

## DATA ITEM DESCRIPTION

**Title:** Geospatial Information and Electronic Submittals

**Number:** WERS-007.01

**Approval Date:** 20100428

**AMSC Number:**

**Limitation:**

**DTIC Applicable:** No

**GIDEP Applicable:** No

**Office of Primary Responsibility:** CEHNC-ED-CS-D (GIS)

**Applicable Forms:** Attachment A – Sample GIS Requirements / Formatting, MMRP GIS Entity Set

**Use/Relationship:** The Geospatial Information and Electronic Submittals will be used to describe methods, equipment and accuracy for conducting location surveys and mapping of Military Munitions Response (MMR) projects, and the subsequent development of Geographical Information System (GIS) databases to support the mapping and document (paper and electronic) production process. This Data Item Description contains instructions for preparing Work Plan chapters addressing all geospatial information and electronic submittals for all Programs and Projects within Huntsville Center.

### Requirements:

1. General. The site-specific Geospatial Information and Electronic Submittals Plan for each project will document the site-specific survey, mapping, aerial photography, CADD/GIS and electronic submittals required to create a complete geospatial dataset requirements tailored to the needs of that project. Additional information is provided in EM 1110-1-4009. Geospatial data products will be required in either metric or English units depending upon the needs of the individual project. Metric is the standard unit, unless otherwise specified by the specific Task Order. All geospatial data shall conform to the CADD/GIS Technology Center Spatial Data Standards for Facilities Infrastructure and Environment (SDSFIE) and the OE-GIS data standard. Samples of minimally acceptable data feature classes, domains, and attributes are available upon request from CEHNC-ED-CS-P (GIS), if required. This GeoDatabase is a version 9.2 for ArcGIS. Metadata shall be created for the core OE-GIS data layers, and will be prepared in accordance with Federal Geographic Data Committee (FGDC) metadata standards.

1.1 Accuracy. Horizontal and vertical control of "Class I, Third Order" or better shall be established for the network of monuments. Horizontal control shall be based on either the English or metric system and referenced to the North American Datum of 1983 (NAD83) and the Universal Transverse Mercator (UTM) Grid System. Vertical control, if required, shall also be based on either the English or metric system and referenced to the North American Datum of 1988 (NAVD88). All surveying and mapping requirements shall meet the minimum standards set forth in **EM 1110-1-1004 - Geodetic and Control Surveying** If aerial photographs or orthophotography are used to provide this survey, the aerial targets used for control points shall meet the same horizontal and vertical accuracy and requirements in **EM 1110-1-1000 - Engineering and Design - Photogrammetric Mapping**. All newly established control points and recovered monuments shall be of a permanent nature for recoverability during future phases of work within the same project. All control points shall be iron or steel pins, concrete monuments, or other permanent construction method. Installation of control points and monuments shall meet minimum standards set forth in EM1110-1-1002 - **Survey Markers and Monumentation**. A licensed Professional Land Surveyor in the State where the work is being performed shall certify all surveying requirements to include all control points, grid corners, transect points, and boundaries as required by the project. The Northing and Easting (Y, X) for all control points, grid corners, transect points, and any boundaries or closures shall be presented in a certified letter or drawing, along with an electronic submittal of the same to CEHNC upon completion of the field work.

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1.2 Geographic Information Systems (GIS) Incorporation. Spatial data created for the project are to be provided in neutral, nonproprietary Spatial Data Transfer Standard (SDTS) format at the completion of the project, as well as in either MicroStation V8/MGE (MicroStation design files), or ESRI-compliant formats (GeoDatabases) during the project. The use of one of these proprietary spatial data formats will be defined in the task order SOW. Raster data (orthophotography, remote sensing imagery, etc.) are to be provided in Tagged Image File format (TIF) at the completion of the project, as well as in either TIF format or MrSID-compliant format during the project. The selection of one of these raster data formats will be defined in the task order SOW. Supporting tabular data shall be provided in ANSI SQL language format at the completion of the project, as well as in either Microsoft Excel, Microsoft Access, or Oracle database format, dependent upon the storage and performance requirements of the project. The use of one of these proprietary database formats will be defined in the Task Order SOW. The Final Submittal in electronic format shall contain all required Project (ArcGIS .mxd) files and Layout files for all plates, figures, and drawings conveyed in the Final Report. The supporting feature class information shall be conveyed in a single or multiple GeoDatabase(s), so that all appropriate Meta Data, Transformation, and Projection are conveyed for a project in a concise GeoReferenced data set.

1.2 Plotting. All of the control points (monuments, aerial targets, and property corners) recovered and/or established at the site shall be plotted at the appropriate coordinate points on reproducible electronic or hard copy media for production of planimetric or topographic maps at scales appropriate for the parcel size being described. Parcels less than 10 acres shall be plotted at 1:200. Parcels 10 – 100 acres shall be plotted at 1:600 (1"=50'). Parcels larger than 100 acres will be plotted at 1:2400 (1"=200'). Area maps shall be provided for parcels of 100 acres, and shall show sheet breakdown for subsequent sheets required for the set.

1.3 Mapping. The location, identification, coordinates, and elevations of all the control points recovered and/or established at the site shall be plotted on reproducible media for planimetric or topographic maps at the scale specified in the task order. Each control point shall be identified on the map by its name and number and the final adjusted coordinates and elevations (to the closest 0.001m and 0.01 ft.). Each map shall include a grid north, a true north, and a magnetic north arrow with the differences between them in degrees, minutes, and seconds shown. Grid lines or tic marks at systematic intervals with their grid values shall be shown on the edges of the map. Also, a legend showing the standard symbols used for the mapping and a map index showing the site in relationship to all other sites within the boundary lines of the project area shall be shown. The coordinates for the grid corners shall be shown to the closest one-foot (1.0 ft.), but may require greater accuracy to meet geophysical mapping and re-acquisition requirements. The locations of individual recovered OE items shall be tape measured or the X and Y distance estimated, to obtain a horizontal accuracy of plus or minus one foot within the grid, and plotted and identified on the map.

## 2. Digital Design Data.

2.1 General Design File Requirements. An overall planimetric design file shall be created and shall be digitized into a Microstation ".dgn" file at an elevation of zero. If contours and spot elevations are required, all data shall be digitized into a second Microstation 3D design file with each element (contours and spot elevations) at their correct elevation, and topologically triangulated network (ttn) files shall be created to model the topographic surface. The ttn file shall be created using the elements of the topographic file, and all spot elevations, contours, and break lines necessary to create the ttn file shall be used. The ttn file shall be created so that it can be used in an Intergraph software product INROADS to recreate the contours at their exact locations. Referencing the planimetric and contour files from additional Microstation work files shall create cut sheet plots, and views into the project data.

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2.2 Each sheet shall be a standard metric A-1 size drawing, which is 841 mm by 594 mm (33.1 inches by 23.4 inches). Each sheet shall also have a standard border; revision block; title block; complete index sheet layout; bar scale; legend; grid lines or grid tic layout in feet or meters; a True North, a Magnetic North and a Grid North arrow, with their differences shown in degrees, minutes, and seconds; and shall be plotted at the horizontal scales required. The Contractor's logo shall not dominate the title block and sheet border. The standard A-1 sheet size title block and border define the text size, location, and format. Printed copies of the report may use this same layout, but produce in a sheet size of 11" x 17" inch for inclusion into the printed report.

2.3 All associated cell, reference, or attachment files shall be attached and provided with the digital data set along with all other supporting files or data. All production and work files shall be fully documented into a concise data manual. This manual shall include all specific information required for an outsider to be able to recreate all products and determine the location, names, structures, and association of the data such as layer description, weights, colors, symbology, referencing of files, etc. This manual shall be included as an ASCII file titled READ.ME that is included with all distributed digital data.

2.4 No digital data will be acceptable until proven compatible with the USAESCH Graphics System. All revisions required to obtain compatibility with the USAESCH Graphics System shall be done at the Contractor's own expense.

### 3. Computer Files and Digital Data Sets.

3.1 All final document files (e.g., reports and associated figures and tables) generated shall be furnished to USAESCH in IBM PC-compatible MS Office 97 or higher software and in Adobe Portable Document Format (PDF). Products shall be suitable for viewing, without modification, on the Internet. Freeware versions of Adobe Acrobat Reader, Netscape, and Internet Explorer, as appropriate, shall accompany the document files on CD-ROM so that the user can use the CD to either install the programs and documents on a machine, or use the CD in a standalone mode to view the document files. In submissions with multiple CDs, only one copy of the viewers is required. It shall be included on the first CD of the series.

3.2 All final GIS data generated by this contract and other individual Task Orders shall be submitted in non-proprietary Spatial Data Transfer Standard format at the close of the project, as well as in the proprietary format used for the execution of the project (MicroStation V8/MGE, DGN format, or ESRI's GeoDatabase format). All data shall conform to the Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE), and as outlined in the specific task order. All in-progress and fielded GIS data, design drawings, survey data, relational databases, geophysical data, and other related data may be required to be available on line to the Government by HTTP or FTP download or by Web based GIS queries as specified for the project. All formal GIS data submittals will be made on PC CD-ROM. Each submittal shall be accompanied by a freeware viewer application appropriate for reviewing the proprietary formatted GIS data (e.g ArcReader for ESRI format shape files and coverage's). The viewer application need only be supplied on one CD-ROM for multiple CD-ROM submittals. At a minimum, the contractor will supply instructions for loading the data and viewer application. No other additional software shall be required, and no data modification shall be required for viewing the submittal. Other specific packages to be considered must be proposed to USAESCH for approval and for system and mission compatibility.

3.3 Electronic Submittal: All data shall be submitted electronically on PC CD-ROM. The PC CD-ROM is the required format. All data items will be delivered, and the specific timeframe for delivery will be specified within each Task Order SOW. However, at no time will the delivery be less than that specified in EM 1110-1-4009. Each CD or DVD required for a complete electronic submittal shall be labeled

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appropriately with Project Name, Project Number, effective date of submittal, Contractor Name, and appropriate disk number or sequential reference. A single copy of the Final Electronic Submittal shall be made to CEHNC-ED-CS-P (GIS) for incorporation into the CEHNC Engineering Directorate CD archive.

3.4 The Spatial Data Standard for Facilities, Infrastructure and Environment (SDSFIE) is now recognized as an enterprise standard across the entire Department of Defense business mission area. As such, it is being managed by the Defense Installations Spatial Data Infrastructure (DISDI) Group. The DISDI Group is a formal governance group reporting to the Department of Defense's Installations & Environment Investment Review Board. It is chaired by the DISDI Program Manager and made up of leaders from each of the Services' programs for Installation Geospatial Information and Services (IGI&S) as well as the U.S. Army Corps of Engineers. As part of the SDSFIE 3.0 implementation, the standard will also become an integral part of the data standards used in the National System for Geospatial-Intelligence (NSG), as required by Department policy. Although tailored to Department of Defense needs, our federal, state, and local stakeholders are welcome to use the standard and help us mature it in future releases.

3.4.1 The Feature Classes, Layers, and Attributes are extremely robust and therefore cannot be listed specifically in a table. All requirements, tools, and POCs for SDSFIE can be found at the following URL: <http://www.sdsfie.org/> Contractors should reference this site and its associated tools to facilitate the development and structure of GIS data to be submitted. The Feature Classes, Layers, and Attributes are too varied and complex to list in a single table for all phases of all projects awarded by the Corps of Engineers. Attachment A gives a sample of a MMRP SI SDSFIE Table as a guide and minimum. The SDSFIE website contains a downloadable blank GeoDatabase of all of the models and feature classes within SDSFIE V.2.3; which may be of value in the development of expanded SI, RI/FS, RA, TCRA, or other environmental assessments, ground water sampling, chemical analyses, or other varied sampling and clearance efforts.

#### 4. Electronic reference URLs:

- a. **Spatial Data Standard for Facilities, Infrastructure & Environment –**  
<http://www.sdsfie.org/>
- b. **Project Information Retrieval System (PIRS) -**  
<https://mvrpirs.mvr.usace.army.mil/FUDS.cfm>
- c. **ESRI Software, scripts, and base mapping information –** <http://www.esri.com>

5. End of DID WERS-007.01.

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**Attachment A**  
**GIS Requirements / Formatting**  
**MMRP GIS Entity Set**

SDSFIE Feature Name	SI Outline	Type	Entity Set	Definition	Priority
acquisition_boundary_area	Section 2	Polygon	cadastre	The outside boundary of all land obtained in fee acquisition.	3
approx_boundary_point	Field Generated	Point	boundary	p y but an approximate location of something.	F1
aquifer_area	Section 5	Polygon	hydrography	An area of subsurface water bearing stratum, sand or gravel.	1
aquifer_recharge_area	Section 5	Polygon	hydrography	An area that is a source of water for an aquifer.	3
building_env_concern_site	Section 2	Point/Polygon	environmental_hazards	Site of building or structure which contains one or more building.	2
building_floor_area	Section 2	Polygon	buildings	The space within the floor outline, the perimeter, or the building footprint.	2
chem_waste_pol_sediment_area	Section 6	Polygon	environmental_hazards	Area where chemical waste residues are present in the sediment.	5
chem_waste_polluted_air_area	EPA Regulated Area	Polygon	environmental_hazards	Area where chemical waste residues are present in the air at concentrations considered to be detrimental to the environment.	5
chem_waste_polluted_gwt_area	Section 5	Polygon	environmental_hazards	Area where chemical waste residues are present in the groundwater at concentrations considered to be detrimental to the environment.	5
chem_waste_polluted_soil_area	Section 3	Polygon	environmental_hazards	Area where chemical waste residues are present in the soil at concentrations considered to be detrimental to the environment.	5
chem_waste_polluted_swat_area	Section 6	Polygon	environmental_hazards	Area where chemical waste residues are present in the surface water at concentrations considered to be detrimental to the environment.	5
chemical_warfare_waste_area	Section 2	Polygon	environmental_hazards	Area where chemical warfare waste residues are present or buried in the water, soil, or sediment.	5
cult_probable_sensitive_site	Section 2	Polygon	cultural	A site suspected to contain archeological or historic resources that has not been verified by a detailed archeological study.	1
cultural_restricted_area	Section 2	Polygon	cultural	An area that needs to be preserved due to the sensitive nature of the archeological or historic site. The area designated as is intended to prevent access or development that will disturb the site.	1
cultural_study_site	Section 2	Point/Polygon	cultural	A site under study for archeological or historic resources.	2
cultural_survey_site	Section 2	Point/Polygon	cultural	A site where detailed investigation has been conducted for cultural resources. This investigation could involve test pits, excavation areas, surface surveys, etc.	2
dod_formerly_used_defnse_site	Section 2	Point/Polygon	environmental_hazards	A site which was formerly owned or used by the Department of Defense which has been identified for assessment/ investigation/remediation under the Defense Environmental Restoration Program - Formerly Used Defense Sites (DERP-FUDS) which may or may not have an active environmental restoration study or project.	4
dudded_impact_buffer_area	Section 2	Polygon	military_operations	An area around a non-dudded impact area where access is restricted for safety reasons.	3
dudded_impact_site	Section 2	Point/Polygon	military_operations	A contaminated site that has been investigated and determined to contain, or potentially contain, some abandoned or unexploded ordnance materials. Investigated geomagnetic anomalies can suggest potential presence of UXO. An area where munitions impact but do not detonate - leaving a "dud" or unexploded ordnance.	3
ecology_habitat_site	Section 2	Point/Polygon	ecology	Location that supports a particular ecological community or population set.	1
ecology_management_site	Section 2	Point/Polygon	ecology	Ecology management areas including ecoregions.	1
ecology_species_site	Section 2	Point/Polygon	ecology	Location at which a species has been or is being observed and counts or other population observations may have been made.	1

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env_field_sample_loc_point	Section 3	Point	environmental_hazards	The physical location at which one or more environmental hazards field samples are collected.	F1	
env_regulated_facility_site	Section 2	Point/Polygon	environmental_hazards	A facility or other locational entity, (as designated by the Environmental Protection Agency) that is regulated or monitored because of environmental concerns.	3	
environmental_restoratr_n_site	Section 2	Point/Polygon	environmental_hazards	A geographic area where an active environmental study or project is underway to remediate pollutants located in the soil, sediment, surface water, or groundwater.	3	
essential_fish_habitat_area	Section 2	Polygon	ecology	Essential fish habitats (EFH) are those regulatory defined waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity.	1	
fauna_special_species_site	Section 2	Point/Polygon	fauna	A site or location where the specific species associated with the habitat require special attention according to law. These are normally threatened, sensitive, or endangered species habitats.	1	
fauna_species_site	Section 2	Point/Polygon	fauna	A site or location where a specific species is observed.	1	
fauna_study_area	Section 2	Polygon	fauna	A geographic area created for the study of fauna.	1	
fence_line	Section 2	Line	improvement	The line, along which, a fence has been erected.	F1	
firing_fan_area	Section 2	Polygon	military_operations	Imaginary surface angled at a degree consistent with the type of weapon discharged, normally 38 degrees emanating from the firing point along the firing line.	X	
firing_lane_area	Section 2	Polygon	military_operations	The designated hazard area parallel to either side of the firing line.	3	
firing_line	Section 2	Line	military_operations	The designated hazard area that follows the projected trajectory of a munition.	3	
firing_site	Section 2	Point/Polygon	military_operations	The designated point or area within a firing lane and firing fan where the weapon is discharged or fired - usually the point of convergence of firing fan.	3	
flood_contour_line	Section 6	Line	hydrography	A line representing the limit or extent of probable flooding associated with the area.	1	
flood_zone_area	Section 6	Polygon	hydrography	An area where statistically derived flood inundation may exist within a specific return period, i.e. 100 year or 500 year chance of flooding, for insurance and floodplain management purposes.	1	
flora_special_species_mgt_area	Section 2	Polygon	flora	The area containing a threatened, endangered, or rare flora species.	1	
flora_special_species_site	Section 2	Point/Polygon	flora	A site or location where there are threatened, endangered, invasive, or sensitive floral species.	1	
flora_species_management_area	Section 2	Polygon	flora	A location where rare, threatened, endangered, etc. flora species are managed.	1	
flora_species_site	Section 2	Point/Polygon	flora	The specific location where an individual flora species or an aggregate of flora species has been identified.	1	
flora_study_area	Section 2	Polygon	flora	A geographic area created for the study of flora.	1	
future_projects_landuse_area	Section 2	Polygon	future_projects	This feature describes man's categorization of the proposed use of land and water.	1	
future_projects_line	Section 2	Line	future_projects	Site specific general linear features within a potential future construction project or activity.	2	
future_projects_site	Section 2	Point/Polygon	future_projects	Site specific general area and point features within a potential future construction project or activity.	2	
gov_wildlife_management_area	Section 2	Polygon	fauna	An area either owned by federal, state, or local governments or government agencies specifically identified for management or preservation of wildlife.	1	6

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hab_of_part_concern_area	Section 2	Polygon	ecology	Habitat areas of particular concern (HAPC) are subsets of essential fish habitats (EFH) areas that are identified to be especially important ecologically or particularly vulnerable to degradation requiring additional focus or conservation.	1	
hazardous_waste_disposal_area	Section 2	Polygon	environmental_hazards	A location which has been used for the disposal of hazardous waste (e.g., pit, buried drums, etc.).	2	
historic_district_area	Section 2	Polygon	cultural	A group of related buildings or streetscapes that demonstrate the historical development of an area.	2	
historic_feature_site	Section 2	Point/Polygon	cultural	Historically or culturally significant points of interest. These include monuments, memorials, landmarks, museums, historic markers, interpretive sites, etc.	1	
historic_impact_area	Section 2	Polygon	military_operations	An impact area, dudged or non-dudged, no longer in use which may pose potential risk.	3	
installation_historical_area	Section 2	Polygon	cadastre	An area of land and water which depicts a prior DoD installation boundary.	1	
land_use_area	Section 2	Polygon	land_status	This feature describes man's categorization of the use of land and water.	3	
land_vegetation_area	Section 2	Polygon	flora	A discrete area where land flora has been classified.	1	
landfill_cell_area	Section 2	Polygon	environmental_hazards	Excavated or constructed receptacle used for the disposal of solid waste.	3	
mil_bomb_circle_target_area	Section 2	Polygon	military_operations	A precision bomb circle used in training on military ranges or exercise areas.	3	
mil_special_use_airspace_site	Section 2	Point/Polygon	military_operations	Special use airspace (SUA) is a three-dimensional region of airspace for activities which must be confined because of their nature. Limitations may be imposed upon aircraft operations that are not a part of the airspace activities. Special use airspace includes any associated underlying surface and subsurface training areas. The types of SUA are Alert Area, Controlled Firing Area, Military Operating Area (MOA), Prohibited Area, Restricted Area, and Warning Area.	X	
mil_surface_danger_zone_area	Section 2	Polygon	military_operations	Areas where live or inert ordnance impact the earth after being dropped from aircraft, fired from ground-based artillery, or fired from shipboard guns. Part of the entire military live fire range area.	3	
military_range_area	Section 2	Polygon	military_operations	(40 CFR 266.201) A designated land or water area set aside, managed and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas. The definition of a military range does not include airspace used for training, testing, or research and development where military munitions have not been used.	3	
non_dudged_impact_area	Section 2	Polygon	military_operations	A medium risk area where explosive munitions land after firing.	3	
non_dudged_impact_buffer_area	Section 2	Polygon	military_operations	An area surrounding a non-dudged impact area where access is restricted for safety risk reasons.	3	
oe_anomaly_point	Section 3	Point	environmental_hazards	Location where a suspected Ordnance and Explosives (OE) Waste related geophysical anomaly has been identified. Also stores information about subsequent reacquisition and excavation of the anomaly (DIG RESULTS).	1	

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oe_grid_area	Section 3	Polygon	environmental_hazards	A defined gridded area in which the presence of Ordnance and Explosives Waste (OE) contamination is being, or has been investigated.	1	
oe_hazard_concern_site	Section 3	Point/Polygon	environmental_hazards	A site of known or suspected ordnance and explosive (OE) waste contamination.	1	
oe_hazard_invest_sector_area	Section 3	Polygon	environmental_hazards	A homogeneous area within an oe_hazard_concern_area for which the same method of investigation can be applied. Usually subdivided into Investigation Grids.	1	
oe_hazard_invest_transect_line	Section 3	Line	environmental_hazards	A ordnance and explosive (OE) waste geophysical investigation transect line, typically part of a grid investigation or a meandering path investigation.	1	
oe_hazards_rac_score_area	Section 2	Polygon	environmental_hazards	A ordnance and explosive (OE) waste geophysical investigation area which has been evaluated and assigned a Risk Assessment Code (RAC) score.	1	
oe_item_point	Section 3	Point	environmental_hazards	A ordnance and explosive (OE) location where actual OE items, including OE scrap, UXO, and CWM-related items, were recovered.	1	
ordnance_explosive_waste_area	Section 2 & 3	Polygon	environmental_hazards	Area where ordnance and explosive waste residues are present or buried in the water, soil, or sediment.	1	
parcel_acquisition_area	Potentially Sec. 2	Polygon	cadastre	Tract boundaries for all land obtained in parcel acquisitions. (fee and less-than-fee).	3	
parcel_area	Potentially Sec. 2	Polygon	cadastre	A single cadastral unit, which is the spatial extent of the past, present, and future rights and interests in real property and the geographic framework to support the description of the spatial extent.	3	
photograph_location_point	Field Generated	Point	common	The location where the photograph is taken. The camera location.	F1	
rad_waste_pol_sediment_area	Section 6	Polygon	environmental_hazards	Area where radioactive waste residues are present in the sediment at concentrations considered to be detrimental to the environment.	5	
rad_waste_polluted_air_area		Polygon	environmental_hazards	Area where radioactive waste residues are present in the air at concentrations considered to be detrimental to the environment.	5	
rad_waste_polluted_gwt_area	Section 5	Polygon	environmental_hazards	Area where radioactive waste residues are present in the groundwater at concentrations considered to be detrimental to the environment.	5	
rad_waste_polluted_soil_area	Section 3	Polygon	environmental_hazards	Area where radioactive waste residues are present in the soil at concentrations considered to be detrimental to the environment.	5	
rad_waste_polluted_swat_area	Section 6	Polygon	environmental_hazards	Area where radioactive waste residues are present in the surface water at concentrations considered environmentally detrimental.	5	
rifle_mgmt_unit_site	Section 2	Point/Polygon	environmental_hazards	A geographic area either currently or formerly used for rifle training activities which is managed and monitored for compliance with environmental laws and regulations.	1	
right_of_entry_area	Required for Field Work	Polygon	cadastre	An area where temporary access privileges have been negotiated. Normally associated with passage or entry required incident to a construction project.	1	
road_centerline	Section 2	Line	transportation	The center of the roadway as measured from the edge of the paved surface. The segments of a road centerline will coincide with the road segments in order to have similar characteristics.	1	
soil_sample_point	Section 3	Point	soil	Location of a soil sample taken to determine characteristics of soil.	F1	
structure_existing_site	Section 2	Point/Polygon	buildings	An existing structure that was created, by man, for occupation, storage, or to facilitate an activity.	1	



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superfund_site	Section 2	Point/Polygon	environmental_hazards	Geographic area designated by the Environmental Protection Agency, where hazardous waste is either abandoned or uncontrolled, as mandated and defined by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).	1	
uxo_clearance_area	Section 2 and 3	Polygon	military_operations	The area in which unexploded ordnance is disposed or removed.	3	
uxo_contamination_site	Section 2	Point/Polygon	military_operations	The area in which unexploded ordnance is known or suspected to exit.	1	
water_intake_point	Section 6	Point	utilities	The location where water is allowed into the water distribution system.	3	
water_management_area	Section 6	Polygon	hydrography	Management area for environmentally sensitive water courses or bodies.	1	
water_well_point	Section 5	Point	improvement	A shaft dug or drilled into the earth for the purpose of extracting water from subsurface aquifers, collecting groundwater environmental samples injecting water or other fluids into subsurface aquifers, or extracting contamination or other impurities from subsurface aquifers.	1	
well_field_site	Section 5	Point/Polygon	improvement	An area containing natural resources wells for example oil or gas wells.	3	
wetland_area	Section 6	Polygon	hydrography	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.	1	
wilderness_area	Section 2	Polygon	flora	Bounded land, virtually unsettled and uncultivated (natural); includes areas designated by an administrative group as wilderness, primitive, wild and scenic, or similar designations. Has use restrictions.	1	