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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

Current Human Exposures Under Control

Facility Name: Union Carbide Corporation, a wholly owned subsidiary of The Dow Chemical Company, St Charles Operations, Taft Facility

Facility Address: 355 Highway 3142, Hahnville, LA 70057

Facility EPA ID #: LAD 041581422

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X If yes - check here and continue with #2 below.

   ____ If no -re-evaluate existing data, or

   ____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

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

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in 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).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"** 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)?

GROUNDWATER

Yes	No	?	Rationale / Key Contaminants
X			

Groundwater in the Shallow Unconfined Zone (SUZ) and Uppermost Semi-Confined Zone (USCZ) has been found to contain certain Constituents of Concern (COC)s at concentrations which exceed risk-based levels (RECAP Standards [RS]) at some sites, as indicated on Table 1. The existing data indicate exceedances of RECAP Screening Standards (SS), MO-1 RS, or MO-2 RS for one or more constituents of concern in groundwater as follows:

Site	SUZ (0-15 feet)	USCZ (25-35 feet)
Site 2	Diphenyl ether Diesel Range Organics	None
Site 3	Phenanthrene Fluorene 2-Methylnaphthalene 1,1'-Biphenyl Bis(2-Ethylhexyl)phthalate Di-n-octylphthalate Anthracene Dibenzofuran Fluoranthene	None
Site 4	Bis(2-Ethylhexyl) phthalate	None
Site 5	Diphenyl ether	None
Site 18	1,2-Dichloroethane	1,2-Dichloroethane
Site 20	Benzene 1,1,2,2-Tetrachloroethane 1,2-Dichloroethane	Dibenz(a,h)anthracene Vinyl chloride 1,1,2-Trichloroethane Trichloroethene 1,1,2,2-Tetrachloroethane Hexachlorobutadiene 1,2-Dichloroethane Bis(2-Chloroethyl) ether Cis-1,2-Dichloroethene Indeno(1,2,3-cd)pyrene
Site 27	Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene	None

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Site	SUZ (0-15 feet)	USCZ (25-35 feet)
Site 32	Benzene Vinyl chloride 1,1-Dichloroethene 1,1,2-Trichloroethane 1,2-Dichloroethane	Benzene Vinyl chloride 1,1-Dichloroethene Trichloroethene 1,2-Dichloroethane Bis(2-Chloroethyl) ether
Site 34	Benzo(a)pyrene Dibenz(a,h)anthracene Benzo(a)anthracene Anthracene Indeno(1,2,3-cd)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene	None
Site 35	Benzo(a)pyrene Benzene 1,1,2,2-Tetrachloroethane Tetrachloroethene Indeno(1,2,3-cd)pyrene Chrysene	None
Site 36	Benzene	None

SURFACE SOIL (0-2 ft) and SUBSURFACE SOIL (>15 ft)

Yes	No	?	Rationale / Key Contaminants
_X_	___	___	

Surface soil (0-2 ft) and potential surface soil/subsurface soil (>2 ft) have been found to contain certain COCs at concentrations which exceed RS at some sites, as indicated on Table 1. The existing data indicate exceedances of RECAP SS, MO-1 RS, or MO-2 RS for one or more constituents of concern in soil as follows:

Site	Soil 0-2 feet	Soil >2 feet
Site 18	None	Trichloroethene 1,2-Dichloroethane
Site 20	Trichloroethene 1,1,2,2-Tetrachloroethane 1,2-Dichloroethane	Benzene 1,1,2-Trichloroethane Trichloroethene 1,1,2,2-Tetrachloroethane 1,2-Dichloroethane Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Tetrachloroethene
Site 32	None	1,2-Dichloroethane Benzo(a)pyrene Benzo(b)fluoranthene
Site 35	None	Benzene 2-Methylnaphthalene Benzo(a)pyrene Dibenz(a,h)anthracene Benzo(a)anthracene 1,2-Dichloroethane

SURFACE WATER

Yes	No	?	Rationale / Key Contaminants
___	_X_	___	

Surface water bodies that are not part of a treatment system or process unit are not present on the Taft Facility.

SEDIMENT

Yes	No	?	Rationale / Key Contaminants
___	_X_	___	

Surface water bodies that are not part of a treatment system or process unit and with the potential to have associated sediments are not present on the Taft Facility

AIR (INDOORS)

Yes	No	?	Rationale / Key Contaminants
___	_X_	___	

For those sites with typically occupied enclosed structures, soil and groundwater RS for protection of enclosed spaces were identified; available soil and groundwater data indicate no exceedances of RS for protection of enclosed spaces (see Table 1).

AIR (OUTDOORS)

Yes	No	?	Rationale / Key Contaminants
___	_X_	___	

Ambient air is not expected to have COCs in concentrations exceeding risk-based levels. At those sites where soil (0-15 ft) is impacted with volatile constituents above limiting RS, the ground surface is covered with industrial ground cover (asphalt, concrete, gravel, shell, tanks and other process equipment).

_____ 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 and Reference(s):

This EI has been prepared using the following source:

Lousiana Department of Environmental Quality (LDEQ). 2003. Soil and Groundwater Risk-Based Levels: Risk Evaluation/Corrective Action Program (RECAP).

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	Trespassers	Recreation	Food[1]
Groundwater	No	No	No	No	No	No	No
Air (indoors)*	--	--	--	--	--	--	--
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
Surface Water	--	--	--	--	--	--	--
Sediment	--	--	--	--	--	--	--
Soil (subsurface e.g., >2 ft)	No	No	No	No	No	No	No
Air (outdoors)	--	--	--	--	--	--	--

* - Indoor air exposure by workers is regulated by OSHA.

Instructions 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 ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

__X___ 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

Rationale and Reference(s):

All contaminated media is contained onsite. There is no public access to the facility, and trespassing is prevented by the high level of security measures in use. The Taft Facility manufacturing area is surrounded by a 6-foot-tall chain link fence topped with barbed wire along the eastern, western, and southern boundaries, and by an 8-foot-tall wrought iron fence topped with sharp finials along the northern boundary, including surveillance cameras and motion detectors. The Taft Facility is secured with locked gates and 24-hour security at each entrance. Site visitors must sign in and out.

Therefore, the only potential receptors are industrial and construction workers. Industrial workers are identified as potential receptors for soil and ambient air. Construction workers were identified as potential

receptors for soil, ambient air and SUZ groundwater because invasive soil activities may occasionally be conducted in areas with COC contamination. Therefore, groundwater may seep into excavations during construction at these sites. Based on historical construction activities at the facility, exposure durations may range from a few weeks to a few months.

Before excavation activities at each site, the area will be evaluated and appropriate personal protective equipment (PPE) will be identified and required to be used by construction workers (including protective clothing, hard hat, boots, and gloves, at a minimum). Workers (employees and contractors) are required to attend regular health and safety training and obtain work permits or complete Safety Task Analysis Cards before beginning any task at the facility. Therefore, no complete exposure pathways are expected for industrial or construction workers.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (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

[4] 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.

Rationale and Reference(s):

SKIP

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 and Reference(s)

SKIP

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

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Union Carbide Corporation, Taft Facility, EPA ID #LAD041581422, located at 355 Highway 3142, Hahnville, LA 70057 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: Kristine Carter Date 2/2/11
Kristine Carter
Geologist 3
Louisiana Department of Environmental Quality

Supervisor: Date 2/7/11
Carey J. Dicharry, Jr.
Geologist Supervisor
Louisiana Department of Environmental Quality

Locations where references may be found:

Union Carbide Corporation, Taft Facility operating records are located at the facility at 355 Highway 3142, Hahnville, LA 70057.

Contact telephone and e-mail numbers

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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.

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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

Migration of Contaminated Groundwater Under Control

Facility Name: Union Carbide Corporation, a wholly owned subsidiary of The Dow Chemical Company, St Charles Operations, Taft Facility

Facility Address: 355 Highway 3142, Hahnville, LA 70057

Facility EPA ID #: LAD 041581422

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   __X__ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in 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).

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?

   __X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   _____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

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

Rationale and Reference(s):

The Taft Facility obtained groundwater data from multiple site investigations performed since issuance of 1989 pursuant to a settlement agreement between the Union Carbide Corporation (UCC) and the Louisiana Department of Environmental Quality (LDEQ) in 1989, and since 2007, the Taft Facility's Hazardous Waste Post-Closure Permit No. LAD 041581422. In addition, groundwater monitoring has been conducted as part of Solid Waste Permit P0049 (and previous solid waste permits contained therein) at nine solid waste permitted units since 1983. Based on a review of available historical information and data related to those sites, 11 of those sites have documented concentrations of one or more constituents in groundwater that exceed Louisiana Risk-Based Evaluation/Corrective Action Program (RECAP) (LDEQ 2003) Management Option 1 (MO-1) or MO-2 RECAP Standards (RS). To date, two distinct shallow groundwater zones have been identified under the Taft Facility. The shallow-most zone begins at a depth of approximately 1 to 4 feet below ground surface (bgs) and extends to an approximate depth of 15 feet bgs. This shallow-most zone is referred to as the Shallow Unconfined Zone (SUZ). The SUZ is underlain by the Uppermost Semi-Confined Zone (USCZ), which occurs at a depth of approximately 25 to 35 feet bgs.

Table 1 is a list of identified constituents detected at concentrations that exceed applicable RECAP standards and the maximum reported concentration for that constituent in each groundwater zone. The data have been retrieved from available historical documents and by querying a database of historical analytical data maintained by UCC.

Footnote:
[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).

Table 1

Parameter	Maximum Reported Concentration (mg/L)	Parameter	Maximum Reported Concentration (mg/L)
Shallow Unconfined Zone			
1,1'-Biphenyl	9.63E+00	bis(2-Ethylhexyl) phthalate	1.90E+00
1,1-Dichloroethene	7.6E-01	Chrysene	1.6E-02
1,1,2-Trichloroethane	3.9E+01	Dibenz(a,h)anthracene	6.3E-03
1,1,2,2-Tetrachloroethane	3.5E+02	Dibenzofuran	8.60E+00
1,2-Dichloroethane	3.4E+03	Diesel Range Organics	2.4E+03
2-Methylnaphthalene	7.60E+00	Di-n-octylphthalate	4.80E-01
Anthracene	8.80E-01	Diphenyl ether	1.1E+01
Benzene	8.1E+01	Fluoranthene	1.50E+00
Benzo(a)anthracene	1.5E-02	Fluorene	1.05E+01
Benzo(a)pyrene	1.5E-02	Indeno(1,2,3-cd)pyrene	1.1E-02
Benzo(b)fluoranthene	5.2E-03	Phenanthrene	4.10E+00
Benzo(k)fluoranthene	2.7E-03	Vinyl chloride	1.9E+01
Uppermost Semi-Confined Zone			
1,1-Dichloroethene	6.4E+00	Chrysene	6.3E-03
1,1,2-Trichloroethane	3.1E+01	Dibenz(a,h)anthracene	6.6E-03
1,1,2,2-Tetrachloroethane	1.5E+02	Hexachlorobutadiene	2.6E-01
1,2-Dichloroethane	3.1E+03	Indeno(1,2,3-cd)pyrene	4.8E-03
Benzene	2.4E+02	Tetrachloroethene	4.8E-01
Benzo(a)pyrene	3.2E-03	Trichloroethene	5.3E+01
bis(2-Chloroethyl) ether	1.3E+01	Vinyl chloride	5.9E+01

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)?

   __X__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[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):

Based on available information, there is no indication that contaminated groundwater is migrating beyond the manmade cooling water return lateral (CWRL) network in the SUZ or beyond the existing groundwater monitoring well network in the USCZ. This conclusion is based on the following lines of evidence:

1. Annual and semiannual groundwater sampling events have been conducted at the facility's solid waste permitted units since approximately 1983 and there has been no evidence of migrating groundwater plumes away from the monitoring well network during that time. Groundwater monitoring reports are available at the LDEQ records department under Agency Interest Number 2083.

2. Groundwater is being assessed as part of ongoing RECAP investigations at the facility. Groundwater has been collected at 43 sites within facility manufacturing area since 2004. Of those 43 sites, eleven sites in the SUZ and three sites USCZ have one or more constituents of concern (COCs) at concentrations above MO-1 or MO-2 RS. Investigations are ongoing at six of these sites while vertical and horizontal delineation is complete at the remaining 5 sites. Results from these investigations show that groundwater contamination is confided within the manufacturing area and there are no groundwater impacts outside of the property boundary.

3. The available groundwater potentiometric surface data suggest that the western CWRL intake laterals contributes recharge to the SUZ while the eastern CWRL discharge laterals serve as points of discharge for the SUZ groundwater. . As such, the CWRL serves as a hydraulic barrier to groundwater flow in the SUZ. The CWRL is part of process unit and are not classified as surface water bodies as determined in *Revised Groundwater Classification and Points of Exposure for the Shallow Groundwater-Bearing Zones – Taft Facility* (CH2M Hill, February 2009). Routine sampling is conducted at the discharge point for the return cooling water lateral to meet the Taft Facility's National Pollutant Discharge Elimination System (NPDES) permit requirements. No permit exceedances have been reported from the NPDES sampling events, suggesting there is not a measurable contribution of impacted groundwater to the laterals.

4. Groundwater in the USCZ is classified as Class 3A groundwater (groundwater within an aquifer that is sufficiently permeable to transmit water to a well at a maximum sustainable yield of less than 800 gallons per day and groundwater quality is such that it has a total dissolved solids concentration of less than 10,000 mg/L) and generally flows in a south-southeasterly direction, away from the Mississippi River. Hydraulic conductivity for the USCZ was estimated in a monitoring report for the Taft Facility solid waste surface impoundments (Zimmerman Environmental Consulting, *Semi-Annual Detection Monitoring Report,* Union Carbide Chemicals

and Plastics Co., Inc. March 1992) to be 1×10^{-4} centimeters per second (cm/sec). With an average groundwater gradient across the Taft Facility of 0.002 foot per foot (ft/ft) and an estimated effective porosity of 35 percent, the groundwater flow velocity in the USCZ is estimated to be 0.6 foot per year. Of the three sites with known groundwater impacts in the USCZ, Site 20 is the closest to a property boundary of the Taft Facility with a downgradient distance from Site 20 to the Taft Facility property boundary of approximately 785 feet. Considering the estimated groundwater flow velocity of 0.6 foot per year, it will require more than 470 years for potentially impacted groundwater in the USCZ to reach the Taft Facility boundary.

Footnote:
[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.

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):

Groundwater in the SUZ generally begins within 1 to 4 feet bgs at the Taft Facility. The only potential surface water feature that could potentially come into contact with groundwater from the SUZ is the manmade cooling water return lateral (CWRL) network; however, the CWRL network is not a surface water body requiring protection or restoration and is not considered to be a point of exposure (POE) for COCs in the SUZ for the following reasons:

- The LDEQ RECAP defines POEs for Groundwater Class 3 to be the "nearest down-gradient surface water body within the aquifer to be protected/restored," (LDEQ, 2003). A surface water body is defined by RECAP to be, "all lakes, bays, rivers, streams, springs, ponds, impounding reservoirs, wetlands, swamps, marshes, water sources, drainage systems, and other surface waters, natural or artificial, public or private, within the state or under its jurisdiction that are not a part of the treatment system allowed by state law, regulation, or permit. Ditches that are part of a treatment system shall not be considered surface water provided that the treatment system is monitored downstream of the impacted area for the COC under the terms of an LPDES permit." The CWRL network is permitted as a part of the Taft Facility treated wastewater, utility water, and storm water system (LPDES Water Discharge Permit No: LA0000191 – AI No: 2083).

- There are three sites indentified in response to Question #3 within the Taft Facility boundary that have confirmed groundwater impact to the USCZ. Groundwater in the USCZ, which occurs at a depth of approximately 25 to 35 feet bgs, is not expected to discharge to the cooling water laterals. The closest potential surface water body in a downgradient direction that could receive groundwater from the USCZ is the St. Charles Canal south of the Taft Facility. The closest site with known impact to groundwater in the USCZ is located, in most cases, greater than 1 mile upgradient the St. Charles Canal. Based on the estimated groundwater velocity in the USCZ of 0.6 foot per year, it is unlikely that impacted groundwater has the potential to reach this surface water body.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[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 judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[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 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):

SKIP

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

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ 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):

SKIP

Footnotes:

[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.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

   __X__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

   _____ If no - enter "NO" status code in #8.

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

Rationale and Reference(s):

Each of the 11 sites within the Taft Facility boundary that currently have reported exceedences of RECAP Standards in groundwater are included in RECAP or corrective action evaluations that are under development. To support development of those evaluations, additional investigations, corrective action, and/or long-term monitoring will be conducted, in accordance with the Corrective Action Strategy (CAS) outlined in Hazardous Waste Post-Closure Permit No. LAD 041581422. In addition, annual and semiannual groundwater monitoring occurs at several sites within the Taft Facility, including two of the eleven sites that have reported impacts to SUZ groundwater. Potentiometric monitoring of both the SUZ and USCZ occurs semiannually on a facility-wide basis (as well as semiannually or annually within specific sites and areas regulated under active solid waste or RCRA permits) to maintain up-to-date information on the direction of groundwater flow within the SUZ and USCZ. Discharge from the cooling water laterals into the Mississippi River will continue to be monitored for the parameters currently required by the NPDES permit.

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 Union Carbide Corporation, Taft Facility, EPA ID #LAD041581422, located at 355 Highway 3142, Hahnville, LA 70057. 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: Kristine Carter — Date 2/2/11
Kristine Carter
Geologist 3
Louisiana Department of Environmental Quality

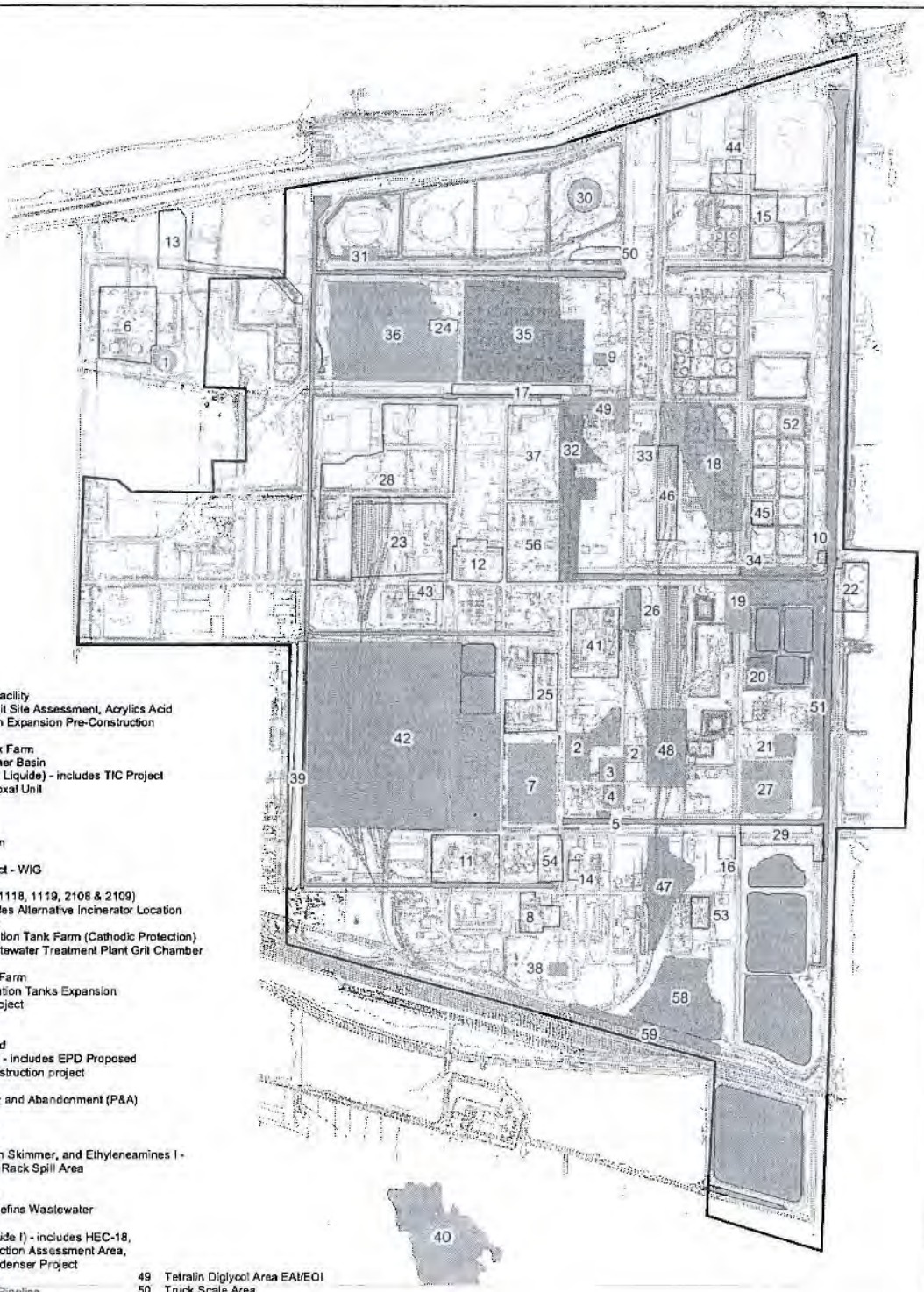
Supervisor: — Date 2/7/11
Carey J. Dicharry, Jr.
Geologist Supervisor
Louisiana Department of Environmental Quality

Locations where references may be found:

Union Carbide Corporation, Taft Facility operating records are located at the facility at 355 Highway 3142, Hahnville, LA 70057.

Contact telephone and e-mail numbers

Rafael F. de Vega
(985) 783-4294
devegarf@dow.com



No.	Unit Description
1	Acetylene Holder Facility
2	Acrylics I Area - Unit Site Assessment, Acrylics Acid Expansion, Acrolein Expansion Pre-Construction
3	Acrylics II
4	Acrylics II Unit Tank Farm
5	Acrylics Unit Skimmer Basin
6	Air Separations (Air Liquide) - includes TIC Project
7	Alkyl Amines II/Glyoxal Unit
8	AP-2
9	Brine Tank Site
10	Building 1312 Area
11	Butanol 2 Expansion
12	Cogen
13	Customer "B" Project - WIG
14	DAP
15	Distribution Tanks (1118, 1119, 2108 & 2109)
16	East Landfill - includes Alternative Incinerator Location
17	East-West Piperack
18	EDC Tank - Distribution Tank Farm (Cathodic Protection)
19	EPD 3 Primary Wastewater Treatment Plant Grit Chamber
20	EPD Burn Pit
21	EPD Residue Tank Farm
22	EPD Surge/Equalization Tanks Expansion
23	Ethoxylates Park Project
24	Ethylene Recovery
25	Ethyleneamines II
26	Former Salvage Yard
27	Ground Burner Area - includes EPD Proposed Incinerator Pre-Construction project
28	Latex Plant
29	Monitoring Well Plug and Abandonment (P&A) Sampling Activity
30	Naphtha Tank 3100
31	Naphtha Tank 5101
32	No. 1 Complex South Skimmer, and Ethyleneamines I - includes Glycol Pipe Rack Spill Area
33	No. 1 TTR
34	Old Fire Training Pit
35	Olefins I- includes Olefins Wastewater
36	Olefins II
37	Oxide I (Ethylene Oxide I) - includes HEC-18, CONEX Pre-Construction Assessment Area, Oxide I External Condenser Project
38	Peracetic Acid Basin
39	Proposed Dripolene Pipeline
40	South Landfill
41	Specialty Product Unit
42	Star Liquid Polyethylene 6 (LP6)
43	Steam Turbine Generator
44	T-2106 Methylcellosolve
45	Tank 1331
46	TCR 1/TCR 3 (Old Truck Scale Area)
47	TCR 4/No. 3 TTR
48	TCR 5
49	Tetralin Diglycol Area EAI/EOI
50	Truck Scale Area
51	Waste Transfer Ditch
52	1300 Hexene
53	Diene 221
54	Package Boilers
55	Not Assigned
56	Ethylene Oxide II
57	Not Assigned
58	Alternative Incinerator Location II
59	#3 Complex Stormwater Ditch

LEGEND

- Union Carbide Production Facility
- Basemap
- NFA - ATT Request In Progress
- Priority Site
- Further Evaluation (Settlement Agreement)
- No Further Action / Interest Site
- Water Features

True North
Plant North

0 750 1,500
Feet

FIGURE 1-2
Site Location Map
Union Carbide Corporation
a wholly owned subsidiary of The Dow Chemical Company
Taft Facility
Hahnville, Louisiana
St. Charles Parish

BTR \\JAZZ\PROJ\DOW_398002\MAPFILES\TEMPLATES\2010_FIGURETEMPLATES\FIGURE1-2_SITELOCATIONMAP.MXD ZANDERSO 12/16/2010 14:10:00

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Table 1 - Dow SCO 2010 Environmental Indicator Summary Table

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	Site Status
Site 1 (Acetylene Holder)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	SO	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 2 (Acrylics I Unit)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	SO	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	Diphenyl ether	1.1E+01	mg/L	$GW3_{ndw}$	5.3E+00	
			Diesel Range Organics	2.4E+03	mg/L	$GW3_{ndw}$	2.0E+03	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-2	None (for existing structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 3 (Acrylics II Unit)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	SO	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	phenanthrene	4.10E+00	mg/L	Solubility	1.2E+00	
			Fluorene	1.05E+01	mg/L	Solubility	2.0E+00	
			2-Methylnaphthalene	7.60E+00	mg/L	GW3ndw	5.2E+00	
			1,1'-Biphenyl	9.63E+00	mg/L	Solubility	7.5E+00	
			Bis(2-Ethylhexyl) phthalate	1.90E+00	mg/L	Solubility	3.4E-01	
			Di-n-octylphthalate	4.80E-01	mg/L	Solubility	2.0E-02	
			Anthracene	8.80E-01	mg/L	Solubility	4.3E-02	
			Dibenzofuran	8.60E+00	mg/L	$GW3_{ndw}$	2.9E+00	
			Fluoranthene	1.50E+00	mg/L	Solubility	2.1E-01	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 4 (Acrylics II Unit Tank Farm)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	SO	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	Bis(2-Ethylhexyl) phthalate	9.9E-01	mg/L	Solubility	3.4E-01	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 5 (Acrylics Skimmer Basin)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	Diphenyl ether	8.2E+00	mg/L	Solubility	7.6E+00	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 6 (Air Liquide)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	MO-1	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 7 (Alkyl Amines/Glyoxyl Unit)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 8 (AP-2)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 9 (Brine Tank)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-1	None (for existing structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 10 (Building 1312)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-1	None (for existing structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 11 (Butanol 2 Expansion)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 12 (Cogen)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 13 (Proposed Acetylene Facility - WIG)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 14 (DAP Quench Tank Area)	Soil 0-15 ft bgs	MO-1	None	NA	NA	NA	NA	NFI Obtained
	Soil > 15 ft bgs	NA	No Subsurface Soil Data	NA	NA	NA	NA	
	GW SUZ	SO	None	NA	NA	NA	NA	
	GW USCZ	SO	None	NA	NA	NA	NA	
	Enclosed Space	NA	No qualifying ES reported	NA	NA	NA	NA	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 15 (Distribution Tanks: 1118, 1119, 2108 & 2109)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 16 (East Landfill)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 17 (East-West Pipe Rack)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 18 (EDC Tank Farm)	Soil 0-15 ft bgs	MO-2	Trichloroethene	2.4E-01	mg/kg	$Soil_i$	1.1E-01	Currently Under Additional Investigation/Remedial Action Evaluation
			1,2-Dichloroethane	1.4E+02	mg/kg	$Soil_i$	9.6E-01	
	Soil > 15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	1,2-Dichloroethane	8.1E+02	mg/L	$GW3_{ndw}$	4.1E-01	
	GW USCZ	MO-2	1,2-Dichloroethane	6.8E-01	mg/L	$GW3_{ndw}$	4.1E-01	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 19 (EPD Grit Chamber)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 20 (Former Burn Pit)	Soil 0-15 ft bgs	MO-2	Benzo(a)pyrene	4.1E+00	mg/kg	$Soil_i$	3.3E-01	Currently Under Additional Investigation/Remedial Action Evaluation
			1,1,2-Trichloroethane	7.5E+00	mg/kg	$Soil_i$	7.5E+00	
			Trichloroethene	2.2E+01	mg/kg	$Soil_i$	3.7E-01	
			1,1,2,2-Tetrachloroethane	4.3E+01	mg/kg	$Soil_i$	3.4E+00	
			1,2-Dichloroethane	7.1E+01	mg/kg	$Soil_i$	2.9E+00	
			Indeno(1,2,3-cd)pyrene	4.3E+00	mg/kg	$Soil_i$	2.9E+00	
	Soil > 15 ft bgs	MO-2	Benzene	3.3E+02	mg/kg	$Soil_{GW3NDW}$	5.4E+01	
			1,1,2-Trichloroethane	4.1E+02	mg/kg	$Soil_{GW3NDW}$	3.5E+01	
			Trichloroethene	1.1E+03	mg/kg	$Soil_{GW3NDW}$	1.4E+02	
			1,1,2,2-Tetrachloroethane	1.8E+03	mg/kg	$Soil_{GW3NDW}$	9.7E+00	
			1,2-Dichloroethane	3.7E+03	mg/kg	$Soil_{GW3NDW}$	1.8E+01	
			Tetrachloroethene	1.1E+02	mg/kg	$Soil_{GW3NDW}$	4.4E+01	
	GW SUZ	MO-2	Benzene	2.0E+00	mg/L	$GW3_{ndw}$	1.8E+00	
			1,1,2,2-Tetrachloroethane	3.5E+02	mg/L	$GW3_{ndw}$	2.6E-01	
			1,2-Dichloroethane	3.4E+03	mg/L	$GW3_{ndw}$	9.7E-01	
	GW USCZ	MO-2	Dibenz(a,h)anthracene	6.6E-03	mg/L	Solubility	2.5E-03	
			Vinyl chloride	3.3E+01	mg/L	$GW3_{ndw}$	5.1E+00	
			1,1,2-Trichloroethane	3.1E+01	mg/L	$GW3_{ndw}$	9.8E-01	
			Trichloroethene	5.3E+01	mg/L	$GW3_{ndw}$	3.0E+00	
			1,1,2,2-Tetrachloroethane	1.5E+02	mg/L	$GW3_{ndw}$	2.6E-01	
			Hexachlorobutadiene	2.6E-01	mg/L	$GW3_{ndw}$	1.2E-01	
			1,2-Dichloroethane	9.6E+02	mg/L	$GW3_{ndw}$	9.7E-01	
			Bis(2-Chloroethyl) ether	1.3E+01	mg/L	$GW3_{ndw}$	8.1E-01	
			Cis-1,2-Dichloroethene	2.8E+02	mg/L	$GW3_{ndw}$	2.4E+02	
			Indeno(1,2,3-cd)pyrene	4.8E-03	mg/L	Solubility	2.2E-05	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 21 (Tank Car Rack #4 and Tank Truck Rack #3)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 22 (EPD Tank Expansion)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[2]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 23 (Ethoxylates Park)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-1	None (for existing structures)	N/A	N/A	N/A	N/A	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 24 (Ethylene Recovery)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 25 (Ethyleneamines II)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 26 (Former Salvage Yard)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-2	None (for existing structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 27 (Former Ground Burner)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	Currently Under Additional Investigation
	Soil > 15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	Dibenz(a,h)anthracene	6.3E-03	mg/L	Solubility	2.5E-03	
			Indeno(1,2,3-cd)pyrene	4.4E-03	mg/L	Solubility	2.2E-05	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 28 (Latex Plant)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 29 (MW P&A Area)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 30 (Naphtha Tank 3100)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 31 (Naphtha Tank 5101)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 32 (#1 Complex South Skimmer)	Soil 0-15 ft bgs	MO-2	Benzo(a)pyrene	8.0E-01	mg/kg	$Soil_i$	3.3E-01	Currently Under Additional Investigation/Remedial Action Evaluation
			1,2-Dichloroethane	2.3E+01	mg/kg	$Soil_i$	1.9E+00	
			Benzo(b)fluoranthene	3.8E+00	mg/kg	$Soil_i$	2.9E+00	
	Soil > 15 ft bgs	MO-2	1,2-Dichloroethane	1.8E+02	mg/kg	$Soil_{GW3NDW}$	3.0E+00	
	GW SUZ	MO-2	Benzene	8.1E+01	mg/L	$GW3_{ndw}$	1.4E+00	
			Vinyl chloride	1.9E+01	mg/L	$GW3_{ndw}$	3.9E+00	
			1,1-Dichloroethene	7.6E-01	mg/L	$GW3_{ndw}$	9.6E-02	
			1,1,2-Trichloroethane	3.9E+01	mg/L	$GW3_{ndw}$	7.6E-01	
			1,2-Dichloroethane	1.2E+02	mg/L	$GW3_{ndw}$	7.5E-01	
	GW USCZ	MO-2	Benzene	1.3E+01	mg/L	$GW3_{ndw}$	1.4E+00	
			Vinyl chloride	5.9E+01	mg/L	$GW3_{ndw}$	3.9E+00	
			1,1-Dichloroethene	6.4E+00	mg/L	$GW3_{ndw}$	1.9E-01	
			Trichloroethene	2.4E+01	mg/L	$GW3_{ndw}$	2.3E+00	
			1,2-Dichloroethane	3.1E+03	mg/L	$GW3_{ndw}$	7.5E-01	
			Bis(2-Chloroethyl) ether	1.1E+00	mg/L	GW2	6.3E-01	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 33 (#1 Tank Truck Rack)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	
	GW SUZ	SO	None	N/A	N/A	N/A	N/A	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 34 (Old Fire Training Pit)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	Currently Under Additional Investigation/Remedial Action Evaluation
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
			Benzo(a)pyrene	1.5E-02	mg/L	Solubility	1.6E-03	
			Dibenz(a,h)anthracene	4.6E-03	mg/L	Solubility	2.5E-03	
			Benzo(a)anthracene	1.5E-02	mg/L	Solubility	9.4E-03	
			Anthracene	4.9E-02	mg/L	Solubility	4.3E-02	
			Indeno(1,2,3-cd)pyrene	1.1E-02	mg/L	Solubility	2.2E-05	
			Benzo(b)fluoranthene	5.2E-03	mg/L	Solubility	1.5E-03	
			Benzo(k)fluoranthene	2.7E-03	mg/L	Solubility	8.0E-04	
			Chrysene	1.6E-02	N/A	Solubility	1.6E-03	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 35 (Olefins I Unit)	Soil 0-15 ft bgs	MO-2	Benzo(a)pyrene	4.4E-01	mg/kg	$Soil_i$	3.3E-01	Currently Under Additional Investigation/Remedial Action Evaluation
			Dibenz(a,h)anthracene	5.0E-01	mg/kg	$Soil_i$	3.3E-01	
			Benzo(a)anthracene	1.1E+00	mg/kg	$Soil_{GW3NDW}$	8.2E-01	
			Benzene	8.7E+00	mg/kg	$Soil_i$	3.1E+00	
	Soil > 15 ft bgs	MO-2	Benzene	1.6E+00	mg/kg	$Soil_{GW3NDW}$	5.1E+00	
			2-Methylnaphthalene	1.2E+00	mg/kg	$Soil_{GW3NDW}$	3.7E+02	
			1,2-Dichloroethane	2.6E-02	mg/kg	$Soil_{GW3NDW}$	1.8E+00	
	GW SUZ	MO-2	Benzo(a)pyrene	3.2E-03	mg/L	Solubility	1.6E-03	
			Benzene	2.4E+02	mg/L	$GW3_{ndw}$	5.4E-01	
			1,1,2,2-Tetrachloroethane	9.1E-02	mg/L	$GW3_{ndw}$	7.7E-02	
			Tetrachloroethene	4.8E-01	mg/L	GW2	2.2E-01	
			Indeno(1,2,3-cd)pyrene	3.9E-03	mg/L	Solubility	2.2E-05	
			Chrysene	6.3E-03	mg/L	Solubility	1.6E-03	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-2	None (for existing structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 36 (Olefins II Unit)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	Benzene	1.2E+00	mg/L	$GW3_{ndw}$	0.5125	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	Under Evaluation	Under Evaluation	Under Evaluation	Under Evaluation	Under Evaluation	Under Evaluation	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 37 (Oxides I Unit)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	SO	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	MO-1	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 38 (Peracetic Acid Basin)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	NA	No Subsurface Soil Data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	NA	No USCZ Data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 39 (Proposed Dripolene Pipeline)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 40 (South Landfill)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	NFA-ATT Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 41 (Specialty Product Unit)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 42 (Star Liquid Polyethylene 6)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	Under Evaluation	Under Evaluation	Under Evaluation	Under Evaluation	Under Evaluation	Under Evaluation	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 43 (Steam Turbine Generator)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NFI Obtained[1]
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 44 (Tank 2106)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 45 (Tank 1331)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 46 (Tank Car Racks #s 1 & 3)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-1	None (For existing Structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 47 (Tank Car Rack #4 & Tank Truck Rack #3)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	SO	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-2	None (For existing Structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 48 (Tank Car Rack #5)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-1	None (For existing Structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 49 (Tetralin/Diglycol Spill Area)	Soil 0-15 ft bgs	MO-1	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	NA	No Subsurface Soil Data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 50 (Truck Scale Area)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	SO	None	N/A	N/A	N/A	N/A	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 51 (Former Waste Transfer Ditch)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	RECAP in Draft NFA-ATT to be Requested
	Soil > 15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	
	GW SUZ	MO-2	None	N/A	N/A	N/A	N/A	
	GW USCZ	MO-2	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	

Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 52 (1300 Hexane)	Soil 0-15 ft bgs	MO-1	Benzene	1.2E+02	mg/kg	Soil	3.1E+00	Currently Under Additional Investigation/Remedial Action Evaluation
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 53 (Diene 221)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	SO	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 54 (Package Boilers)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	MO-1	None (For existing Structures)	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 55[3] (Primary Solids Settling Basin)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	See Explanation Below
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 56 (Ethylene Oxides II)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	NFA-ATT Obtained
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	SO	None	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 58 (Alternative Incinerator Location II)	Soil 0-15 ft bgs	MO-2	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	SO	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	
Site	Media/Pathway	Management Option	Constituents exceeding RS	AOIC/CC	Units	LRS	LRS Value	
Site 59 (#3 Complex Storm Water Ditch)	Soil 0-15 ft bgs	SO	None	N/A	N/A	N/A	N/A	Currently Under RECAP Evaluation
	Soil > 15 ft bgs	N/A	No subsurface soil data	N/A	N/A	N/A	N/A	
	GW SUZ	MO-1	None	N/A	N/A	N/A	N/A	
	GW USCZ	N/A	No USCZ data	N/A	N/A	N/A	N/A	
	Enclosed Space	N/A	No qualifying ES reported	N/A	N/A	N/A	N/A	

1 - This unit was sampled as part of pre-construction assessment or groundwater certification investigation at the facility. Concentrations in all collected samples were either non-detected or below RECAP Screening Standards. Therefore, no further investigation (NFI) was required for these locations and no further submittals were provided to LDEQ beyond those already submitted and in LDEQ files. (UCC letter dated June 6, 2006 to Mr. Jeffery Jones, Louisiana Department of Environmental Quality (LDEQ) - Remediation Services Division [received June 11, 2005])

2 - An NFI was received in 2007.

3 - Basin regulated under solid waste permit P-0049

AOIC/CC - Area of Investigation Concentration / Compliance Concentration
GW3ndw - RECAP standard for Classification 3 groundwater which may discharge to a non-drinking water source
GW SUZ - Groundwater Shallow Unconfined Zone
GW USCZ - Groundwater Uppermost Semi-Confined Zone
LRS - limiting RECAP standard
NFA-ATT - No Further Action-At This Time
MO-1 - RECAP Management Option 1
MO-2 - RECAP Management Option 2
N/A - not applicable
RECAP - Risk Evaluation/Corrective Action Program
SO - Screening Option
$Soil_{GW3ndw}$ RECAP standard for soil protective of Classification 3 groundwater which may discharge to a non-drinking water source
Soili - RECAP standard protective of human health for industrial land use