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: **Vopak USA, formerly Van Waters & Rogers**
Facility Address: **3950 NW Yeon Avenue**
Portland, Oregon 97210-1412
Facility EPA ID #: **ORD 00922 7398**

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.

EI determinations are intended to be a "snapshot" of current site conditions, and should NOT require additional data to be gathered at the time an EI determination is made. Even if available data are clearly insufficient to determine the nature and extent of contamination or whether cleanup standards are met, it is perfectly acceptable to check "yes" for question #1 as long as whatever data currently available has been considered. When data currently available are considered but are insufficient for EI determinations, such a conclusion should be indicated in question 3 for pathways and question 4 for exposures.

Note: Even though only currently available data should be used for EI determinations, the process of making EI determinations may well identify data gaps that need to be filled through the corrective action process.

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).

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)?

> In many cases, available sampling and analytical data will be insufficient to fully document whether or not contaminant levels in the various media are above or below appropriate risk-based levels. For purposes of making EI determinations, it is entirely appropriate to use sound professional judgement as to whether particular media are or are not contaminated. For example, at a site with metal contamination in groundwater, professional judgement could easily be used to determine that no air (indoor or outdoor) contamination had occurred. This is particularly important when a phased approach is used for site characterization or corrective action - if characterization of a particular portion of a site has been deferred under a phased approach on the basis that area is not believed to be contaminated and this belief is reasonably supported by an analysis of historical activities, processes knowledge or other information, then it is quite reasonable to conclude that media in that area are not "contaminated" as part of a site-wide EI determination. Should data contradicting the initial phased-investigation presumption be gathered later in the site characterization process, it can easily be reflected in an updated EI determination. Deferral of a particular area as being low priority but still or likely to be contaminated should be reflected by a "no" or "in" EI.

Yes

	No	?	Rationale / Key Contaminants
Groundwater	X	___	See below under Rationale and References(s)
Air (indoors)	___	X	
Surface Soil (e.g., <2 ft)	X	___	
Surface Water	___	X	
Sediment		X	
Subsurf. Soil (e.g., >2 ft)	X	___	
Air (outdoors)	___	X	

The rationale/key contaminants should have a brief note of the "principle threat" contaminants (those that most significantly drive cleanup decisions), as well as a reference to key documents, if any. A note as to which particular risk-based standard is being used as the basis of comparison should also be included. For complex documents, a note to the particular section, table, etc. from which data or standards are selected should be provided, as it is often difficult to verify data out of context.

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_____ 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):

RFI Report, July 1993 identified contamination in the groundwater and both surface and subsurface soil.

Contaminants of Concern (COCs) in groundwater:
Volatile Organic Compounds (VOCs) - PCE, TCE, 1,1,1-TCA, MC, VC, benzene, toluene, ethylbenzene, xylenes, and primary isomers of DCE and DC;
Semivolatile Organic Compounds (SOCs) - Naphthalene
Metals - Arsenic, Nickel, selenium, Thallium, Vanadium (total).

The concentrations of contaminants in the groundwater are above the Federal MCLs.

COCs in surface soil (0-2ft bgs):
VOCs - MC, Styrene, Tetrachloroethene, Trichloroethene;
SOCs - Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene, Indeno(1,2,3-cd)pyrene, Naphthalene;
Metals - Arsenic.

COCs in subsurface soil (>2 ft bgs):
VOCs - 1,2-DCE, MC, Tetrachloroethene, 1,1,1-Trichloroethane (TCA), Trichloroethene (TCE), VC

Soil cleanup levels are proposed for protection of human health and the environment via migration of COCs from soil to ground water and ultimately to surface water receptors in the Willamette River. Soil cleanup levels will be calculated for each contaminant for each identified complete exposure pathway.

- Inhalation of vapors resulting from the volatilization of chemicals in the soil and groundwater by onsite workers during normal business activities, or maintenance activities above or below pavement and building foundations (e.g., utility lines).
- Inhalation of dust by onsite workers during maintenance activities below pavement or building foundations.

- Incidental ingestion of soil by onsite workers during maintenance activities below pavement or building foundations.
- Dermal contact with soil by onsite workers during maintenance activities below pavement or building foundations.

Footnotes:

[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.

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	N	**Y**	N	**Y**	N	N	N
Air (indoors)	N	**Y**	N	**Y**	N	N	N
Soil (surface, e.g., <2 ft)	N	**Y**	N	**Y**	N	N	N
~~Surface Water~~							
~~Sediment~~							
Soil (subsurface e.g., >2 ft)	N	**Y**	N	**Y**	N	N	N
Air (outdoors)	N	**Y**	N	**Y**	N	N	N

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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).

Semantic Alert: In this instance, saying "NO" complete pathways exist translates to a "YE" environmental indicator. Go figure.

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) :

RFI Report, July 1993 identified four complete exposure pathways:

- Inhalation of vapors resulting from the volatilization of chemicals in the soil and groundwater by onsite workers during normal business activities, or maintenance activities above or below pavement and building foundations (e.g., utility lines).
- Inhalation of dust by onsite workers during maintenance activities below pavement or building foundations.
- Incidental ingestion of soil by onsite workers during maintenance activities below pavement or building foundations.
- Dermal contact with soil by onsite workers during maintenance activities below pavement or building foundations.

Currently gw exposure pathways other than inhalation at the surface are not considered to be complete.

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

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)?

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."

See Semantic Alert above.

_____ 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):

Currently exposure is considered to be minimal because most of the site is paved preventing workers from a direct contact with contaminated soil and vapors. The potential exposure scenarios are most likely to occur during utility trenching. However, with proper health and safety training and implementation of the institutional controls during the activity, it is reasonable to expect that the exposure to the onsite workers to soil and gw will not be significant.

In general, EI's (if not cleanup standards themselves) can be met through a combination of reduction of contaminant concentrations (assuming that concentrations have been unacceptable) and (physical) engineering or institutional controls that interrupt an exposure pathway. For purposes of EI determinations, however, institutional or engineering controls do not need to have the sophistication, permanence, or legal defensibility as would be necessary for a final corrective action remedy. Rather, they need to be functional and reasonable - should the controls later be found to be no longer effective, the finding can easily be reflected in an updated EI determination.

An example might be the existence of off-site groundwater contamination that might pose risks to utility workers outside of the facility boundary. In this instance, evidence of an agreement between the facility and the utility that excavations would not occur in the contaminated area without appropriate protective gear would be acceptable for meeting the human exposures controlled EI.

Current Human Exposures Under Control

Environmental Indicator (EI) RCRIS code (CA725)

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

The response to this question should include a brief description of the analysis and assumptions used in arriving at whatever conclusion is reached. The description does not have to be particularly detailed, but it should allow the reader to gain a basic understanding of the reasoning employed by the decision-maker.

_____ 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):

[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.

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):

YES 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 **Van Waters & Rogers** facility, EPA ID # **ORD 00922 7398** located at **3950 NW Yeon Avenue, Portland, Oregon** 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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Completed by _____/s/_____ Date ____7/15/02_____
Anna I. Filutowski
Project Manager

Supervisor _____/s/_____ Date _____
Jamie Sikorski
RCRA Compliance Unit Manager
U.S. EPA Region 10

Locations where references may be found:

U.S. EPA Region 10
Office of Waste and Chemicals Management
1200 Sixth Avenue
Seattle, Washington 98101

U.S. EPA Region 10
Regional Library
1200 Sixth Avenue
Seattle, Washington 98101

Van Waters & Rogers Inc.
3950 NW Yeon Avenue
Portland, Oregon 97210
Telephone: 503/326-3686

Contact: Anna Filutowski
phone #: 206/553/5122
e-mail: filutowski.anna@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.

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name:	Univar USA Inc. aka Vopak USA aka Van Waters & Rogers
Facility Address:	3950 NW Yeon Avenue Portland, Oregon 97210-1412
Facility EPA ID #:	ORD 00922 7398

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

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

____ If no - re-evaluate existing data, or

____ if data are not available skip to #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 "Migration of Contaminated Groundwater Under Control" EI

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

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the

physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g.,

non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI 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).

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

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

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

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

Rationale and Reference(s):

Draft CMS Report (IT Corporation 2001) identified 10 contaminants of concern in the groundwater:

Benzene, Chloroform, 1,1-Dichloroethene, cis-1,2-Dichloroethene, Methylene Chloride, Tetrachloroethene, Toluene, 1,1,1-Trichloroethane, Trichloroethane, and Vinyl Chloride.

The concentrations of contaminants in the groundwater are above the Federal MCLs.

[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 appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

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

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

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

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

Rationale and Reference(s):

Interim Corrective Measures (ICM) implemented at the site are based on a hydraulic containment to prevent off-site contaminant migration. The ICM consists of extraction wells and water treatment systems. Treated water is discharged under the NPDES permit and the air stripper vapor is treated using resin adsorption system.

2002-3 Progress Report (2002) provides documentation on effectiveness of the system in achieving the hydraulic containment.

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

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

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

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

Rationale and Reference(s):

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

Although groundwater from the site eventually flows into the Willamette River, located approximately 2000 feet north of the site, recent groundwater monitoring data and the performance of the ongoing ICM document that site-related contamination is not discharging to the surface water. Groundwater monitoring data can be found in recent progress reports including Progress Report 2002-3 (October 2002), Progress Report 2002-4 (January 2003), and Progress Report 2003-1 (April 2003). Data presented in these reports show low concentrations of VOCs in wells at or within 150 feet of the property boundary; (for example SMW-25, SMW-4, SMW-19, SMW-20). Analysis presented in the Progress Report 2002-3 document that ICM is effective in controlling contaminants from migrating off site.

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

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

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

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

Rationale and Reference(s):

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed

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

to continue until a final remedy decision can be made and implemented[4])?

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

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

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

Rationale and Reference(s):

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

X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that

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

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

groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

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

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

Rationale and Reference(s):

Univar is currently conducting quarterly groundwater monitoring. Second and fourth quarter events include sampling of 34 shallow monitoring wells and piezometers (see Progress Report 2002-4 dated January 2003 for details). First and third quarter event include sampling of 17 shallow wells and piezometers in the vicinity of the three extraction wells (see Progress Report 2003-1 date April 2003 for details). Measurement of water levels from all shallow wells and piezometers are collected and analyzed quarterly to demonstrate attainment of the capture zone. Monitoring requirements for the final corrective measures will be defined in the CMI work plan and related sampling and analysis plan (to be developed).

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

X YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Univar facility , EPA ID # ORD 00922 7398, located at 3950 NW Yeon Avenue, Portland, Oregon 97210-1412** . Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

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

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

Completed by (signature) /s/ Date 5/12/03
(print) Anna Filutowski
(title) RCRA Project Manager

Supervisor (signature) /s/ Date 5/12/03
(print) Jamie Sikorski
(title) RCRA Compliance Unit Manager

U.S. EPA Region 10

Locations where References may be found:

U.S. EPA Region 10
Office of Waste and Chemicals Management
1200 Sixth Avenue
Seattle, Washington 98101
Telephone: 206/553-4280

U.S. EPA Region 10
Regional Library
1200 Sixth Avenue
Seattle, Washington 98101
Telephone: 206/553-1259

U.S. EPA Oregon Operations Office
811 SW 6Th Avenue, 3rd floor
Portland, Oregon 97204
Telephone: 503/326-3686

Univar USA Inc.
3950 NW Yeon Avenue
Portland, Oregon 97210
Telephone: 503/222-1721

Contact telephone and e-mail numbers

(name)	Anna Filutowski
(phone #)	206/553-5122
(e-mail)	filutowski.anna@epa.gov