DOCUMENTATION OF ENVIRONMENTAL INDICA'TOR DETERMINATION

Interim Final2/5/99

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

Current Human Exposures Under Control

Facility Name:	International Shoe and Rubber Company
Facility Address:	Bryan, TX
Facility EPA ID #:	TXD008071227

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.

BACKGROUND

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 EI 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 EI 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 are 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 RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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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	<u>No</u>	<u>?</u>	Rationale/ Key Contaminants
Groundwater	<u>X</u>	_	_	Previous analytical results indicate concentrations which exceeded the MCL. Groundwater samples were collected during the June 21, 2004 EPA/TechLaw field activities. One monitoring well sample was collected from SWMU 10, and groundwater samples were collected from completed temporary wells at SWMUs 1, 7, 8 and 9 (see below). The detected concentration of bis(2- ethylhexy)phthlate at SWMU 9 exceeded the corresponding MSSL for tap water exposure.
Air (indoors) ²			<u>X</u>	No sampling data were found in available file material.
Surface Soil (e.g., <2 ft)	<u>X</u>			Previous Sampling Results: concentrations of Arsenic exceeded corresponding MSSL for Industrial Soil Exposure were detected (see below). Surface soil samples were collected during the June 21, 2004 EPA/TechLaw field activities. Surface soil samples were collected from SWMUs 1, 7, 8, 9, and 10. Detected concentrations of arsenic exceed the corresponding MSSL for the industrial soil exposure, cancer-endpoint benchmark (see below). However, arsenic concentrations in soil were lower than the statewide average for arsenic (5.9 mg/kg) SLRE.
Surface Water		<u>X</u>	—	Concentrations of chemicals of concern were not found in Surface water sample analyses.
Sediment	<u>X</u>			The detected concentration of arsenic exceeded the MSSL for the industrial soil, cancer-endpoint benchmark. However the maximum detected concentration of 4.4 mg/kg in sediment is less than the statewide average concentration for arsenic.

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.

Subsurf. Soil (e.g., >2 ft)	<u>X</u>	 	Subsurface soil samples were collected during the June 21, 2004 EPA/TechLaw field activities. The subsurface soil samples were collected from soil cores completed at SWMUs 1, 7,8, 9 and 10. Detected concentrations of arsenic exceed the corresponding MSSL for the industrial soil exposure, cancer-endpoint benchmark (see below). However, arsenic concentrations in soil were lower than the statewide average for arsenic (5.9 mg/kg, SLRE). One sub-surface sampling location (INT-SB-01B) with a concentration of 6.2 mg/kg exceeded the statewide average. (SWMU 7).
Air (outdoors)		 <u>X</u>	No sampling data were found in available file material.

- 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): Previous Analytical Data: Available date which was assembled for the 2003 Screening Level Risk Evaluation (SLRE)were used to identify the exceedences in groundwater, surface soils, sub surface soils, sediment and surface water based on comparisons to the MCL and Texas Commission on Environmental Quality (TCEQ) TRRP PCLs. Bis (2-ethylhexy)phthalate had a maximum detected concentration of 160 μ g/L, which exceeded the MCL (6 μ g/L) and TRRP PCLs for industrial groundwater ($6.0 \mu g/L$). Chemical analysis of the groundwater samples collected during the June 21, 2004 sampling activity indicated a maximum concentration of $68 \,\mu g/L$ of bis(2-ethylhexyl)phthlate in the groundwater sample collected at SWMU 9. This detected concentration (68 µg/L) exceeded the MCL (6 μ g/L) and the TRRP PCLs for industrial groundwater (6.0 μ g/L). It should be noted that bis(2ethylhexyl)phthalate was also detected in the associated laboratory blank sample and is a common laboratory contaminant. In addition, arsenic and lead were detected in groundwater at in concentrations that exceed the MCL ($10 \mu g/L$) for arsenic and ($15 \mu g/L$) for lead. Arsenic concentrations ranged from 5.5 to 55.5 μ g/L and lead concentrations ranged from 41 to 385 μ g/L. However, it should be noted that these samples were collected from temporary monitoring wells with significant turbidity. The turbidity of the unfiltered groundwater samples may have influenced the concentrations of detected arsenic and lead. Neither Arsenic or Lead were detected in the on-site monitoring well and they have not been detected in groundwater in the past.

The identification of contaminants in surface soil was based upon the review of the 2003 SLRE. Arsenic was detected at 5 mg/kg, which exceeds MSSLs for industrial soils. It should be noted that the TCEQ TRRP has established a state-wide background level for arsenic at 5.9 mg/Kg. Other chemicals of concern were present in the soils at the site, however all were present below MSSLs. Chemical analysis of the surface soil samples collected during the June 21, 2004 sampling event indicated the presence of arsenic in concentrations that exceed the arsenic MSSL (cancer-endpoint) for industrial soils at SWMUs 1, 7, 8, 9, and 10. Detected arsenic concentrations ranged from 1.6 to 2.3 mg/kg, however, it should be noted that the TCEQ TRRP established arsenic background concentration is 5.9 mg/kg.

<u>Chemical analysis of subsurface soil samples collected during the June 21, 2004 EPA/TechLaw sampling activities indicated the presence of arsenic in concentrations that exceed the arsenic MSSL (cancer-endpoint) for industrial soils at SWMUs 1, 7, 8, 9, and 10. Detected arsenic concentrations ranged from 1.5</u>

to 6.2 mg/kg. Other chemicals of concern were present in the surface soils at the site, however all were present below MSSL. Only one soil sample (INT-SB-01B) exceeded the statewide for arsenic.

The identification of contamination in sediments was derived from the 2003 SLRE, which took into account all historical information, including site investigations, analytical sampling of the soil, groundwater, surface water and sediment at the site. Arsenic was detected in the sediments of the on-site pond at a concentration of 4.4 mg/Kg, which exceeds the MSSL for industrial soil (1.8 mg/Kg) but does not exceed the statewide average for arsenic.

No air sampling data, either indoor or outdoor, was found in the available file material.

References: Revised Screening Level Risk Evaluation for Interco, Inc., Dated June 25, 2003; Trip Report for Sampling Activities Conducted at International Shoe & Rubber Company, Dated September 15, 2004.

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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	UN	Yes	No	Yes	No	<u>UN</u>	UN
Soil (surface, e.g., <2 ft)	UN	Yes	<u>No</u>	Yes	<u>Yes</u>	<u>UN</u>	UN
Surface Water	UN	No	<u>UN</u>	No	No	<u>No</u>	UN
Sediment	UN	Yes	<u>No</u>	Yes	Yes	Yes	Yes
Soil (subsurface, e.g., >2 ft	<u>) No</u>	No	<u>No</u>	Yes	<u>No</u>	<u>No</u>	<u>No</u>
Air (outdoors)	UN	UN	<u>UN</u>	<u>UN</u>	<u>UN</u>	<u>UN</u>	UN
Air (indoors)	<u>UN</u>	UN	<u>UN</u>	<u>UN</u>	<u>UN</u>	<u>UN</u>	<u>UN</u>

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.

- 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).
- X If yes (pathways are complete for any "Contaminated" Media Human Receptor combination) continue after providing supporting explanation.
- <u>If unknown (for any "Contaminated" Media Human Receptor combination) skip to #6</u> and enter "IN" status code

Rationale and Reference(s): "Contaminated" media identified at Interco Shoe Factory in Bryan, TX include surface soil, subsurface soil, groundwater, and sediment. Air contamination is unknown and unlikely since operations conducted by Interco have ceased.

Residential areas are located adjacent to the facility, along with a mixture of light industrial and commercial land use in the area of the Interco facility. Residential exposure to contaminated soil and subsurface soil is unknown, trespassers could possibly be exposed to contaminated surface soils. No information regarding air modeling of emissions from the facility was found in the available file material. As such, it is not

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

known if deposition of hazardous constituents onto soils within the residential areas located adjacent to the facility could occur. Ingestion of contaminated groundwater is a potential exposure pathway that should be considered since contaminated groundwater exists at the site. However, there are not drinking water wells within a mile of the facility. It is also possible that exposure pathways exist for sediment in the on-site pond, with workers and trespassers possibly fishing and swimming in the pond. However, the maximun detected arsenic concentration was 4.4 mg/kg which is below the statewide arsenic average of 5.9 mg/kg... It does not appear that arsenic concentrations on-site are significantly different than the statewide average.

In the vicinity of the site, groundwater is located below the facility and the neighboring areas of land use, both residential and commercial. An on-site worker or construction worker could come into contact with contaminated soil, and shallow groundwater. A trespasser would come into contact with all contaminated media except groundwater.

References: Revised Screening Level Risk Evaluation for Interco, Inc., Dated June 25, 2003; Trip Report for Sampling Activities Conducted at International Shoe & Rubber Company, Dated September 15, 2004.

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- <u>4</u> 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)?
 - X 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): Based on the June 2004 groundwater analytical results, it appears that the detected concentration of bis(2-ethylhexyl)phthalate is decreasing. Secondly, the detected concentration of bis(2-ethylhexyl)phthalate was detected in the laboratory blank sample, thus, it is not known for certain if the compound was actually detected in the groundwater. In addition, the arsenic and lead concentrations in the groundwater exceeded the MCL; however, groundwater is not used for drinking or industrial purposes at the site. However, the actual possibility of contact with the contaminated groundwater is negligible and can be controlled. The on-site monitoring well is kept locked at all times, and the temporary wells were plugged with bentonite after sample collection had taken place, thus, eliminating contact with the groundwater. Drinking water and water used for industrial purposes is obtain from the city of Bryan, which maintains groundwater wells outside the city limits of Bryan.

Arsenic has been detected in surface and subsurface soils in concentrations that exceed the MSSL for the cancer endpoint; however, site access is limited by a fence that surrounds the facility. The detected arsenic concentrations may exceed the U.S. EPA Region MSSL for industrial outdoor worker exposure scenarios (cancer-endpoints); however, the detected arsenic concentrations are lower that the TCEQ TRRP statewide arsenic background concentration of 5.9 mg/kg. Only the subsurface soil sample collected at SWMU 8 (6.2 mg/kg) had an arsenic concentration greater than 5.9 mg/kg. In addition, should a site-specific Risk Assessment be conducted for this site, it is likely that the resulting risk numbers may not indicate a threat to human health.

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

X_____If yes (all "significant" exposures have been shown to be within acceptable limits) -

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.

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).

- <u>If no (there are current exposures that can be reasonably expected to be "unacceptable")-</u> <u>continue and enter "NO" status code after providing a description of each potentially</u> <u>"unacceptable" exposure.</u>
- <u>If unknown (for any potentially "unacceptable" exposure) continue and enter "IN" status</u> <u>code</u>

Rationale and Reference(s): Not applicable

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- 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):
 - 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 International Shoe and Rubber Company facility, EPA ID #TXD000807122, located in Bryan, Brazos County, Texas under current and reasonably expected conditions. This determination will be reevaluated when the Agency/State becomes aware of significant changes at the facility.
 - <u>NO</u> "Current Human Exposures" are NOT "Under Control."
 - IN More information is needed to make a determination.

Completed by	Anna Treinies	Date: November 22, 2004
	EPA Region 6	
	Toxicologist	
Supervisor		Date
<u> </u>	Cathy Gilmore	

Locations where References may be found:

U.S. EPA Region 6, Dallas, TX

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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.

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Check the appropriate RCRIS status codes for the Current Human Exposures Under Control El 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):

> 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 International Shoe and Rubber Company facility, EPA ID #TXD000807122, located in Bryan, Brazos County, Texas under current and reasonably expected conditions. This determination will be reevaluated 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

Anna Treinies EPA Region 6

Date: November 22, 2004

Date 11/22/04

Supervisor

Locations where References may be found:

U.S. EPA Region 6, Dallas, TX

Toxicologist

Cathy Gilmore

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6.