extraction well MW-16-120. As a result, migration of contaminated groundwater is impeded. The contaminants of concern are trichloroethene and vinyl chloride. Results from the Johnson-Ettinger model using groundwater quality data from this well indicate incremental risks below the EPA risk management range of 1×10^{-6} to 1×10^{-4}. Specifically, the incremental risk for trichloroethene, and vinyl chloride are 6.9×10^{-9} and 6.6×10^{-7}, respectively (see Attachment #5 for vinyl chloride results). Therefore, indoor air risks are not a concern either on-site or off-site.

Surface Soil (e.g., <2 ft.): After application of NJDEP Compliance Averaging Procedure, levels of surface soil contamination at several AOCs were determined to be below NJDEP

RDCSCC. Therefore, there has been no exceedence of criteria. See also AOC descriptions for no further action determinations regarding surface soil at AOCs.

Surface Water: There are no surface water bodies on or bordering this facility. According to the USGS topographic map, the nearest major surface water body to the site is the Raritan River that is located approximately 3 miles southwest. Therefore, contaminated surface water is not a concern at this facility.

Sediment: Due to the lack of water bodies and the fact that sediment samples from storm water drains were sampled and found to be below NJDEP RDCSCC, contaminated sediment is not a concern at this facility.

Subsurface Soil (e.g., > 2ft.): A remedial investigation for AOCs # 5 and #6 was performed on November 4 and 5, 1998 via installation of borings and collection of soil samples for laboratory analysis. Results of the investigation are contained in the remedial investigation report prepared for NJDEP in February 1999. The soil samples collected successfully delineated the extent of the arsenic contamination and fill material within AOCs #5 & #6. Arsenic contamination detected in the soil is from historic fill material that was used to raise the elevation at both AOCs. A total of fourteen borings were installed within AOCs #5 & #6. A total of twenty six soil samples were collected for laboratory analysis. The laboratory analysis revealed levels of arsenic in the soil as high as 30.7 ppm in shallow and deep "hot spots". The NJDEP RDCSCC and the NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC) for arsenic is 20 ppm. Asphalt and concrete paving covers this area. Arsenic contamination in AOCs #5 and #6 does not pose a threat to human health or the environment. Attachment #1 (Summary of Media Impacts Table) shows that AOC #5 and #6 have impacted subsurface soil.

Air (outdoors): The contamination in the soils is arsenic which does not volatilize. Outdoor air exposures are only a concern if there are open or vented units such as surface impoundments which contain volatile organics. Ambient air problems are not considered likely from underground aquifers. Therefore, outdoor air quality is not considered a concern at this facility.

Reference(s):

(1) Remedial Investigation Report – AOC's #5 & #6, February 1999, Environmental Waste Management Associates, LLC.
(2) Ground Water Remedial Action – Year 2 Annual Progress Report, January 1998, DeMaximis, Inc.
(3) Quarterly Compliance Monitoring Program Report (Year3/Quarter1) May 1998, (Year3/Quarter2) July 1998, (Year3/Quarter3) August 1998, DeMaximis, Inc.
(4) Quarterly GW Compliance Monitoring Program Report (Year4/Quarter1) March 1999, (Year4/Quarter2) April 1999, (Year4/Quarter3) June 1999, Environmental Waste Management Associates, LLC.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
*Potential **Human Receptors** (Under Current Conditions)*

Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No	--	--	No
Air (indoors)	No	No	No	--	--	--	–
~~Soil (surface, e.g. < 2 ft.)~~							
~~Surface Water~~							
~~Sediment~~							
Soil (subsurface e.g. > 2 ft.)	--	--	--	No	--	--	No
~~Air (outdoors)~~							

Instruction for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated"Media — Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces. These spaces instead have dashes ("--"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

__X__ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Rationale:

Groundwater: Although groundwater is contaminated as discussed in the rationale section of Question #2, there are no drinking water wells on-site or within close proximity to contaminated groundwater off-site. Based on a well search conducted by the NJDEP in March 2000 and discussions with NJDEP in August 2000, there is only one public drinking water supply well within a 6,000 foot radius of the Revlon facility. This well is owned by the Edison Water Department, is currently inactive, and is located 3,679 feet south (upgradient) of the facility. Therefore, exposure to contaminated groundwater is not a concern on-site or off-site.

In addition, workers maintaining the groundwater extraction and treatment system are expected to be wearing the appropriate personal protective equipment (PPE), therefore, exposure to contaminated groundwater is not expected.

Indoor Air: As discussed previously in the rationale section of Question #2, the Johnson and Ettinger Model For Subsurface Vapor Intrusion Into Buildings indicates the possibility of unacceptable indoor air quality on-site at this facility. However, there are currently no manufacturing operations being conducted and the building is currently unoccupied, therefore, indoor air risks are not a concern on-site. Also, the Johnson-Ettinger model results indicate incremental risks below the EPA risk management range for the off-site apartment complex. The extraction well is impeding off-site migration of contaminated groundwater. Therefore, indoor air risks are not a concern either on-site or off-site.

Subsurface Soil: The arsenic contaminated subsurface soils at AOC #5 and AOC #6 at the Revlon facility are capped and have a deed notice (as described under Questions #1 and #2 above), therefore, no exposures are possible.

Reference(s):

(1) Demonstration of Clean Closure, May 1990, GZA Associates.
(2) Remedial Investigation Report – AOC's #5 & #6, February 1999, Environmental Waste Management Associates, LLC.
(3) Ground Water Remedial Action – Year 2 Annual Progress Report, January 1998, DeMaximis, Inc.
(4) Quarterly Compliance Monitoring Program Report (Year3/Quarter1) May 1998, (Year3/Quarter2) July 1998, (Year3/Quarter3) August 1998, DeMaximis, Inc.
(5) Quarterly GW Compliance Monitoring Program Report (Year4/Quarter1) March 1999, (Year4/Quarter2) April 1999, (Year4/Quarter3) June 1999, Environmental Waste Management Associates, LLC.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

This question is not applicable, see answer to Question 3.

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

This question is not applicable, see answer to Question 3.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

__X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Revlon, Inc. –Main Production Facility**, EPA ID # **NJD002520542**, located at **55 Talmadge Road, Edison, NJ.** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

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

Completed by: _____ Date: _____
John Kober, Environmental Scientist
Tetra Tech EM Inc.

Reviewed by: _____ Date: _____
Douglas Sullivan, Project Manager
Tetra Tech EM Inc.

_____ Date: _____
Alan Straus, EPA Project Manager
RCRA Programs Branch
EPA Region 2

_____ Date: _____
Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: Original signed by: _____ Date: 10/16/2000
Raymond Basso, Chief
RCRA Programs Branch
EPA Region 2

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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Attachments

The following attachments have been provided to support this EI determination.

- Attachment 1 - Summary of Media Impacts Table
- Attachment 2 - Corrective Action Status Sheet

Attachment 1 - Summary of Media Impacts Table

Revlon, Inc. Main Production Facility

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
AOC #1: Crusher, Dumpster and Holding Tank area	Yes	Yes	No	No	No	No	No	GW Extraction and Treatment System	VOCs
AOC #2: Stained soil East side of Manufacturing Bldg.	No	No	No	No	No	No	No	NA	NA
AOC #3: RCRA Drum Storage Pad and UST's #15 & #16	Yes	No	No	No	No	No	No	GW Extraction and Treatment System	VOCs
AOC #4: Stained paved area east of Manufacturing Bldg.	No	No	No	No	No	No	No	NA	NA
AOC #5: Paved area adjacent to northwest face of Bldg. From centerline to north corner.	No	No	No	No	No	Yes	No	Addressed by Deed Notice	Arsenic
AOC #6: Paved area adjacent to northwest face of Bldg. From centerline to west corner.	No	No	No	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	2-Propanone (Acetone)
AOC #12: Holding pit	Yes	No	No	No	No	No	No	GW Extraction and	2-Propanone

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
between UST's #1 & #2.								Treatment System	(Acetone)
AOC #13: Tank Farm #2.	Yes	No	No	No	No	No	No	GW Extraction and Treatment System	2-Propanone (Acetone)
AOC #14: Transformer pad area.	No	No	No	No	No	No	No	Excavate Contaminated Soil	PCB's
AOC #15: Area of the Pump House Bldg.	No	No	No	No	No	No	No	Excavate Contaminated Soil	Petroleum Hydrocarbons
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	Excavate Contaminated Soil GW Extraction and Treatment System	Methylene Chloride and TPHs
AOC #18: Storm drain, catch basin and dumpster/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	Excavate Contaminated Soil	Petroleum Hydrocarbons
AOC #23: AST #28 and concrete pad.	No	No	No	No	No	No	No	NA	NA

Attachment 2
Corrective Action Status Sheet

Revlon, Inc. Main Production Facility
55 Talmadge Road, Edison, NJ
EPA ID# NJDEP002520542

Corrective Action Measure	Description	Location at Facility	Start Date	Complete Date	Objective of Measure	Have objectives been met?
Excavate Contaminated Soil	Excavate approximately 260 cubic yards of PCB contaminated soil.	AOC #14	9/91	12/91	Remove contaminated soil and eliminate potential human exposure	Yes
Excavate and remove UST's	Excavate and remove UST's #17 & #18 and surrounding contaminated soil	AOC #15	6/4/92	6/5/92	Remove contaminated soil and sources of additional contamination.	Yes
Excavate Contaminated Soil	Excavate and remove Methylene Chloride and TPH contaminated soil	AOC #17	1994	1995	Remove a potential source of groundwater contamination.	Yes
Excavate Contaminated Soil	Excavate and remove soils contaminated with metals and TPHs	AOC #22	Not Known	Not Known	Remove contaminated soil and eliminate potential human exposure.	Yes
Groundwater Extraction	Extracting groundwater from well MW-16-120	Site Wide	8/95	Present	Maintain hydraulic control over contaminated groundwater zones and remediate groundwater contamination	No