#### DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 8/5/04

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

## **Current Human Exposures Under Control**

Facility Name:	Cascade Pole and Lumber Co, - Tacoma
Facility Address:	<u>1640 E. Marc St. Tacoma, WA 98421</u>
Facility EPA ID #:	WAD 00895 8357

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).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**<sup>1</sup> 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_			(see next page)
Air (indoors) <sup>2</sup>		_X_		
Surface Soil (e.g., <2 ft)	_X_			(see next page)
Surface Water		_X_		
Sediment		_X_		
Subsurf. Soil (e.g., >2 ft)	_X_			(see next page)
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.

## **Site Description**

Cascade Pole and Lumber Company (CPLC) is a wood treating facility located in the Tacoma tide flats adjacent to the Puyallup River. CPLC pressure treats wood using inorganic metals (Copper, Chromium, and Arsenic), and pentachlorophenol (PCP). They also treat poles by dipping the ends in creosote. Wastes include, rinse waters from cleaning retorts or other areas of the site, drippings from treated wood. Over the years of operation various wood treating constituents have contaminated the soil and ground water at the site.

In October of 1992 Cascade Pole signed an Agreed Order under the Model Toxic Control Act to perform a Remedial Investigation and Feasibility Study at the site to determine the extent of contaminated soil and ground water. This Order also required Cascade Pole to conduct interim measures to remediate and contain contamination found at the site. In December 1997, as part of the interim measures taken at the facility, CPLC has paved all areas of the site where treated wood is handled. In addition, CPLC installed a 300-foot long horizontal well as a ground water containment system. This well is approximately 7-feet deep and is designed to prevent off-site migration and potential downward migration of the ground water. The well is a 2-inch diameter HDPE screen with 0.020-inch slots pre-packed inside a 4 inch HPDE screen with 0.020-inch slots. It drains to a 13-foot deep sump where the water is collected and removed. The water recovered from this well is being continuously collected and reused in the CPLC process as make-up water.

## Footnotes:

<sup>1</sup> "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).

<sup>2</sup> 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.

## **Ground Water**

Highest Levels of Constituents of Concern found in Ground Water

Constituent	MTCA Method B Std.	<b>Highest Historical Level</b>	Highest Current Level
Pentachlorophenol	0.73 ug/l	3400 ug/l (MW-5)	276 ug/l Drain (2/6/04)
		(3/29/91)	
Naphthalene	320 ug/l	6800 ug/l (MW-9)	4980 ug/l (MW-9)
		(10/3/91)	(2/5/04)
Total Chromium	2400 ug/l	180 ug/l (MW-3)	66.1 ug/l (MW-3)
As Cr III		(7/11/93)	(2/6/04)
Dissolved Chromium	50 ug/l (Method A)	150 ug/l (MW-3)	284 ug/l (MW-13)
		(7/11/93)	(2/6/04)
Total Carcinogenic PAH	N/A	32.1 ug/L (MW-5)	2.674 ug/L (MW-16)
		1/24/02	2/4/04

In addition to the constituents listed above various levels of other PAHs and metals (arsenic and copper) have been found at the site. No free product has been found to date in the ground water.

## Surface Soil/Subsurface Soil

Surface and subsurface soils have been found to contain levels of PAHs, Pentachlorophenol and Metals (Chromium and Arsenic) above MTCA Method B but generally within the MTCA Method C industrial standards. These soils were generally in the area of the treatment plant and the drip pad areas (process areas). Some of this soil has been excavated and removed from the site. All of the active process areas of the site have been paved.

## **Surface Water/Sediments**

Cascade Pole has obtained an NPDES permit from the Washington State Department of Ecology for treatment and discharge of non-contact storm water. There are two permitted outfalls. One outfall is to the Puyallup River and the other is to the Lincoln Avenue Ditch to the east of the site which ultimately drains to the Blair Waterway. CPLC's permit contains limitations on the amount of contaminants that are allowed to be discharged.

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> Groundwater	Residents	Workers _X_	Day-Care	Construction _X_	Trespassers	Recreation	Food <sup>3</sup>
Soil (surface, e.g., <2 ft)		_X_		_X_			
Soil (subsurface e.g., >2 ft)				_X_			

Instructions for <u>Summary Exposure Pathway Evaluation Table</u>:

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 <u>Pathway Evaluation Work Sheet</u> to analyze major pathways).

 $X_{1}$  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):

#### Pathways:

Workers: The contaminated process areas of the site have been paved, however, workers on site may be exposed to contaminated surface soils where the cover may be removed for construction activities.

Construction: The contaminated process areas of the site have been paved, however, any construction that penetrates the paving at the site or extends into the subsurface may expose workers to contaminants in the ground water surface and subsurface soils.

Recreation: There are no recreation activities at this site or at adjacent land areas. Recreational use of the Puyallup River does occur but contaminated ground water from this site has not been shown to extend as far as the river.

Food: No food is produced, stored or processed at this site. Some subsistence fishing may occur in the Puyallup River but contaminated ground water from this site has not been shown to extend as far as the river.

Residences: There are no pathways to residences because this is an industrial area and there are no residential areas near the site.

Day Care: No pathways exist since there are not any known daycare facilities near the site.

Trespassers: No pathways are complete to trespassers because the site is fenced and there is 24 hour security. While there is a chance that trespassers could gain access to the site the fence and security interrupt this pathway.

<sup>3</sup> 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**"<sup>4</sup> (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):

## **Complete Pathways/Significant Exposure**

Workers: It is assumed that exposure to workers from surface soils and ground water is not significant because the contaminated portion of the site is completely paved. Cascade Pole has a rigorous health and Safety program that only permits trained personnel to come handle ground water or to be involved with construction and maintenance activities in the contaminated areas.

Construction: There is not any regular ongoing construction activities at this site which involve outside contractors. When there are such activities, CPLC's rigorous Health and Safety program notifies these workers of the hazards at the Site. All contractors and outside personnel who will be working at the site receive a safety briefing before entering the site.

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

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

- If yes (all "significant" exposures have been shown to be within acceptable limits) continue and enter "YE" after summarizing <u>and</u> 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):\_\_\_\_\_

- 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 <u>Cascade Pole and Lumber</u> <u>Company</u> facility, EPA ID # <u>WAD 00895 8357</u>, located at <u>1640 E. Marc St. Tacoma,</u> <u>WA 98421</u> under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
  - NO "Current Human Exposures" are NOT "Under Control."
  - IN More information is needed to make a determination.

Completed by		Date		
	Stan Leja Hydrogeologist			
Supervisor		Date		
	K Seiler			
	Supervisor Hazardous Waste and Toxic Reduction Program			
	Washington State Department of Ecology - Southwest Regional Office			

Locations where References may be found:

Site Files Washington State Department of Ecology Southwest Regional Office P. O. Box 47775 Olympia, WA 98504-7775

Contact telephone and e-mail numbers

Stan Leja (360) 407- 6345 slej461@ecy.wa.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 8/04/04

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

## Migration of Contaminated Groundwater Under Control

# Facility Name:Cascade Pole and Lumber Co, - TacomaFacility Address:1640 E. Marc St. Tacoma, WA 98421Facility EPA ID #:WAD 00895 8357

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 #8 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"**<sup>1</sup> 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):

Constituent	MTCA Method B Std.	Highest Historical Level	More Recent Level	Highest Current Level
Pentachlorophenol	0.73 ug/l	3400 ug/1 (MW-5) (3/29/91)	50 ug/l Drain (2/27/01)	276 ug/l Drain 2/06/04
Naphthalene	320 ug/l	6800 ug/1 (MW-9) (10/3/91)	4800 ug/1 (MW-9) (2/27/01)	4980 ug/L MW-9 2/05/04
Total Chromium	24000 ug/l	180 ug/l (MW- 3)	7000 ug/l (MW-13)	66.1 ug/L MW-3
(As CrIII)	non-carcinogen	(7/11/93)	(1/8/92)	2/06/04
Dissolved Chromium	50 ug/l (Method	150 ug/l (MW-3)	1800 ug/l (MW-13)	28.4 ug/L
	A)	(7/11/91)	(2/27/01)	(MW-3) 2/6/04
Total Carcinogenic	NÁ	32.1 ug/L (MW-5)	32.1 ug/L (MW-5)	2.674 ug/L
PAH		1/24/02	1/24/02	(MW-16) 2/04/04

Highest Levels of Constituents of Concern found in Ground Water\*

In addition to the constituents listed above various levels of other PAHs and metals (arsenic and copper) have been found at the site. No free product has been found to date in the ground water.

\*Based on various reports submitted to the Department of Ecology from 1991 to the present

Footnotes:

<sup>1</sup>"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"<sup>2</sup> 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"<sup>2</sup>).
  - If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"<sup>2</sup>) 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):

Cascade Pole and Lumber Company has installed a 300 foot horizontal well which is being used to collect contaminated ground water from the site. Water level measurements taken after installation and the start of pumping has shown that the ground water is moving toward the well. There is one area near the horizontal well that does not have a monitoring well adjacent. This area does not have data to conclusivly show that the water is moving toward the horizontal well. However, numeric modeling conducted by the facility using MODFLOW has shown that this well should contain the ground water and prevent migration. In addition contaminant concentrations have remained stable or declined at the monitoring wells at the site.

Reference(s):

#### Progress Report for May and June 2004, Annual Site-Wide Ground Water Monitoring Report for 2004; June 30, 2004

Groundwater Interim Action Design Report, Cascade Pole and Lumber Company, Tacoma, Washington; Remediation Technologies, Inc.; December 6, 1995

<sup>2</sup> "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.

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): Monitoring Well Data shows that contaminated ground water does not extend to the surface water.

Reference(s):

Progress Report for May and June 2003, Cascade Pole and Lumber Facility, Tacoma; September 10, 2001

Annual Site-Wide Ground Water Monitoring Report for CA 2003, Cascade Pole and Lumber Facility, Tacoma; April 18, 2003

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration<sup>3</sup> 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)?

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<sup>3</sup> of <u>key</u> 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<sup>3</sup> of <u>each</u> 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<sup>3</sup> 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):

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

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 to continue until a final remedy decision can be made and implemented<sup>4</sup>)?

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,<sup>5</sup> 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):\_\_\_\_\_

<sup>4</sup> 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.

<sup>5</sup> 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.

- 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 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):\_Ground water monitoring of the upper and lower aquifers was begun in 1999 to fulfill the requirements of Agreed Order No. DE92HS-S146. Ground water sampling began after the completion of an interim ground water action in 1999. Presently twelve shallow wells, three deep wells, an offsite monitoring well and a horizontal drain are being sampled on an annual basis. A final RI/FS workplan was prepared, approved by Ecology and implemented in December 2003. Based on the results of this investigation additional monitoring of the aquifer system may be required by Ecology.

The installation of a horizontal well (drain) was completed during December 1997 and start-up began in January 1999. This drain has essentially achieved hydraulic control of ground water in the upper aquifer by intersecting ground water and directing it to a sump thus preventing ground water from reaching the facility boundary. The sump is periodically pumped and the water used as makeup water for the CCA system.

The current ground water monitoring system consists of fifteen wells, the horizontal drain, and one offsite well, UPRR 29, located in an adjacent former rail yard. Twelve wells monitor the shallow aquifer, and three wells monitor the deeper aquifer. The shallow aquifer monitoring system is composed of monitoring wells, MW-1 through MW-3, MW-6, MW-8 through MW-10, MW-12, MW-13 and MW-15 through MW-17. The deeper aquifer monitoring system is composed of monitoring wells, MW-7, MW-14 and MW-18. These wells, offsite well UPRR-29 and the drain are scheduled to be sampled on an annual basis, subject to the regulatory requirements of Ecology. Ground water at all sampling locations is analyzed for semivolatile organics, PAHs, and arsenic, chromium, and copper.

Monitoring wells MW-4, MW-5 and MW-11 were dropped from the monitoring system due to low or nondetect concentrations of contaminants and the addition of newer monitoring wells. Ecology is currently evaluating the performance of the new monitoring system.

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 <u>Cascade Pole and Lumber Company</u>
	facility, EPA ID # <u>WAD 00895 8357</u> , located at <u>1640 E. Marc St.</u> <u>Tacoma, WA 98421</u> . 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.
	<ul><li>NO - Unacceptable migration of contaminated groundwater is observed or expected.</li><li>IN - More information is needed to make a determination.</li></ul>
Completed by	Date Stan Leja Hydrogeologist
Supervisor	Date K Seiler Supervisor Hazardous Waste and Toxic Reduction Program Washington State Department of Ecology - Southwest Regional Office

Locations where References may be found:

Site Files Washington State Department of Ecology Southwest Regional Office P. O. Box 47775 Olympia, WA 98504-7775

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