DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Standard T Chemical Company, Inc.**
Facility Address: **1312 West Elizabeth Avenue, Linden, New Jersey 07036**
Facility EPA ID#: **NJD011394467**

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 EIs 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 objectives of the RCRA Corrective Action program, the EIs 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 groundwater 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 Determination status codes should remain in the RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

The former Standard T Chemical facility is located on a 2.1-acre parcel in the City of Linden, Union County, New Jersey. The property lies north of (and fronts) West Elizabeth Avenue in an industrially zoned area of Linden. Adjacent land uses include metal products and plastic injection molding

manufacturing facilities and transportation warehouses. Standard T was engaged in the formulation of specialty inks, lacquers, and varnishes for marking electrical wire and cable. Standard T occupied this property without substantial change in operation from 1925 through 1986.

During active operations, solvents used at the Standard T facility included methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), acetone, butanol, cyclohexanone, ethyl acetate, methylene chloride, methanol, toluene, and xylene. Inorganics used on site included lead chromate, cadmium pigments, and antimony trioxide. Phosphoric acid, sodium hydroxide, and phthalates were also used on site. The site consisted of an above ground tank farm, solvent storage areas, loading docks, a manufacturing area, a dry materials warehouse, a storage shed for nitrocellulose, and five underground storage tanks (UST). Four of the USTs were used to store product varnish and solvents, while the remaining UST stored fuel oil. There was also a railroad spur present on the site. No waste disposal occurred on site. Spent solvents were stored in drums in a waste solvent storage area and removed from the site by a licensed hazardous waste carrier.

All on-site structures were demolished and removed in 1986. In addition, the five USTs were excavated and removed from the site. Remedial investigations and remedial actions for soil and groundwater were performed at the Standard T site between 1989 and 1996. Investigations determined that groundwater had not been impacted above relevant standards. Soil contamination was identified and delineated through numerous sampling events. Excavation and removal of a majority of the contaminated soil was performed. Several small areas of lead and polychlorinated biphenyls (PCB) contamination were left in place and, as a result, a Declaration of Environmental Restrictions (DER) and engineering controls were implemented at the site to mitigate potential exposure to contaminated soil areas. The New Jersey Department of Environmental Protection (NJDEP) approved a No Further Action determination for the Standard T site on October 14, 1997. Thus, all remedial investigations and activities at this site are complete.

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.

Summary of Areas of Concern (AOCs): During the initial ECRA soil investigations, the site was divided into seven AOCs based on functional and geographic consideration. These seven areas are described below. Groundwater beneath the site was investigated as one unit and is discussed as its own AOC (Area 8). A site map depicting the AOCs is provided in Attachment 1.

Area 1, Former Diked Above Ground Tank Farm: Area 1 is located in the northwest corner of the site and formerly contained a diked above ground tank farm. The above ground tanks contained raw products such as MEK, toluene, ethanol, and MIBK. Initial investigations in this area in the late 1980s indicated the presence of PCBs, petroleum hydrocarbons (PHCs), mercury, and volatile organic compounds (VOCs). Excavation 1A was performed in August 1990 to approximate final dimensions of 60 ft by 15 ft by 2 ft in depth. Post-excavation samples indicated that contaminants had been remediated to less than an order of magnitude above[1] the New Jersey Residential Direct Contact Soil Cleanup Criteria (NJ RDCSCC). Thus, no further action was recommended by Standard T and approved by NJDEP for this AOC (Ref. 1).

Area 2, Former Solvent Drum Storage Area: Area 2 is also located in the northwest corner of the site, immediately southeast of Area 1. This area was used to store drums of waste solvent. A series of fill pipes for the above ground tank farm (Area 1) and the railroad spur, used for the transport of products, was also located on the northern and northwestern boundary of Area 2. Initial investigations in this area in the late 1980s indicated the presence of VOCs, cadmium, chromium, copper, lead, zinc, PCBs, PHCs, MEK, and MIBK above relevant standards. Area 2 was subsequently divided into two sub-areas, 2A and 2B, for excavation.

Excavation Area 2A: Three rounds of soil excavation were performed from August 1990 to May 1991. Final excavation dimensions are shown on Attachment 1. Upon review of the post-excavation sampling data, NJDEP required additional sampling to delineate PCB contamination present at greater than an order of magnitude above the NJ RDCSCC. The horizontal and vertical extent of the post-excavation PCB contamination was delineated in 1994. Standard T opted to leave the remaining PCBs in place at this

[1] Standard T had begun soil remediation activities, and had received a No Further Action determination for 9 of the 13 soil excavation areas, prior to the promulgation of the NJ Soil Cleanup Criteria on February 3, 1992. Per Section 36e. of P.L. 1993, c. 139, facilities that have been previously remediated in compliance with soil remediation standards in effect at the completion of the remediation, will not be liable for any additional remedation unless the difference between the new standard and the existing level of contamination differs by an order of magnitude or more.

AOC and implement a DER and engineering controls to prevent unacceptable exposure. NJDEP approved this approach (Refs. 11, 12).

Excavation Area 2B: Two rounds of soil excavation were performed in August 1990 and February 1991. Approximate final dimensions of the excavation were 38 ft by 34 ft by 8 ft in depth. Post-excavation sample results indicated that contaminants had been remediated to within an order of magnitude above the NJ RDCSCC, with the exception of one sample location (PCBs at 6.9 mg/kg in SW-2B-4). NJDEP accepted a No Further Action proposal for this AOC on March 24, 1993 (Ref. 7).

Area 3, Raw Materials Storage Area: Area 3 is located along the western boundary of the site and included an area near the loading docks and an adjacent solvent (raw materials) storage area. Four USTs used to store product solvent and varnishes were formerly located at this area. Initial investigations in this area in the late 1980s indicated the presence of metals, PCBs, MIBK, and VOCs above relevant standards. Area 3 was subsequently divided into three sub-areas, 3A, 3B, and 3C, for excavation.

Excavation Area 3A: Three rounds of soil excavation were performed from August 1990 to May 1991. Final excavation dimensions are shown on Attachment 1. Upon review of the post-excavation sampling results, NJDEP required additional sampling to delineate the PCB contamination present at greater than an order of magnitude above the NJ RDCSCC. The horizontal and vertical extent of the PCB contamination was delineated in 1994. Standard T chose to leave the remaining PCBs in place at this AOC and implemented a DER and engineering controls to mitigate exposure. NJDEP approved this approach (Refs. 11, 12).

Excavation Area 3B: Two rounds of soil excavation were performed in August 1990 and February 1991. Final excavation dimensions are shown on Attachment 1. Post-excavation sample results indicated that contaminants had been remediated to within an order of magnitude above the NJ RDCSCC. NJDEP concurred with the No Further Action recommendation for this excavation area. Sample locations found to be above the NJ RDCSCC were included in the DER to prevent potential exposure to the remaining soil contamination in this area (Refs. 11, 15, 17).

Excavation Area 3C: Three rounds of soil excavation were performed from August 1990 to May 1991. Final excavation dimensions are shown on Attachment 1. Upon review of the post-excavation sampling results, NJDEP required that additional sampling be performed to delineate the lead and PCB contamination. The horizontal and vertical extent of the lead and PCB contamination was delineated in 1994, and additional soil sampling was performed in 1996 to determine if PCB contamination above the NJ RDCSCC extended off site. Results indicated that contamination did not extend off site above the NJ RDCSCC. Standard T chose to leave the remaining lead and PCBs in place at this AOC and implemented a DER and engineering controls to prevent exposure to the remaining contamination. Engineering controls were not required for the lead contamination because concentrations were below the New Jersey Non Residential Direct Contact Soil Cleanup Criteria (NJ NRDCSCC) (600 mg/kg). NJDEP approved the remedy and required no further action for this area (Refs. 11, 12, 16, 19).

Area 4, Office Trailers and Vicinity: **Area 4** is located in the southeast section of the site and was the former location of two office trailers. This area also contained the fuel oil UST and a transformer. During initial investigations in the late 1980s, PCBs, PHCs, and VOCs were detected in this area. Area 4 was subsequently divided into two sub-areas, 4A and 4B, for excavation. Area 4A contained the former fuel oil UST that was removed in 1987. Area 4B was the location of a former transformer pad.

Excavation 4A: Soil was excavated from this area in August 1990. The final dimensions of the excavation were 18.5 ft by 16 ft by 1 ft in depth. Post-excavation sample results indicated that contamination was above the NJ RDCSCC in two locations. Thus, Standard T concluded that sufficient cleanup had been conducted for this AOC and no further action was necessary. There is, however, one sample location (BOT-4A-1, 0.5 to 1.5 feet below ground surface [bgs]) that contains PCBs (6.0 mg/kg) at levels greater than an order magnitude above the NJ RDCSCC. Since this level was only slightly above the site-specific standard (4.9 mg/kg) and since the average of the soil sample results in the vicinity of this sample location was below the site-specific standard, NJDEP concurred with the No Further Action recommendation (Ref. 11).

Excavation 4B: Soil was excavated from this area in August 1990. The final dimensions of the excavation were 32.5 ft by 13 ft by 1.5 ft in depth. Post-excavation sample results indicated that contaminants had been remediated to levels less than an order of magnitude above the NJ RDCSCC. Thus, no further action was recommended for this excavation area. NJDEP concurred with this recommendation (Ref. 11).

Area 5, Dry, Raw Materials Storage Area: **Area 5 is** located in the central portion of the site and consisted of a dry, raw materials warehouse. The warehouse structure had a concrete floor with no floor drains. During initial investigations in the late 1980s, metals, VOCs, and PHCs were detected to a maximum depth of eight feet bgs, which was at the groundwater table for the site. Soil excavation was performed at the area in August 1990. The final excavation dimensions are shown on Attachment 1. The excavation extended down to nine feet bgs, and subsequently the excavation filled with groundwater. Based on post-excavation sample results, NJDEP required additional sampling to delineate PCB contamination at the bottom of the excavation. Due to the presence of groundwater in the excavation area, however, sampling could not be performed. Based on the lack of PCBs in groundwater samples collected downgradient of this excavation area, no further remedial action was recommended for this AOC. NJDEP concurred with this approach based on the inability to perform additional soil sampling. **Sample locations above the NJ RDCSCC were included in the DER as areas of contamination not to be disturbed (Refs. 11, 12).**

Area 6, Historical Waste Storage: **Area 6** is located on the eastern boundary of the site and encompassed a former drum storage area used to store waste solvents. Initial investigations in the area in the late 1980s detected low levels of lead, PCBs, and PHCs. Soil excavation was performed in August 1990. The final dimensions of the excavation were 33 ft by 15 ft by 1.5 ft in depth. Post-excavation sample results indicated that contamination levels were less than an order of magnitude above the NJ RDCSCC, thus no further action was recommended. NJDEP concurred with this recommendation (Ref. 11).

Area 7, Nitrocellulose Storage Shed and Vicinity: Area 7 is located in the northeast corner of the site and included the nitrocellulose shed and surrounding area. Historical soil sampling in this area detected elevated concentrations of PHCs, lead, zinc, and cadmium. During the investigations this area was divided into three excavation areas, 7A, 7B, and 7C.

Excavation Area 7A: Soil was excavated from this area between August 1990 and May 1991. The final dimensions of the excavation were approximately 25 ft by 20 ft by 3 ft in depth. Post-excavation sampling results indicated that soil remediation had reduced contaminant concentrations to less than an order of magnitude above the NJ RDCSCC, thus no further remedial action was recommended. NJDEP concurred with this recommendation (Ref. 11).

Excavation Area 7B: Soil was excavated from this area between August 1990 and May 1991. The final excavation dimensions are shown on Attachment 1. Upon review of the post-excavation sample results, NJDEP required additional sampling to delineate PCB contamination along the property boundary. Additional on- and off-site sampling was performed in 1994 and 1996 to horizontally and vertically delineate the PCB contamination. Sample results indicated that PCB contamination did not extend off site at levels above the NJ RDCSCC. Thus, Standard T opted to leave the elevated PCB contamination in place at this AOC and implemented a DER and engineering controls to prevent exposures to the remaining contamination. NJDEP approved this approach (Refs. 11, 12).

Excavation Area 7C: Soil was excavated from this area between August 1990 and May 1991. The final dimensions of the excavation were approximately 15 ft by 11 ft by 3.5 ft in depth. Post-excavation sampling results indicated that soil remediation had reduced contaminant concentrations to less than an order of magnitude above the NJ RDCSCC, thus no further remedial action was recommended. NJDEP concurred with this recommendation (Ref. 11).

Area 8, Groundwater: Standard T performed an initial groundwater investigation in 1989 while installing four monitoring wells at the site. Based upon the initial investigation results, NJDEP instructed Standard T to install three piezometers to determine the direction of groundwater flow beneath the site and conduct two complete sampling rounds to confirm that groundwater had not been impacted by activities at the site. The two complete rounds of groundwater sampling were performed on March 14, 1990, and May 27, 1993. In a letter dated May 24, 1990, NJDEP determined that based on the initial investigation and the first round of groundwater sampling, groundwater remediation was not required at the site. However, NJDEP did require the additional (second) round of groundwater sampling upon completion of the soil cleanup program. Groundwater sample results from the first and second rounds of groundwater sampling indicated that no constituents were detected above the NJDEP Ground Water Quality Criteria (NJ GWQC). Consequently, no further action was required for groundwater at the site (Refs. 4, 9, 19).

In summary, industrial activities ceased at the site in 1986 when all site structures were either removed or demolished. Remediation of site soils was initiated in August 1990 and subsequently required two additional rounds of cleanup work, which were completed in May 1991. In total, approximately 4,400 tons of X-725 coded soil (X-725 was a hazardous waste code formerly used by NJDEP in the regulation of

waste oil) and 200 tons of PCB Toxic Substances Control Act (TSCA) regulated soil were excavated and removed from the site. PCB contamination was left in place above the NJ RDCSCC in all areas, and lead contamination was left in place above the NJ RDCSCC in one area. However, based on post-excavation sample results, NJDEP concluded that no further remedial actions were required for Areas 1, 2B, 3B, 4A, 4B, 5, 6, 7A, and 7C. Further sampling was required for Areas 2A, 3A, 3C, and 7B to horizontally and vertically delineate PCB and lead contamination. Based on the additional investigation results, engineering controls were put in place at Areas 2A, 3A, 3C, and 7B, in addition to the DER established for the site. Based on the results of the groundwater sampling events, no further remediation is required for groundwater at the site, as results indicated groundwater has not been impacted by activities at the Standard T site.

References:

1. Letter from Christopher Marraro, Sive, Paget & Riesel, P.C., to M. Metlitz, NJDEP, re: Environmental Investigation for the Standard T Chemical Company, Inc. Facility, Linden, New Jersey. Dated April 29, 1987.
2. Letter from J. Miles, Kay Scholer, Fierman, Hays & Handler, to Mark Fisher, NJDEP, re: Results of Groundwater Sampling Program, First Round. Dated March 14, 1990.
3. Letter from Joseph Spatola, Clement Associates Incorporated, to Mark Fisher, NJDEP, re: Second Round Groundwater Sampling. Dated May 16, 1990.
4. Letter from Karl Delaney, NJDEP, to Christopher Marraro, Kay Scholer, Fierman, Hays & Handler, re: Groundwater Sampling Report/Cleanup Plan Addendum. Dated May 24, 1990.
5. Letter from Joseph Spatola, Clement International Corporation, to Sal Balakrishnan, NJDEP, re: Results of the Soil Remediation Program. Dated July 10, 1991.
6. Letter from David Patrick, Clement International Corporation, to Sal Balakrishnan, NJDEP, re: Third Round of Soil Sampling at the Standard T Site. Dated July 31, 1992.
7. Letter from Tessie Fields, NJDEP, to Christopher Marraro, Kay Scholer, Fierman, Hays & Handler, re: Review of Cleanup Actions at the Standard T Site. Dated March 24, 1993.
8. Letter from David Patrick, Clement Risk Assessment, to Sal Balakrishnan, NJDEP, re: Fourth Round of Soil Sampling at the Standard T Site. Dated June 2, 1993.
9. Letter from David Patrick, Clement International Corporation, to Sal Balakrishnan, NJDEP, re: Confirmatory Groundwater Sampling at the Standard T Site. Dated July 16, 1993.
10. Letter from Douglas Stuart, NJDEP, to Christopher Marraro, Kay Scholer, Fierman, Hays & Handler, re: Issues Remaining at the Standard T Site. Dated May 17, 1994.
11. Letter from Gerard Maresca, ICF Kaiser, to Anthony Wagar, NJDEP, re: Remedial Action Workplan Addendum. Dated November 11, 1994.
12. Letter from Douglas Stuart, NJDEP, to Christopher Marraro, Howey & Simon, re: Completion of Site Restoration Activities. Dated June 11, 1995.
13. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Final Remedial Activities at the Standard T Site. Dated August 28, 1995.
14. Letter from Mary Beth DeBord, Altheimer & Gray, to Stephen Maybury, NJDEP, re: Response to Comments on the Remedial Action Report. Dated January 30, 1996.
15. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Attachments to Revised DER. Dated February 29, 1996.
16. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Off-Site Sampling Report. Dated November 15, 1996.
17. Letter from Sean Bezark, Altheimer & Gray, to Jackie Bobko, NJDEP, re: Amended DER. Dated April 2, 1997.

18. Letter from Stephen Maybury, NJDEP, to Christopher Marraro, Howrey & Simon, re: Comments on the Amended DER. Dated May 15, 1997.
19. Letter from Wayne Howitz, NJDEP, to Sean Bezark, Altheimer & Gray, re: Revised No Further Action Designation for the Standard T Site. Dated October 14, 1997.

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"[2] 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:

NJDEP required Standard T to investigate groundwater quality on a site-wide basis. Standard T performed an initial investigation that included installation of four monitoring wells at the site. Samples were collected from each of these wells and analyzed for metals, PHCs, and VOCs (Ref. 1). NJDEP required two additional rounds of groundwater sampling to confirm the groundwater quality at the site (Ref. 2). No hazardous constituents were detected above the NJ GWQC during the initial round of sampling, with the exception of lead (97 µg/l) at well MW-3 in the eastern portion of the site which exceeded the NJDEP suggested groundwater criteria of 50 µg/l in effect at that time (Ref. 1). The wells installed for the investigation were developed by pumping for one-half hour each, according to well construction forms included in the report. Because of the minimal amount of well development, the initial sampling results may have been affected by excess suspended solids in the samples. The two subsequent rounds of groundwater sampling required by NJDEP did not detect any hazardous constituents above the NJ GWQC. Therefore, NJDEP required no further action for groundwater at the site (Ref. 4).

Monitoring wells installed at the site were screened in the uppermost aquifer, a thin (less than 20 feet thick) sequence of unconsolidated clayey sands, silts, and clays overlying the bedrock Triassic Brunswick Formation. Available documentation indicates that NJDEP was concerned about the adequacy of the construction of the monitoring wells. The wells were installed to total depths of 13.5 to 20 feet below ground surface, with 10-foot screen intervals. Because the top of the screens were below the water table in some of the wells, NJDEP instructed Standard T to install three piezometers at the site to collect accurate water level data. The locations of the four wells and the piezometers are shown in Attachment 2. The water level measurements from the wells and piezometers indicate that groundwater flows to the southwest across most of the site, and to the northwest in the northernmost part of the site (Attachment 3).

References:

[2] "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).

1. Sampling Plan Results Report, Standard T Chemical Company, Linden, New Jersey. Prepared by ICF Technology, Inc. Dated August, 1989.
2. Memorandum from Robert Lux, NJDEP, to Mark Fisher, NJDEP, re: Standard T Chemical Company Cleanup Plan. Dated March 23, 1990.
3. Groundwater Sampling Program, Second Round, Standard T Chemical Company, Linden, New Jersey. Prepared By ICF Kaiser Engineers. Dated May 27, 1993.
4. Memorandum from Robert Lux, NJDEP, to Sal Balakrishnan, NJDEP, re: Standard T Chemical Co. Dated October 29, 1993.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[3] 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:

This question is not applicable. See response to question #2.

[3] "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.

____ 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:

This question is not applicable. See response to question #2.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[4] 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 ecosystems 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[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or ecosystem.

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

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

Rationale:

This question is not applicable. See response to question #2.

[4] 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 ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented[5])?

___ 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 ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment[6], appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialist, including an ecologist) adequately protective of receiving surface water, sediments, and ecosystems, 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 ecosystem.

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

Rationale:

This question is not applicable. See response to question #2.

[5] 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.

[6] 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 ecosystems.

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:

This question is not applicable. See response to question #2.

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 Standard T Chemical Company, Inc. Facility, EPA ID# NJD011394467, located at 1312 West Elizabeth Avenue, Linden, New Jersey. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

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

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

Completed by: _____ Date:_____

Stuart Strum
Hydrogeologist
Booz·Allen & Hamilton

Reviewed by: _____ Date:_____

Pat Shanley
Geologist
Booz·Allen & Hamilton

Also Reviewed by: _____ Date:_____

Elizabeth Butler, RPM
RCRA Programs Branch
USEPA Region 2

_____ Date:_____

Barry Tornick, Section Chief
RCRA Programs Branch
USEPA Region 2

Approved by: Original signed by: Date: May 24, 2001

Raymond Basso, Chief
RCRA Programs Branch
USEPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the USEPA Region 2, RCRA Records Center, located at 290 Broadway, 15th Floor, New York, New York, and the New Jersey Department of Environmental Protection Office located at 401 East State Street, Records Center, 6th Floor, Trenton, New Jersey.

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Attachments

The following attachments have been provided to support this EI determination.

- Attachment 1 - Site Map
- Attachment 2 - Groundwater Monitoring Well and Piezometer Locations
- Attachment 3 - Water Table Elevations, Standard T Chemical, May 27, 1993
- Attachment 4 - Summary of Media Impacts Table

Attachment 1 - Site Map

Attachment 2 - Groundwater Monitoring Well and Piezometer Locations

Attachment 3 - Water Table Elevations, Standard T Chemical, May 27, 1993

Attachment 4 - Summary of Media Impacts Table

Standard T Chemical Company, Inc.

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
Area 1. Former Diked Above Ground Tank Farm	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Fencing ▸ DER	PCBs
Area 2. Former Solvent Drum Storage Area	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Capping ▸ Fencing ▸ DER	PCBs
Area 3. Raw Materials Storage Area	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Capping ▸ Fencing ▸ DER	PCBs, Lead
Area 4. Office Trailers and Vicinity	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Fencing ▸ DER	PCBs
Area 5. Dry, Raw Materials Storage Area	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Fencing ▸ DER	PCBs
Area 6. Historical Waste Storage	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Fencing ▸ DER	PCBs
Area 7. Nitrocellulose Storage Shed and Vicinity	No	No	Yes	No	No	Yes	No	▸ Soil Excavation ▸ Capping ▸ Fencing ▸ DER	PCBs
Area 8. Groundwater	No	No	No	No	No	No	No	N/A	N/A