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Colorado Department of Public Health & Environment Comments		
	General Comments	
	No general comments provided.	
	Specific Comments	
1	Figures should be provided, or the figures provided modified, to actually show the plumes, not just identify the individual well information. It is difficult to identify, from the figures provided the "plumes" that may be an issue, such as on Fig 4.6, 4.7, 4.10, etc., and to identify the plumes as discussed in Table 4.7.	The groundwater contaminant plume maps shown in original Section 7.0, Contaminant Fate and Transport, will be moved to Section 4.0 so that the plumes used as part of Screening Step 5 (Section 4.5.5) are clearly identified for the reader. Incorporation of the plume maps in this section will eliminate confusion concerning the selection of AOIs.
2	A figure should be provided that shows the remaining groundwater monitoring network, as well as the retained wells identified on each of the upper and lower HSU figures provided (possibly circles on the retained wells).	Figures 4.1 and 4.2 provide a historical perspective of groundwater monitoring at the site and were not meant to show the "final" IMP groundwater monitoring well network. A map of the current groundwater monitoring well network in the UHSU is not appropriate in this section since some of the wells in the IMP network were installed after the cut-off date (July 31, 2005) for data evaluated in the RI/FS. No monitoring wells remain in the LHSU since monitoring of the LHSU is not required per agency agreement. The reader should consult the current version of the IMP for a map of the wells retained in the groundwater monitoring well network (for example, Figure 2 in RFETS Integrated Monitoring Plan FY05, Summary Document, Revision 1, September, 2005).
3	Figure 4.1 – This figure should be modified to include all wells currently installed. This would specifically include the new well south of B991, on the south side of South Walnut Creek.	Please see response to CDPHE specific comment 2.
4	Sec 4.1 – Please identify the difference between an AOI and the previously identified COCs.	COCs were not discussed in Section 4.0. No change made.
5	Table 4.1 – Please include wells installed in 2005.	Wells installed, sampled, and analyzed through July 31, 2005

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		will be included in Table 4.1. Only wells for which data were evaluated in the RI/FS (through July 31, 2005) will be included in this table.
6	Table 4.2 – A) Please include all wells, including the well completed south of B991, on the south side of South Walnut Creek (completed in Sept/Oct 2005). B) Since all of these wells will not be retained, those that are not retained should have been plugged. As such, please provide the abandonment information and dates for all of the non-retained/plugged wells.	Wells sampled and analyzed through July 31, 2005 will be included in Table 4.2. Only wells for which data were evaluated in the RI/FS (through July 31, 2005) will be included in this table. Well completion details, including abandonment date, will be listed on Table 4.2 where this information is available.
7	Please provide a table identifying all retained wells and specific information regarding their appropriate sampling rationale.	Inclusion of a table in the nature and extent section listing the wells retained in the final monitoring network and their sampling rationale is not appropriate. The reader should consult the current version of the IMP (for example, RFETS Integrated Monitoring Plan FY05, Summary Document, Revision 1, September, 2005) for the wells retained in the groundwater monitoring well network and their sampling rationale. No change made.
8	Section 4.4.8 through 4.4.8.7 – Although it is stated that the rationale for elimination of AOIs is contained in Table 4.5, only ammonia and chromium were discussed in Table 4.5. This is of concern since levels of potential AOIs such as Nitrate/Nitrite (A2.206) and dissolved uranium (A2.196) exceeding surface water standards were identified in the LHSU in the area of the Solar Ponds Plume without any non-detections in a down gradient position. Although the rationale for non-detection in other wells cannot be appropriately used to dismiss these detections (since there are no wells), no discussion for exclusion of these AOIs is provided. However, if the discussion in the last paragraph of Section 4.4.8 is to be used to universally exclude all	Table 4.7 only shows those contaminants (both UHSU and LHSU) eliminated by process knowledge or professional judgment and is stated as such in the text in Sections 4.5.6, 4.5.7, and 4.5.8 (former Section 4.4.8). For clarification, additional text will be included in Section 4.5.8 (following the first paragraph) that states that "Although potential LHSU AOIs, such as nitrate/nitrite, may not have sufficient well density in the LHSU to eliminate as an AOI based on Screening Step 5, these analytes were eliminated as AOIs based on the lack of potential for any site-related contaminants to migrate downward in the LHSU through the thick, underlying

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	potential LHSU AOIs from concerns then this should be specifically identified as rationale for no further LHSU AOI discussion (with additional discussion as to lack of potential to contaminate any lower drinking water source). Otherwise, the exclusion of all suspicious AOIs should be properly explained.	shale strata and potentially contaminate deeper drinking water aquifers beneath the site." This text will be the introduction to the discussion that follows concerning other lines of evidence for the lack of groundwater quality impacts in the LHSU.
9	Section 4.5 – The discussion regarding the time intervals should include identification of the figures used for each time interval, as is provided for the concentration discussion (colors).	The symbol shapes for each time interval will be added to the discussion on time intervals presented in Section 4.6 (former Section 4.5). Samples collected between June 28, 1991 and December 31, 1994 are shown as a triangle; samples collected between January 1, 1995 and December 31, 1999 are shown as a square; and samples collected since January 1, 2000 are shown as a circle.
10	Section 4.5.1.2 – In the discussion of total nickel (last paragraph on pg 4-13), please identify the occurrences of total nickel rather than dissolved nickel.	The text in Section 4.6.1.2 (former Section 4.5.1.2) actually discusses total nickel occurrences in UHSU groundwater; however, the text incorrectly identified the occurrences as dissolved nickel. The text will be revised to read "total nickel" in the referenced paragraph.
11	Section 4.5.1.4 – Please include a discussion regarding the current modified nitrate/nitrite (N) allowable levels (100 mg/l, agriculture) rather than the actual standards (10 mg/l, human health) and how or if this has been taken into consideration. The current allowable levels are set to expire in 2009.	The temporary modification for nitrate/nitrite (as N) was not used in the determination of nature and extent because it is recognized that the modified standard is scheduled to expire in 2009. Nitrate/nitrite (as N) comparisons in the nature and extent sections were compared with the underlying Colorado Water Quality Control Commission (CWQCC) surface water standard of 10 mg/L for nitrate/nitrite (as N). The text states that the CWQCC surface water standards are used in the evaluation. No change made.
12	Figure A1.193 – Should modify the red designation from "not applicable" to the correct designation, since there is a red location on the figure.	The legend will be revised to reflect the correct designation for the red category labeled "not applicable." The referenced red category label will be revised to read ">100X MCL."

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13	Figure A1.192 – Why are all of the red locations only identified as above UTL? Why are there no categories above UTL, such as surface water standard, or MCL?	The legend for Total Uranium-233,234 is correct as shown. Although there is not an isotope-specific surface water standard for U-233,234, total U-233,234 was compared with the site-specific total uranium standard of 10 pCi/L established for Woman Creek. However, the site-specific standard is much less than the background 99/99 UTL (145 pCi/L) for U-233,234 in UHSU groundwater. Of the 1,059 samples evaluated, only 1.13 percent of the samples exceeded the 99/99 UTL and the total uranium surface water standard. Total U-233,234 did not form any contiguous plumes and was eliminated as an AOI. Therefore, only three categories are shown in the legend for U-233,234 – not detected, detected and <= 99/99 UTL, and > 99/99 UTL.
14	Table 4.7 & Section 4.5.2 – Please provide all of the areas previously discussed as having contamination, such as the Original Landfill, Ash Pits, etc., or provide specific information as to why they are not included in this Table.	Only areas where contiguous, mappable groundwater plumes were defined are listed in Table 4.9 (former Table 4.7) and discussed in Section 4.6.2 (former Section 4.5.2). The last sentence in Section 4.6.2 will be revised to read: "Table 4.9 lists the areas where UHSU groundwater AOIs form contiguous, mappable plumes based on the screening criteria specified in Section 4.5." for clarification. Thus, the Original Landfill and Ash Pits will not be listed in Table 4.9 or discussed in Section 4.6.2 since contiguous, mappable contaminant plumes in the UHSU were not identified in these areas.
	Editorial Comments	
15	The words "Sections" in the last sentence of sections 4.2, 4.3, and 4.4 should be singular.	No reference to "sections" is found in old Sections 4.2 or 4.3. However, the reference to "sections" in Section 4.4 remain plural as it refers to old Sections 4.4.1 through 4.4.6 and old Sections 4.4.7.1 through 4.4.7.7. No change made.
Environmental Protection Agency Comments		

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	General Comments	
1	The description of nature and extent of contamination for soil, surface water, and groundwater should be provided based on presentation of data and summary statistics (background, means, etc.) as needed. Sections 3, 4 and 5 should be rewritten to present data, figures and maps as obtained from analytical results, without risk interpretation, analytes of interest (AOIs) screening, process knowledge, or comparison to the Wildlife Refuge Worker (WRW) preliminary remediation goals (PRGs). Data should be presented based on detection limits. Please note, thorough comment on the interpretation of data screening is not provided due to the extent to which this comment will affect the revision of the text.	Additional text will be provided in Sections 4.0 and 4.1 describing the approach taken to develop the nature and extent of groundwater contamination. Summary statistics for the RI-Ready data regardless of whether the analytes are regulated or not are now presented in new Table 4.3 for the UHSU and new Table 4.4 for the LHSU in Section 4.4. A summary discussion of these statistics is provided in Sections 4.4.1 and 4.4.2.
2	The data quality objectives (DQOs) associated with the RI/FS are not presented. The accelerated actions were performed based on human health PRGs only, yet data were collected to serve multiple purposes (human health and ecological evaluation). The DQOs for the RI/FS determine whether existing data are adequate to evaluate human health and the environment. Please present RI/FS DQOs relevant to current site conditions and discuss how DQOs are meet.	New text will be provided in Section 4.3.1 that describes the data quality objectives (DQOs) for the nature and extent of groundwater contamination.
3	Section 1.0 presents an appropriate summary of potential contamination sources. However, the nature and extent sections do not adequately present the historical information to describe residual contamination. Please revise the nature and extent for each media in terms of how the data represent and characterize the historical sources. In general, there is relevant and significant information presented on figures that has not been	Section 1.0 provides a discussion of the accelerated actions performed at RFETS. The nature and extent of contamination sections present data after the accelerated actions were completed. It is not appropriate to include a discussion of the accelerated actions completed at RFETS or their associated cleanup goals in a discussion on the nature and extent of contamination.

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	interpreted and discussed in the text in sufficient detail. Please revise the text to reference and interpret key figures that are currently in text figures or on the CD.	
4	Presentation of interpretive findings, such as comparison to PRGs, should be provided in a separate chapter that would serve as a bridge between the extensive risk assessments presented in Appendix A and the RI/FS. This chapter should present a risk evaluation and a summary of both human health and ecological risks. Rather than presenting two executive summaries, one for the RI and one for the Comprehensive Risk Assessment (CRA), the Executive Summary currently presented in the CRA should be eliminated. The information from the CRA Executive Summary should instead be presented in the CRA Summary following the Fate and Transport section of the RI.	Per agreement with the RFCA parties, no change needs to be made to Section 4.0 in response to this comment. Additional text will be provided in Sections 4.0 and 4.1 describing the approach taken to develop the nature and extent of groundwater contamination. Summary statistics for the RI-Ready data regardless of whether the analytes are regulated or not are now presented in new Table 4.3 for the UHSU and new Table 4.4 for the LHSU in Section 4.4. A summary discussion of these statistics is provided in Sections 4.4.1 and 4.4.2.
5	The data source subsections in Sections 3.0 through 5.0 describe a process used for extracting and filtering data records from the Soil/Water Database (SWD). As indicated in the previous comment, risk assessment practices (e.g., use of one half the detection limit) should not be used for reporting nature and extent of contamination. The descriptions presented in the data source sections have not clearly defined the SWD or presented the process used for extracting and filtering data from SWD. It is requested that a general description of the SWD, general definitions (e.g., data records, versus data points, versus sampling locations), and a concise presentation of the data 'filtering' process (as presented in the previous response to comments dated July 30, 2005) be provided in the discussion of the data used in the RI. The Data Source sections for each media should be revised to provide a concise description of the total	Use of one half the reported detection limit value is consistent with EPA's 2002 Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites (EPA 540-R-01-003, OSWER 9258.7-41, September 2002). It is assumed that this guidance can also be applied to constituent concentrations in groundwater. This reference has been added to Section 4.4. Section 4.3.2 has been modified to add language describing SWD, the process for extracting and filtering data from SWD and a definition for data record in relation to sampling location. No definition for data point is provided as this term was not used in the nature and extent evaluation sections. A summary of the data filtering process is provided in Section

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	amount of records included in the SWD, records eliminated based on the 'filtering' process, and records retained for use. The comprehensive data set that was used and data eliminated should then be presented on a disk for the record.	4.3.2 Data Source, referencing Appendix A, Volume 2, Attachment 2 for the detailed list of filters. Data that did not meet data quality filters was included on CD/ROMs in the draft RI/FS Report, Attachment A for site-wide groundwater. These data will also be included on a CD ROM in the final RI/FS Report, Attachment A for site-wide groundwater.
6	For Sections 3.0 through 5.0, it is indicated that data adequacy and data quality are presented in Appendix A, Volume 2 Attachments 2 and 3. It is then indicated that a data quality assessment (DQA) is included in Attachment 2 to each section (which is presented on a CD ROM). It is not clear why two different DQA sections are referenced for the same dataset. The RI should be revised to clarify and present one comprehensive RI data set used to document nature and extent of contamination and its associated DQA. Nature and Extent and Fate and Transport should be evaluated based on all data. The CRA should then be presented as a relevant sub-set of comprehensive RI dataset. The DQA discussion lacks sufficient detail. Please see the EPA's DQA comments below (page 6 through 9) on the Appendix A, Volume 2, Attachment 2. These comments are also relevant to the DQA on CD in the RI Attachment 2. Please include the DQA into the text of the Final RI/FS document.	One comprehensive RI-Ready data set is used as the starting point for all RI evaluations, including the CRA. The DQA in Appendix D, Volume 2 has been modified based on EPA comments.
7	Sections 4.0 and 5.0 present water data but do not provide an indication as to whether the results are filtered or non-filtered. Please revise the sections to elaborate on sampling methodology	Although Section 4.0 specifically states that comparisons to background and standards are made for sample with equivalent filtration states (i.e., total [unfiltered] and dissolved [filtered]),

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	(e.g, purging, filtering, filter size), and water data presented in these sections should be identified as total or dissolved. It should be ensured that the appropriate type of sample result (e.g., total vs dissolved) are presented and used in comparisons to MCLs and/or surface water quality standards, as appropriate.	additional text will be added to appropriate sections as necessary to further clarify that comparisons to background and standards were only made for samples with the same filtration state.
8	In Sections 3.0 through 6.0, Attachment 2 (attached CD), Data Quality Assessment, the text states, "The nature and extent of soils report for the Rocky Flats Environmental Technology Site (RFETS) has been prepared in accordance with the CRA Methodology." The statement is not clear since the CRA Methodology was designed based on the assumption that the nature and extent of IHSSs (or other sources) was conducted as part of source characterization. While it is accurate to state that CRA Methodology was developed jointly with the regulatory agencies using the consultative process, the RI/FS text should not confuse the objective for data adequacy for the CRA versus the objective of data adequacy for the RI/FS. The data adequacy objective for the CRA was to determine if data were adequate for performing the risk assessment, not whether the nature and extent of contamination was established for the site. Please clarify the statement for this and the other data quality assessments provided as attachments to the Nature and Extent sections.	Section 4.3.3 has been clarified to identify the data adequacy objectives for the nature and extent of groundwater contamination. Section 4.3.3 concludes that the data used in the RI are adequate to define the nature and extent of groundwater contamination. The nature and extent of contamination section demonstrates that the data are adequate to define the nature of groundwater contamination at the site and that the extent of groundwater contamination is bound both horizontally and vertically.
9	In Sections 3.0 through 5.0, Attachments 1 and 2, the figures may need to be revised based on previous comments. EPA would like to schedule a meeting to discuss potential options for presenting data on figures. The attached disks will need an index and figures should be titled, to prevent having to review several hundred maps in order to find a particular map (e.g., to determine	A figure index will be provided for the figures included in Section 4.0 Attachments 1 and 2.

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	if carbon tetrachloride has been tested or detected in the LHSU). Please provide an index of figures and refer to appropriate figures in the text.	
	Specific Comments	
1	**Page 4-3, Section 4.4.1.** The text indicates that analytes were compared to background values 'where available' or 'not available'. The text should be revised to clarify the approach used at the site to evaluate only naturally occurring analytes for comparison to background. In addition, for water media, please indicate whether background comparisons were made by comparing filtered background samples to filtered release samples or unfiltered to unfiltered. Please present or reference a table of metals that are considered to be below background.	Section 4.5.1 (former Section 4.4.1) will be revised to clarify that background comparisons were only made for naturally-occurring analytes where the filtration state (total [unfiltered] or dissolved [filtered]) of the sample was the same as background.
	Editorial Comments	
	No editorial comments provided.	
U.S. Fish and Wildlife Service's (USFWS) Comments		
	General Comments	
1	In the Nature and Extent sections, where possible, maps should incorporate "Kriging" maps instead of sample point maps. This will be easier for the public to understand. And it infers that there are contiguous levels, not just spots. This is most important in the soil and groundwater sections.	Per agreement with the RFCA parties, kriging is not required for Section 4.0 Nature and Extent of Groundwater Contamination. No change made.
	Specific Comments	
	Section 4.1, page 4-1, first paragraph – Why does the AOI need to form contiguous, mappable plumes. What about the case where there are no nearby wells the AOI is a slow moving chemical in groundwater? In those cases, it needs to be looked at on a case by case basis.	The criterion that AOIs must form contiguous, mappable plumes, where a plume is defined as three or more wells, is necessary to avoid identification of single-well hot-spots that are not indicative of RFETS-related contamination. In the IA OU, where RFETS-related contamination occurs, the well density in

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		the UHSU is usually sufficient so that isolated contaminant hot spots are bound by adjacent up- and down-gradient wells. There are examples of hot spots without adjacent wells in the BZ OU. Those locations were evaluated based on professional judgement on a case-by-case basis.
	Editorial Comments	
	No editorial comments provided.	