

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name:	Roche Vitamins (formally Hoffmann La-Roche)
Facility Address:	205 Roche Drive , Belvidere, NJ
Facility EPA ID #:	NJD042321042

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.

The following information was obtained from Groundwater Investigation and Remedial Activities Report dated October 2, 1992. This report was prepared by Metcalf & Eddy, Inc. on behalf of Hoffmann La Roche Inc..

NJDEP conducted two separate RCRA facility assessments (RFAs) of the Hoffmann-La Roche facility. The purpose of these RFAs was to identify all potential solid waste management units (SWMUs), any areas of concern (AOC), and any areas in which releases occurred. NJDEP identified six SWMUs, including two RCRA regulated units (one now closed and the other no longer regulated), one AOC and four areas in which releases occurred at the site. The SWMUs, AOC and Releases are as follows:

SWMUs

1. 2,000-Gallon Above Ground Waste Lube Oil Tank
This above ground storage tank (AST) was a regulated unit under Hoffmann-La Roche's RCRA permit. The tank was situated in a clay-lined dike from 1969 to 1987. In 1987, the tank was moved to a concrete-lined dike. There has been no history of release from this tank and no further action was recommended for this area. This tank was removed from NJ permit in 1996 due to the de-regulation of waste oil in NJ.
2. Drum Storage Area
This was a RCRA regulated and permitted unit. It was constructed in accordance with regulatory requirements with no history of spills. Therefore, no further action was required for this SWMU. This unit was cleaned closed on 1/28/99.
3. Former Compost Pile
Hoffmann-La Roche treated by composting Mycelia cake contaminated with methanol, a highly biodegradable hazardous substance. This material was generated during the production of lasalocid. Hoffmann-La Roche handled Mycelia cake as a hazardous waste because it contained methanol. Treatment of this material took place on lined asphalt to prevent discharges to the environment. Hoffmann-La Roche terminated these activities prior to May 1998. After this time the composted Mycelia waste was removed to an off-site permitted disposal facility. A no release determination was made in the RFAs and no further action was required.

4. 12,000-Gallon centrifuge Oil Tank

Hoffmann-La Roche uses this tank for operation of its on-site diesel cogeneration plant. The oil was collected and sent off site in accordance with applicable regulations. This tank was designated as a protective filer and removed from RCRA jurisdiction by letter dated May 21, 1984 since it does not and never has contained waste oil. No further action was required for this area.

5. Pequest Sludge Farm

This facility was established as a cooperative experimental venture with Rutgers University to evaluate land based treatment and disposal of sewage sludge and its impact on agriculture. The facility was remediated to state and federal standards. No further action was required for this area.

6. Delaware Sludge Farm

This facility was also established as a cooperative experimental venture with Rutgers University to evaluate land based treatment and disposal of sewage sludge and its impact on agriculture. The facility was remediated to state and federal standards. No further action was required for this area.

AOC and RELEASES

1. Leaking Process Sewers (AOC)

Hoffmann- La Roche had experienced leaks in its underground process sewer lines as far back as 1975. The material released included wastewater with dissolved amounts of acetone, chloroform, toluene, and sodium sulfate. These compounds were detected in the groundwater in well pw5 in the parts per million range (ppm). Hoffman La Roche has been addressing this AOC since 1975 through remedial measures, groundwater monitoring and natural attenuation.

2. No. 6 Fuel Oil UST

On November 9, 1982, a leak was discovered in a 30,000-gallon No. 6 fuel oil UST. The amount of the oil released was estimated to be 4,000-gallons. Any remaining oil was removed from the tank. The tank was cleaned and visually inspected. Several 1/4 to 1/2 inch holes were observed in a side wall area of the tank, approximately 3 feet up from the bottom. The asphalt, overburden and soils surrounding and below the tank were excavated to access the released oil and oil contaminated soil. A sump pump was used to evacuate oil that collected in the excavation. The contaminated soil was sent for disposal to SCA Chemical Services in Model City, New York, on April 20 and 21, 1983. The tank was repaired by welding metal plates over the holes. Soil adjacent to the tank was completely excavated, and a concrete vault was constructed around the tank. The vault area was backfilled with sand and the surface was paved. According to an internal memorandum dated June 24, 1985, an NJDEP inspector recommended that this case be closed based on the information provided by Hoffmann-La Roche and a follow up inspection by the Warren County Health Department. No further action was recommended for the area.

3. No. 6 Fuel Oil Aboveground Storage Tank

On March 15, 1983, a leak was discovered in a discharge pipeline from a 700,000-gallon No. 6 fuel oil aboveground storage tank. A spool piece in the discharge pipe had ruptured releasing approximately 5,500-gallons of oil into the earthen dike that surrounded the tank. A vacuum truck was used to pump out approximately 3,500-gallons of the fuel oil and place it back into the tank for later use. The remaining oil was removed and disposed of off-site.

The portion of the earthen dike area that had been contaminated with oil was scraped up, staged, and covered with a tarpaulin within the dike area. This material was sent to CECOS International facility for proper disposal. An NJDEP internal memorandum dated June 24, 1983 determined this spill to be properly remediated. No other spill has occurred in this area. No further action was required.

4. Sulfuric Acid Release

On January 23, 1985, a spill of 100% sulfuric acid occurred from a corroded overhead pipe. The pipeline runs between the tank farm and the production area in a pipe rack over an asphalt road. Approximately 200 to 300 gallons of sulfuric acid leaked and was contained on the roadway. The spill was contained with sand and sorbants, and then neutralized using sodium bicarbonate. The material was pumped into the facility's wastewater treatment plant. The asphalt surface affected by the spill was properly remediated and the corroded section of the pipe was replaced. Inspection of the area by the local Health Department confirmed the spill was properly remediated. No further action was required for this area.

5. Diesel Fuel Release

On December 16, 1988, a diesel fuel release occurred in the parking lot as a result of trucking operations. The release occurred from a truck delivery to the facility and was remediated using absorbent material. A total of two 55-gallon drums of spill and absorbent material were collected and properly disposed of. A copy of the disposal receipt was sent to NJDEP on January 10, 1989. NJDEP required no further action for this spill.

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**" 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)?

	YES	No	?	Rationale / Key Contaminants
Groundwater	X			Chloroform
Air (indoors) 2		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water				
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
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.

Rationale and Reference(s): Contaminants of concern were originally identified as being those associated with the manufacturing of Vitamin C, namely acetone, toluene, chloroform, sulfate, chloride ions, sodium ions, COD, and TDS. The source of release to groundwater was confirmed through leaks in the process sewer lines, which handled process wastewater containing parts per million ranges of these contaminants, to an on-site treatment plant. Contaminated groundwater was detected in the upper aquifer, which consists of glacial deposits and is the principal water producing aquifer underlying the site. The glacial deposits are underlain by two consolidated bedrock formations, These formations are generally tight, not a good source of potable water, and are believed to form an effective barrier for any downward (vertical) migration of contamination

Sampling data from 1996 to present confirmed that Chloroform is the only compound detected at concentrations in excess of the Class II-A Cleanup Criteria of 6ppb. The highest concentration of chloroform ever detected at the site was 8400ppb from well pw5 in December 1981. Well pw5 is located in the vicinity of the production area where the sewer line brakes occurred. However, the most recent groundwater sampling data for July 1999 confirms that only two monitoring wells, pw5 and 9(J) which are both located in the production area, contained slightly elevated levels of chloroform at 8ppb. This information is documented in Groundwater Investigation and Remedial Activities Summary Report October 2, 1992 and the attached sampling data tables. The data tables were obtained from Remedial Action Progress Report dated February 24, 1997, Compliance Monitoring Well Analytical Report 2nd Quarter 1997, 1998 & 1999, and the Well Water Data Reports for July 1997, 1998, & 1999.

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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.

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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	No	No

Instructions 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 ("___"). 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.

Rationale and Reference(s): Glacial deposits are the principal water producing aquifer underlying the site. Groundwater is located at approximately 60 feet below the surface. The glacial deposits are underlain by two consolidated bedrock formations, the Jacksonburg Limestone and Martinsburg Shale. Well yields in each of these bedrock formations are considered poor and generally less than 50 gpm. Fractures within the bedrock tend to be isolated and not interconnected. These formations are generally tight, not a good source of potable water and are believed to form an effective barrier for any downward (vertical) migration of contamination. Therefore, the glacial deposit aquifer is the only area in which groundwater contamination is a concern for the facility.

Beginning in 1975 Hoffman- La Roche undertook a detailed and comprehensive investigation into the potential groundwater contamination at the site. This effort identified leaks in the process sewer lines as the source for the groundwater contamination. Hoffman-La Roche then undertook extensive remedial activities, as delineated in Question #1, to identify and replace broken sewer lines and remove contaminated soil. From 1984 to 1995 the facility installed and operated a groundwater recovery system, in which contaminated groundwater was extracted and treated under their New Jersey Pollution Discharge Elimination System (NJPDES) permit. In 1993 Hoffman La-Roche submitted a Groundwater Monitoring Plan to NJDEP as part of their proposal for Natural Attenuation. Hoffmann La-Roche has voluntarily implemented this plan since 1995. Groundwater sampling data from 1996 to present has concluded that groundwater contamination is hydraulically controlled on-site and is continuing to

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decreases to levels just above 6 ppb. This monitoring has also concluded that groundwater standards have not been exceeded at the compliance wells in the past four years. The above information is documented in the groundwater Investigation and Remedial Activities Summary Report October 2, 1992, the attached Groundwater Elevation Map and Chloroform Concentration Map and the attached groundwater data tables. The Groundwater Elevation and Chloroform Concentration Maps were obtained from the October, 1997 Remedial Action Progress Report Addendum. Data tables were obtained from Remedial Action Progress Report dated February 24, 1997, Compliance Monitoring Well Analytical Report 2nd Quarter 1997, 1998 & 1999, and the Well Water Data Reports for July 1997, 1998, & 1999.

A CEA is presently being developed for the facility and will be forwarded to NJDEP for approval. The proposed CEA boundary is documented on the attached Proposed CEA map. CEA map was obtained from the October, 1997 Remedial Action Progress Report Addendum.

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

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 **Hoffman La Roche** facility, EPA ID# NJD042321042, located at 205 Roche Drive Belvidere, 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.

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Completed by: Frances S. Viscovich
Frances Viscovich, Project Manager
RCRA Programs Branch
EPA Region 2

Date: 9/30/99

Barry Tornick
Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Date: 9/30/99

Approved by: R. Basso
Raymond Basso, Chief
RCRA Programs Branch
EPA Region 2

Date: 9/30/99

Locations where References may be found:

USEPA
Region II
290 Broadway
NY, NY 10007-1866
RCRA File Room 15th Floor

Contact telephone and e-mail numbers

(name)	Frances S. Viscovich
(phone #)	(212) 637-4152
(e-mail)	viscovich.frances@epamail.epa.gov

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.

