

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: Lyondell Chemical Company

Facility Address: 3801 West Chester Pike, Newtown Square, Pennsylvania 19073

Facility EPA ID #: PAD046538211

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])

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.

 X 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):

Lyondell Chemical Company (Lyondell or facility) is situated on 312 acres of land located at 3801 West Chester Pike, Newtown Square, Newtown Township, Delaware County, Pennsylvania. The property was ultimately subdivided into two separate parcels. The western 112 acres of the property (west of the main entry road) are currently owned and occupied by SAP America, Inc. (SAP). The eastern 200 acres of the property (east of the main entry road) are currently owned by BPG Real Estate Investors Straw Party 1 LP (BPG). Lyondell, along with multiple separate operating entities (e.g., Graham Partners, Catholic Health East and Medstaff, SAP, and the Ellis Athletic Center), currently lease building space from BPG. Note: Non-facility buildings in the complex included the Cottages, Gymnasium, Training Center, Auditorium, and Medical Building (also referred to as the Dispensary).

The facility is bordered to the north by vacant land and residences. Properties to the east, west, and south of the facility are primarily residential with some commercial properties intermixed. Bryn Mawr Hospital Health Center is located directly south of the facility on BPG’s property. The remainder of the property owned by BPG has been approved for redevelopment, which will include office, retail, and residential uses. Currently, the property consists of approximately 20 percent impermeable surfaces (buildings and paved areas) and 80 percent permeable surfaces (vegetation and stormwater ponds).

The facility and surrounding properties are provided with potable water supplied by Aqua Pennsylvania, Inc.’s main system. There are no surface water intakes located within one mile of the facility, according to the PADEP eMapPA website (accessed February 1, 2010). According to the Department of Conservation and Natural Resources Pennsylvania Groundwater Information System, there are two water supply wells located within 0.5 miles of the facility. One well (reportedly a domestic supply well) is approximately 0.35 miles south of the facility at the current location of the CVS store located directly across West Chester Pike from the facility’s main entry road. The second well (reportedly a public supply well for a skateboard park) is approximately 0.5 miles south of the facility in a residential area. Both wells are listed as 161 feet deep installed in November 1977. Based on the current land uses at the reported locations of the wells and because the township is serviced by the public water supply, it is not expected that these wells currently exist.

From 1921 through 1977, the property on which the facility is located was the campus of the Ellis School for Fatherless Girls. The property was purchased in October 1978 by Atlantic Richfield Company (ARCO) who subsequently constructed a facility complex on the eastern portion of the property from which its chemicals division operated under the name of ARCO Chemical Division of Atlantic Richfield Company. The facility was constructed in 1979 and began operating in 1981 as a research and development (R&D) center focusing on chemicals (primarily propylene oxide and its derivatives) that are used to make consumer end products. Research conducted at the facility ranged from small bench-scale experiments performed in its laboratories to pilot plants. No commercial chemical manufacturing was performed at this facility.

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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In October 1987, ARCO spun off its chemicals division, transferring substantially all of the assets and liabilities of the ARCO Chemical Division of Atlantic Richfield Company. At this time, the facility began operating under the name of ARCO Chemical Company (ACC). ARCO retained ownership of the property and leased the facility to ACC. In October 1997, ARCO (later bought by British Petroleum [BP]) sold the western half of the property (west of the main entry road) to SAP on which it constructed its headquarters building. The remaining eastern half of the property (east of the main entry road), including the ACC lease, was ultimately sold to SAP in March 2000. In July 1998, ACC became a wholly-owned subsidiary of Lyondell Chemical Worldwide, Inc. and Lyondell assumed ACC's lease. In December 1999, Lyondell Chemical Worldwide, Inc. was merged into Lyondell Chemical Company. Lyondell Chemical Company continued to lease the facility from SAP.

In March 2000, Bayer Corporation (Bayer) purchased Lyondell's polyolefins business and continued to operate it from this location under its own USEPA generator identification number (PAR000023994), sub-leasing the space from Lyondell. Lyondell continued to operate the remainder of its R&D facility at this location, during this time. In December 2002, Bayer vacated the property, retaining ownership of the polyolefin business. Bayer took some equipment with them when they vacated the property, and sold the remaining equipment at the facility back to Lyondell. (Note: Bayer does not own any of the equipment currently on-site, and never owned any parcels of the property).

In June 2004, SAP sold approximately 200 acres of the 312-acre property, including the buildings leased by the facility and its lease, to BPG Management Company L.P. SAP retained the remaining 112 acres where they constructed their current headquarters building. The 200 acre property (east of the main entry road) is currently owned by separate limited partnerships affiliated with BPG Properties Ltd. and managed by BPG Management Company L.P. The Lyondell-leased areas of the facility are operated by Lyondell Chemical Company, an indirect wholly-owned subsidiary of LyondellBasell Industries, N.V. (LyondellBasell). (Note: Lyondell merged with Basell Polyolefins in December 2007, but continued to operate under the name of Lyondell Chemical Company.)

The facility currently serves as a R&D center for the company's chemicals and fuels businesses. It also served as the commercial office of its North American (N.A.) Polymers business from late 2009 through late 2010 when the N.A. Polymers business moved to its Houston location. R&D work (which is either conducted in the facility's laboratories, bays, high pressure cells, or pilot plants) focuses on improving the technology used to manufacture raw materials for consumer end products such as plastics, furniture foams, athletic footwear, paints, cosmetics, fabrics, gasoline and more. No commercial manufacturing takes place at this facility.

The facility is a large quantity generator of various types and quantities of chemical wastes. Wastes are stored in small containers (e.g., lab packs) and in 55-gallon drums until shipped off-site by licensed transporters for disposal at permitted facilities. In general, wastes generated at the facility have included acetone, isopropyl methanol, styrene, toluene, methylene chloride, acetone isopropanol, mixed amines, polyester resin, chloroform, methyl alcohol, allyl alcohol, toluene, diisocyanate, acetaldehyde, propylene oxide, propylene, isobutylene, n-butane, and petroleum hydrocarbons. Wastes are generated in the laboratories and bays located in the B-building and the pressure cells, and the E-building pilot plants. The wastes are stored in satellite accumulation areas until they are transferred to the main waste storage area located outside and north of the B-building. Wastes generated in the E-building pilot plants are temporarily stored in the separate smaller drum storage area (known as the E-pad) located outside the northwest corner of the E-building, and are transferred daily to the main drum storage area. Two releases (one-liter container of acryloyl chloride and approximately six gallons of propylene oxide) were reported at the facility, both were contained on concrete surfaces and immediately cleaned up.

Non-contact industrial cooling water and wastewater from the facility's laboratories and pilot plants are stored in two wastewater pretreatment aboveground storage tanks (ASTs) located behind (north of) the E-building. The wastewater pretreatment system consists of two open-top steel ASTs, one of 143,000-gallon capacity (interim tank) and one of 36,000-gallon capacity (overflow tank). The non-contact cooling water and laboratory wastewater is directed via underground drains to the 143,000-gallon AST which acts as a settling and equalization tank before the water is discharged daily under permit to the Delaware County Regional Water Quality Control Authority (DELCORA) Publicly Owned Treatment Works (POTW). The smaller AST (36,000-gallon AST) is available for overflow purposes. Facility representatives indicate the smaller holding tank is typically empty.

Multiple underground storage tanks (USTs) and ASTs were located on the 312 acre property. These included two 30,000-

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gallon USTs at the heating and cooling plant; two 7,500-gallon USTs at the Training Center; one 1,000-gallon UST at the Material Dispensary; and one 550-gallon UST at the President's House. The USTs were used to store No. 2 fuel oil for heating purposes. These USTs (with the exception of the two 30,000-gallon USTs) were removed from the property by ACC in 1991. Extensive contamination was identified in the excavation for the two 7,500-gallon USTs located at the Training Center. Oil was observed flowing beneath the fill pipe of one of the USTs. The contaminated soil was excavated, and post-excavation soil samples analyzed for total petroleum hydrocarbons (TPH) showed the concentrations were below 100 parts per million (ppm). (Note: A TPH concentration of 377 ppm was detected in one of the post-excavation floor samples, and additional soil was reportedly removed in the vicinity of this sample. However, there was no documentation that confirmatory soil samples were collected from this area prior to backfilling the excavation.)

Post-excavation soil samples collected at the Dispensary UST excavation showed TPH concentrations were 11 ppm. However, initial post-excavation soil samples collected at the President's House UST excavation showed TPH concentrations of 911 ppm and 1,246 ppm. Accordingly, additional soil was removed and post-excavation soil samples showed TPH concentrations were below 100 ppm (27 ppm and 39 ppm). Pennsylvania Department of Environmental Protection (PADEP) determined that no further action was necessary for the four USTs. During this time, ACC also removed two 550-gallon ASTs that contained gasoline and diesel fuel in the area referred to as the Contractor's Area (currently the property owned and operated by SAP located west of the main entrance road). While removing the original ASTs, gasoline-impacted soil was observed, and approximately 120 cubic yards of soil was excavated. No additional information (particularly related to confirmatory soil sampling) was provided in the report. Groundwater was not encountered during the investigation; therefore, no groundwater investigation was conducted at that time.

In November 1992, ACC removed seven additional USTs that contained the facility's raw and waste materials located behind (north of) the E-building. Four of the USTs were permanently closed. These included one 1,000-gallon light gasoline/oil tank (TK-103); one 6,500-gallon hexane tank (TK-104); one 6,500-gallon cyclopentane tank (TK-105); and one 6,500-gallon waste solvent/hexane tank (TK-107). The remaining three USTs were replaced with upgraded, compliant equipment. These included one 6,500-gallon styrene tank (TK-101), one 500-gallon pentane tank (TK-102), and one 2,500-gallon xylene/toluene tank (TK-106). The USTs appeared to be in good condition and no evidence of contamination was observed. All piping was aboveground. Three post-excavation soil samples were collected from beneath each UST. Samples were collected directly beneath and at three feet below the bottom of tanks T-101, T-102, and T-103; and at depths of one foot and four feet below the bottom of tanks T-104, T-105, T-106, and T-107. The samples were analyzed for volatile organic compounds (VOCs). VOCs were not detected in the soil samples. The excavation was backfilled with the excavated materials, which was reportedly pre-screened for contaminants. On March 8, 1993, PADEP issued a no further action determination for the seven USTs. Groundwater was not encountered during the investigation; therefore, no groundwater investigation was conducted at that time. The four USTs that remain are currently empty and are registered with PADEP.

In March 1998, while ACC was upgrading the equipment for the two 30,000-gallon fuel oil USTs adjacent to the boiler house, indications of a release were observed. Polynuclear aromatic hydrocarbons (PAHs) were identified in soil samples collected from the excavation area. However, none of the detected concentrations were above the PADEP direct contact residential and non-residential subsurface soil (2 to 15 feet) medium-specific concentrations (MSCs) or the soil to groundwater, used aquifer, total dissolved solids (TDS) less than 2,500 milligrams per liter (mg/L) residential MSCs. Groundwater was not encountered during the investigation; therefore, no groundwater investigation was conducted at that time.

The current property owner (BPG) identified 15 groundwater monitoring wells on the property that were installed by previous property owners in 1997 (MW-104, MW-105, and MW-107) and 2000 (MW-1 through MW-11, and MW-4D). The wells range in depth from 28 to 60 feet bgs. BPG determined that the wells were no longer necessary; however, prior to abandoning them, BPG contracted IES Engineers (IES) to collect one round of groundwater samples to determine the groundwater quality at the property. IES collected samples from 13 of the 15 wells in October 2010. One of the wells (MW-8) could not be located, and MW-1 could not be sampled because approximately 0.5 inches of separately phase liquid (SPL) was encountered in the well. (Note: MW-1 is located in the vicinity of the former 7,500-gallon fuel oil USTs removed at the Training Center in 1990.) The static water levels gauged in October 2010 ranged from 16.59 feet bgs on the northern portion of the property to 33.61 feet bgs at on the southern portion of the property. The interpreted direction of groundwater flow was to the south, towards Route 3.

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EIS sampled 14 groundwater monitoring wells including MW-1 November and December 2011 to evaluate the groundwater quality at the property. Benzene (0.42 ug/L, 0.52 ug/L) was detected in MW-1 below the reporting limit, but greater than or equal to the method detection limit. The concentrations are below the used aquifer, residential and non-residential MSCs of 5 ug/L. No other monitoring wells samples detected benzene and only the MW-9 samples from both sampling events detected chloroform (2.4 ug/L and 1.1 ug/L) below the used aquifer, residential and non-residential MSCs of 80 ug/L.

The groundwater samples did contain Semi volatile organic compounds (SVOCs), most being detected in MW-1: acenaphthene, acenaphylene, bis(2-ethylhexyl)phthalate, 2-chlorophenol, di-n-butyl phthalate, fluorine, 2-methylnaphthalene, naphthalene, and phenanthrene; all SVOCs were below the respective used aquifer, residential and non-residential MSCs. Bis(2-ethylhexyl)phthalate and di-n-butyl phthalate were detected in the sample collected from MW-10, below the used aquifer, residential and non-residential MSCs. Only di-n-butyl phthalate was detected in MW-104, below the used aquifer, residential and non-residential MSCs.

Arsenic, barium, cadmium, chromium, lead, selenium, and silver were detected in one or more of the groundwater samples, but at concentrations less than the respective used aquifer, residential and non-residential MSCs.

In January 2011, BPG submitted a Notice of Intent to Remediate (NIR) to PADEP, which stated that BPG intends to demonstrate attainment of the Statewide Health Standards (SHS) for groundwater under the PADEP Voluntary Cleanup (Act 2) Program. This will include additional groundwater characterization, soil sampling in the vicinity of the two former 7,500-gallon fuel oil USTs at the Training Center, and analyzing the samples for the individual constituents of No. 2 fuel oil. In addition, the fuel oil USTs were installed by the school prior to ARCO's purchase of the property. Ownership of the areas where the fuel oil USTs were removed was transferred to the subsequent property owners [SAP, and later BPG].

As part of the PADEP NIR sampling BPG sampled the 14 groundwater wells in October 2013 and again in September 2014. In addition well MW-4 was also sampled in March 2014 and June 2014. Well MW-4 was the only well that had elevated results above the residential used aquifer levels for Barium (2760 ug/L).

The detected VOCs, SVOCs and metals concentrations were below the PADEP used aquifer, residential and non-residential MSCs except bis(2-ethylhexyl)phthalate and barium. Bis(2-ethylhexyl)phthalate was detected in one well (32 ug/L at MW-5) above the MSC of 6 ug/L, and barium was detected in two wells (2,500 ug/L at MW-4 and 2,600 ug/L at MW-4D) above the MSC of 2,000 ug/L. The source for these elevated concentrations was reportedly unknown; however, IES suspected that the elevated barium concentrations were naturally occurring conditions (IES, 2010). (Note: Bis(2-ethylhexyl)phthalate is used in the production of polyvinyl chloride [PVC] materials and is a common laboratory contaminant, which may contribute to the elevated concentration detected in the MW-5 sample. Monitoring well MW-5 is located upgradient to the facility's operational areas.) Groundwater sample results for wells surrounding the formerly and currently operational area of the facility indicate that groundwater has not been impacted by facility related activities. In subsequent rounds of sampling done in 2013 and 2014, bis(2-ethylhexyl)phthalate was found at levels below PADEP MSC and EPA Drinking Water Standards.

While the September 2014 Barium Concentration in MW-4 (2760 ug/L) was above PADEP's MSC for groundwater, this concentration is below EPA's Regional Screening Level (RSL) for tap water (3800 ug/L).

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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):

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.

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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 implemented)?

_____ 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 groundwatercontamination 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):

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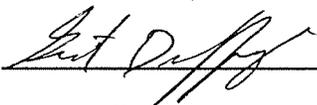
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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting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

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 Lyondell Chemical Company facility, EPA ID # PAD046538211 located at 3801 West Chester Pike, Newtown Square, Pennsylvania 19073
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 reevaluated 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)	<u></u>	Date	<u>3/26/15</u>
	(print)	<u>Grant Dufficy</u>		
	(title)	<u>RCRA Project Manager</u>		
Supervisor	(signature)	<u></u>	Date	<u>3/27/15</u>
	(print)	<u>Paul Gotthold</u>		
	(title)	<u>Assoc. Dir., PA Remediation, LCD</u>		
	(EPA Region or State)	<u>EPA region III</u>		

Locations where References may be found:

USEPA Region III
Waste and Chemical Mgmt. Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
South East Regional Office
2 East Main Street
Norristown, PA 19401

Contact telephone and e-mail numbers

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