APPENDIX D

EVALUATION OF DATA QUALITY OBJECTIVES ATTAINMENT

Activity	Objectives	Action	Objective Attained?	Recommendations
Objective 1: Meet TNRCC Requirements for Site Closure				
Attainment of Risk Reduction Standard Number 1: Closure/Remediation to Background				
	Remove all hazardous and nonhazardous waste and waste residues and contaminated design and operating system components such as liners, leachate collection systems, and dikes from the unit or area of the unauthorized discharge. For remediation of media that have become contaminated by releases from a waste management unit or by other unauthorized discharge of hazardous or nonhazardous waste, the contaminated media must be removed or decontaminated to cleanup levels specified in this section (30 TAC 335.554(b) and (c)).	A soil gas survey, geophysical survey, surface and subsurface sampling were conducted to determine if there is evidence of buried waste at the site. The surveys and sampling did not indicate any waste-related anomalies, or evidence of contamination in surrounding soils.	No. Waste residues remain within the incinerator.	Additional waste residue or removal is recommended.

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Activity	Objectives	Action	Objective Attained?	Recommendations
	Determine compliance with RRS1 closure requirements by comparing to background as represented by results of analyses of samples taken from media that are unaffected by waste management or industrial activities. If the practical quantitation limit (PQL) is greater than background, then the PQL rather than background shall be used as the cleanup level provided that the person satisfactorily demonstrates to the executive director that lower levels of quantitation of a contaminant are not possible (30 TAC 335.554(d)).	Contaminant concentrations were compared to revised background levels (Parsons, February 2002) or PQLs, which are equivalent to RLs.	Metals (barium, chromium, copper, lead, nickel, zinc, arsenic, and cadmium) were evident in one sample collected from the site at concentrations exceeding the RRS1 closure criteria for Glen Rose limestone. However, concentrations are below soil background criteria and thus are not believed to be contaminants.	No further actions are recommended within the surrounding media of Building 294 (SWMU I-1). Since the two soil samples that were collected from above the Glen Rose were below background levels, a release most likely did not occur. The elevated levels of metals in the I1-SB02 sample are therefore probably due to natural heterogeneity in the Glen Rose Limestone.
	Attainment of cleanup levels shall be demonstrated by collection and analysis of samples from the media of concern (30 TAC 335.554(e)).	Surface and subsurface samples as well as soil gas samples were collected at SWMU I-1.	No, waste and/or waste residues have not been removed sufficiently from Building 294 (SWMU I-1).	Building 294 (SWMU I-1) requires that all waste and waste residue be removed. Pressure washing is recommended to complete RRS1 closure requirements.

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Activity	Objectives	Action	Objective Attained?	Recommendations
Objective 2: Meet Requirements of 3008(h) Order for RFI				
RFI Workplan Requirements				
Field Sampling *(Detailed listing of methods and procedures are provided in project plans which are incorporated by reference).*	Conduct field sampling in accordance with procedures defined in the project work plan, SAP, QAPP, and HSP.	All sampling was conducted in accordance with the procedures described in the project plans.	Yes.	NA
Facility Investigation				
Characterization of Environmental Setting - Hydrogeology (B.3.A.1)	Evaluate hydrogeologic conditions at the site.	Not included in this phase of the RFI at SWMU I-1. Shallow groundwater was not encountered during drilling at the site. Groundwater of the Trinity Aquifer is being addressed through the Groundwater Investigation.	NA	NA
Characterization of Environmental Setting- Soils (B.3.A.2)	Characterize soils in accordance with USCS soil classification system (B.3.A.2(a)).	Soil types at the site are based on the SCS Bexar County Soil Survey (USDA, 1991) and are described in Section 1.2.1.	Yes	NA

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Activity	Objectives	Action	Objective Attained?	Recommendations
	Identify soil profile, including ASTM classification of soils; directional relative permeability; bulk density; particle size distribution; infiltration (field test); storage capacity; mineral content; and soil conductivity (B.3.A.2(b), (c), (d), (f), (h), (i), (j), (k))	Soil types at SWMU I-1 are based on the SCS Bexar County Soil Survey (USDA, 1991) and are described in Section 1.2.1.	Yes	NA
	Determine soil pH (B.3.A.2(e)).	The pH of each of the soil types evaluated as part of the background metals concentration study was determined through laboratory analysis. According to those analyses, the pH of Krum Complex soils is 7.87.	Yes.	NA
	Determine moisture content (B.3.A.2(g)).	The moisture content of each sample was analyzed. Moisture content values are provided in the laboratory data packages.	Yes.	NA
Characterization of Environmental Setting – Surface Water and Sediment (B.3.A.3)	Characterize marshes, creeks, wetland areas, or ditches at the site.	No marshes, creeks, wetland areas, or ditches are present at the site. Direction of runoff flow has been evaluated to be toward the south.	Yes	NA
Source Characterization (B.3.B)	Identify the source area (B.3.B.1).	A description of the source area is provided in Section 1.1.2.	Yes, the source is naturally occurring and is not the result of waste disposal practices. Only one surface and one subsurface soil sample had contamination levels which exceeded RRS1.	NA

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Activity	Objectives	Action	Objective Attained?	Recommendations
	Identify the location of the unit/disposal area (B.3.B.2(a)).	In 1999, points along the boundary of each site were surveyed with a Rockwell Plugger GPS unit (estimated accuracy of ±25 feet). The measurement points were identified by the CSSA Environmental Coordinator. The boundary of the site was reviewed during preparation of this report and adjusted, if necessary, based on observations made during the field investigation.	Yes. Although the accuracy of the boundary survey of the site is estimated to have an approximate error of 25 feet, this accuracy is sufficient for closure under RRS1. If CSSA opts to close the site under RRS2, a metes and bounds survey by a licensed surveyor will be necessary.	NA
	Identify the type of unit/disposal area (B.3.B.2(b)).	The type of unit/disposal area was identified in the Environmental Assessment and by aerial photo review, visual observation of waste management activities n the field and records review.	Yes. The type of disposal was verified based on records review, interviews with base personnel, and aerial photo review and field observations.	NA
	Identify design features (B.3.A.2(c)).	Information regarding design features was obtained during the Environmental Assessment (ES, 1993) and through visual observation during the field investigation. All available information regarding the design of the disposal site is provided in Section 1.1.2.	Yes	NA
	Identification of past and present operating practices, period of operation, age of unit/disposal area, and method used to close the unit/disposal area (B.3.B.2(d), (e), (f), and (h)).	All known information regarding these items is provided in Section 1.1.2.1. This information is from the Environmental Assessment, records review, interviews, aerial photo review, and visual observations.	To the extent possible with the data available.	NA

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Activity	Objectives	Action	Objective Attained?	Recommendations
	Determine general physical conditions of the site (B.3.B.2(g))	The general physical condition of the site was determined during the field investigation. This information is presented in Section 1.1.2.1.	Yes.	NA
	Identify waste characteristics, including type of waste placed in the unit, physical and chemical characteristics of the wastes, and migration and dispersal characteristics of the waste (B.3.B.3).	Records regarding historic waste disposal practices at CSSA are very limited. All known information, derived from the Environmental Assessment, records review, interviews, and visual observations at the site is provided in Section 1.1.2.	Yes	NA
Contamination Characterization – Groundwater (B.3.C.1)	Characterize the vertical and horizontal extent of groundwater contamination.	Not included in this phase of the RFI at SWMU I-1. Shallow groundwater was not encountered during drilling at the site. Groundwater of the Trinity Aquifer is being addressed through the Groundwater Investigation.	NA	NA
Contamination Characterization – Soil (B.3.C.2)	Determine vertical and horizontal extent of contamination (B.3.C.2(a)).	Soil borings were advanced in areas thought to contain contamination.	Yes, the vertical extent of contamination has been established, as only one surface soil sample (one foot below ground surface) and one subsurface (5.5-6) soil sample exceeded RRS1 closure criteria for VOCs and metals, respectively.	No further actions are recommended within the surrounding media of Building 294 (SWMU I-1). Since the two soil samples that were collected from above the Glen Rose were below background levels, a release most likely did not occur. The elevated levels of metals in the I1-SB02 sample are therefore probably due to natural heterogeneity in the Glen Rose Limestone.

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	Describe contaminant and soil properties with the contaminant source area, including contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation (B.3.C.2(b)).	See Characterization of Environmental Setting- Soils (B.3.A.2), above.	Yes	NA
	Describe soil properties (B.3.C.2(c)).	See "Characterization of Environmental Setting – Soils" above.	Yes	NA
	Identify the direction of contaminant movement (B.3.C.2(d)).	No actions taken.	NA	NA
	Extrapolate future contaminant movement (B.3.C.2(e)).	No actions taken.	NA	NA

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Activity	Objectives	Action	Objective Attained?	Recommendations
	Implement a soil boring investigation to determine the extent of soil contamination. Soil gas monitoring will be performed during drilling of all borings. Laboratory analysis of borings for contaminants of potential concern will be performed on soils at depths where either visual contamination is evident, or soil gas concentrations indicate contamination. All boreholes shall be properly abandoned.	Three soil borings were advanced to determine the extent of soil contamination. Nine soil samples were collected and analyzed for metals, and VOCs. The soil borings were properly abandoned upon completion of field activities.	Yes, the extent of soil contamination was defined to RRS1 criteria.	Although contamination was detected in two samples, they are attributed to either laboratory contamination or soil background levels (see Section 3.3). No further recommendations.
	Prepare a map of all areas included in the investigation (B.3.C.2(i)).	Figures included in this report show all areas included in this investigation.	Yes	NA
	All reporting limits should be below regulatory criteria.	RLs were approved by TNRCC on October_5, 1999. SQLs based on these RLs are considered RRS1 standards for all analytes except metals.	Yes	NA
	Perform all analyses in accordance with the AFCEE QAPP.	All analyses were performed in accordance with the AFCEE QAPP and approved variances.	Yes	NA

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		All data flagged with "U," "F," "M," and "J" are considered usable for site characterization purposes.	Yes. "J" flagged data are also considered usable. The estimation of quantitation does not significantly affect the sample results and all data flagged "M" are considered usable as the matrix interference is minimal and does not significantly affect the sample results.	NA
		No data was flagged with "R".	Yes	NA
Contaminant Characterization – Sediment and Surface Water (B.3.C.3)	Characterize the extent of sediment and surface water contamination.	NA. There are no creeks or marshes located at SWMU I-1. Therefore, surface water and sediments were not sampled as part of the SWMU I-1 investigation.	NA	NA
Potential Receptors (B.3.D).	Collect the information necessary to describe the human populations and environmental systems that are susceptible to contamination exposure from the Facility.	Potential receptors are discussed in Section 1.2.5 of this report.	Yes	NA