

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action Environmental Indicator (EI) RCRA AInfo code (CA725) Current Human Exposures 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 “Current Human Exposures Under Control” EI

A positive “Current Human Exposures Under Control” EI determination (“YE” status code) indicates that there are no unacceptable human exposures to “contamination” (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all contamination subject to RCRA corrective action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies

While Final remedies remain the long-term 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 “Current Human Exposures Under Control” EI is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and does not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI 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 soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

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

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 above¹ 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 remediation 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. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “**contaminated**”² above appropriately protective risk-based levels (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater		X		
Air (indoors) ³		X		
Surface Soil (e.g., <2 ft)	X			PCBs, lead
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g., >2 ft)	X			PCBs
Air (Outdoor)		X		

_____ If no (for all media) - skip to #6, and enter YE, status code after providing or citing appropriate levels, and referencing sufficient supporting documentation demonstrating that these levels are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each contaminated medium, citing appropriate levels (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter IN status code.

Rationale:

Groundwater

Standard T performed the 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. Water level data from those two rounds of groundwater sampling indicated groundwater flow across most of the site

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 appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

³ Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

was to the southwest. In the northernmost portion of the site, however, groundwater flowed to the northwest. The locations of the four wells and three piezometers are shown on Attachment 2. Those two subsequent rounds of groundwater sampling were performed on March 14, 1990, and May 27, 1993. According a letter dated May 24, 1990, NJDEP determined that groundwater remediation was not required at the site based on the results of the initial investigation and first round of groundwater sampling. However, NJDEP did require the additional (second) round of groundwater sampling upon completion of the soil cleanup program. Groundwater sample results from the 1993 sampling event confirmed that no constituents were present above the NJ GWQC. Consequently, NJDEP determined that no further remediation or action was required for groundwater at the Standard T site (Refs. 4, 9, 20).

Air (Indoors)

Due to the lack of volatile contamination in both soil and groundwater at the site, and given that all buildings at the site have been demolished, migration of contamination via volatilization into indoor air is not a concern at the Standard T site.

Surface/Subsurface Soil

Remediation of site soils was initiated in August 1990, and subsequently required two additional rounds of cleanup work in February and May 1991. In total, approximately 4,400 tons of X-725 coded soil and 200 tons of PCB TSCA-regulated soil were excavated and removed from the site. Based on confirmatory sample results, PCB contamination remained in all areas above the NJ RDCSCC, and lead contamination remained in one area (Area 3C) above the NJ RDCSCC. Upon review of investigation results, NJDEP concluded that no further remedial actions were required for Areas 1, 2B, 3B, 4A, 4B, 5, 6, 7A, and 7C. NJDEP required additional sampling in the remaining excavation areas to horizontally and vertically delineate PCB soil contamination (Ref. 12). Additional investigations were performed in 1994 for Areas 2A, 3A, 3C, and 7B, and again in 1996 for Areas 3C and 7B (Ref. 12, 17). Lead contamination (544.5 mg/kg) was detected above the NJ RDCSCC (400 mg/kg) in only one sample location (3C-2A-1), but this concentration was below the NJ NRDCSCC (600 mg/kg) (Ref. 16).

Standard T began soil remediation activities, and received No Further Action determinations at 9 of the 13 soil excavation areas (i.e., Areas 1, 2B, 3B, 4A, 4B, 5, 6, 7A, and 7C), 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 remediation unless the difference between the new standard and the existing level of contamination differs by an order of magnitude or more. Thus, a PCB soil standard of 4.9 mg/kg was applied at the Standard T site rather than the 0.49 mg/kg NJ RDCSCC (Ref. 12). Table 1 provides the sample locations and concentrations where PCB contamination was left in place above the NJ RDCSCC at the site. The concentrations in bold in Table 1 are above the relevant site-screening criterion of 4.9 mg/kg (Refs. 16, 18, 19).

Table 1 - Soil Sample Locations Exceeding the NJ RDCSCC for PCBs at the Standard T Site (mg/kg)

Excavation	Sample Loc.	Concentration	Excavation	Sample Loc.	Concentration
1A	SW-1A-3	2.60	3C (cont.)	3C-7A-1	14.00
	SW-1A-4	3.30		3C-7A-002	0.87
	SW-1A-5	1.10		3C-7A-1H	5.13
		3C-7A-2H		1.36	
2A	SW-2A-3	1.20	4A	SW-4A-2,	2.40
	SW-2A-4	2.70		BOT-4A-1	6.00
	SW-2A-7	8.30	4B	SW-4B-3	2.50
	SW-2A-7H	2.38		BOT-4B-1	1.20
	SW-2A-7H2	4.18	5A	BOT-5A-5	0.53
	SW-2A-8	4.89		BOT-5A-6	16.00
	SW-2A-10	1.50		BOT-5A-7	1.70
	BOT-2A-2	2.10		BOT-5A-8	7.40
	BOT-2A-3	1.10	6A	SW-6A-2	4.70
	BOT-2A-4	1.60		SW-6A-3	2.00
	BOT-2A-5	1.70		BOT-6A-1	0.53
	BOT-2A-7	0.83		BOT-6A-2	1.10
BOT-2A-9	1.20	7A	SW-7A-1	2.67	
2B	SW-2B-1		0.81	SW-7A-2	3.69
	SW-2B-2		3.40	SW-7A-3	1.30
	SW-2B-4		6.90	SW-7A-4	0.70
3A	SW-3A-1		6.30	BOT-7A-1	0.88
	SW-3A-4	2.59	7B	BOT-7B-1	4.50
	BOT-3A-1	0.68		SW-7B-2	2.00
3B	SW-3B-4	4.60		SW-7B-4	2.50
				SW-7B-7	6.20
3C	SW-3C-1	3.20		SW-7B-8	0.71
	SW-3C-3	4.60		SW-7B-9	3.80
	SW-3C-4	5.61		BOT-7B-2	3.60
	SW-3C-5	3.10	BOT-7B-5	3.60	
	BOT-3C-1	0.54			
	BOT-3C-2	1.00			

	3C-5A-1	11.60	7C	SW-7C-3	3.40
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Concentrations in bold indicate levels above PCB site-specific screening criterion (4.9 mg/kg)

Surface Water/Sediment

There have been no documented impacts to surface water or sediment due to activities at the Standard T site. There are no surface water bodies on site. In addition, groundwater has not been impacted and thus contaminant migration from groundwater to surface water/sediment is not of concern.

Air (Outdoors)

Based on the nature (i.e., PCBs) and extent of soil contamination at the Standard T site and the engineering controls (i.e., capping) that have been implemented, volatile emissions and/or the migration of particulates entrained on dust are not expected to be significant exposure pathways of concern 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. Memorandum from Robert Lux, NJDEP, to Sal Balakrishnan, NJDEP, re: BUST Assessment, Standard T Chemical Co. Dated October 29, 1993.
11. 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.
12. Letter from Gerard Maresca, ICF Kaiser, to Anthony Wagar, NJDEP, re: Remedial Action Workplan Addendum. Dated November 11, 1994.
13. Letter from Douglas Stuart, NJDEP, to Christopher Marraro, Howey & Simon, re: Completion of Site Restoration Activities. Dated June 11, 1995.
14. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Final Remedial Activities at the Standard T Site. Dated August 28, 1995.

15. Letter from Mary Beth DeBord, Altheimer & Gray, to Stephen Maybury, NJDEP, re: Response to Comments on the Remedial Action Report. Dated January 30, 1996.
16. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Attachments to Revised DER. Dated February 29, 1996.
17. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Off-Site Sampling Report. Dated November 15, 1996.
18. Letter from Sean Bezark, Altheimer & Gray, to Jackie Bobko, NJDEP, re: Amended DER. Dated April 2, 1997.
19. Letter from Stephen Maybury, NJDEP, to Christopher Marraro, Howrey & Simon, re: Comments on the Amended DER. Dated May 15, 1997.
20. 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.

3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
*Potential **Human Receptors** (Under Current Conditions)*

“Contaminated” Media	Residents	Workers	Day-Care	Construction	Trespasser	Recreation	Food ⁴
Groundwater							
Air (indoor)							
Surface Soil (e.g. < 2 ft)	No	No	No	No	No	No	No
Surface Water							
Sediment							
Subsurface Soil (e.g. > 2 ft)	-	-	-	No	-	-	No
Air (outdoors)							

Instruction for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. Enter “yes” or “no” for potential “completeness” under each “Contaminated” Media — Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces. These spaces instead have dashes (“-”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

⁴ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Rationale:

Surface/Subsurface Soil

All industrial activities ceased at the Standard T site in 1986. Remedial activities were conducted at the site from 1989 to 1996. On October 14, 1997, NJDEP concluded that no further action was necessary at this site. All remedial investigations and activities at this site are complete. The site is completely surrounded by a chain link fence, eliminating any potential for off-site receptor exposure to on-site soil contamination.

A majority of the on-site soil sampling locations with PCB contamination at levels greater than an order of magnitude above the NJ RDCSCC have been capped to prevent exposure. All PCB-contaminated soil locations are included in the DER for the site. Table 2 presents the sample locations where PCBs were detected above the site-specific criterion (4.9 mg/kg), the sample depths, and whether a cap is present at these sample locations (Refs. 5, 7, 8).

Table 2 - Soil Contamination Remaining at the Standard T Site Above the Site-Specific PCB Criterion (4.9 mg/kg)

Excavation	Sample Number	Sample Depth (ft)	Concentration (mg/kg)	Cap
2A	SW-2A-7	0.5 to 1.0	8.3	Yes
2B	SW-2B-4	0.5 to 1.0	6.9	No
3A	SW-3A-1	0.5 to 1.0	6.3	Yes
3C	SW-3C-4	0.5 to 1.0	5.61	No
	3C-5A-1	1.5 to 2.0	11.60	Yes
	3C-7A-1	0.5 to 1.0	14.00	Yes
	3C-7A-1H	0.5 to 1.0	5.13	Yes
4A	BOT-4A-1	1.0 to 1.5	6.00	No
5A	BOT-5A-6	11.0 to 11.5	16.00	No
	BOT-5A-8	11.0 to 11.5	7.40	No
7B	SW-7B-7	0.5 to 1.0	6.20	Yes

As presented in Table 2 above, there are several elevated sample locations that were not capped. NJDEP did not require a cap over sample locations SW-2B-4, SW-3C-4, and BOT-4A-1, because the detected PCB concentrations were only slightly above the 4.9 mg/kg site-specific standard, and average soil sample results in the vicinity of these sample locations were below the site-specific standard. Due to the depths of the elevated concentrations at BOT-5A-6 and BOT-5A-8, and given that PCBs were not detected in groundwater downgradient of this excavation area, NJDEP did not required any further action at this area. Sample locations BOT-5A-6 and BOT-5A-8 are also explicitly defined in the DER as areas

of contamination that are not to be disturbed. The extent of the deed restrictions and the cap locations are presented in Attachments 3 and 4.

In addition, the elevated sample locations identified in Tables 1 and 2 are post-excavation samples. These excavations were subsequently backfilled and regraded. These elevated PCB concentrations are not exposed at the surface, making exposure for on-site receptors to elevated PCB contamination unlikely.

The USEPA Final Rule and Regulation for Disposal of PCBs, promulgated on July 29, 1998 (63 FR 35390), indicates that the self-implementing cleanup level (i.e., the “walk-away” level) for soil in low occupancy (i.e., industrial) areas is 25 mg/kg. Therefore, although the PCB concentrations remaining at the site are above the NJ NRDCSCC (2 mg/kg), contaminant levels remaining at this site are below the USEPA cleanup standard.

References:

1. 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.
2. Letter from Gerard Maresca, ICF Kaiser, to Anthony Wagar, NJDEP, re: Remedial Action Workplan Addendum. Dated November 11, 1994.
3. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Final Remedial Activities at the Standard T Site. Dated August 28, 1995.
4. Letter from Mary Beth DeBord, Altheimer & Gray, to Stephen Maybury, NJDEP, re: Response to Comments on the Remedial Action Report. Dated January 30, 1996.
5. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Attachments to Revised DER. Dated February 29, 1996.
6. Letter from Gerard Maresca, ICF Kaiser, to Jackie Bobko, NJDEP, re: Off-Site Sampling Report. Dated November 15, 1996.
7. Letter from Sean Bezark, Altheimer & Gray, to Jackie Bobko, NJDEP, re: Amended DER. Dated April 2, 1997.
8. Letter from Stephen Maybury, NJDEP, to Christopher Marraro, Howrey & Simon, re: Comments on the Amended DER. Dated May 15, 1997.
9. 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.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **significant**⁵ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks?

_____ If no (exposures cannot be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale:

This question is not applicable. See response to question #3.

⁵ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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

_____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

_____ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale:

This question is not applicable. See response to question #3.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Standard T Chemical Company, Inc. Facility, EPA ID# NJD011394467, located at 1312 West Elizabeth Avenue, Linden, New Jersey, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

NO - "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

Completed by: _____ **Date:** _____

Kristin McKenney
Risk Assessor
Booz Allen & Hamilton

Reviewed by: _____ **Date:** _____

Kathy Rogovin
Senior Risk Assessor
Booz Allen & Hamilton

Also Reviewed by: _____ **Date:** _____

Elizabeth Butler, RPM
RCRA Programs Branch
USEPA Region 2

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.

Contact telephone and e-mail numbers: Elizabeth Butler, USEPA RPM
(212) 637-4163
butler.elizabeth@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

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 - Extent of Deed Restrictions
- ▶ Attachment 4 - Cap Locations
- ▶ Attachment 5 - Summary of Media Impacts Table

Attachment 1 - Site Map

Attachment 2 - Groundwater Monitoring Well and Piezometer Locations

Attachment 3 - Extent of Deed Restrictions

Attachment 4 - Cap Locations

Attachment 5 - 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	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Fencing ▸ DER 	PCBs
Area 2. Former Solvent Drum Storage Area	No	No	Yes	No	No	Yes	No	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Capping ▸ Fencing ▸ DER 	PCBs
Area 3. Raw Materials Storage Area	No	No	Yes	No	No	Yes	No	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Capping ▸ Fencing ▸ DER 	PCBs, Lead
Area 4. Office Trailers and Vicinity	No	No	Yes	No	No	Yes	No	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Fencing ▸ DER 	PCBs
Area 5. Dry, Raw Materials Storage Area	No	No	Yes	No	No	Yes	No	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Fencing ▸ DER 	PCBs
Area 6. Historical Waste Storage	No	No	Yes	No	No	Yes	No	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Fencing ▸ DER 	PCBs
Area 7. Nitrocellulose Storage Shed and Vicinity	No	No	Yes	No	No	Yes	No	<ul style="list-style-type: none"> ▸ Soil Excavation ▸ Capping ▸ Fencing ▸ DER 	PCBs
Area 8. Groundwater	No	No	No	No	No	No	No	N/A	N/A