

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: Former Fruehauf Corporation (currently Briar Hill Steel)
Facility Address: Route 119, Uniontown, PA 15401
Facility EPA ID #: PAD 00 433 8646

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).

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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?

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): See following pages for response to this question.

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 appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

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BACKGROUND

The site has the former Fruehauf Corporation designation since this is the name that the facility used on the latest Part A and no subsequent Part As were submitted to notify USEPA of the name change. The Briar Hill Steel Corporation has owned the site since 1992.

The Fruehauf Corporation manufactured truck trailers in the form of tanks and hoppers at the site from 1961 until 1986, when operations began to include the manufacture of dump trailers and flatbed trailers (ceased in approximately 1992).

Three Tenants occupy space at the facility and include:

- Fayette Engineering (Briar Hill Steel's consultant) - office space
- EW Bowman (glass products manufacturer) - office space
- United Defense LP - removes interior equipment from tanks (armored personnel carriers), self-propelled guns, and Bradley fighting vehicles, shot blasts and refinishes gutted hulls, and paints the vehicles. As these vehicles enter the site, all fuel and oil is removed from them, and stored in ASTs. Once the refinishing process is complete, the vehicles are staged outside on the ground surface.

GROUNDWATER

Residents within the study rely on surface water and groundwater for potable water. The Pennsylvania-American Water Company and the North Fayette County Municipal Authority (provides potable water to the site) serve residents within the area of the site with water obtained from a surface intake on the Youghiogheny River (not downstream of the site). The NUS Corporation reported in 1990 in a Preliminary Assessment, that no public water was obtained from within the area of the site, however, 1,284 residents reportedly rely on private wells for potable water within the study area. The private wells were reported to be located east, west and north of the site, with the closed one located approximately 1,250 feet southwest of the site.

Groundwater samples collected in August 2001 contained no contaminants above minimum detection levels. Current groundwater conditions at the site are discussed at the end of this section under AOCs/SWMUs.

Remedial activities took place for the following former AOCs/SWMUs.

Former Surface Impoundment (Lagoon)

From 1961 until 1983, the Fruehauf Corporation deposited residual wastes in a 0.5-acre unlined surface impoundment (lagoon) located in the southern corner of the site. The majority of the wastes were generated from the washing station where acid and alkaline cleaners were used to wash trailers prior to painting (heavy metals resulted from the trailers and mixed with the cleaners). The lagoon also received wastes from the dip tank, spent xylene, wastes from the overflow of the water spray filtering system in the paint booth, and water from the steam cleaning rack.

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The lagoon was closed per a PADEP-approved closure plan, which involved the excavation of supernatant, sludge, and approximately 1 foot of soil under the sludge. The supernatant was disposed of at the North Union Municipal Sewer Authority, while 1,588 tons of sludge and soil were disposed of at the Kelly Run Landfill. The closure was certified on June 28, 1984.

The 1990 Preliminary Assessment indicated that the Fruehauf Corporation had also deposited paint residues directly onto the ground surface between Building 2 and the lagoon for an unknown duration (began in the early 1960s). No remediation was reported to have been performed in this area, however, Foster Wheeler observed no surface staining during the EI site inspection. This area may have been addressed during the remediation of the lagoon.

Four monitoring wells were installed in 1981 to monitor the possible impacts to groundwater caused by the lagoon. The groundwater was sampled quarterly from 1981 to approximately 1990. A fifth monitoring well (MW-5) was installed in 1990 to further determine the extent of contamination and to replace MW-1, as PADEP determined that water samples from it were not representative of the aquifer. A letter from the Fruehauf Corporation to PADEP dated March 21, 1990 indicated that MW-5 would be installed no more than 5 feet from MW-1 and would be at least 20 feet deeper than MW-1.

In 1986, four evaporators were installed at monitoring well MW-1 in an attempt to reduce elevated levels of 1,1-dichloroethane and 1,1,1-trichloroethane (evaporated to the atmosphere), per PADEP's conditional approval provided in a letter to the Fruehauf Corporation dated April 22, 1986. In this letter, PADEP required the Fruehauf Corporation to bail MW-1 as frequently as possible (the water to be processed by the evaporator units) and that the monitoring wells be sampled quarterly (MW-1 did not have to be purged prior to sampling).

According to the Loss of Interim Status (LOIS) inspection on April 16, 1986, PADEP approved the Fruehauf Corporation's request to analyze groundwater samples for only 1,1,1-trichloroethane and 1,1-dichloroethane, and not a full analytical suite. At the time of the LOIS inspection, the Fruehauf Corporation did not believe that the waste placed in the lagoon was the source of the 1,1-dichloroethane and 1,1,1-trichloroethane contamination, nor was it significant, as it was below drinking water standards.

In a letter to the Fruehauf Corporation dated February 2, 1988, PADEP indicated that the four evaporators at MW-1 were not efficient and that the monitoring system was inadequate because MW-1 was the only downgradient monitoring well (MW-2 appeared to be upgradient and MW-3 and MW-4 appeared to be off-gradient), well screens were installed at different depths in the aquifer, making it impossible to collect groundwater level measurements. PADEP also indicated that the organic contamination may have migrated to the geologic strata beneath the site and the plume may extend in time, and because of this, higher concentrations of contaminants can be detected in MW-1, even though contaminated sludge was removed from the lagoon.

A Phase II Subsurface Investigation was performed in 1991 by Killam Associates to define and characterize the uppermost aquifer and determine the direction of groundwater flow and the vertical extent of contamination in the vicinity of MW-1. Killam Associates concluded that since concentrations of 1,1,1-trichloroethane did not exceed the maximum concentration limit of 200 ppb (there was no limit for 1,1-dichloroethane), groundwater remediation was not recommended and would not be effective. Recommendations included quarterly monitoring of MW-1 and MW-5, and annual monitoring of the other three monitoring wells.

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Prior to the sale of the site to the Briar Hill Steel Corporation in July 1992, PADEP reduced the monitoring requirements to sampling MW-5 for 1,1,1-trichloroethane and 1,1-dichloroethane on an annual basis (Letter from PADEP to the South Trust Bank, care of the Fruehauf Corp., April 9, 1992; PADEP Internal Memo, October 2, 1992).

A groundwater sample was collected from MW-5 in August 2001 by Fayette Engineering (Briar Hill Steel's consultant) and analyzed for 1,1,1-trichloroethane and 1,1-dichloroethane to demonstrate current groundwater conditions in support of the anticipated EI site inspection. No compounds were detected above the minimum detection limit.

Former 2,000-gallon Waste Oil UST and Oil/Water Separator

The Fruehauf Corporation began discharging water from the former steam cleaning rack to this oil/water separator in 1983 (1990 Preliminary Assessment).

A United Defense LP Internal Memo, dated December 31, 1997 indicated that this UST and oil/water separator were removed in December 1997 in association with the installation of a new oil/water separator, located adjacent to the east side of Building 2. Contaminated soil was observed to exist by the removal contractor, Metros Evacuation. United Defense LP notified PADEP of the removal of the UST and the suspicion of contaminated soil by filing a Registration for the Removal of a Storage Tank on December 23, 1997. Fayette Engineering, Briar Hill Steel, and Metros Evacuation suspected that the contamination probably predated United Defense LP.

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Fruehauf Corporation Uniontown, PA										
EPA ID # PAD 004228646										
Table 1 Historic Groundwater Sampling Results for the Former Lagoon										
Date	MW-1		MW-2		MW-3		MW-4		MW-5	
	1,1-DCA	1,1,1-TCA								
10/82	2	2	NR	NR	NR	NR	NR	NR	NR	NR
5/27/87	120	160	NR	NR	NR	NR	NR	NR	NR	NR
11/18/88	63	59	<5	<5	<5	<5	<4	<5	DNE	DNE
8/18/89	100	69	<5	<5	<5	<5	<4	<5	DNE	DNE
8/01	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND
7/15/82	5	5	NR	NR	NR	NR	NR	NR	DNE	DNE
10/15/82	2	2	NR	NR	NR	NR	NR	NR	DNE	DNE
1/17/83	<10	<10	<10	<10	<10	<10	<10	<10	DNE	DNE
3/15/83	19	24	<10	<10	<10	<10	<10	<10	DNE	DNE
8/19/83	73	120	<5	<5	<5	<5	<5	<5	DNE	DNE
10/19/83	<5	<5	<5	<5	<5	<5	<5	<5	DNE	DNE
1/13/84	71	79	<5	<5	<5	<5	<5	<5	DNE	DNE
4/18/84	<5	<5	<5	<5	<5	<5	<5	<5	61	65
7/16/84	78	110	<5	<5	<5	<5	<5	<5	DNE	DNE

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EPA ID # PAD 004228646										
Table 1 Historic Groundwater Sampling Results for the Former Lagoon										
Date	MW-1		MW-2		MW-3		MW-4		MW-5	
	1,1-DCA	1,1,1-TCA								
10/17/84	47	71	<5	<5	<5	<5	<5	<5	DNE	DNE
2/15/85	54	96	<5	<5	<5	<5	<5	<5	DNE	DNE
5/14/85	64	80	<5	<5	<5	<5	<5	<5	DNE	DNE
8/27/85	53	82	<5	<5	<5	<5	<5	<5	DNE	DNE
9/30/85	49	80	NR	NR	NR	NR	NR	NR	DNE	DNE
11/14/85	65	120	<5	<5	<5	<5	<5	<5	DNE	DNE
3/30/86	91	120	<5	<5	<5	<5	<5	<5	DNE	DNE
5/30/86	110	150	<5	<5	<5	<5	<5	<5	DNE	DNE
9/5/86	110	140	<5	<5	<5	<5	<5	<5	DNE	DNE
11/20/86	96	130	<5	<5	<5	<5	<5	<5	DNE	DNE
2/20/87	120	180	<5	<5	<5	<5	<5	<5	DNE	DNE
5/27/87	120	160	<5	<5	<5	<5	<5	<5	DNE	DNE
8/25/87	68	57	<5	<5	<5	<5	<5	<5	DNE	DNE
11/20/87	68	81	<5	<5	<5	<5	<5	<5	DNE	DNE

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Fruehauf Corporation Uniontown, PA										
EPA ID # PAD 004228646										
Table 1 Historic Groundwater Sampling Results for the Former Lagoon										
Date	MW-1		MW-2		MW-3		MW-4		MW-5	
	1,1-DCA	1,1,1-TCA								
2/26/88	53	56	<5	<5	<5	<5	<5	<5	DNE	DNE
5/27/88	70	70	<5	<5	<5	<5	<5	<5	DNE	DNE
2/17/89	52	55	<5	<5	<5	<5	<5	<5	DNE	DNE
6/1/89	89	58	<5	<5	<5	<5	<5	<5	DNE	DNE
11/9/90	31	47	3.4	3.8	NS	NS	NS	NS	ND	ND
1/13/92	110	15	<1	<1	<1	<1	<1	<1	<1	<1
8/01	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND

Notes:

Results are in ppb

DNE - Does not exist at this date, MW-5 was installed in 1990

NR = Not reported

NS = Not sampled

ND = Not detected

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Sources:

Phase II Subsurface Investigation, Killam Associates, January 1991
Letter from the Fruehauf Corporation to PADEP, January 27, 1992
Letter from the Fruehauf Corporation to PADEP, September 12, 1990
Letter from the Fruehauf Corporation to PADEP, December 21, 1988
Letter from PADEP to the Fruehauf Corporation, February 2, 1988

A PADEP Storage System Report Form dated December 23, 1997 indicated that the waste oil UST was in excellent condition when it was removed from the excavation, however, contamination was observed under Building 2 but not in the opposite side of the excavation.

Soil samples were collected and analyzed in December 1997. The analytical result report was expected in January 1998. Visual observation of the samples revealed "dry dirt-like and red paint-like substances." Apparent contamination was reported to be between the east wall of Building 2 and the storage tank. The excavated site, at the time of the United Defense LP Internal Memo indicated that Briar Hill Steel would assume the cost of disposal of contaminated soil and that the excavation has been approximately 80% filled with 2B gravel. The backfilling activity was to be completed once analytical results of post excavation samples were received.

The United Defense LP Facilities Manager indicated that the No Further Action determination was received from PADEP in 1997 for this UST. A copy of the soil sampling results and the No Further Action Determination has been requested from Briar Hill Steel and had not been received at the time of the submittal of these Draft EI Forms.

Former 2,000 -gallon Steel Unleaded Gasoline UST

A 2,000 gallon unleaded gasoline UST was installed in 1976 (undated PADEP Storage Tank Data System Facility Screen) adjacent to the loading dock at Building 1. A leak was discovered during a routine pressure test in the fall of 1989 (Letter from the Fruehauf Corporation to NUS Corporation, June 21, 1990); the UST was subsequently drained and taken out of service. The liquid level was lowered by pumping approximately five 55-gallon drums of gasoline from the UST, to bring the level of fuel below the apparent source of the leak, according to a letter from the Fruehauf Corporation to PADEP dated November 22, 1989. The free liquid was then contained with an absorbent, which along with contaminated soil, was subsequently packaged in 55-gallon drums, and disposed of off-site.

The Fruehauf Corporation filed a Notice of Intent to Close a Storage Tank with PADEP on November 9, 1989 and September 7, 1990. The UST was removed in September 1990 (Letter from Carlucci Construction Company to PADEP, February 5, 1991). According to a 1992 Environmental Site Assessment, approximately 100 tons of contaminated soil was disposed off site at the Erie Way facility in Bedford, Ohio, while one 55-gallon drum of contaminated water was to be disposed with other waste generated by the Fruehauf Corporation. The Fruehauf Corporation submitted a Storage Tank and Spill Prevention Act Notification of Contamination Report to PADEP on September 17, 1990 indicating that minor soil contamination and odors were discovered upon excavation of the UST.

A September 19, 1990 PADEP Storage System Report indicated that the UST contained several holes, contaminated soil could be observed at a depth of 16 feet in the excavation, and that excavation was stopped at bedrock (approximate depth of 20 feet). The excavation was located near the foundation of Building 1 and the Fruehauf Corporation chose not to continue the excavation around the perimeter of the tank to protect the structural integrity of Building 1. PADEP required the Fruehauf Corporation to collect four soil borings (one from each excavation wall) and install four monitoring wells.

A PADEP Storage System Report, dated October 22, 1990 indicated that PADEP believed there was residual contamination in the tank excavation, however, did not expect it to affect groundwater quality and subsequently recommended that the excavation be backfilled. Since the groundwater in the area of the former lagoon was being

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monitored, PADEP allowed the Fruehauf Corporation to use that data as background conditions and required the installation of one monitoring well (MW-6) at the tank excavation. PADEP informed the Fruehauf Corporation that the installation of additional monitoring wells would be necessary if contamination related to the UST was discovered.

Four soil samples were collected; one each from the north, south, east and west walls of the UST excavation. These soil samples contained concentrations of:

- TPH concentrations ranged from non-detect to 80 ppm
- Benzene concentrations were non-detect
- Toluene concentrations ranged from non-detect to 38 ppm
- Ethylbenzene concentrations ranged from non-detect to 87 ppm
- Xylenes (Total) concentrations ranged from non-detect to 210 ppm.

A groundwater sample collected in February 1992 contained concentrations of less than 1 ppb of benzene, toluene, ethylbenzene, and xylene, and less than 0.2 ppb of TPH. It was not clear to Briar Hill Steel or United Defense LP representatives when the monitoring of this well discontinued. No additional information was found in PADEP or USEPA files.

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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)?

_____ 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): _____

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.

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

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

_____ 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): _____

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5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “**insignificant**” (i.e., the maximum concentration³ 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 concentration³ 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 concentration³ 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 concentrations³ 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): _____

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

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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 implemented⁴)?

_____ 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): _____

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.

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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?”

_____ 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): _____

