

 Division of Waste and Hazardous Substances

 Remediation Section

 <https://de.gov/remediation>

 302-395-2600

**Conceptual Site Model and Site Summary**

**January 2020**

**Conceptual Site Model and Site Summary for \_\_\_\_\_\_\_\_\_Site (DE # )**

The purpose of the Conceptual Site Model and Site Summary (CSM-SS) document is to provide a single document where all the information about the site can easily be reviewed and used for decision making at any stage of the project. This format is all inclusive and not all sections are applicable to all sites. The CSM-SS is a dynamic document that is intended to be refined and updated as new information becomes available.

At the initial stage of the development of this document, only information that is readily available and necessary for the Scoping Meeting for the investigation needs to be completed. The sections that need to be completed for the Scoping Meeting are shown in ***bold italics***. The CSM-SS should be submitted by the consultant at **least two week** prior to the Scoping Meeting and should be used during the **Scoping Meeting** along with the **Sampling and Analysis Plan.**

**Table of Contents**

|  |  |
| --- | --- |
| 1.0 Site Description | 11.0 Air (Vapor Intrusion) |
| 2.0 Site Developer and Development Plan | 12.0 Ecological Concerns |
| 3.0 Site Regulatory/Operational/Investigation History | 13.0 Asbestos and Lead Issues |
| 4.0 Potential Contaminants and Source Areas | 14.0 Community Outreach |
| 5.0 Adjacent Properties and Release Sites  | 15.0 Other Federal, State and Local Agency Involvement |
| 6.0 Geologic and Hydrogeologic Setting | 16.0 Conceptual Site Model |
| 7.0 Surface, Shallow, and Deep Soil  |  16.1 Conceptual Site Model Table |
| 8.0 Groundwater |  16.2 Conceptual Site Model Map  |
| 9.0 Surface Water |  16.3 Conceptual Site Model Cross-Section |
| 10.0 Sediment | Appendix - Maps, Photos, Tables, etc. |

**1.0 Site Description**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES**  | **REFERENCE USED** |
| ***1.1 Site Location (Address and Tax Parcel ID)*** |  |  | ***Site Location Map*** |  |
| ***1.2 Site Description (Acreage, Layout, current buildings, undeveloped areas, parking facilities/paved areas, etc)*** |  |  | ***Site Detail Map******Site Photos******(at a minimum current photos)*** |  |
| ***1.3 Current Zoning and future zoning*** |  |  |  |  |
| ***1.4 Existence of infrastructure (i.e., sewer, water, roads* etc.)** |  |  |  |  |

**2.0 Site Developer and Development Plan**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES**  | **REFERENCE USED** |
| ***2.1Developer/Applicant Name and Address***  |  |   |   |   |
| ***2.2 Current Owner Name and Address (if different from 2.1)***  |  |   |   |   |
| ***2.3 Proposed future use and development plan*** |  |  | Development plan |  |
| 2.4 Project start date and completion date (Project Schedule)  |  |  |  |   |
| ***2.5 Consultant Name and Address***  |  |   |   |   |

**3.0 Site Regulatory/Operational/Investigation History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***3.1 Operational History and known or potential use of chemicals or hazardous substances***  |   |  | Historic MapsAerial Photos |   |
|  |  |  |  |
| ***3.2 Regulatory History*** |  |  |  |  |
|  |  |  |  |
| ***3.3Investigation History*** |  |   |   |   |
|  |   |   |  |
|  |   |   |  |

**4.0 Potential Contaminants and Source Areas**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***4.1 Known Release Areas on Site*** |  |  | ***CSM map(see16.2)*** |  |
| ***4.2 Potential Source areas /areas of contamination on Site*** |  |  | ***CSM map(see 16.2)*** |  |

**5.0 Adjacent Properties and Release Sites**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***5.1 List all adjacent site land uses(past & present)*** |  |  |  |  |
| ***5.2 Describe any known or potential contaminant sources on adjacent sites***. |  |  |  |  |

**6.0 Geologic and Hydrogeologic Setting**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***6.1 Regional Geology*** |  |  | Maps***CSM Cross-section(see 16.3)*** |  |
|
| 6.2 Site Geology |  |  |  |  |
| ***6.3 Regional Hydrogeology*** |  |  | ***CSM Cross-section(see 16.3)*** |  |
| 6.4 Site Hydrogeology |  |  |  |  |

**7.0 Surface, Shallow, and Deep Soil**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| **7.1 Surface Soil** |
| 7.1.1 Potential Contamination areas and contaminants (include concentration ranges, if known) for surface soil |  |  | MapsTables |  |
| 7.1.2 Potential Receptors |  |  |  |  |
| **7.2 Shallow Soil** |  |  |  |  |
| 7.2.1 Potential Contamination areas and contaminants (include concentration ranges, if known) for shallow soil |  |  | MapsTables |  |
| 7.2.2 Potential Receptors |  |  |  |  |
| **7.3 Deep Soil** |
| 7.3.1 Potential Contamination areas and contaminants (include concentration ranges, if known) for deep soil |  |   |  MapsTables |   |
| 7.3.2 Potential Receptors |  |  |  |  |

**8.0 Groundwater**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| 8.1 Background contamination |  |  |  |  |
| ***8.2 Distance to Nearest drinking water source*** |  |  |  |  |
| ***8.3Predominant use of groundwater in the area and Site*** |  |  |  |  |
| 8.4 Depth & direction of groundwater flow of the uppermost aquifer  | (include aquifer name and whether it is potable) |  |  |  |
| 8.5 Deeper aquifer and impermeable layers (depth, thickness and flow direction |  |  |  |  |
| 8.6 Distance to Water Resource Protection Area and to GMZ (if applicable) |  |  |  |  |
| 8.7 Potential Contaminants (include concentration ranges, if known) |  |  |  |  |
| 8.8 Potential Receptor(s) |  |  |  |  |

**9.0 Surface Water**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***9.1 Nearest surface water body (include distance from site)*** |  |  | Map |  |
| ***9.2 Site Surface drainage direction*** |  |  | Site topo map |  |
| ***9.3 Usage of surface water at the area and Site*** |  |  |  |  |
| 9.4 Potential Contaminants (include concentration ranges, if known) |  |  |  |  |
| 9.5 Receptors |  |  |  |  |
| 9.6 Offsite source of Contamination |  |  |  |  |
| 9.7 Groundwater to surface water loading |  |  |  |  |

**10.0 Sediment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| 10.1 Background contamination |  |  |  |  |
| 10.2 Site related contaminants |  |  |  |  |
| 10.3 Potential Receptor(s) |  |  |   |  |

**11.0 Air (Vapor Intrusion)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***11.1 Contaminant with Vapor Intrusion Potential*** |  | Potential contaminant based on operation history if no other data available |  |  |
| ***11.2 Current & Potential buildings within 100 feet and type of building*** |  |  |  |  |
| 11.3 Preferential Pathway |  |  |  |  |

**12.0 Ecological Concern**

**Are any of the following ecologically sensitive areas (ECSA) present on or adjacent to the site?** **If the answer is "YES" to any of these questions, then further ecological evaluation may be necessary.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **YES or NO** | **DESCRIPTION** | **COMMENTS** | **GRAPHICS DATA TABLE**  | **REFERENCE USED** |
| 12.1 ESCA on or adjacent to site |  |  |  |  |  |
|  12.1.1 Critical Habitat for endangered or threaten species |   |   |   |   |   |
|  12.1.2 Parks, wildlife refuge |   |   |   |   |   |
|  12.1.3 Coastal Barriers |   |   |   |   |   |
|  12.1.4 Spawning, migration and feeding areas |   |   |   |   |   |
|  12.1.5 Water way (stream, lake etc.) |  |  |  |  |  |
|  12.1.6 Wetland |  |  |  |  |  |
| 12.2 Site Within 2,000 feet of an ECSA |   |   |   |   |   |
|  12.2.1 Connected to a ECSA via open-space, wooded area, ag land, perennial water body or other natural corridor? |   |   |   |   |   |
|  12.2.2 Storm runoff from the site discharges via a pipe or drainage swale directly to the ECSA? |   |   |   |   |   |
| 12.2.3 Evidence of soil erosion from the site such as gulleys, washout features |   |   |   |   |   |
| 12.3 The site supports fauna with a shelter or food source |   |   |   |   |   |
| 12.4 Evidence of stressed veg., barren soil, dead animals, fish kills or other ecological detriments? |   |   |   |   |   |

**13.0 Asbestos and Lead Issues**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| 13.1 Was lead paint survey conducted? Type of lead present in the buildings |  |  |  |  |
| 13.2 Was asbestos survey conducted? Type of asbestos present and is it friable |  |  |  |  |

**14.0 Community Outreach**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SECTIONS** | **DESCRIPTION** | **COMMENTS** | **MAPS, PHOTOS & TABLES** | **REFERENCE USED** |
| ***14.1 Public Representatives (names and contact information)*** |  |  |  |  |
| 14.2 Community groups |  |  |  |  |
| 14.3 Known areas of Public concern/issues |   |   |   |   |
| 14.4 Public Outreach Plan |   |   |   |   |

**15.0 Other Federal/State/ Local Agency Involvement**

(Identify the agencies, issues and contacts related to this site. **Fill in only the items that apply**)

|  |  |  |  |
| --- | --- | --- | --- |
| **Agencies** | **Issues/Involvements** | **Contact** | **Comments** |
| 15.1 DNREC Tanks Compliance Program and/or Corrective Action Program | Above and underground storage tanks | 302- 395-2500 |  |
| 15.2 DNREC Waste Management & Reduction Program and/or Corrective Action Program | Landfill, dump, RCRA  | 302- 739-9403 |  |
| 15.3 DNREC Sediment & Storm water Management Program (or delegated agency) | Storm water management, erosion or sediment issues |  302-739-9921 |   |
| 15.4 DNREC Wetlands & Subaqueous Lands Section | Wetland, piers, bulkhead, or other subaqueous issues | 302-739-9943 |   |
| 15.5 Delaware State Historic Preservation Office | State historic preservation issues | 302-739-5685 |  |
| 15.6 Fire Marshal’s Office | Fire Marshal Issue | 302-739-5665 |  |
| 15.7 Del DOT | Road improvement, traffic impact study |  |  |
| 15.8 DNREC Groundwater Discharge | Septic issues |  |  |
| 15.9 DNREC Parks & Recreation |  |  |  |
| 15.10 City Planning Office |  |  |  |
| 15.11 County Planning Office |  |  |  |
| 15.12 Delaware Dept. of State/Division of Small Business  |  |  |  |
| 15.13 Delaware Prosperity Partnership |  | 302-244-5785 |  |
| 15.14 Coastal Zone |  |  |  |
| 15.15 Federal Agencies (TSCA, EPA, ACOE, etc) | TSCA (PCBs > 50 ppm or a known PCB source present), federal wetlands, etc. |  |  |

**16.0 Site Conceptual Model (Table)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Known and Potential Sources*** | Impacted Media | Contaminants of Concern | Exposure Route | Receptors | Comments |
| Current | Future |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Notes:**

**Sources:** historic fill, spill areas, USTs, hotspots (arsenic, lead, NAPL), etc

**Impacted Media:** Soil, Groundwater, Sediment, Surface water, Soil vapor, etc

**Contaminant of Concern:** dominant contaminants that will drive the risk, etc

**Exposure routes:** inhalation of vapors, dust, dermal, ingestion, fish consumption, etc.

**Receptors:** area resident, future construction worker, recreational user, office worker, trespasser, gardener, fish and other ecological receptors, etc.

***16.2 Conceptual Site Model (Map view)***

**Note: On a site map please show known and potential source areas, exposure pathways and receptors based on existing knowledge of the site and the regional area.**

***16.3 Conceptual Site Model (Cross-sectional View)***

**Note: Include a site cross section based on existing data and show source areas, potential contaminated media and migration pathway. This at initial stage can be based on knowledge on the regional area. This will be helpful in the determination of subsurface soil sampling and groundwater sampling.**

**Appendix**

**Include Maps, Tables and Photos as needed**