

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: Occidental Chemical Corporation
Facility Address: 7601 Old Channel Trail, Montague, MI 49437
Facility EPA ID #: MID 006 014 906

- 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?

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.

US EPA RECORDS CENTER REGION 5



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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X			<i>VOCs</i> : Carbon tetrachloride, chloroform, PCE, TCE; and <i>C-series compounds</i> : hexachlorobenzene, hexachlorobutadiene, hexachloroethane, hexachlorocyclopentadiene, octachlorocyclopentene
Air (indoors) ²	X			<i>VOCs</i> : Carbon tetrachloride, PCE in groundwater; soil vapor flux sampling found no unacceptable risk
Surface Soil (e.g., <2 ft)		X		Contaminated soil excavated and disposed off-site as part of final remedy
Surface Water		X		White Lake protected by purge well system
Sediment		X		Contaminated sediment dredged as part of final remedy
Subsrf. Soil (e.g., >2 ft)	X			<i>VOCs</i> : PCE; and <i>C-series compounds</i> : hexachlorobenzene, hexachlorobutadiene, hexachlorocyclopentadiene, octachlorocyclopentene
Air (outdoors)		X		Soil vapor flux sampling found no unacceptable risk

_____ 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):

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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References:

- *Administrative Record for Occidental Chemical Corporation, MID 006 014 906, Montague Township, Michigan, including Statement of Basis dated February 15, 2001, Index to Administrative Record, and Documents OCC-001 through OCC-155.*
- *Final Decision and Response to Comments for Occidental Corporation, Montague Township, Michigan, MID 006 014 906, July 18, 2001.*
- *Documentation and Certification Report for On-site Soil Corrective Measures at the Occidental Chemical Corporation Site in Montague, Michigan, February 2002.*
- *EPA letter approving On-site Soil Corrective Measures Report, February 27, 2002.*
- *Operation and Maintenance Manual for the Groundwater, Leachate Collection, and Activated Carbon Treatment Systems, Revised January 20, 2003.*
- *2002 Annual Groundwater Monitoring Report, February 28, 2003.*
- *Final Dewatering Design for Dredging White Lake Sediment Near the Occidental Chemical Corporation Site in Montague, Michigan, March 2003.*
- *Final Dredging Design for Dredging White Lake Sediment Near the Occidental Chemical Corporation Site in Montague, Michigan, March 2003.*
- *Phase I of the DNAPL Investigation at the Occidental Chemical Corporation Site in Montague, Michigan, March 14, 2002.*
- *Phase II of the DNAPL Investigation at the Occidental Chemical Corporation Site in Montague, Michigan, May 2003.*

Rationale: Groundwater - A large 300-acre groundwater contaminant plume containing volatile organic compounds (VOCs) and to a lesser extent, C-series compounds, is present beneath the facility. The plume is approximately 2000-feet wide and 6500-feet long and is intercepted at its southernmost extent by an eight-well purge system before it can discharge to White Lake. Maximum contaminant concentrations detected in the plume in the last year and corresponding groundwater protection standards derived from the State of Michigan Part 201 generic cleanup criteria for industrial and commercial drinking water are:

GROUNDWATER CONTAMINANT	MAXIMUM CONCENTRATION (ppb)	GROUNDWATER PROTECTION STANDARD (ppb)
Carbon tetrachloride	41,000	5.0
Chloroform	450	100
Hexachlorobutadiene	1,000	42
Hexachlorobenzene	40	1.0
Hexachlorocyclopentadiene	14,000	50
Hexachloroethane	1,600	21
Octachlorocyclopentene	2,900	50
Tetrachloroethylene (PCE)	63,000	5.0
Trichloroethylene (TCE)	880	5.0

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A human health risk assessment was performed to address exposure to the contaminated groundwater. The estimated cancer risk associated with potential groundwater exposure under a residential scenario is 3.4×10^{-1} or a 3 in 10 cancer risk from lifetime exposure to the contaminant levels present. The non-cancer effects associated with hexachlorocyclopentadiene were also found to exceed the acceptable health standard.

Air (indoors) - Air sampling was conducted in the Northern, Central, and Southern Exposure Areas. Some PCE, TCE, and carbon tetrachloride was detected using soil vapor flux sampling but the potential cancer risk associated with exposure to indoor air was below EPA's acceptable lower range of potential risk of 1 in 1,000,000. However, at certain locations in the core of the groundwater contaminant plume, the State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria is exceeded for carbon tetrachloride (370 ppb) and PCE (25,000 ppb) under a residential scenario, and for carbon tetrachloride (2,400 ppb) under an industrial-commercial scenario.

Surface soil - Investigations at the Former Small Disposal Pile Exposure Area found maximum concentrations of hexachlorocyclopentadiene and octachlorocyclopentene at 3,300 ppm and 750 ppm in surface soil. These concentrations exceed the State of Michigan Part 201 soil screening levels for direct contact of 720 ppm under an industrial-commercial scenario. As part of the final remedy, 100 cubic yards of contaminated soil was excavated from two locations within the Former Small Disposal Pile Exposure Area and disposed off-site. Verification sampling confirmed that the more restrictive cleanup criteria of 320 ppm was met for residential drinking water protection. The two excavations were backfilled with clean fill, graded, and seeded.

During site activities performed in 2003, additional surface soil contamination was visually identified in three small areas (total of 1,500 square feet) just south and north of the former hexachlorocyclopentadiene production plant. Sampling confirmed that the State of Michigan Part 201 soil screening levels for hexachlorocyclopentadiene and hexachlorobutadiene under an industrial-commercial scenario were exceeded. In late-September 2003, the upper 2-feet of soil in the contaminated areas was excavated and placed in roll-off boxes. The cleanup is being conducted by trained personnel under the approved Health and Safety Plan. Confirmation sampling is being performed and clean excavated areas will be backfilled with clean sand. Upon proper waste characterization, the soil will be disposed off-site.

In addition to these remediation activities, two miles of 8-foot high, 9-gauge wire fencing was installed in 1994 to restrict site access by trespassers, hunters, skiers and other persons who might access the site. The fence prevents access to the 170-acre former manufacturing area where soil impacts were identified. On-site 24-hour security is also provided.

Institutional controls are required as part of the final remedy to restrict the entire former industrial area to non-residential use only (current land use is industrial). This is necessary since the State of Michigan Part 201 direct contact screening levels for residential and commercial property are exceeded in the Northern Exposure Area, the Stack Fall Exposure Area, and the Former Burn Pit Exposure Area for hexachlorobenzene, mirex, dioxin, and carbon tetrachloride. Institutional controls will be in the form of a restrictive covenant enforceable by MDEQ under the authority of the State of Michigan Part 201 rule. The restrictive covenant is expected to be entered into late-2003 or early-2004.

Surface water - The only surface water at the facility is White Lake located at the southern boundary. No site contaminants were detected in surface water at the nearest portion of White Lake located just south of the groundwater contaminant plume. A purge well system is located between White Lake and the contaminant plume. The system maintains hydraulic control of the groundwater and effectively captures the contaminant plume before it discharges into White Lake. Captured groundwater is treated on-site by

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carbon adsorption and discharged to White Lake pursuant to an NPDES permit. Since 1990, over three-billion gallons of groundwater has been treated and over 100,000 pounds of contaminants have been removed from the local environment.

Sediment - Approximately 8,500 cubic yards of sediment below the outfall to White Lake was found to be contaminated with PCBs and C-series compounds. The contaminated sediment contained approximately 1,100 pounds of persistent, bioaccumulative, and toxic (PBTs) compounds and was determined to pose a risk to human health via fish consumption. Calculations showed that eliminating exposure of PCBs and hexachlorobenzene to concentrations above 2 ppm and 0.45 ppm respectively, would reduce risk to an acceptable level. The sediment was required to be dredged as part of the final remedy. Dredging of approximately 9,000 cubic yards of contaminated sediment was completed on September 10, 2003, and the risk-based cleanup criteria of 2 ppm PCBs and 0.45 ppm of hexachlorobenzene was attained.

Subsurface soil - Subsurface soil contamination was identified during the dense non-aqueous phase liquid (DNAPL) investigations. DNAPL is present in the subsurface soil which consists predominantly of sand with finer, thin discontinuous layers. Maximum contaminant concentrations detected within 10-feet of the ground surface and corresponding State of Michigan Part 201 soil screening levels for direct contact under an industrial-commercial scenario are:

SUBSURFACE SOIL CONTAMINANT	MAXIMUM CONCENTRATION (ppm)	MICHIGAN PART 201 SOIL SCREENING LEVEL (ppm)
Hexachlorobutadiene	1,400	350
Hexachlorobenzene	310	51
Hexachlorocyclopentadiene	11,000	720
Octachlorocyclopentene	19,000	720
Tetrachloroethylene	6,600	88

Air (outdoors) - Air sampling was conducted in the Northern, Central, and Southern Exposure Areas. Some PCE, TCE, and carbon tetrachloride was detected using soil vapor flux sampling but the potential cancer risk associated with exposure to ambient air was below EPA's acceptable lower range of potential risk of 1 in 1,000,000.

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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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	No	No	No	No	No	No	No
Air (indoors)	Yes	Yes	No	No	No	No	No
Soil (subsurface e.g., >2 ft)	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.

_____ 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.

_____ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

References:

- *Administrative Record for Occidental Chemical Corporation, MID 006 014 906, Montague Township, Michigan, including Statement of Basis dated February 15, 2001, Index to Administrative Record, and Documents OCC-001 through OCC-155.*
- *Final Decision and Response to Comments for Occidental Corporation, Montague Township, Michigan, MID 006 014 906, July 18, 2001.*

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

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- *Operation and Maintenance Manual for the Groundwater, Leachate Collection, and Activated Carbon Treatment Systems*, Revised January 20, 2003.
- *2002 Annual Groundwater Monitoring Report*, February 28, 2003.
- *Phase I of the DNAPL Investigation at the Occidental Chemical Corporation Site in Montague, Michigan*, March 14, 2002.
- *Phase II of the DNAPL Investigation at the Occidental Chemical Corporation Site in Montague, Michigan*, May 2003.

Rationale: Groundwater - As described in the O&M Manual, the groundwater contaminant plume is captured by a system of eight purge wells, treated using granular activated carbon adsorption, and discharged into White Lake. The system currently achieves a 98+% on-line operating efficiency. In 2002, over 6,300 pounds of contaminants were captured and removed from the environment. The average difference in hydraulic head between monitoring wells at the purge well system and White Lake ranged from -0.30 to -1.27 feet in 2002, and -0.38 to -0.90 feet as recently as August 2003. The data demonstrates effective hydraulic control of the plume. Contaminants do not discharge into White Lake which has year-round recreational use.

The contaminant plume is contained within the facility boundary except for a few acres south of Old Channel Trail at the entrance to Blueberry Ridge. Residences at Blueberry Ridge above or near the plume were put on city water several years ago. Deed restrictions, in the form of water service agreements, were also placed on 10 potentially affected property owners in this area. Private wells located along White Lake and west of the plume were sampled in 2001 and 2004. No detectable concentration of groundwater contaminants were found. There are no known water wells located within the plume boundary; contaminated groundwater is not used at or near the facility. The plume boundary is monitored semiannually as part of the final remedy to ensure that it is not expanding and potentially impacting water well users to the west along Old Channel Trail.

Because of the facility plume, State law and local zoning prevent the drilling of any water wells in the immediate area for residential use. The Village of Montague is currently working with local industries to locate a new public water supply well and hook-up all residences along Old Channel Trail and White Lake to city water. Institutional controls are also required as part of the final remedy to restrict residential development and groundwater use. This is necessary since the groundwater protection standards derived from the State of Michigan Part 201 generic cleanup criteria for residential, industrial and commercial drinking water are exceeded at the facility. Institutional controls will be in the form of restrictive covenants enforceable by MDEQ under the authority of the State of Michigan Part 201 rule. The restrictive covenants are expected to be entered into late-2003 or early-2004.

Air (indoors) - There are three areas with potentially complete pathways. Some residences at Blueberry Ridge off Old Channel Trail are located over the western edge of the groundwater contaminant plume; an old resort used to house corporate personnel for extended corporate meetings is located over the groundwater contaminant plume at the northern portion of the purge well system; and facility trailers and a small office building are located at the facility entrance over the eastern portion of the plume.

Pathways are not complete at other areas of the facility where State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria are exceeded. For example:

The area of the facility where State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria for PCE (25,000 ppb) under a residential scenario is exceeded is at monitoring wells MW-02-06A and MW-95-03B. These two wells are both located immediately downgradient of the former hexachlorocyclopentadiene production plant. The area is wholly on the facility property which is industrial

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use only and there are no buildings (or receptors) within 1200-feet of this area;

The area of the facility where State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria for carbon tetrachloride (370 ppb) under a residential scenario is exceeded is generally a 500-foot wide core of the 6,500-foot long plume extending from monitoring well MW-02-05 at the northern portion of the facility (Former Primary Disposal Pile Area) to purge well Pg at White Lake. There are no buildings (or receptors) present within this area, except at Blueberry Ridge, the old resort used for corporate meetings, and the onsite trailers/office building described above; and

The area of the facility where State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria for carbon tetrachloride (2,400 ppb) under an industrial scenario is exceeded is generally a thinner 250-foot wide core of the southern-half of the 6,500-foot long plume extending from monitoring well MW-95-03B at the former hexchlorocyclopentadiene production plant to purge well Pg at White Lake. There is also a small area exceeded in the immediate area of MW-02-05, the site of the Former Primary Disposal Pile Area. The area is wholly on the facility property which is industrial use only. There are no buildings located in this area except for the on-site trailers/office building which appear to be located within a few hundred feet of this area.

Subsurface soil - A site Health and Safety Plan was approved back in 1997 and provides for the appropriate standard operating procedures and safe working practices to be followed at the facility. The only current activities at the site are maintenance, monitoring, and DNAPL investigations. The DNAPL investigations consist of intrusive borings and pilot studies to determine the feasibility of remedial technologies. All maintenance, monitoring, and investigations are conducted by trained personnel under the approved Health and Safety Plan. No other on-site activities are performed in the areas of subsurface soil contamination. Outside access is restricted by fencing and on-site security. There are no buildings present in the areas of residual soil contamination.

Pursuant to a 1979 State of Michigan Consent Judgment, visible soil contamination was excavated from the Northern, Central, and Southern Exposure Areas in the early-1980's and consolidated in an on-site vault. In some areas, subsurface soil was excavated down to the water table or approximately 25-feet below ground surface. Remaining contaminated soil was covered with clean fill, graded, and seeded. In the near future, deed restrictions in the form of restrictive covenants will be placed on these contaminated subsurface soil areas to limit development and restrict excavations. Pilot studies are also being performed as part of the final remedy to determine applicable technologies for treating and destroying the remaining subsurface soil contamination.

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)?

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.

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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):

References:

- *Administrative Record for Occidental Chemical Corporation, MID 006 014 906, Montague Township, Michigan, including Statement of Basis dated February 15, 2001, Index to Administrative Record, and Documents OCC-001 through OCC-155.*
- *Final Decision and Response to Comments for Occidental Corporation, Montague Township, Michigan, MID 006 014 906, July 18, 2001.*
- *2002 Annual Groundwater Monitoring Report, February 28, 2003.*
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- *Phase II of the DNAPL Investigation at the Occidental Chemical Corporation Site in Montague, Michigan, May 2003.*

Rationale: Air (indoors) - Well S is located immediately upgradient of residences at Blueberry Ridge. Historical data for Well S from 1995 to 2002 shows carbon tetrachloride concentrations ranging from 140 to 210 ppb and PCE concentrations ranging from 130 to 920 ppb. Therefore, the groundwater contaminant concentrations in this residential area do not exceed the State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria for carbon tetrachloride (370 ppb) or PCE (25,000 ppb), and exposure is not significant.

The purge well system is located at the old resort used for extended corporate meetings. Purge wells Pc, Ph, and Pi are located among the buildings. The maximum concentrations detected in 2002 sampling at the three purge wells were 120 ppb of carbon tetrachloride and 2,100 ppb of PCE. More recently, data from July 23, 2003, found carbon tetrachloride concentrations ranging from 15 to 110 ppb and PCE concentrations ranging from 94 to 1,700 ppb. Therefore, the groundwater contaminant concentrations in this area of the facility do not exceed the State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria for carbon tetrachloride (370 ppb) or PCE (25,000 ppb) under a conservative residential scenario, and exposure is not significant.

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Borings CPT-03-01 and CPT-03-02 were placed in the immediate area of the on-site trailers and office building during the 2003 DNAPL investigations. The maximum concentration of carbon tetrachloride detected in groundwater was 1,500 ppb at a sample depth of 57-feet. Therefore, the groundwater contaminant concentrations in this area of the facility do not exceed the State of Michigan Part 201 groundwater volatilization to indoor air inhalation criteria for carbon tetrachloride (2,400 ppb) under an industrial scenario, and exposure is not significant.

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):

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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 Occidental Chemical Corporation facility, EPA ID # MID 006 014 906, located at Montague, Michigan 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	(signature) <u>Kenneth S. Bardo</u>	Date <u>Sept. 30, 2003</u>
	(print) <u>Kenneth S. Bardo</u>	
	(title) <u>Environmental Scientist</u>	
		<u>B. Sundal</u>
Supervisor	(signature) <u>George Hamper</u>	Date <u>9-30-03</u>
	(print) <u>George Hamper</u>	
	(title) <u>Section Chief</u>	
	(EPA Region or State) <u>EPA Region 5</u>	

Locations where References may be found:

- *RCRA 7th Floor File Room.*
- *Montague Branch Muskegon County Library, 8778 Ferry Street, Montague, MI 49437.*
- *White Lake Community Library, 3900 White Lake Drive, Whitehall, MI 49461.*

Contact telephone and e-mail numbers

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(phone #)	<u>(312) 886-7566</u>
(e-mail)	<u>bardo.kenneth@epa.gov</u>

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.