APPENDIX A:

Interim Response Action Descriptions

November 2010

Appendix A - Interim Response Action Descriptions

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APPENDIX A
INTERIM RESPONSE ACTION DESCRIPTIONS

1.0 GROUNDWATER INTERCEPT AND TREATMENT SYSTEM NORTH OF ROCKY MOUNTAIN ARSENAL

This Interim Response Action (IRA) was undertaken to address groundwater contamination that had migrated off post prior to installation of the North Boundary containment and treatment systems on post. A groundwater extraction and treatment system is now in place north of Rocky Mountain Arsenal (RMA) for treatment of diisopropylmethylphosphonate (DIMP), solvents, and pesticides. This groundwater intercept and treatment system includes one extraction and reinjection system located along Highway 2 between 96th Avenue and 104th Avenue and another near 108th Avenue and Peoria. The extracted water is treated by granular activated carbon (GAC) to Containment System Remediation Goals (CSRG) for organics at a treatment plant located on Peoria. The Decision Document for this IRA was finalized in July 1989. The design for this IRA was completed and finalized in January 1991. Construction of this IRA was completed in 1993; treatment of groundwater at this system is ongoing.

2.0 IMPROVEMENT OF THE NORTH BOUNDARY SYSTEM AND EVALUATION OF ALL EXISTING BOUNDARY SYSTEMS

The North Boundary Containment System (NBCS) was originally designed to remove and treat contaminated groundwater reaching the north boundary. Groundwater is extracted, treated by GAC, and reinjected into the ground. The primary contaminants at this location are chloroform, dieldrin, DIMP, Dicyclopentadiene (DCPD), and organosulfur compounds. The original system consisted of extraction wells, a 6,740-ft slurry wall, a recharge sump, filters to remove particles from water, three large (20,000 lb.) carbon adsorbers to treat organic contaminants to CSRGs from groundwater, and reinjection wells. Groundwater is treated at a rate of 200 to 250 gallons per minute (gpm). The IRA for the NBCS consisted of operational improvements and improvements to the reinjection system for treated water through the addition of recharge trenches along the entire portion of the slurry wall. The Decision Document for the installation of recharge trenches along the western half of the slurry wall was finalized in July 1988. The design was completed that same month, and installation was completed in December 1988. The Decision Document for the installation of treatment process improvements and recharge trenches along the eastern half of the slurry wall was finalized in April 1989. The design of the eastern recharge trenches was finalized in November 1989, with the design of the treatment process improvements finalized in January 1990. Completion of all the improvements to the NBCS was accomplished by December 1990; treatment of groundwater at this system is ongoing.

The NBCS was designed to remove and treat contaminated groundwater migrating toward the northwest boundary. The original system included an extraction system, GAC treatment, and a reinjection system as well as a slurry wall to control contaminant migration. The NBCS was improved under this IRA in two separate phases; the Short-Term Improvements and the Long-Term Improvements. Under the Short-Term Improvements portion of this IRA, the slurry wall,

which originally measured 1,425 ft, was extended by 665 ft on the northeast end, and five extraction wells and four reinjection wells were added to the southwest end of the system. The Short-Term Improvements increased the amount of water treated in the NBSC from approximately 625 to 975 gpm. The Long-Term Improvements portion of this IRA involved the addition of seven monitoring wells, one extraction well, and an expansion of the monitoring program for the system. Groundwater is treated to CSRGs for organic contaminants. The Decision Document for the Short-Term Improvements was finalized in June 1990. All Short-Term Improvements design work was completed by March 1991. Installation of the Short-Term Improvements was completed in November 1991. The Decision Document for the Long-Term Improvements was finalized in October 1991. The Long-Term Improvements to the NBCS were completed by July 1993. Treatment of groundwater at this system in ongoing.

The Irondale Containment System (ICS) was designed to remove and treat contaminated groundwater migrating toward the western boundary. The original system included two parallel rows of extraction wells, one row of reinjection (recharge) wells, and GAC treatment. This system was designed to treat a Dibromochloropropane (DBCP) plume migrating from the Rail Yard. The system was improved during the Rail Yard portion of the Remediation of Other Contamination Sources IRA by installing extraction wells approximately 2,000 ft upstream from the original system, adding new recharge wells adjacent to the original system, and converting some of the original extraction wells to recharge wells. Groundwater is treated to CSRGs for organic contaminants. Construction of the improvements was completed in July 1991.

3.0 GROUNDWATER INTERCEPT AND TREATMENT SYSTEM NORTH OF BASIN F

The purpose of this IRA was to intercept and remove contaminated groundwater migrating from the Basin F area toward the northern boundary. The IRA involves extraction, treatment to CSRGs, and reinjection of groundwater. Water is extracted from a well north of Basin F at a rate of 1 to 4 gpm. The extracted groundwater is piped to the Basin A Neck System (BANS) for removal of volatile contaminants (solvents) by air stripping, and the remaining contaminants, such as pesticides, by GAC. Treated water is reinjected in recharge trenches at the Basin A Neck area. The Decision Document for this IRA was finalized in December 1988. The design was finalized in August 1989, with the construction being completed in September 1990; treatment of groundwater at this system is ongoing.

4.0 CLOSURE OF ABANDONED WELLS AT ROCKY MOUNTAIN ARSENAL

This IRA consisted of locating and closing old or deteriorating farm wells and unused on-post wells at numerous locations throughout RMA. The Decision Document for this IRA was finalized in June 1988. The IRA was completed in 1990.

5.0 GROUNDWATER INTERCEPT AND TREATMENT SYSTEM IN THE BASIN A NECK AREA

The BANS was designed to capture and contain contaminated groundwater migrating from the Basin A area. The IRA consists of extraction wells for removal of groundwater from the aquifer, a slurry wall to minimize migration of contaminated groundwater, a treatment system, and a reinjection system consisting of several recharge trenches. Approximately 12 to 20 gpm of groundwater are extracted and treated to CSRGs by GAC at the BANS. The contaminants removed from the groundwater include solvents and pesticides. The Decision Document for this IRA was finalized in September 1988. The design was finalized in June 1989, with construction of the BANS completed in 1990; treatment of groundwater at this system is ongoing.

6.0 BASIN F LIQUIDS, SLUDGES, AND SOILS REMEDIATION

This IRA included transfer of the basin liquids and decontamination water into temporary storage tanks and a lined, covered surface impoundment (Pond A); excavation of 600,000 cubic yards of Basin F soil and placement into a 16-acre lined waste storage pile with a leachate collection system; and incineration of the stored liquids by Submerged Quench Incinerator (SQI). This IRA was completed in two separate phases. The Decision Document for the first phase of this IRA was finalized in January 1988. Excavation and containment of the sludges/soil in the wastepile was completed by May 1989. The Decision Document for the second phase of this IRA was finalized in May 1990. In January 1991, an Explanation of Significant Differences from the Decision Document was finalized. This change in the original Decision Document involved off-site treatment of the SQI scrubber brine rather than on-site spray drying. The design of the SQI system was completed in January 1992, with construction completed in October 1992. Check-out of the SQI system was completed in March 1993, and the SQI became operational in
May 1993. The SQI was shut down in July 1995 following successful treatment of approximately 11 million gallons of Basin F liquids and decontamination water. Over 250,000 lbs. of copper was reclaimed during the off-site treatment of the SQI scrubber brine. The SQI, storage tanks, and pond were closed in accordance with a Colorado Department of Public Health and Environment closure plan. The tank farm and pond areas were clean closed to specific closure performance standards for contaminants in the Basin F liquid. The SQI was demolished, and some of the process equipment was salvaged. All field and administrative closure activities were completed by May 1996.

7.0 BUILDING 1727 SUMP LIQUID

This IRA involved the treatment of accumulated liquid in the Building 1727 sump by activated alumina and GAC to remove contaminants that included arsenic and DIMP. The Decision Document for this IRA was finalized in December 1988, with the design completed by
May 1989. This IRA eliminated any remaining threat of liquid release from the sump, and was completed in November 1989.

8.0 CLOSURE OF THE HYDRAZINE FACILITY

The Hydrazine Blending and Storage Facility was used as a depot to receive, blend, store, and distribute hydrazine fuels. This IRA involved the treatment of stored decontamination rinseate and the demolition and disposal of the facility structures. Decontamination rinseate stored at the facility was treated on post at the SQI facility, the structures demolished, and the debris removed. Uncontaminated materials at the site were salvaged for recycling and reuse, and contaminated materials were disposed at an off-post permitted hazardous waste landfill. The area encompassing the former facility was regraded and revegetated following demolition and debris removal. The Decision Document for this IRA was finalized in November 1988. The Decision Document was amended in August 1991 to change the treatment of the decontamination rinseate from Ultraviolet/Ozone to incineration at the SQI. The Implementation Document for demolition and disposal of the facility structures was finalized in January 1991. The Implementation Document for transfer of the decontamination rinseate to the SQI facility was finalized in August 1991. All IRA activity was completed by September 1992.

9.0 FUGITIVE DUST CONTROL

This IRA consisted of the application of a dust suppressant in unvegitated areas of Basin A. Hydro-seeder trucks were used to spray a nontoxic, water-based dust suppressant. Unlike other IRAs, no Decision Document was required. The initial application was completed in August 1988. Subsequent reapplications were completed in May 1991, April 1993, and August 1994. No further applications are planned.

10.0 SANITARY SEWERS REMEDIATION

This IRA involved the plugging of selected sanitary sewer manholes to eliminate the transport of contaminated groundwater that may have entered the sewer system via cracks or loose connections. The Decision Document for this IRA was finalized in April 1989. The Implementation Document was completed in January 1990, with all IRA activities completed by September 1992.

11.0 ASBESTOS REMEDIATION

This IRA is part of the Army's ongoing survey of asbestos on post, including removal and disposal activities. The survey of and removal actions for friable asbestos from occupied buildings were completed in December 1989. The Asbestos IRA activities were completed in December 1997.

12.0 REMEDIATION OF OTHER CONTAMINATION SOURCES

Under this IRA, the following contamination sources have or are being minimized or eliminated:

Motor Pool - A groundwater extraction system was constructed to remove trichloroethylene (TCE) in groundwater in the Motor Pool area. Because the low levels of TCE present in this water can be effectively treated by GAC, the water is piped to the ICS for treatment. The amount of water extracted from the Motor Pool area is approximately 100 gpm. A temporary soil vapor extraction (SVE) system was also constructed to draw vapors containing volatile contaminants from the soil. Extracted vapors are sent first to a separation tank to remove the water vapor and then to a treatment system where the volatile contaminants are treated. The temporary soil vapor extraction action was conducted at the Motor Pool area between July and December 1991 to remediate TCE-contaminated soil. Two vapor extraction wells and four clusters of soil gas monitoring wells were installed. The Decision Document for the Motor Pool was finalized in March 1990. The design of the temporary soil vapor extraction system was completed by November 1990. The design of the groundwater extraction system was completed as part of the Rail Yard design. Treatment of groundwater from the Motor Pool extraction system is ongoing.

Rail Yard - Action was conducted at this site to assess a potential DBCP problem in this area and introduce cleanup measures if necessary. It was decided that groundwater removal would be necessary, but that adequate treatment could be provided at the ICS at the western boundary of RMA. The Rail Yard IRA extraction system consists of a row of five wells that extract approximately 230 gpm of groundwater containing low levels of DBCP. The water is piped to the ICS where DBCP is removed by GAC. Two additional wells further down gradient act as a backup system. The Decision Document for the Rail Yard was finalized in March 1990. The design of the extraction system was completed in November 1990, with installation finishing by July 1991. Treatment of groundwater from the Rail Yard extraction system is ongoing.

Lime Settling Basins - A soil cover was constructed over the Lime Settling Basins area to isolate the basins from the ground surface and minimize the amount of rainwater seeping into the basins. The Decision Document for the Lime Settling Basins was finalized in March 1990. The design of the cap for the Lime Settling Basins was completed by November 1990. Due to unforeseen site conditions, the design of the cap was modified to a soil cover in February 1993. The construction of the soil cover was completed by September 1993.

South Tank Farm Plume - The South Tank Farm consisted of 11 tanks used for storage of alcohol, Bicycloheptadiene bottoms, DCPD, D-D soil fumigant, and sulfuric acid. Benzene was also used or stored in this area. The South Tank Farm Plume, located between the South Plants and the South Lakes area, consists of two separate groundwater plumes extending toward the lakes, one of which consists of light nonaqueous phase liquids (LNAPL). The selected alternative for this site consisted of continued groundwater monitoring and maintenance of the South Lakes levels so that no additional action would be necessary to keep the groundwater plumes from affecting the South Lakes. The Decision Document for the South Tank Farm Plume was finalized in May 1991. Monitoring activities began in June 1991, and continued until May 1994.

Although unrelated to the IRA, an SVE field demonstration was conducted in 1991. The SVE field demonstration included collection and analysis of soil, LNAPL, SVE off gas, and soil gas samples, and was designed for specific application to the South Tank Farm Plume. The resulting data were used to evaluate the performance, effectiveness and operating parameters for an SVE system in the area of the plume. Based on the results of the demonstration, it would take more than 10 years for the SVE process to remove the majority of the mass of contaminants that would remain after LNAPL recovery was no longer feasible.

Army Trenches - Soil samples collected from representative trenches showed elevated concentrations of Inductively-Coupled Plasma metals and relatively low concentrations of arsenic, mercury, and many organic contaminants, including members of all the analyte groups except pesticide-related organophosphorous compounds and organonitrigen compounds. A large variety of tentatively identified compounds were also detected in the trench soil. High concentrations of some organic contaminants exist in groundwater in portions of this area. The selected alternative for this site consisted of continued groundwater monitoring in this area. The Decision Document for the Army Trenches was finalized in May 1990. The Implementation Document for the continued groundwater monitoring was completed in September 1990. Monitoring activities began in November 1990, and continued until August 1994.

Shell Trenches - Under this action, a slurry wall that surrounds the trench area was constructed to reduce the lateral movement of contaminants away from the trenches. In addition, a vegetative soil cover was placed over the trench area. The Decision Document for the Shell Trenches was finalized in May 1990. The slurry wall and vegetative cover design was completed by December 1990. Installation of the slurry wall and vegetative cover was completed in December 1991.

M-1 Basins - The M-1 Basins action was to consist of In Situ Vitrification. This innovative technology would result in the in place melting or glassifying of the M-1 Basin soils. The Decision Document for the M-1 Basins was finalized in March 1990. The design for the M-1 Basins was completed in December 1990, but this action was terminated in September 1993 prior to any field activities being performed.

13.0 PRETREATMENT OF COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT LIQUID WASTES

The initial action was pretreatment of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liquid wastes, which primarily involved the treatment of decontamination water and wastewater from the Remedial Investigation/Feasibility Study (RI/FS) and other IRA activities. This IRA was later expanded to include identification, storage, and disposal of a variety of CERCLA wastes. The initial action and expanded elements are as follows:

Wastewater Treatment Plant - A wastewater treatment plant was constructed under this phase of the CERCLA IRA, to treat wastewater generated from laboratory operations, field sampling, decontamination, and other sources such as equipment washing. Multiple treatment technologies are used at the CERCLA Wastewater Treatment Plant including activated GAC, advanced oxidation using ultraviolet light, air stripping, chemical precipitation, and activated alumina adsorption. The Decision Document for the CERCLA Wastewater Treatment Plant was finalized in June 1990. The plant design was finished by January 1991, with construction completed in July 1992. It is expected that this facility will continue to be used for the treatment of similar wastewater streams during implementation of the Record of Decision (ROD).

Waste Management - This element identified several on- and off- post disposal options to dispose of hazardous waste that has been or will be placed in storage areas at RMA and that has not been addressed under another action. Waste streams currently being managed include RI/FS wastes; IRA wastes; miscellaneous wastes from vehicles, grounds and building maintenance; and items found on post. The Decision Document for this element was finalized in January 1993. Implementation letters were prepared after February 1993 for each disposal action taken.

Polychlorinated Biphenyls (PCB) - The purpose of this element was to inventory and sample PCB-contaminated equipment followed by disposal off-post. This element included characterization of spill sites (i.e., soil and structures) associated with PCB contamination, and is ongoing as required. The Decision Document for this element was finalized in September 1993. The Implementation Plan for this element was finalized in January 1995. PCB contamination not addressed in this element will be addressed as part of the final remedy.

Waste Storage - This element included the assessment of constructing an on-post facility for temporary management of solids that are bulk hazardous wastes. These wastes would have primarily consisted of contaminated soil and building debris. No Decision Document was prepared as the assessment resulted in a determination that construction of an on-post management facility was not required.

14.0 CHEMICAL PROCESS-RELATED ACTIVITIES

Agent-related, nonagent-related process equipment and piping, free standing tanks, and underground storage tanks located in the North Plants and South Plants are being sampled, decontaminated, and dismantled under this IRA. Although much of the equipment in these areas has already been removed and recycled or disposed, process-related equipment not remediated as part of this IRA will be disposed in the new on-post hazardous waste landfill. The Decision Document for this IRA was finalized in August 1991. An explanation of significant differences was finalized in November 1992 to expand this IRA to nonagent-related equipment and piping. A Decision Document for the removal of underground storage tanks was finalized in September 1993. Removal and disposal of the underground storage tanks was completed in April 1996. Some process equipment and piping removal will continue as part of the final response action at RMA. Asbestos removal activities as required for equipment removal will

also continue as part of the final response action at RMA.

In addition, two other response actions were undertaken at RMA: the closure of a 12,045 ft deep injection well and the construction of the Klein treatment plant. 165 million gallons of waste were disposed in the deep well. The well was closed in 1985. The Klein treatment plant (located in Section 33) was constructed in the mid-1980s to treat off-post groundwater to the west of RMA that was contaminated primarily by chlorinated solvents. (It was subsequently determined that this contamination originated primarily from non-RMA sources.)

Reports generated for these IRAs (Technical Plans, Alternatives, Assessment Reports, Decision Documents, Implementation Documents, and Operational Reports) can be accessed through the Joint Administrative Record and Document Facility.

TABLE A-1 SUMMARY OF PAST AND ONGOING RESPONSE ACTIONS

Response Action	Objective	Status/Completion
Interim Response Actions		
1. Groundwater Intercept and Treatment System North of RMA	Capture and treat contaminated groundwater plumes north of RMA.	Construction completed 1993; treatment is ongoing.
2. Improvement of the North Boundary System and Evaluation of all Existing Boundary Systems	Evaluate and improve, as necessary, the operation of the boundary containment and treatment systems.	Construction completed 1993; ongoing treatment/monitoring has been incorporated into the on- and off-post RODs.
3. Groundwater Intercept and Treatment System North of Basin F	Capture and treat contaminated groundwater north of the Basin F area closer to its source.	Construction completed 1990; treatment is ongoing.
4. Closure of Abandoned Wells at Rocky Mountain Arsenal	Identify, locate, examine and properly close old or unused wells at RMA to prevent vertical migration of contamination between aquifers.	Completed 1990.
5. Groundwater Intercept and Treatment System in the Basin A Neck Area	Capture and treat shallow contaminated groundwater from Basin A closer to the source area.	Construction completed 1990; treatment is ongoing.
6. Basin F Liquids, Sludges, and Soils Remediation	Construct wastepile and cap to minimize the potential for infiltration of contaminants to groundwater and the potential for volatile emissions; reduce the potential impact of Basin F on wildlife; incinerate Basin F liquids; close SQI system.	Containment of sludges/soil completed in 1989; incineration of liquids completed 1995; SQI closed 1996.
7. Building 1727 Sump Liquid	Treat contaminated liquid in the sump.	Completed 1989.
8. Closure of the Hydrazine Facility	Treat decontamination rinseate stored at this facility; demolish and dispose of the aboveground structures.	Completed 1992.
9. Fugitive Dust Control	Minimize the amount of windblown contaminated dust.	Application completed 1988; reapplications completed in 1991, 1993, and 1994.
10. Sanitary Sewers Remediation	Plug the RMA sanitary sewers to eliminate the transport of contaminated groundwater.	Completed 1992.
11. Asbestos Remediation	Remove and dispose of friable asbestos in RMA structures where any potential for human exposure exists.	Action was completed in Dec 97.
12. Remediation of Other	Minimize or eliminate releases from selected	Motor Pool and Rail Yard

Contamination Sources: Motor Pool Area Rail Classification Yard Lime Settling Basins South Tank Farm Plume Army (Complex) Disposal Trenches Shell Section 36 Trenches M-1 Settling Basins	contamination sources.	extraction systems are ongoing and have been incorporated into the on- and off-post RODs; Lime Settling Basins completed in 1993; South Tank Farm Plume completed in 1994; Army Trenches completed in 1994; Shell Trenches completed in 1991; M-1 Basins action terminated in 1993.
13. CERCLA Liquid Wastes: Wastewater Treatment System Waste Management Polychlorinated Biphenyls Waste Storage	Construct and operate a facility to treat wastewater resulting from response actions; identify disposal options for hazardous wastes; inventory, sample, and remediate PCB-contaminated structures and soil; analyze temporary management of bulk hazardous wastes.	Construction of treatment plant completed in 1992; liquid treatment and waste management is ongoing; PCB remediation is ongoing as part of ROD implementation; waste storage analysis completed.
14. Chemical Process-Related Activities: Agent Equipment and Tanks Nonagent Equipment and Tanks Underground Storage Tanks	Remove and dispose of contaminated process-related equipment from manufacturing areas.	Underground Storage Tanks completed in 1996. Phase I Chemical Process Equipment Removal (Exterior) completed Jan 98. Remaining actions are ongoing as part of ROD implementation.
Other Response Actions:		
1. Klein Water Treatment Plant	Construct and operate a facility to treat chlorinated-solvent contaminated groundwater extracted by SACWSD wells west of RMA.	Construction of treatment plant completed 1989; water treatment is ongoing.
2. Deep Disposal Well Closure	Properly seal and abandon deep injection well adjacent to Basin F.	Completed in 1985.

NOTE: Final summary reports for all IRAs are projected to be complete by October 2000.

TABLE A-2 STATUS OF INTERIM RESPONSE ACTION SUMMARY REPORTS

Report Number	ROD Table 2.4.1	Interim Response Action	Priority	Submitted to Army	Army 1st Draft	EPA Review	State Review	Report Finalized	EPA Acceptance
1	1	Groundwater Intercept and Treatment System North of Rocky Mountain Arsenal	2	02/17/99	04/15/99	09/23/99	09/24/99	05/23/00	10/19/00
	2	Improvement of the North Boundary System and Evaluation of all Existing Boundary Systems:							
2		North Boundary System	2	02/24/99	07/01/99	09/23/99	09/24/99	05/23/00	10/19/00
3		Northwest Boundary Containment System	2	02/18/99	10/01/99			05/23/00	10/19/00
4		Irondale Containment System		10/01/97	10/01/97	10/01/97		10/31/97	10/19/00
5	3	Groundwater Intercept and Treatment System North of Basin F	2	02/25/99	10/01/99	12/02/99	12/02/99	05/23/00	10/19/00
6	4	Closure of Abandoned Wells at Rocky Mountain Arsenal	2	06/03/99	07/10/00		09/8/00	10/05/00	08/23/00
7	5	Groundwater Intercept and Treatment System in the Basin A Neck Area	2	02/26/99	10/01/99	12/02/99	12/02/99	05/23/00	10/19/00
	6	Basin F Liquids, Sludges, and Soils Remediation							
8		Element 1, Basin F Waste Pile	1	07/15/98	01/13/98	03/08/99	06/18/99	05/23/00	10/19/00
9		Element 2, Basin F Liquid	1	07/15/98	11/18/98	03/08/99	03/23/99	05/23/00	10/19/00
10	7	Building 1727 Sump Liquid	3	06/04/99	07/10/00			10/05/00	08/23/00
11	8	Closure of the Hydrazine Facility	3	06/07/99	07/16/99	09/23/99	09/09/99	05/23/00	10/19/00
12	9	Fugitive Dust Control	3	06/07/99	07/10/00			10/05/00	08/23/00
13	10	Sanitary Sewer Remediation	1	03/15/98	06/22/98	07/20/98		05/23/00	10/19/00
14	11	Asbestos Remediation	4	W/EPA	07/10/00	09/15/00		09/27/00	09/29/00
	12	Remediation of Other Contamination Sources							
15		Motor Pool Area		10/01/97	10/01/97	10/01/97		10/31/97	10/19/00
16		Rail Classification Yard		10/01/97	10/01/97	10/01/97		10/31/97	10/19/00
17		Lime Settling Basins	3	06/04/99	07/10/00			10/05/00	08/23/00
18		South Tank Farm Plume	2	03/03/99	07/16/99	09/23/99	09/09/99	08/22/00	10/19/00
19		Army (Complex) Disposal Trenches	1	03/15/98	06/03/98	07/10/98		05/23/00	10/19/00
20		Shell Section 36 Trenches	1	02/17/98	05/26/98	07/10/98		05/23/00	10/19/00
21		M-1 Settling Basins	3	06/04/99	07/16/99	09/23/99	09/09/99	05/23/00	10/19/00
	13	Pretreatment of Comprehensive Environmental Response, Compensation, and Liability Act Liquid Wastes:							
22		Wastewater Treatment System	2	06/03/99	07/10/00			10/05/00	08/23/00
23		Element One – Waste Management	3	06/04/99	07/10/00		09/08/00	10/05/00	08/23/00
24		Element Two – Polychlorinated Biphenyls	1	07/15/98	10/29/98	03/08/99		05/23/00	10/19/00
25		Element Three – Waste Storage	3	06/04/99	07/10/00			10/05/00	08/23/00
26	14	Chemical Process Related Activities	1	02/17/98	07/10/00			10/05/00	08/23/00
		Other Response Actions							
27		Klein Water Treatment Plant (OU-1 ROD)	3	06/16/99	07/16/99	09/23/99	09/09/99	05/23/00	10/19/00
28		Deep Disposal Well Closure	3	06/03/99	07/16/99	09/23/99	09/09/99	05/23/00	10/19/00

APPENDIX B:

Remediation Design and Implementation Schedule

Project Descriptions

November 2010

APPENDIX B

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B-1 ROD Change Documentation

APPENDIX B
PROJECT DESCRIPTIONS

1.0 INTRODUCTION

Appendix B has been prepared to provide the reader with a description of the Implementation Projects, Site-Wide Programs, Water Treatment and Monitoring, Program Management, and Off-Post Remedy as listed in the implementation schedule (Appendices C-P). All the components of the selected remedy (Chapter 9 of the Record of Decision (ROD)) are addressed in this Appendix. The smaller remedy components, not listed as individual projects, will be found within larger project descriptions. Two figures are located at the end of this Appendix. Figure 1 is the Remediation Implementation Areas and Figure 2 is the Conceptual Logic Flow Diagram.

It is intended that the information in this Appendix provide a general overview of the work to be performed, currently defined (approved changes) as of the defined data date for this publication. While the Remediation Venture Office (RVO) strives to ensure accuracy of this information, details concerning specific scope changes are documented in the appropriate design documents (such as Design Change Notice (DCN), Explanation of Significant Differences (ESD), and ROD Amendments), operations manuals, and/or Construction Completion Reports (CCR) for that project (reference Table B-1). For that reason the scope descriptions within the Remediation Design and Implementation Schedule (RDIS) should be used only as a reference for understanding the Rocky Mountain Arsenal (RMA) remediation program.

Table B-1 ROD Change Documentation

Project	Change Type	Applicable Sections in Appendix B	Change	EPA Approval Date *
Basins F/ Basin F Exterior	ESD	7,3	Document increases in remediation volume for human health soil and biota risk soil. Document overall decrease in project cost.	In Progress
Groundwater Remedy Changes	ESD	9.5, 9.6, 9.7, 9.8, 9.9	Shut-off criteria, Practical Quantitation Limits (PQL) process, fluoride standard The Regulatory Agencies would like to delay until approval of Long-Term Monitoring Plan (LTMP); possibly add surface water program changes; Containment System Remediation Goals (CSRG) selection process	In Progress
North Plants Soil Cover	ESD	6.6	Eliminate soil cover	January 2009

Basin F Cover	ESD	7.3	Add chemical sewer remediation and revise extent of Basin F cover to include sewer	January 2009
Basin F Wastepile	ESD	7.1	Cost decrease (volume decrease, vapor controls)	April 2009
Munitions Testing	ESD	4.5	Change in remediation volume, Munitions and Explosive of Concern (MEC) area and cost growth	November 2008
Section 36 Balance of Area (BOA)	ESD	6.2	Document soil volume and cost changes	October 2009
Off-Post Groundwater Intercept and Treatment – Northern Pathway System	Fact Sheet	12.2	Northern Pathway System relocation	In Progress
Waste Disposal	ESD	2.1, 2.2, 4.10	Off-site disposal, cost growth for Hazardous Waste Landfill (HWL), and Enhance Hazardous Waste Landfill (ELF)	September 2008
Miscellaneous Southern Tier and Section 35 Soil	ESD	4.7, 6.7	Sand Creek Lateral and other ditches volume and cost increases	June 2008
Resource Conservation and Recovery Act (RCRA)-Equivalent Covers (Basin A, South Plants CPA, Complex Army Trenches, Section 36 Lime Basins, Basin F)	Fact Sheet	2.3, 5.3, 6.4,7.3, 7.4	Change Basin A and South Plants to RCRA-Equivalent Covers; change biota barrier for Basin A and Complex Trenches from 6-inch poured concrete to 16-inch crushed concrete; add lysimeters for compliance monitoring; add geotexile for capillary break; delete 1-foot backfill for BOA	April 2008
Landfill Wastewater Treatment System	Fact Sheet	2.1	Revise discharge standards	June 2007
Shell Disposal Trenches	ESD	2.3, 5.3, 6.4, 6.5, 7.3, 7.4	Extend RCRA-Equivalent Cover area to extent of slurry wall and also to cover the former drum storage area; add 2-foot soil cover for area adjacent to the Shell Trenches; document changes to the RCRA-Equivalent Cover requirements and the associated cost increases	June 2006
Groundwater Remediation and Revegetation	ESD	8.14, 9.10, 9.11	Delete lake level maintenance requirement for purposes of groundwater contaminant plume control; add contaminant reduction system for South Tank Farm Plume and South Plants North Plume; clarify revegetation requirements to be	March 2006

			consistent with U.S. Fish and Wildlife Service (USFWS) management plan and require USFWS certification for implementation	
Section 36 Bedrock Ridge	ESD	4.8	Document change to design to replace horizontal well with vertical extraction wells and corresponding cost decrease	May 2006
Section 36 Lime Basins, Basin F	ROD Amendment	2.2, 7.2, 7.4	Change selected remedy for Section 36 Lime Basins from excavate/landfill to RCRA-Equivalent Cover and groundwater barrier wall. Change selected remedy for Basin F Principal Threat (PT) Soil form in-situ solidification to excavate and dispose in ELF	October 2005
Existing Sanitary Landfills	ESD	4.2	Documents volume changes to Human Health Exceedance (HHE) soil, biota soil and trash/debris and project cost increase	May 2005
North Boundary Containment System	Fact Sheet	9.8	North Boundary Containment System enhancements to the well field and treatment systems summary of new technology	April 2005
North Plants Structures	ESD	6.8	Documents changes to HHE soil volume and biota soil volume	September 2004
Burial Trenches	ESD	4.4	Document decrease to HHE soil volume and increase in munitions debris/soil volume; document overall project cost increase	July 2004
Section 36 BOA	ESD	6.2	Delete excavation of soil along previously excavated chemical sewer line in Sections 36; delete 1-foot and 2-foot soil covers; document boundary change between Basin A and CSA-1b and resulting volume reduction	April 2010
South Lakes Plume Monitoring	Fact Sheet	9.10	Delete ROD requirements for lake level maintenance and plume control at Lake Mary	April 2003
Hex Pit	ROD Amendment	5.2	Change selected remedy from in-situ thermal treatment to excavate and dispose in on-site landfill	April 2003
Basin F/Basin F Exterior Soil Remediation Project	Fact Sheet	7.3	Describes changes to Basin F boundary based on review of aerial photography, topography	July 2003

			and additional soil sampling. Contaminated soil between the ROD boundary and modified boundary was excavated and disposed in the HWL	
Secondary Basins	ESD	2.3, 6.3	Excavate biota soil and dispose in Basin A; delete 2-foot soil covers for Basins B, C and D	February 2002
Confined Flow System	Fact Sheet	9.4	Change well evaluation criteria	March 2002
Northwest Boundary Containment System	Fact Sheet	9.8	Change CSRGs	March 2002
On-Post and Off-Post Groundwater Containment Systems	ESD	9.5, 9.6, 9.8, 9.9,12.2	Change endrin CSRG based on change to the Colorado Basic Standard for Groundwater (CBSG)	November 2001
South Plants	ESD	5.3, 5.4	Delete 1-foot soil cover; modify 3-foot soil cover; modify 4-foot soil cover	November 2000
Chemical Sewers	ESD	6.3, 6.7	Delete excavation of soil along previously excavated chemical sewer line in Sections 26 and 35	November 2000
Toxic Storage Yards	Technical Justification	4.1	Document HHE soil volume increase	May 1999
Complex Trenches Slurry Wall Project	Fact Sheet	3.2	Design modifications to the Complex Trenches Slurry Wall Project at the RMA.	April 1997

*Dates shown for Fact Sheets represent final document date.
Planned – Document is planned but has not been started
In progress – Document is being worked, but is not final.

2.0 DISPOSAL FACILITIES – BASIN A/LANDFILLS

The disposal facilities are comprised of three projects: HWL, ELF, and Basin A Consolidation. This section provides site descriptions, project sites/history, project descriptions, and dependent project discussions.

2.1 Construction of Hazardous Waste Landfill

Site Description: The On-Post HWL is located in the western portion of Section 25.

Project Sites/History:

- NCSA-4b – Secondary Basins – Basins F Exterior – Surface contamination; includes the portion of the site within the Corrective Action Management Unit (CAMU) boundary.

Project Description:

a) Close or protect monitoring wells, as required.

b) Construct the first doubled-lined cell of a RCRA - and Toxic Substance Control Act - compliant HWL in Section 25. The construction project includes all site development and preparatory work for the overall site and all standard hazardous waste cell(s); staging and treatment facilities; fencing; leachate collection, pumping, and treatment; truck scales; landfill security, operations, and equipment storage facilities; monitoring wells; haul roads; and stormwater drainage control.

c) Construct additional cells, liners, and leachate collection systems within the overall footprint as necessary to reach the total capacity required for the RMA On-Post Remedy.

d) Construct a RCRA Cover. The cover system includes placing a minimum 16-inch layer of crushed concrete as a human/biota barrier.

e) Re-establish vegetation over the landfill and borrow areas (BA).

Dependent Projects: The HWL is the keystone project in the early years of the RMA remedy. Nine separate projects are solely dependent upon the landfill's availability to accept hazardous wastes. An additional nine projects are dependent upon both the HWL and the Basin A consolidation area. None of these 18 projects may begin until the landfill is ready for operations. Figure 2, Conceptual Logic Flow Diagram, depicts these project interrelationships. Stored drummed waste will be disposed of in the HWL.

2.2 Construction of Enhanced Hazardous Waste Landfill

Site Description: The triple-lined ELF will permanently store waste from the Basin F Wastepile and the Basin F PT Soils in two separate cells. The facility is located in the western portion of Section 25, just south of the double-lined HWL.

Project Sites/History:

- No Study Area Report (SAR) sites are associated with this project.
- The construction of the ELF consists of one site. The site includes Biota Exceedance and Priority 1 (P1) soils that need to be removed before work can begin.

Project Description:

a) Perform site study as provided in the final CAMU document.

b) Perform a chemical compatibility-testing program to document long-term performance of the compact clay liners.

c) Construct two triple-lined cells in Section 25. The total capacity of the ELF will be approximately 1,200,000 bank cubic yards (bcy).

d) Construct a leachate storage/load-out facility for off-site disposition of leachate and contaminated stormwater.

e) Construct a Contingent Contaminated Stormwater Management System to disposition incidentally contaminated waste streams to the Landfill Wastewater Treatment Facility or contaminated waste streams for off-site disposal/treatment.

f) Construct modifications to the existing Landfill Waterwater Treatment System to allow for the treatment of wastewater from the remediation of the Basin F Wastepile and the operation of the ELF. The Modifications will include the addition of an ion exchange system and supporting equipment to allow for the treatment of metals at the existing treatment plant.

g) Construct a RCRA Cover. The cover system includes placing a minimum 16-inch layer of crushed concrete as a human/biota barrier.

h) Re-establish vegetation over the landfill and BA.

Dependent Projects: The ELF is the keystone project in the middle years of the RMA remedy. Two separate projects are dependent upon the enhanced landfill's availability to accept hazardous wastes.

2.3 Basin A Consolidation and Remediation

Site Description: The Basin A project is composed of two sites: Basin A and a burn site. These sites are located in Section 36 within the high-water line of Basin A, where manufacturing effluent was received and retained from the South Plants via the Lime Settling Basins. Historic waste disposal in Basin A has resulted in elevated salt concentrations in the soil due to its high chloride content.

The Basin A group can be subdivided into three regions based on differing contaminant types and concentrations. High concentrations of organochlorine pesticides (OCP), arsenic, and chromium that exceed the human health site evaluation criteria (SEC) characterize the eastern region. The southern region is characterized by high concentrations of OCPs, and arsenic that exceed the human health SEC. The northern region is characterized by low concentrations of OCPs, arsenic, and mercury. However, chlordane is present at concentrations exceeding the human health SEC. Portions of these three regions contain agent and potentially contain Unexploded Ordnance (UXO). Additionally, parts of Basin A exceed principal threat criteria. Human health and PT exceedances may occur to an approximate depth of eight feet.

Project Sites/History:

- NCSA-1a – Basin A – located in Section 36 within the high-water line of Basin A, where manufacturing effluent was received and retained from the South Plants via the Lime Settling Basins

- NCSA-1e – Burn Site – South Plants Operations – used to incinerate munitions and trash from the South Plants

Project Description:

a) Close or protect monitoring wells, as required.

b) A foundation layer will be placed within the Basin A footprint to protect wildlife and provide a safety buffer to field workers to mitigate the cost and time required for surface UXO clearance. This foundation layer will be established with biota and P1 soils from the CAMU.

c) Stabilize Basin A soil as necessary to support material that will be consolidated in Basin A and subsequently covered. Contain the remaining exceedance soil in the former Basin A waste disposal lagoon by placing fill material to change the grade from a basin (depression) to a rise (hill). Fill material includes biota exceedance soil and trash/debris, structural debris, and clean soil fill borrowed from other RMA areas.

d) Construct a RCRA-Equivalent Cover System. The cover system includes placing a minimum 16-inch layer of crushed concrete as a human/biota barrier; final vegetation; and Engineering controls.

e) Re-establish vegetation over the disturbed remediation and BA.

Dependent Projects: The Basin A Consolidation is a keystone project in the early years of the RMA remedy. Nine separate projects are dependent upon both the HWL and the Basin A Consolidation area. With the exception of the removal of biota and P1 soils from the CAMU site (a subproject of the HWL Construction); there are no projects that are solely dependent upon the Basin A Consolidation. However, none of these nine projects may begin until Basin A is ready for operations. Figure 2, Conceptual Logic Flow Diagram, depicts these project interrelationships. The design of RCRA-Equivalent Caps for the Shell/Complex Trenches is dependent upon the design of Basin A.

3.0 EARLY START TASKS

The early start projects are comprised of three projects: Sanitary Sewer Manhole Plugging (Phase I), South Plants Central Processing Area (SPCPA), and Complex Trench

Chemical Sewer Plugging (this is one project); Shell/Complex Trench Slurry Walls; and Post-ROD Removal Actions for Structures. This section provides site descriptions, project sites/history, project descriptions, and related project discussions.

3.1 Sanitary/Chemical Sewer Manhole Plugging – Phase I

Site Description: The Sanitary/Process Sewer System includes four sites consisting of sanitary sewer lines and systems, process water lines, and sanitary sewer sediment. This project encompasses portions of the system located in Sections 1, 2, 25, 26, 35, and 36. These sites contain soil that was potentially contaminated by spillage or leakage from broken pipes or faulty joints and manholes in the sewer lines. Contamination entered these sewer lines through inadvertent disposal of liquid wastes or conveyance of contaminated groundwater. The majority of sewer piping is vitrified clay, although some sections are made of steel or cast-iron pipe. Soil around these sewer lines does not exceed human health site evaluation criteria (SEC) and does not pose risks to biota based on the average sewer line depth of 4 to 10 feet. However, these sewer lines potentially serve as conduits for migration of groundwater contamination.

The SPCPA and Complex Trench Chemical Sewer Plugging project is composed of portions of the chemical sewer system that are located within the SPCPA and the Complex Trenches. These sewer lines served the manufacturing areas in the North Plants and South Plants. The release of contaminants was caused by spillage or leakage from broken pipes or faulty joints and manholes in the sewer lines.

The chemicals of concern (COC) present for these sites that exceed the human health SEC include OCPs, chloroacetic acid, volatile organic compounds (VOC), and dibromochloropropane (DBCP). The highest concentrations of contaminants that exceed PT criteria were detected along the lines in the South Plants. Portions of the sewer lines may be characterized by the potential presence of agent. The depth of the sewer line in the South Plants is approximately 7 feet; the depth of the line in the Complex Trenches may vary from 3 to 8 feet.

Project Sites/History:

- NCSA-8a – Sewer Systems – Sanitary Sewer Lines to Sewage Treatment Plant – used as a waste lines
- WSA-7a – Sewer System – Sanitary Sewer Sediments
- CSA-3 – Chemical Sewer System – Complex Trenches Area - portions of site only

Project Description:

Sanitary Sewer Manhole Plugging – Phase I:

a) Plug the void space with concrete or grout inside approximately 100 remaining sanitary and process water sewer manholes in Sections 1, 2, 25, 26, 35, and 36. The remediation objective is to prohibit access and eliminate the sewer system as a potential migration pathway for groundwater.

b) Post-aboveground warning signs indicating sewer location every 1,000 feet.

SPCPA and Complex Trench Chemical Sewer Plugging:

a) Close or protect monitoring wells, as required.

b) Plug void space in the sewer with concrete or grout for approximately 11,000 linear feet of chemical sewer lines and approximately 60 manholes in the SPCPA in Section 1 and the Complex (Army) Trenches in Section 36. The remediation objective is to prohibit access to these lines and eliminate them as a potential migration pathway for groundwater. The plugged sewers are to be contained beneath the soil cover or the cap constructed in their respective sites.

Dependent Projects: This project is not dependent upon any other project to be completed. The Sanitary Sewer Manhole Plugging – Phase II will be a follow-on project later in the program.

3.2 Shell/Complex (Army) Disposal Trenches Slurry Walls

Site Description: The Shell Disposal Trenches Remediation project involves of one site comprised of approximately 18 trenches that were filled with a variety of solid and liquid wastes from Shell production facilities. Wastes were buried both in bulk form and in drums from 1952 through 1966. Due to the presence of high contamination levels, containerized waste, and historical evidence as a source of groundwater contamination, the entire site is considered a principal threat.

The historical contamination has been contained as part of the Shell Trenches Interim Response Action (IRA). A vertical barrier was installed around the site to reduce the migration of contaminated groundwater away from the site, and a soil cover was placed over the site to reduce rainwater infiltration through the contaminated area. The soil cover is approximately three feet thick and has been revegetated with native grasses. The vegetation types and the maintenance activities conducted at the site were designed to discourage burrowing animals from using the area for habitat.

The Shell Disposal Trenches themselves contain elevated levels of OCPs, hexachlorocyclopentadiene (HCCPD), and DBCP, which are encountered to a depth of ten feet. In addition to the COCs identified in the trenches, numerous nontarget compounds, which are intermediates and byproducts from the manufacturing of pesticides, are identified at concentrations as high as 40,000 parts per million (ppm).

Army agent-related compounds were also detected in soil samples and from nearby monitoring wells.

The Complex (Army) Trenches contain soil and debris disposed of in a series of trenches. The trenches were investigated during the Remedial Investigation (RI) and were found to contain trash and manufacturing and military waste including scrap metal, bricks, concrete and asphalt rubble, empty and full glass bottles, white phosphorous, containerized wastes, burned incendiary device casings, agent, and agent-filled ordnance and explosives (OE).

The Complex (Army) Trench areas are considered PT areas down to a depth of approximately 14 feet. In addition, contaminated soils outside of the anomalous trench areas contain chlordane exceeding human health SEC, generally within the 0- to 1-foot-depth interval. A large quantity of soil outside the trench areas contains COCs and may pose a potential risk to biota. The site is located in an area of disturbed vegetation types.

Project Sites/History:

- CSA-1a – Pesticide Pits – filled with a variety of solid and liquid wastes from Shell production facilities.

- CSA-1c – Complex Disposal Area North – used as a disposal site for manufacturing and military waste.

Project Description: The remedy for the Shell Trenches and Complex (Army) Trenches has been split into two implementation phases each: placement of the slurry walls and groundwater extraction system, and placement of the cap. The first implementation phase is addressed with this early start project and is comprised of the following:

a) Protect monitoring wells.

b) Drain trenches inside the slurry wall as determined by the approved design.

c) Correct the leaching condition originating from the disposal trenches in Section 36 by installing a slurry wall into competent bedrock around them.

d) Transport any explosive-containing munitions found to an approved site and detonate them.

e) Grade slurry wall spoil over the surface of the site.

Note: The fact sheet for the design modifications to the Complex Trenches issued in January 1998 describes the following design modifications:

1. The ROD states that the remedy for the Complex Trenches includes the installation of a slurry wall into competent bedrock around the disposal trenches to

augment the containment of contamination within this area. While the slurry walls were generally considered for only some of the trenches (Anomalous Areas D and E were excluded), the ROD language indicates that the trenches would be fully enclosed by a surrounding slurry wall. The modifications will propose installation of the slurry wall along only the western, northern, and southern boundaries of the Complex Trenches. As a result of the investigations and analyses performed, it was found that the bedrock material along the eastern boundary already serves as a cutoff and was providing a barrier to groundwater flow from the Complex Trenches. To install the slurry walls along the eastern boundary would only duplicate the existing bedrock with little-to-no additional containment achieved and three-to-seven-fold increase in cost. Construction time would also increase.

2. The ROD calls for the slurry wall to be installed into competent bedrock by keying the slurry wall into an underlying low permeability stratum.

3. As a result of the analyses conducted in the Technical Justification Report, the interdependency of the Complex Trenches and the Section 36 Bedrock Ridge project became apparent.

The slurry wall barrier technology selected is the Deep Soil Mixing method utilizing Impermix as the slurry compound.

Dependent Projects: The Shell and Complex (Army) Trenches will receive a RCRA-Equivalent Cap over the trenches and any slurry wall spoils. Vegetation will be re-established over the disturbed area. Thus, the RCRA-Equivalent Cap portion of the project depends on the slurry walls being complete. The future projects are called Shell Disposal Trenches Remediation and Complex (Army) Disposal Trenches Remediation. The RCRA-Equivalent Cap study must also be completed prior to its placement. The slurry wall project for the Complex (Army) Trenches is also related to the Section 36 Bedrock Ridge Groundwater Plume Extraction System project in that the two projects share common design goals.

3.3 Post-ROD Removal Actions for Structures

Site Description: The Post-ROD Removal Actions for Structures will take place in the North Plants and South Plants and are comprised of three separate projects. The first project includes the removal of non-agent-related chemical process equipment previously identified for removal under the Chemical Process-Related Equipment IRA in the South Plants. The second project includes the removal of remaining accessible and friable asbestos-containing material (ACM) previously identified for removal under the Asbestos Removal IRA in the North Plants. The third project is the continuation of non-agent-related chemical/process equipment removal (interior) in the South Plants.

Project Sites/History: No SAR sites are associated with this project.

Project Description:

Chemical Process-Related Equipment Removal (non-agent) (exterior):

a) Clear process-related equipment identified for removal through monitoring and removal of residual liquids. Sample removed liquids for disposal.

b) Decontaminate equipment by exterior and interior washing.

c) Cut up equipment for removal as scrap.

Asbestos Removal:

a) Remove in accordance with applicable Occupational Safety and Health Administration and U.S. Environmental Protection Agency (EPA) regulations.

Chemical Process-Related Equipment Removal (non-agent) (interior):

Design of the South Plants Interior Equipment Removal was delivered to the parties in September 1997. This project continues the efforts that began under the Chemical Process-Related Activities to the Interior of South Plants Structures, IRA 14. IRA 14 will be closed at the completion of the original Scope of Work (SOW). This SOW will be tracked under the title Phase II Chemical Process Equipment Removal (Interior), and will be subject to the requirements of the ROD and the Remedial Action process.

Related Projects: These removal actions are the completion of work begun under the Chemical Process-Related Equipment IRA and the Asbestos Removal IRA. Any chemical process equipment, piping, or asbestos remaining after completion of these actions will be performed under one of the three structures demolition projects.

4.0 PHASE I – OUTLYING AREAS

There are ten Phase I projects. These include two structure demolition projects: South Plants Structures and Miscellaneous Structures. There is one groundwater extraction project: Bedrock Ridge. The remaining seven projects are soil remediation and sanitary landfill. This section provides site descriptions, project sites/history, project descriptions, and related project discussions.

4.1 Toxic Storage Yards Soil Remediation

Site Description: The Toxic Storage Yards are a subgroup within the Agent Storage Medium Group. While the Detailed Analysis of Alternatives (DAA) identified several sites within this subgroup, only a few contain soil exceedances that will be remediate under this project. Two of the sites are located in Sections 5 and 6, respectively, in what

is known as the Old Toxic Storage Yard. The third site is located in Section 31 in the New Toxic Storage Yard. The sites are located in areas containing weedy forbs.

Primary COCs include isolated detections exceeding the human health SEC for chloroacetic acid and arsenic to a depth of six feet. These sites are considered to potentially contain agent, based on use histories and detections of agent breakdown products. However, sampling has not indicated the presence of agent.

Project Sites/History:

- ESA-3a – Agent Testing – Storage Yard – used as a storage area
- ESA-3b – Agent Testing – Old Toxic Storage Yard – used as a storage area
- ESA-3g – Agent Testing – Drum Storage/Spill Site – spill site area

Project Description:

a) Close monitoring wells, as required.

b) Excavate and dispose of HHE soil in the On-Post HWL. Screen potentially agent-contaminated excavated soil by sampling for agent, and treating any soil exceeding Army regulatory criteria.

c) Backfill the excavated area with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion (Note: The New Toxic Storage Yards will be used as a BA).

d) Re-establish vegetation over the disturbed remediation and BA.

e) Demolish approximately 12 buildings and structures and haul the building debris to the Basin A Consolidation Facility for permanent disposal.

f) Remove railroad ballast, ties, and rail within and north of ESA-3b.

g) Remove infrastructure, including wooden utility poles, overhead cabling, metal light fixtures, and sanitary sewer manholes.

h) Rip the boundaries of ESA-3a and ESA-3b to a depth of 18-inches below grade. Ripping activities are to be screened with chemical agent monitoring equipment to confirm the soil was not agent contaminated.

Dependent Projects: The New Toxic Storage Yard may be used as a borrow site. The borrow site may support several other remedy projects.

4.2 Existing (Sanitary) Landfills Remediation

Site Description: The Existing (Sanitary) Landfills Remediation project consists of nine sites that include sanitary landfills and landfill trenches. These sites primarily contain trash and rubbish, but no agent or UXO. Containerized (drummed) waste was detected during site investigations. Habitats within these sites range from weedy forbs to native grasses. Several of the sites are located within the Bald Eagle Management Area (BEMA).

Characterization indicates the soil and debris contained within the landfills consist of rubbish, construction debris, wood, paper, asbestos, and metal piping. The contamination patterns are heterogeneous as various materials were disposed of in the same landfill trench.

The primary human health COCs and contaminants that potentially pose risk to biota include OCPs and Inductively-Coupled Argon Plasma (ICP) metals. Portions of the site contain mercury at levels that may pose potential risk to biota, but they are below the human health SEC. The maximum concentrations of OCPs and ICP metals and the average concentrations of isodrin, cadmium, and chromium exceed the human health SEC. The human health COCs were detected at depths ranging from the ground surface to approximately eight feet below ground surface. Soil posing potential risk to biota was found in the zero- to one-foot interval surrounding the landfills. Refuse, consisting of debris and soil, occurs to an average of eight feet below the ground surface.

Project Sites/History:

The Existing (Sanitary) Landfills Remediation project consists of nine sites. These sites include sanitary landfills and disposal trenches located in various RMA areas:

- CSA-1d – Sanitary Landfills/Incinerator 834 – used for burning and burial of contaminated and uncontaminated waste, located in Section 36.
- CSA-2d – Munitions Testing – NN3601 Incinerator Con – used for destruction of mines, located in Section 36.
- ESA-2b – Sanitary Landfill – used for disposal of On-Post sanitary waste, located in Section 30.
- SSA-4 – Sanitary Landfills/Trash Dump – used for surface disposal of miscellaneous construction debris, located in Section 1.
- WSA-2 – Sanitary Landfills West – Landfill – used for burning and disposal of uncontaminated and potentially contaminated waste, located in Section 4.
- WSA-3c – Sanitary Landfills – East Landfill/Main Area – used for burning, burial, and surface disposal of uncontaminated waste, located in Section 4.

- WSA-5a – Sanitary Landfills – North Landfill Trench – used for burning and disposal of uncontaminated and potentially contaminated water, located in Section 4.

- WSA-5c – Sanitary Landfills – North Landfill Trench – used for a landfill, located in Section 4.

- WSA-5d – Sanitary Landfills – North Landfill Trench – used for a landfill located in Section 4.

Project Description:

a) Close or protect monitoring wells, as required.

b) Construct stormwater controls.

c) Excavate and dispose of HHE soil in the On-Post HWL. Consolidate excavated biota exceedance soil and P1 soils into the Basin A Landfill.

d) Demolish structures and dispose of debris in Basin A.

e) Excavate and haul trash and debris to Basin A.

f) Backfill with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion.

g) Re-establish vegetation over the disturbed remediation and BA.

Dependent Projects: There are no projects dependent upon the Existing (Sanitary) Landfills project.

4.3 Lake Sediments Remediation

Site Description: The Lake Sediments Group includes four lakes located in the southern portion of RMA and sediments from the North Bog.

These sites were grouped together based on similar contamination patterns within the lakes and physical properties of the lakebed sediments. In the past, the water from Upper Derby Lake, Lower Derby Lake, and Lake Ladora was used as process/coolant water for South Plants.

These sites contain sediments contaminated by the influx of suspended-solid or dissolved-phase contaminants transported to the lakes by groundwater or surface water. However, only Upper Derby Lake and Lower Derby Lake will be remediated. No areas

in the other lakes or North Bog exceed the human health SEC or pose any potential risk to biota.

Upper Derby Lake and Lower Derby Lake contain contamination that poses a potential risk to humans. Isolated exceedances of human health SEC include chlordane and chromium and acute exceedances of aldrin and dieldrin. These exceedance areas occur to a depth of approximately three feet. Upper Derby Lake poses a potential risk to biota. The sites containing material that exceeds human health or biota criteria are located within the BEMA.

Project Sites/History:

- SSA-1b – Lake Sediments – Upper Derby Lake – Surface Impoundment/Lagoon.

- SSA-1c – Lake Sediments – Lower Derby Lake – Surface Impoundment/Lagoon.

Project Description:

a) Protect trees while excavating contaminated soil from Upper and Lower Derby Lakes. Dispose of excavated HHE soil into the On-Post HWL. Consolidate excavated biota exceedance soil into Basin A.

b) Grade perimeters of excavation areas to provide a smooth transition from the original surface to the excavation surface.

c) Re-establish vegetation over the areas in Upper Derby Lake.

Dependent Projects: There are no projects dependent upon the Lake Sediments project.

4.4 Burial Trenches Soil Remediation

Site Description: This project addresses the Burial Trenches (BT), a subgroup within the Undifferentiated Medium Group, which initially consisted of eight ROD-identified sites. Thirty-four additional sites have been added to the BT work scope, which brings the total to 42 sites remediated under this project. The following is a summary description on how the additional 34 sites were added to the project, including haul road removal activities.

Field reconnaissance of the project site (completed as part of pre-design activities) resulted in the discovery of 12 new sites. There are 11 new munitions debris areas designated as BT 32-1 through BT 32-9 and BT 6-1 and – 2, and one site pertaining to the removal of asphalt pavement (designated as BA 10 –asphalt).

The RVO incorporated 15 new sites from Sections 4 and 9 into the BT work scope, and these sites are designated as BT4-01 through BT4-14 and BT9-01. These sites include both surface debris and trenches, and they will be remediated as a "housekeeping" exercise. Material to be removed includes: munitions debris and soil, construction debris (i.e., pipe, wire, wood, concrete, brick, and glass bottles), and ACM. The munitions debris and ACM will be disposed of in the HWL and all other material will be hauled to Basin A.

Review of historical aerial photographs resulted in the discovery of five additional sites. The first site is a burn pit in Section 32 (designated as BT32-10). The second, third, and fourth sites are trenches containing munitions debris in Sections 29 and 32 (designated as BT29-01, BT29-02, and BT-32-11). The fifth site in Section 30 (designated as BT30-01) is a halo around ESA-2c containing munitions debris.

Two additional sites were identified and added, bringing the total number of new sites added to 34. The first site is in Section 20 (designated as BT20-01) and contains red ash, and the second site (designated as BT4-15) is a debris pile consisting of railroad ballast with munitions debris that has been removed from Section 4 but had been stockpiled behind the Building 111 parking lot.

The original eight sites, and 34 new sites, will be remediated under this project. Five of the sites have COCs in the soil that exceed human health SEC for chromium and lead from a depth of approximately two to ten feet. All HHE soils, asbestos containing material, munitions debris, and soils removed with munitions debris will be excavated and disposed of in the On-Post HWL.

All sites contain vegetation ranging from weedy forbs to native grasses. Some of the sites are located within prairie dog colonies, and the majority of the sites are located within BEMA. Based on the operations that occurred there, these sites may contain agent and high explosive (HE)-filled OE. Because the four original ROD burn sites were not used for the detonation of agent-filled OE, they are assumed to potentially contain only HE-filled OE. Soil may also pose a potential risk to biota, and the potential exists for the presence of non-armed ordnance.

Project Sites/History:

The eight original ROD sites, as listed below, were used historically for the demilitarization and disposal of obsolete munitions:

- Sites ESA-2a-1, -2, and -3: Burn Pits.
- Sites ESA-2a-4, -5, -6, and -7: Burn Pits (sites include both HHE and munitions debris).
- Site ESA-2c: Open Trenches.

New Sites:

- Borrow Area 10 Asphalt: Surface Debris.
- BT4-01 through BT4-07, BT4-13, and BT4-14: Surface Debris.
- BT4-08 through BT4-12: BT.
- BT4-15: Debris pile – Railroad ballast with munitions debris.
- Site BT6-1 and BT6-2: Surface Burn Sites.
- BT9-01: Surface Debris.
- BT20-01: Red Ash Site.
- BT29-01: BT.
- BT29-02: BT.
- BT30-01: (Halo) Near Surface Debris.
- Sites BT32-01 through BT32-09: Surface Burn Sites.
- Site BT32-10: Burn Pit.
- Site BT32-11: BT.

Project Description:

a) Close or protect wells, as required.

b) Characterize geophysical targets.

c) Excavate HHE soils, munitions debris, and soil co-mingled with munitions debris and dispose of in the On-Post HWL. Transport any explosive-containing munitions to an approved demolition range and detonate; or, if unstable, detonate in place.

d) Complete an Explosive Safety Submission to be approved by the Department of Defense Explosives Safety Board (DDESB) prior to commencing remediation activities.

e) Complete a Chemical Safety Submission to be approved by the DDESB prior to remediation activities at ESA-2c.

f) Screen potential agent-contaminated excavated soil by sampling for agent, and treat any soil exceeding Army regulatory criteria.

g) Backfill with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and control erosion.

h) Re-establish vegetation over the disturbed remediation (approximately 35 acres) and borrow areas.

Dependent Projects: There are no projects dependent upon the BT project.

4.5 Munitions (Testing) Soil Remediation

Site Description: The Munitions Testing (MT) Group originally consisted of seven sites with similar histories and the potential presence of OE. These sites, predominantly located in the eastern portion of RMA in Sections 19, 20, 25, 29, and 30, were used for the testing and destruction of non-chemical munitions. The sites typically contain slag, debris, and potential OE in the upper 1 foot of soil and represent potential physical hazards. Site ESA-4a was an impact area for mortars and may contain HE-filled OE at depths to 6 feet. No HHE were detected within these sites.

Field reconnaissance to evaluate burn areas resulted in the discovery of a new munitions debris area (MT29-1).

During the process of clearing geophysical targets from the footprints of ESA-4a, an area surrounding former remediation site BT32-10 was determined to require additional work to address the ground surface surrounding the former burial trench. As a result, a geophysical survey and target characterization of this area were added to the MT project via design change notice.

A surface sweep of a former burn area in BA 10 was added to the MT project following the recovery of OE debris in the area.

Remediation of the RMA Section 29 Demolition Range Exclusion Zone (DREZ) was added to the MT project in an effort to prepare for the eventual closure of the RMA Demolition Range.

Project Sites/History:

- ESA-1a – MT – Surface Burn 1 – used as a burn area.
- ESA-1b – MT – Surface Burn 2 – used as a burn area.
- ESA-1c – MT – Surface Burn 3 – used as a burn area.
- ESA-1d – MT – Surface Burn 4 – used as a burn area.
- ESA-4a – MT – Impact/UXO – unexploded Munitions/Ordnance.
- ESA-4b – MT – Defense Reutilization and Marketing Office Area – explosive ordnance disposal area.
- CSA-2c – MT – Incendiary MT – unexploded Munitions/Ordnance – Surface Debris.

New Sites

- MT29-1 – Surface debris site.

- BT32-10 – Geophysical Survey and Target Characterization of surface area surrounding former BT.

- Borrow Area 10 – Burn area surface sweep.

- DREZ – Demolition Range Exclusion Zone.

Project Description:

a) Complete an Explosive Safety Submission to be approved by the DDESB prior to commencing remediation activities.

b) Conduct an electromagnetic geophysical survey of ESA-4a site area and identify, locate, and retrieve designated targets to a maximum depth of four feet.

c) Excavate munitions debris and associated soil from Sections 19, 20, 25, 29, and 30 and dispose of it in the On-Post HWL. Transport any explosive-containing munitions to the approved demolition range and detonate or, if unstable, detonate in place.

d) Excavate and dispose of ACM from Site CSA-2c into the On-Post HWL. Consolidate excavated biota exceedance soil into the Basin A Landfill.

e) Perform a site characterization of area surrounding the RMA Section 29 Demolition Range consisting of a surface sweep and target characterization. Use this data to develop the path forward for characterization of the remainder of the DREZ. Perform remediation of the DREZ (includes Initial and Quality Assurance (QA) geophysical surveys and Initial and QA target characterization).

f) Perform geophysical survey and target characterization of surface area surrounding BT32-10.

g) Perform surface sweep of BA 10 burn area.

h) Perform remediation and closure of the RMA Section 29 Demolition Range.

i) Grade as necessary to provide adequate drainage and to control erosion.

j) Re-establish vegetation over the disturbed remediation areas.

Dependent Projects: There are no dependent projects for the Munitions (Testing) Soil Remediation Project.

4.6 Miscellaneous Northern Tier Soil Remediation

Site Description: The Miscellaneous Northern Tier Soil Remediation project includes the Sewage Treatment Plant, Fuse and Detonator Ditch, and the Pistol Range, which are located in Sections 24, 25, and 19, respectively.

Sewage Treatment Plant. The Sewage Treatment Plant is the former sewage treatment plant site located in the approximate center of Section 24. The site included the sewage treatment plant, two trickling filters and Imhoff tanks, a lagoon associated with sewage treatment, a road, and two 20-foot-wide ditches leading from the sewage treatment facility to First Creek. The site encompasses almost ten acres.

Organochlorine pesticides are the primary human health and biota COCs at these sites. Chromium, chloroacetic acid, and lead also exceed human health SEC at scattered locations. Portions of these sites contain soil that posed potential risks to biota in some samples. Human health COCs extend to a depth of approximately five feet, with the highest contaminant concentrations detected in the upper two feet of the soil profile.

Fuse and Detonator Ditch. The Fuse and Detonator Ditch site is located in Section 25 on the downgradient of Building 1608, in the northeastern corner of the North Plants. The site is within the portion of the man-made ditch that controls the surface drainage within the North Plants. The ditch measures 350 feet-long and ten feet-wide, encompassing approximately 3,500 square feet. The ditch contains byproducts of chemical agents, such as chloroacetic acid, historically stored in Building 1608.

The human health COCs extend to a depth of five feet, with all exceedance contamination concentrations detected in the upper two feet of the soil profile. The site was not designated as containing potential agent soil.

Pistol Range. The Pistol Range site is located in Section 19 within the BEMA. This site is roughly a rectangular area approximately 950 feet by 40 feet and encompasses 32,414 square feet.

The COC at the Pistol Range is lead. The Pistol Range contains soil that was contaminated by lead from the site's use as a shooting range. Soil in the Pistol Range is considered HHE soil based on the presence of lead exceedances.

Project Sites/History:

Sewage Treatment Plant Fuse and Detonator Ditch:

- NCSA-8b – Ditches Drainage – Sewage Treatment Plant Area – used to transport water to and from the Secondary Basins and to drain the South Plants process areas.

Fuse and Detonator Ditch:

- NPSA-4 – Buried Sed/Ditches-Fuse and Detonator Mag – used as a surface disposal area.

Pistol Range:

- Pistol Range – Surficial Soil Site – Located in Section 19.

Project Description:

a) Close or protect monitoring wells, as required.

b) Construct stormwater controls, temporary access roads, and protect existing trees.

c) Demolish existing structures and haul to Basin A.

d) Flush existing culverts with a pressure washer and leave in place.

e) Dispose of excavated HHE soil and debris into the On-Post HWL. Consolidate excavated biota exceedance soil into Basin A.

f) Backfill designated excavated areas with clean soil borrowed from the sewer line berm, and grade as necessary to provide adequate drainage and to control erosion.

g) Re-establish vegetation over disturbed remediation and BA.

Dependent Projects: There are no projects dependent upon the Miscellaneous Northern Tier Soils project.

4.7 Miscellaneous Southern Tier Soil Remediation

Site Description: The Miscellaneous Southern Tier Soils Remediation project includes the Buried Sediments and Ditches, Ditches/Drainage Area, and Surficial Soil Medium Groups located in Sections 1, 2, 3, 4, and 12.

Buried Sediment and Ditches Sites. This grouping consists of one site that carried stormwater and industrial process water from the South Plants area to Upper and Lower Derby Lakes. The RI indicated that the primary COCs at this site are OCPs. A portion of the site contains soil that poses potential risks to biota. Human health COCs extend to a depth of approximately five feet with all exceedance contaminant concentrations in the upper two feet of the soil profile.

Ditches/Drainage Area Site. The overflow basin will be remediated under this project. The overflow basin was constructed in 1955 to retain overflow from Lake Ladora. The RI indicated that the primary COCs are OCPs. The majority of samples had analytical

results below the certified reporting limits and therefore only poses a risk to biota. The majority of contaminants were detected in the zero- to one-foot-depth interval.

Sand Creek Lateral. Originally, the Sand Creek Lateral was an irrigation ditch. During RMA production times, the lateral carried waste generated by the South Plants operations and runoff during storm events and snowmelt. The RI indicated that the primary COCs at the lateral are OCPs. In addition, chromium exceeds the human health SEC at scattered locations. Portions of the lateral contain soils that pose potential risks to biota. Human health COCs extend to a depth of approximately five feet with all exceedance contaminant concentrations in the upper two feet of the soil profile.

Previously Excavated Upper and Lower Derby Lake Sediments. In 1964 and 1965, Upper and Lower Derby Lakes were dredged as part of a cleanup action that was intended to protect ducks. The sediments were deposited along the south side of 6th Avenue and covered with 18 inches of clean soil. The RI indicated that the primary sites COCs are OCPs. The COCs at the sediment mound range in depths from four to ten feet.

Isolated Detection. This site is a spill area located in the railyard in Section 3. It is a circular area with a radius of approximately 100 feet. The RI indicated that the primary COCs at this site are OCPs. A portion of the site contains soil that poses potential risks to biota. Human health COCs extend to a depth of approximately five feet with all exceedance contaminant concentrations in the upper two feet of the soil profile.

Motor Pool Ditch. This site is part of the RMA maintenance area used for servicing equipment, vehicles, and railroad cars and for storing fuel, road oil, and flammable liquids. Various wastes including degreasing solvents, washbay liquids, and other diluted materials were discharged into the ditch over the years. The RI indicated that the primary COCs are OCPs. In addition, chromium and lead exceeds the human health SEC at scattered locations. Portions of the site contain soils that pose a potential risk to biota. Human health COCs extend to a depth of approximately five feet with all exceedance contaminant concentrations in the upper three feet of the soil profile.

Surficial Soil Sites. Surficial soil sites contain soils that were primarily contaminated by windblown dust and lead from firing range activities. These sites pose a potential risk to biota and include isolated HHE areas. Surficial soil sites include P1 soil areas selected by the Biological Advisory Subcommittee (BAS) for residual biota risk remediation. The Rifle Range and the Fisherman's Parking Lot, both located in Section 12, will be remediated under this project.

Project Sites/History:

Buried Sediments and Ditch Sites

- SSA-2a – Ditches/Drainage – Process Ditch – storage area.

Ditches/Drainage Area Site

- SSA-2c – Ditches/Drainage – Lakes Overflow Basin – used to retain overflow from Lake Ladora.

Sand Creek Lateral

- SSA-2b – Buried Sediments/Ditches – Sand Creek Lateral – used to carry waste generated by South Plants operations and runoff during storm events and snowmelt.

Previously Excavated Upper and Lower Derby Lake Sediments

- SSA-3b – Buried Sediments/Ditches – Upper and Lower Derby Lakes – contaminated sediments.

Isolated Detection

- WSA-1f – Ditches –Railyard/Pesticide Detection – a spill site area.

Motor Pool Ditch

- WSA-6a – Buried Sediments/Ditches – Motor Pool Ditch – used as a disposal pit/dry well.

Surficial Soil Sites

- Rifle Range – Used for firearm qualifications and recreational target practice.
- Fisherman's Parking Lot – P1 Soil Site.

Project Description:

a) Close or protect monitoring wells as required.

b) Construct temporary site access roads and stormwater control, as necessary.

c) Demolish structures and haul to Basin A, or, in the case of existing railroad track, remove and stockpile.

d) Excavate contaminated soil from the component project areas. Dispose of excavated HHE soil into the On-Post HWL. Consolidate excavated biota exceedance soil and P1 soil into Basin A.

e) Protect trees to the maximum extent possible during all construction activities.

f) Backfill designated excavated exceedance areas with clean soil borrowed from other RMA areas, and grade as necessary to provide adequate drainage and to control erosion.

g) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: There are no projects dependent upon the Miscellaneous Southern Tier Soils Remediation project.

4.8 Section 36 Bedrock Ridge Groundwater Barrier Plume Extraction System

Site Description: The Basin A Plume Group is composed of the Section 36 Bedrock Ridge Plume, the Basin A Plume, and the South Plants North Plume. Contaminated groundwater flow in the South Plants North Plume and the Basin A Plume occurs principally within saturated alluvium, with lesser flow through the underlying weathered bedrock. However, in the Section 36 Bedrock Ridge area, the water table generally lies below the alluvium and groundwater flows predominantly within weathered bedrock. The major contaminants detected in the entire Basin A Plume Group are chloroform, methylene chloride, diisopropylmethlyphosphonate (DIMP), trichloroethylene (TCE), DBCP, and benzene.

Project Site/History:

- A-S36BR – Basin A/Section 36 Bedrock Ridge Plumes – contaminated groundwater.

Project Description: Remediation involves constructing groundwater extraction facilities to intercept and treat the Section 36 Bedrock Ridge Groundwater Plume. This will be accomplished by connecting the extraction wells to an existing facility (Basin A Neck); no modifications to the existing facility are necessary. The Bedrock Ridge system will be operated as necessary to prevent further migration.

Dependent Projects: The Bedrock Ridge project is related to the Complex (Army) Trenches Slurry Wall project. The two projects together will prevent contaminated groundwater from migrating beyond the Bedrock Ridge area. Both projects are also related to the long-term operation and maintenance of the Basin A Neck treatment plant.

4.9 South Plants Structure Demolition and Removal

Site Description: The South Plants Structures Demolition and Removal project encompasses a wide variety of structural types and materials located in Sections 1, 2, and 36. Included are all aboveground structures, buildings, foundations, basements, tanks (including underground storage tanks), process and non-process equipment (including boneyards), aboveground chemical and non-chemical pipelines, ACM, equipment and materials contaminated with polychlorinated biphenols (PCB), and other man-made objects placed at RMA. The structures have been divided into three groups: Agent History (AH) Structures, Significant Contamination History (SCH) Structures, and Other Contamination History (OCH) Structures.

Project Site/History:

- NFU-A – Structures – No Future Use, Agent–contaminated buildings.
- NFU-MNP – Structures – No Future Use, Manufacturing, Non-Process–contaminated buildings.
- NFU-MP – Structures – No Future Use, Manufacturing, Process–contaminated buildings.

Project Description:

a) Demolish all South Plants AH, SCH, and OCH Structures including removal of all aboveground piping, utilities, and selected foundations. Asbestos-containing material and PCBs encountered will be properly disposed of in the On-Post HWL.

b) Screen potentially agent-contaminated building debris by sampling for agent and treat any exceeding Army regulatory criteria.

c) Remove AH and SCH structural debris and equipment and dispose of in the On-Post HWL.

d) Remove OCH structural debris and consolidate into Basin A.

e) Demolition of structures will stop at the top of the grade. All foundations and below grade structures will be managed with the South Plants Soils Remediation project.

f) Remove drums, utilities, and debris piles staged within the South Plants boundary.

Dependent Projects: The South Plants Structures must be removed prior to beginning several soil remediation projects. These projects include: Hex Pits, Buried M-1 Pits, South Plants Balance of Areas (SPBA), and SPCPA. This project may be dependent upon the availability of a structures agent treatment facility, if the screening process to determine actual quantities of agent-contaminated materials indicates a need for this facility.

4.10 Miscellaneous RMA Structures Demolition and Removal

Site Description: This project encompasses structures and related items from all RMA areas other than Sections 1 and 2 (South Plants Structures) and Section 25 (North Plants Structures). The structures have been divided into three groups: AH Structures, SCH Structures, and OCH Structures.

Project Site/History:

- NFU-A- Structures – No Future Use, Agent–contaminated buildings.
- NFU-MNP – Structures – No Future Use, Manufacturing, Non-Process–contaminated buildings, referred to as OCH structures.
- NFU-MP – Structures – No Future Use, Manufacturing, Process–contaminated buildings, referred to as SCH structures.

Project Description:

a) Demolish all AH, SCH, and OCH Structures including removal of all aboveground piping, utilities, and selected foundations.

b) Screen potentially agent-contaminated building debris and associated soil by sampling for agent and treat any exceeding Army regulatory criteria.

c) Remove AH and SCH structural debris and dispose of in the On-Post HWL. Remove OCH structural debris and consolidate into Basin A.

d) Remove floor slabs and foundations, and plug below ground piping and utilities.

e) Backfill foundation and basement excavations with clean soil borrowed from other RMA areas, and grade as necessary to provide adequate drainage and to control erosion.

f) Remove debris piles identified by the USFWS.

g) Perform surface sweep and excavation and removal of ACM discovered in BA 9A Parcel 3 during borrow operations and Site 25CC-3 during revegetation activities.

Note: Three structures have been demolished as part of the 815-Acre Land Transfer package. The three structures include a septic tank, radio range B foundations, and a survey tower.

Dependent Projects: There are no projects dependent upon the Miscellaneous RMA Structures Demolition and Removal project.

4.10.1 Drummed Waste Handling and Disposal

According to Section 9.4 of the On-Post ROD, stored, drummed waste may be disposed of in the On-Post HWL. To meet this allowance, two tasks are being implemented to dispose of drummed material inventories that have been stored on the RMA. Each task has its own unique process to size drums and contents and assures that the materials meet

acceptance criteria when disposed of at the HWL. These two tasks have been associated with the Miscellaneous RMA Structures Demolition and Removal Project to properly document the work in the project CCR.

One task involves processing and disposing of approximately 9,700 drums that were stored in the South Plants and other miscellaneous structures around the RMA. Drums are processed through a drum-shredding machine that has been installed at Building 785. The shredding process assures compliance with HWL sizing requirements and also alleviates any concerns of liquids remaining in drums. Following shredding, any wet material is mixed with dry material to assure there are no liquids. After confirming that the processed material will meet HWL acceptance criteria, the material is loaded into a haul vehicle and transported to the HWL for disposal.

The other task involves processing and disposing approximately 4,200 drums that were stored in the North Plants area of the RMA. These drums have been screened for chemical agent and may now be disposed of in the HWL. Because the drums contain dry materials, they will be emptied into roll off containers and the contents transported to the HWL for disposal. The drums will then be processed according to their type prior to disposal at the HWL: steel drums will be crushed; fiberboard drums may go directly to the landfill for compacting; and plastic drums will be transferred to Building 785 facility for shredding. This task also involves characterizing approximately 125 drums containing liquids to determine whether they must be sent off-site for disposal or may be disposed of at the on-site Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Wastewater Treatment Facility.

5.0 PHASE II – SOUTH PLANTS AREA

The four Phase II projects are concentrated in the South Plants Area. All of these projects are soil remediation-related. This section will provide site descriptions, project sites/history, project descriptions and related project discussions.

5.1 Buried M-1 Pits Soil Remediation

Site Description: The Buried M-1 Pits are a subgroup within the Lime Basins Medium Group. The pits were used to treat waste fluids from the Lewisite Facility, primarily to precipitate arsenic out of solution. In addition, a considerable amount of mercuric chloride catalyst from a possible spill entered the pits. However, waste materials from alleged spills within the acetylene-generation building, the thionylchloride plant, and the arsenic trichloride plant were allegedly routed through floor drains and the connecting piping to the pits. The pits were backfilled in 1947, covered with several feet of soil, and were overbuilt by several structures that have since been removed. The pits are located in an area of disturbed vegetation.

The entire site is considered to exceed principal threat criteria, and based on the history of the site, potentially contains agent. The pits are characterized by soil/sludge mixtures with high pH levels and percentage levels of arsenic and mercury to a depth of 10 feet.

Project Site/History:

- SPSA-1e – Lime Basins/M1-Pits – used to treat waste fluids from the Lewisite Facility

Project Description:

a) Perform necessary treatability testing during design to select the best mixture of solidification/stabilization agents. This treatability testing will be used to verify the effectiveness of the treatment process and establish operating parameters for the design of the full-scale operation.

b) Close or protect monitoring wells as required.

c) Excavate principal threat and HHE soil from the M-1 Pits in Section 1.

d) Monitor for potentially agent-contaminated excavated soil by sampling for agent, and treat any soil exceeding Army regulatory criteria.

e) Treat with a solidification technology, stabilize, and dispose of treated soil in the On-Post HWL.

f) Control vapors and odors at every remediation stage using necessary measures.

g) Backfill with P1 soils from BA 3 and grade as necessary to provide adequate drainage and control erosion. A soil cover will be placed and vegetation re-established by the SPCPA Soil Remediation project over this site.

Dependent Projects: This project may be dependent upon the availability of a soils agent treatment facility, if the screening process to determine actual quantities of agent-contaminated materials indicates a need for this facility, and may also be dependent upon the removal of all the South Plants structures that cover or are immediately adjacent to the site and the SPCPA Soil Remediation project.

5.2 Hex Pit Soil Remediation

Site Description: The Hex Pit is a subgroup within the Disposal Trenches Medium Group. The Hex Pit was historically used to dispose of residual materials (tarry, chlorinated, resinous materials called hex bottoms) resulting from the production of hexachlorocyclopentadiene (HCCPD). This material was buried in thin-gauge barrels and in bulk. The site is partially underneath Building 571B in Section 1, in an area of

disturbed vegetation. The entire site is considered a principal threat based on the presence of containerized waste and high levels of contamination to a depth of ten feet.

Project Site/History:

- SPSA-1f – Disposal Trenches – Hexa Barrels – used to dispose of residual materials (tarry, chlorinated, resinous materials called hex bottoms) resulting from the production of HCCPD.

Project Description:

a) The Regulatory Agencies will complete the evaluation of several innovative thermal technologies to determine if any of the technologies can meet all evaluation criteria described in the dispute resolution agreement (Program Manager Rocky Mountain Arsenal 1996). If none of the innovative thermal technologies meet all evaluation criteria, then solidification/stabilization will become the selected remedy.

b) If an innovative thermal technology is the selected remedy, treatability testing will be performed during design to verify the effectiveness of the process and establish operating parameters for the design of the full-scale operation. After treatability testing, if it is determined that the innovative thermal technology cannot meet all of the evaluation criteria, and then the selected remedy reverts to solidification/stabilization.

c) If solidification/stabilization is the selected remedy, treatability testing will be performed during design to verify the effectiveness of the solidification process and determine appropriate solidification/stabilization agents.

d) Treat approximately 2,550 cubic yards of contaminated material (principal threat soil) from the Hex Pit Section 1 with an innovative thermal technology or solidify and stabilize (if the evaluation criteria cannot be met for the thermal technology).

NOTE: UPDATE – The innovative thermal technology titled "In-Situ Thermal Destruction" was selected, designed and implemented. However, a few days into the treatment process, the technology failed and had to be terminated.

Due to the failed technology, a ROD Amendment was prepared with the purpose of changing the preferred remediation approach to excavation and disposal of the Hex Pit material into the HWL.

e) Excavate and dispose Hex Pit contaminated soil (also considered PT exceedance soil), into the HWL.

f) Control emissions at every remediation stage using necessary measures.

g) Backfill with biota exceedance soil from the South Plants and grade as necessary to provide adequate drainage and to control erosion. A soil cover will be placed and vegetation re-established over this site by the SPCPA Soil Remediation project.

Dependent Projects: The Hex Pit Soil Remediation project is dependent upon the South Plants Structures Removal and Demolition project and the SPCPA Soil Remediation project.

5.3 South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase II

Site Description (Note: Also see, Site Description for Phase I, Section 5.4)

This phase of the project addresses the SPBA and Central Processing Area SPCPA, which is a subgroup of the South Plants Medium Group. This site was the main processing area within the South Plants. Soil contamination resulted from the manufacture, storage and disposal of chemicals and from the demilitarization of agent-filled ordnance. The area exhibits areas of disturbed vegetation.

A portion of this area is located within a ROD-identified potential agent boundary. The COC in the soil that exceed the human health and PT criteria include, but are not limited to volatiles, OCPs, and arsenic. Remediation of these COCs is limited to a depth of five feet in the SPCPA.

Project Site/History

The South Plants Study Area is comprised of the following Study Areas Report Sites:

- SPSA – 1a – SPCPA – used as the main processing area within the South Plants.
- SPSA – 4B – Spill Site (foundation only).
- SPSA – 3E – Spill Site (foundation only).
- SPSA – 1G – Spill Site (foundation only).
- SPSA – 5B– Spill Site (foundation only).
- SPSA – 9A – Drainage Ditches (foundation only).
- SPSA – 9B – Spill Site (foundation only).
- SPSA – 10 – Sewer Systems – Chemical Sewer – Waste Lines.
- SPSA – 11 – Sewer Systems – Sanitary – used as a sanitary sewer system.
- *SPSA – 12c – Sewer Systems – Process Water – used as process water lines.

**Note: ***SPSA – 12c is also defined as and referred to as SPSA – 12 in other documents.

Foundation only means the excavation of HHE Soil blocks within the foundation footprint, (see note SPBA & Central Processing Area Phase I).

Phase II Project Description

a) Close or protect existing monitoring wells, as required.

b) Excavate approximately 110,000 bcy of principal threat and HHE soil in SPCPA up to a depth of five feet and dispose of in the On-Post HWL.

c) Excavate approximately 317,000 bcy of biota soil to a depth of one foot. This material will be used as backfill in deeper excavations or gradefill beneath either the 3.25-foot SPBA or 4.5-foot SPCPA cover areas.

d) Remove SCH and OCH foundations that are located within HHE soil excavation areas to the depth of the surrounding ROD-identified soil exceedance as measured from existing soil grade adjacent to the foundation and dispose of in the HWL.

e) Remove SCH and OCH foundations located outside the 3.25-foot cover area. Use removed debris as backfill or gradefill beneath either the 3.25-foot SPBA or 4.5-foot SPCPA cover areas. Those SCH and OCH structures will be used as backfill or gradefill or will be disposed in Basin A.

f) Where grading requires, excavated SCH and OCH foundations located within the 3.25-foot cover area or located in biota soil areas for use as backfill or gradefill beneath either the 3.25-foot SPBA or 4.5-foot SPCPA cover areas. Those SCH and OCH foundations not used as backfill or gradefill and left in place must be fractured.

g) Remove AH foundations remaining after the removal of the superstructure under the South Plants Structure Demolition and Removal Project. The AH foundations will be disposed of in the HWL after chemical agent screening and/or ROD 3X decontamination has been performed and certified. Debris not meeting ROD 3X certification requirements shall be segregated and stored.

h) Chemical sewers within the SPCPA will be addressed in one of two ways: removal or plugging. Sewers identified at a depth greater than five feet below ground surface (bgs) have been plugged during a previous project. Remaining sewers encountered during excavation of soil will be removed and disposed in the HWL or plugged. Sewer segments in the SPCPA outside the soil excavation limits that were not previously plugged will be plugged or removed at the discretion of the subcontractor.

i) All manholes associated with the process water lines and sanitary sewers will be plugged.

j) The final cover system for the SPCPA will be RCRA-Equivalent Cover (in accordance with the South Plants Agreement) constructed in accordance with the requirements defined in the Integrated Cover System Design. Soils meeting the geotechnical Acceptance Zone and agronomic properties defined, as part of the Basin F Exterior Project will be used for the SPCPA. The BA 10 will be the source.

k) Prevent biota and humans from accessing contaminated soils in the SPCPA by constructing a 1.5-foot thick biota barrier comprised of crushed concrete overlain by 4 feet of clean soil.

l) Construct the 3-foot cover system for the SPBA with soils that have a fines content ranging from 20 to 35 percent to minimize the infiltration through the SPBA cover. Haul soil from BA 3 for the cover.

m) Haul soil from BA 3 and BA 10 for use as backfill and gradefill beneath SPBA and SPCPA cover areas and for gradefill in the 1-foot backfill area.

n) Minimize soil losses by wind and water erosion through revegetation while providing necessary slopes for runoff and ponding control.

Dependent Projects: The SPCPA is dependent upon the removal of the South Plant structures, completion of the M-1 Pit and Hex Pit Remediation projects, and the SPBA Soil Remediation project. This project may be dependent upon the availability of a soils agent treatment facility, if the screening process to determine actual quantities of agent-contaminated materials indicates a need for this facility.

5.4 South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase I

Site Description

The SPBA Soil Remediation project will be implemented in two phases. Phase I of work will consist of HHE soil excavation/foundation removal in the SPBA. Phase II of work will include completing the remainder of foundation removal/cracking in the SPBA and SPCPA, SPBA biota excavation, SPCPA HHE soil excavation, and construction of the required covers over South Plants.

The ROD identifies several groups and subgroups for soil in the South Plants that exceed human health and biota exceedance criteria. The South Plants Medium Group and Sewer Systems Medium groups are within the HHE category.

The South Plants Medium Group includes the South Plants Ditches and SPBA subgroups. The Sewer Systems Medium Group includes the Chemical Sewers and Sanitary/Process Water Sewers subgroups.

The SPBA Soil Remediation Project involves the SPBA Subgroup, South Plants Ditches Subgroup, Chemical Sewers Subgroup, and the Sanitary/Process Water Sewers Subgroup.

There is a potential OE area identified in the ROD located within the southern portion of the SPBA, which will not be excavated as part of the Phase I work.

The SPBA project area has ROD-identified potentially agent-contaminated areas that require screening for the presence of chemical agent materiel and possible treatment to attain ROD 3X certification.

The selected remedy in the ROD for South Plants includes the placement of soil covers. No cover construction will occur as part of Phase I work.

Project Sites/History:

- SPSA-BAL – This site is comprised of the following SAR sites:
  - SPSA-1g – South Plants Balance – Miscellaneous – Spill Site (Phase II foundations).
  - SPSA-4b – South Plants Balance – Miscellaneous – Spill Site (Phase II foundations).
  - SPSA-7b – South Plants Balance – Depression – Spill Site.
  - SPSA-9b – South Plants Balance – Miscellaneous/Surface Contamination – Spill Site (Phase II foundations).
  - SPSA-3e – South Plants Balance – Miscellaneous – Spill Site (Phase II foundations).
  - SPSA-8c – SPSA8 Balance/Surface Contamination – Spill Site.
  - SPSA-2e – South Plants Balance – Surface Deposition – Spill Site.
  - SPSA-5b – South Plants Balance – Miscellaneous – Spill Site (Phase II foundations).
  - SPSA-7c – South Plants Balance – Miscellaneous/Surface Contamination – Spill Site.
  - SPSA-6 – Hydrazine Fuel Blending/Storage Facility – Spill Site.
  - SPSA-7a – Balance SPSA/Surface Contamination – Spill Site.
  - SPSA-12a – South Tanks Balance – Aeration Basin – Surface/Lagoon.
  - SPSA-12b – South Plants Balance – Sediment Pond – Surface/Lagoon.
  - SPSA-1b – South Plants Balance – Unknown Mounds – Contaminated Soil Piles.
  - SPSA-1c – South Plants Balance – Lime Pits – Disposal Pit/Dry Well.
  - SPSA-3b – South Plants Balance-Storage Pad – Storage Area.
  - SPSA-2b – South Plants – Open Storage Area – Storage Area.
  - SPSA-3c – South Plants Balance – Tank Storage Area – Aboveground Storage Tank.
  - SPSA-3d – South Plants Balance – Tank Storage Area – Aboveground Storage Tank.
  - SPSA-2a – South Plants-South Tank Farm – Aboveground Storage Tank.
  - SPSA-8a – South Plants Balance – Sanitary Landfill – Landfill.
  - SPSA-1d – South Plants – Drainage Ditches – Surface Disposal Area.
  - SPSA-2d – South Plants – Drainage Ditches – Surface Disposal Area.
  - SPSA-3a – South Plants – Drainage Ditches – Surface Disposal Area.
  - SPSA-4a – South Plants – Drainage Ditches – Surface Disposal Area.
  - SPSA-5a – South Plants – Drainage Ditches – Surface Disposal Area.
  - SPSA-8b – South Plants – Drainage Ditches – Surface Disposal Area.

- SPSA-9a – South Plants – Drainage Ditches – Surface Disposal Area (Phase II foundations).
- SPSA-2c – South Plants Balance – Salvage Yard – Storage Area.
- SPSA-10 – Sewer Systems – Chemical Sewer – Waste Lines.

Note: Phase II foundations means that HHE soil blocks within foundation footprints will be excavated as part of Phase II. All other SAR sites will be excavated to remove all HHE blocks.

Phase I Project Description

The following is a list of the project tasks for Phase I work in SPBA as outlined in the ROD or as agreed to with the Regulatory Agencies:

a) In potentially agent-contaminated soil areas that are to be excavated, screen soil for the presence of chemical agent materiel to attain ROD 3X certification. Segregate soil that does not meet ROD 3X certification requirements.

b) Close or protect monitoring wells as required.

c) Excavate chemical sewer lines and associated contaminated soil (approximately 31,784 bcy) to a depth of ten feet bgs or two feet below the invert of the sewer pipe, whichever is deeper. Screen chemical sewers and associated contaminated soil for the presence of chemical agent materiel to attain ROD 3X certification. Segregate soil/chemical sewer debris not meeting ROD 3X certification requirements.

d) Excavate and dispose of approximately 171,141 bcy of HHE soil in the On-Post HWL as prescribed in the ROD.

e) Excavate and dispose of approximately 9,302 additional bcy of HHE soil in the HWL. The additional HHE volume was identified as a result of the following activities:

   - Data review of modeled exceedances occurring outside of the ROD-determined volume.
   - Boundary remodeling and relocation.
   - SPBA Sampling and Analysis Project.
   - Anticipated cut and fill plan for cover construction during Phase II of the SPBA and Central Processing Area Soil Remediation Project.

f) Excavate soil contaminated with PCB concentrations greater than 250 ppm and dispose of in the HWL.

g) Remove SCH foundations and OCH foundations remaining in HHE soil excavation areas greater than three feet in depth after the removal of the superstructure (under the South Plants Structure Demolition and Removal Project – Phase I (Foster Wheeler 1998a)) to the depth of the surrounding ROD-identified soil exceedance as measured from existing soil grade adjacent to the foundation. Dispose of demolition debris in the HWL. Foundations located in HHE soil excavation areas less than three feet in depth will be removed during Phase II.

h) Remove foundations 571B and TF0103 to allow for work activities associated with the M-1 and Hex Pit Projects.

i) Remove existing underground storage tanks (UST) regardless of tank depth, and remove (or grout) associated piping systems within the horizontal limits of the excavation in the SPBA. Concrete tanks (including sumps) or concrete appurtenances that are located below ten feet in depth will be fractured and left in place. Fracture UST vaults. Remove stained soils from previous UST removal actions with COC above the SEC to a maximum depth of 10 feet and horizontally to the approximate extent of previous removals.

j) Fill excavations to within five feet of existing grades with soils obtained from borrow sources adjacent to (Borrow Source 1) or within (Borrow Source 2 and 3) the South Plants Soils project boundary (for the Phase 1 work) or other contractor-approved borrow sources. Note: Excavations located outside the 3.25-foot soil cover boundary in the SPBA will be backfilled with clean soil.

k) Prior to excavation, in the area outside of the SPBA 3.25-foot soil cover, collect discrete soil samples from 12 to 18 inch in depth, four to five feet in depth and nine to ten feet in depth. At designated locations, collect 12 18-inch depth composite soil samples. Analyze samples to determine whether HHE criteria are exceeded. Excavate soil in excess of HHE criteria and dispose of in the HWL. Utilize the SPBA Field Sampling and Analysis Plan developed for collecting soil samples. Note: This sampling exceeds the ROD requirement of two samples per acre over this area.

l) Establish temporary vegetation over the remediation areas.

Dependent Project: The SPBA project is dependent upon the removal of the South Plant structures. This project may be dependent upon the availability of a soils agent treatment facility, if the screening process to determine actual quantities of agent-contaminated materials indicates a need for this facility.

6.0 PHASE III – SECTIONS 35 AND 36 SITES

There are eight Phase III projects. Two projects will remediate the North Plants buildings and soils. Two projects will complete the Army and Shell Trenches site. Three projects are soils remediation and one project is Phase II of Sanitary Sewer Plugging. This section will provide site descriptions, project sites/history, project descriptions, and related project discussions.

6.1 Sanitary Sewer Manhole Plugging Project – Phase II

Site Description: The Sanitary/Process Sewer System includes four sites. Portions of the system that are located in Sections 3, 4, 24, 25, 26, 34, and 35 are included in this project. These sites contain soil that was potentially contaminated by spillage or leakage from broken pipes or faulty joints and manholes in the sewer lines. Contamination entered

these sewer lines through inadvertent disposal of liquid wastes or conveyance of contaminated groundwater. The majority of sewer piping is vitrified clay, although some sections are steel or cast-iron pipe.

Soil around these sewer lines does not exceed the human health SEC and does not pose risks to biota based on the average depth of the sewer lines of six to ten feet.

Project Site/History:

- NCSA-8a – Sewer Systems – Sanitary Sewer to Sewage Treatment Plant – used as waste lines.

- WSA-7a – Sewer System – Sanitary Sewer Sediments – used as waste lines.

Project Description:

a) Plug the void space inside remaining sanitary and process water sewer manholes with concrete or grout in Sections 3, 4, 24, 25, 26, 34, and 35. The remediation objective is to prohibit access and eliminate the sewer system as a potential migration pathway for groundwater.

b) Post aboveground warning signs indicating sewer locations every 1,000 feet.

Dependent Projects: There are no dependent projects for the Sanitary Sewer Manhole Plugging Phase II project.

6.2 Section 36 Balance of Areas Soil Remediation

Site Description: The Section 36 BOA Soil Remediation project includes the Section 36 BOA Medium Subgroup as described in the DAA, as well as sites within the Chemical Sewers (including those within the footprint of Basin A), Ditches/Drainage Areas, and Surficial Soil Medium Groups that are located in the Section 36.

Section 36 Balance of Areas Sites. Section 36 BOA is a subgroup within the Undifferentiated Medium Group and includes four sites located in the southern portion of Section 36. The sites do not have unique site-type characteristics or contamination patterns. COCs in the soil exceeding human health SEC include OCPs and chloroacetic acid to a depth of 10 feet. These sites are also characterized by the potential presence of agent and agent-filled OE.

Chemical Sewers Sites. Sections of both the North Plants and South Plants chemical sewer lines located within Section 36 will be remediated under this project. Three sites are part of the chemical sewer system that served the manufacturing areas in the South Plants and North Plants. Release of contaminants was caused by spillage or leakage from

broken pipes or faulty joints and manholes in the sewer lines. The majority of sewer piping is vitrified clay, although some sections are steel or cast-iron pipe.

The COCs present that exceed the human health criteria include OCPs, chloroacetic acid, VOCs, and DBCP. Portions of the sewer lines may be characterized by the potential presence of agent. The depth of the sewer lines ranges from approximately 6 to 8 feet.

Ditches/Drainage Areas Sites. Ditches/drainage area sites have varied disposal and release histories. They were primarily used to convey surface water from other sites so they only sporadically contain water.

The primary COCs are OCPs. Detections of OCPs, as well as detections of arsenic and mercury, are below the certified reporting limits (CRL) in the majority of the samples collected, and so only pose potential risk to biota. The majority of contaminants were detected in the zero- to one-foot depth interval.

Surficial Soil. Surficial soil sites contain soil that was primarily contaminated by windblown dust and lead from firing range activities. These sites pose potential risk to biota and include isolated HHE areas. Surficial soils sites include P1 soil areas selected by BAS for residual biota risk remediation. There is a relatively small area in the very southwest corner of Section 36 that will be remediated under this project. Sampling was typically limited to the uppermost 2 inches of soil. Results indicate the primary COCs to be OCPs.

Project Sites/History:

Section 36 Balance of Areas Sites

- CSA-1b – Undifferentiated – Section 36 Balance – Complex Disposal Area South.
- CSA-2a – Undifferentiated – Section 36 Balance – Munitions Testing Area.
- CSA-4 – Undifferentiated – Section 36 Balance – contaminated fill.
- NCSA-1g – Surficial Soils – General Surface Contamination – contaminated fill.
- NCSA-1b – Lime Basins – Settling Basins – surface disposal area.

Chemical Sewers Sites

- CSA-3 – Sewer Systems – Chemical/Basins A to F – used as waste lines.

- NCSA-6a – Sewer Systems – South Plants/Basin F (Chemical) – used as waste lines. Only portions of this site in Section 36 are to be remediated under this project.

- NCSA-6b – Sewer Systems – North Plants/Basin F (Chemical) – used as waste lines.

Ditches/Drainage Areas Sites

- CSA-2b – Ditches/Drainage – Section 36 Metal Debris – used as a storage area.

- NCSA-1d – Ditches/Drainage – Runoff Storage – used as a surface impoundment/lagoon.

- NCSA-1f – Buried Sediment/Ditches – South Plants Ditches – used as a surface area disposal.

- CSA-1d – Sanitary Landfills/Incinerator 834 – used for burning and burial of contaminated and uncontaminated waste. Located in Section 36. Remaining portion not remediated under the Existing (Sanitary) Landfills Remediation Project, the portion that lay under the high-density polyethylene dewatering line.

Project Description:

a) Close or protect monitoring wells, as required.

b) Excavate contaminated soil, OE debris, and associated sewer line debris from the sites within Section 36, as identified above. Set aside clean overburden from the Chemical Sewer excavation sites for replacement after backfilling.

c) Screen potentially agent-contaminated excavated soil for agent and treat any soil exceeding Army regulatory criteria prior to landfilling at the On-Post HWL.

d) Transport any explosive-containing munitions to an approved site and detonate, if unstable, or detonate in place.

e) Dispose of excavated HHE soil and OE debris into the On-Post HWL. Consolidate excavated biota soil into Basin A.

f) Perform a geophysical survey in areas that will not be maintained by the Army, and characterize geophysical targets.

g) Perform composite sampling of the site to confirm removal of contaminated soil. Excavate and dispose of soil with residual biota risk.

h) Replace excavated overburden for HHE and OE debris areas and grade as necessary to provide adequate drainage and to control erosion; interim revegetate the disturbed areas.

i) Provide gradefill and grade as necessary to match the final contours of adjacent projects and the site drainage plan.

j) Perform composite sampling of the site to confirm that no residual biota risk is present at final grades.

k) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: This project may be dependent upon the availability of a soils agent treatment facility if the screening process to determine actual quantities of agent-contaminated materials indicates a need for this facility.

6.3 Secondary Basins Soil Remediation

Site Description: This project includes portions of the Secondary Basins Medium Group as well as Sand Creek Lateral and Surficial Soil Medium Group/Subgroup sites that are located in Section 26 and west of Basin C.

Secondary Basins Sites. As presented in the DAA, this group consists of five sites: four inactive liquid disposal basins (Basins B, C, D, and E) and the Deep Well Disposal Facility.

This project will address remediation for two sites within the group: Basin C and Basin D. The other sites within the group will either be addressed by other remediation projects or do not contain soil that exceeds remediation criteria.

Basins C and D contain soil contaminated by infiltrating wastewater that flowed through ditches from Basin A. They are also expected to contain slightly elevated concentrations of salts because they were used to store wastewater with high chloride contents. The habitat contains weedy forbs and areas of disturbed vegetation.

The primary contaminants are OCPs. The human health SEC is exceeded by maximum concentrations of OCPs at depths ranging from 0 to 10 feet below ground surface. Fewer than two percent of the samples for any OCP exceed the human health SEC. Soil in the zero- to one-foot depth interval potentially poses risks to biota.

Surficial Soil Sites. A relatively small area in the southeastern portion of Basin D will be remediated under this project. Surficial soil sites contain soil that was essentially contaminated by windblown dust and pose potential risks to biota and surficial

contamination. Sampling was typically limited to the uppermost two inches of soil. The COCs are primarily OCPs.

Sand Creek Lateral Site. The Sand Creek Lateral is a subgroup within the Buried Sediments/Ditches Medium Group. The Basin B to Basin D ditch will be remediated under this project. Primary contaminants are OCPs found in the upper one foot of soil.

Project Sites/History:

Secondary Basins Sites

- NCSA-2a – Secondary Basins-Basin C – used as a surface disposal area.

- NCSA-2b – Secondary Basins –Basin D – used as a surface disposal area.

Surficial Soil Sites

- No SAR sites are associated with this project.

Sand Creek Lateral Site

- NCSA-2d – Ditches/Drainage-B to D/B – used as a surface disposal area.

- NCSA-4b – Secondary Basins – Basin F Exterior – surface contamination.

- NCSA-5c – Buried Sediments/Ditches – Sand Creek Lateral – surface disposal area.

Project Description:

a) Close or protect monitoring wells, as required.

b) Excavate contaminated soil from the Secondary Basin, Sand Creek Lateral, and Surficial Soil medium groups in the Section 26 project area. Dispose of excavated HHE soil into the On-Post HWL. Consolidate excavated biota exceedance soil into Basin A.

c) Backfill with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion.

d) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: There are no dependent projects for the Secondary Basins Soil Remediation project.

6.4 Complex (Army) Disposal Trenches Remediation - Cover

Site Description: The Complex (Army) Trenches is a subgroup within the Disposal Trenches Medium Group. This site contains soil and debris disposed of in a series of trenches. The trenches were investigated during the RI and were found to contain trash and manufacturing/military waste including scrap metal, bricks, concrete and asphalt rubble, empty and full glass bottle, white phosphorous, containerized wastes, burned incendiary device casings, agent, and agent-filled OE.

The trench areas are considered principal threat areas down to a depth of approximately 14 feet. In addition, contaminated soil outside of the anomalous trench areas contains chlordane exceeding human health SEC, generally within the zero- to one-foot depth interval. A large quantity of soil outside the trench areas contains COCs and may pose potential risk to biota. The site is located in an area of disturbed vegetation types.

Project Site/History:

- CSA-1c – Disposal Trenches/Complex Trenches – used as a disposal area.

Project Description: This is implementation of Phase II of this project (Phase I – Slurry Walls was conducted as an early start project) and includes:

a) Close the Complex (Army) Disposal Trenches by placing a RCRA-Equivalent Cap, including placement of a minimum 16-inch layer of crushed concrete as a human/biota barrier and sufficient soil to establish and support vegetation, over the Complex Trenches to the slurry wall.

b) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: This project is dependent upon the Shell/Complex Trenches Slurry Walls, an early start project, the RCRA cap equivalency study, and the Basin A Consolidation and Remediation design.

6.5 Shell Disposal Trenches Remediation - Cover

Site Description: This project addresses the Shell Trenches, which are a subgroup within the Disposal Trenches Medium Group. This site contains approximately 18 trenches that were filled with a variety of solid and liquid wastes from Shell production facilities. Wastes were buried both in bulk form and in drums from 1952 through 1966. Due to the presence of high contamination levels, containerized waste, and historical evidence as a source of groundwater contamination, the entire site is considered a PT.

The historical contamination has been contained as part of the Shell Trenches IRA. A vertical barrier was installed around the site to reduce the migration of contaminated groundwater away from the site, and a soil cover was placed over the site to reduce rainwater infiltration through the contaminated area. The soil cover is approximately three feet thick and has been revegetated with native grasses. However, the vegetation types and the maintenance activities conducted at the site are designed to discourage burrowing animals from using the area for habitat.

The disposal trenches themselves contain elevated levels of OCPs, HCCPD, and DBCP, which are encountered to a depth of ten feet. In addition to the COCs identified in the trenches, numerous nontarget compounds, which are intermediates and byproducts from the manufacturing of pesticides, are identified at concentrations as high as 40,000 ppm. Army agent-related compounds were also detected in soil samples and from nearby monitoring wells.

Project Site/History:

- CSA-1a – Disposal Trenches-Shell Trenches – used as a disposal area.
- CSA-1b – Undifferentiated – Section 36 Balance – Complex Disposal Area South.
- CSA-4 – Undifferentiated – Section 36 Balance – surface contamination.

Project Description: This is implementation Phase II of this project (Phase I – Slurry Walls was conducted as an early start project) and includes:

a) Close the Shell Disposal Trenches by placing a RCRA-Equivalent Cap, including placement of a minimum 16-inch layer of crushed concrete as a human/biota barrier and soil to establish and support vegetation, and a moisture monitoring system (not required by the ROD) to aide in assessment of RCRA-Equivalent Cap performance.

b) Construct 2-ft-thick soil cover.

c) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: This project is dependent upon the Shell/Complex Trenches Slurry Wall, an early start project, and the RCRA-Equivalent Cap equivalency study.

6.6 North Plants Soil Remediation - Cover

Site Description: This project includes the North Plants Subgroup of the Agent Storage Medium Group and portions of the Chemical Sewers Medium Group located in the North Plants area.

Project Sites/History:

There are no SAR sites in this implementation project (see North Plants Structure Demolition and Removal).

Project Description:

The North Plants Soil Remediation Project ESD was approved in January 2009 resulting in the deletion of the ROD requirement of a soil cover and elimination of the remaining remedy requirement for the North Plants. All remedy requirements identified in the ROD are either complete or transferred to other projects or, in the case of the soil cover, eliminated. No further design documents will be prepared and therefore no CCR is required. As a result, no further work is required under the North Plants Soil Remediation Project.

6.7 Section 35 Soil Remediation

Site Description: The Section 35 Soil Remediation project includes Secondary Basins Medium Group site Basin B and portions of the Chemical Sewers, Sand Creek Lateral, Ditches/Drainage Areas, and Surficial Soil Medium Groups/Subgroups that are located in Section 35.

Secondary Basins Site. The only Secondary Basins Medium Group site remediation under this project is Basin B, which contains soil contaminated by infiltrating wastewater that flowed through ditches from Basin A.

Although the majority of contamination potentially poses risks to biota only, COCs detected in the soil above the human health criteria include OCPs to a depth of approximately one foot.

Chemical Sewers Site. The portion of the former South Plants Chemical Sewer, located within Sections 35 and 26, will no longer be remediated under this project in accordance with an ESD approved by the Regulatory Agencies in Fiscal Year (FY) 00. This site was part of the chemical sewer system that served the South Plants manufacturing areas and transported waste from the South Plants to Basin F. The Program Management Contractor (PMC) performed site sampling that confirmed that no contamination exists along the former sewer that the Army removed in 1982. The Regulatory Agencies concurred with the sampling results and an ESD that eliminated the requirement to further remediate this site.

Sand Creek Lateral Sites. The Sand Creek Lateral is a subgroup within the Buried Sediments/Ditches Medium Group and includes segments of the Sand Creek Lateral that transported runoff from the SPCPA during storm events and snowmelt, and of drainage ditches used to transport water to and from the Secondary Basins and to drain the South

Plants and North Plants process areas. The habitat varies from weedy forbs to native grasses.

Organochlorine pesticides are the primary human health and biota COCs present at these sites. Portions of these sites contain soils that pose potential risks to biota in some samples. Human health COCs extend to a depth of approximately five feet, with the highest contaminant concentrations detected in the upper one foot of the soil profile.

Ditches/Drainage Areas Sites. Ditches/Drainage Area sites have varied disposal and release histories. They were primarily used to convey surface water away from other sites so they only sporadically contained water.

The primary COCs are OCPs. Detections of OCPs, as well as detections of arsenic and mercury are below the CRLs in the majority of the samples collected, and so only pose potential risk to biota. The majority of contaminants were detected in the zero- to one-foot depth interval.

Surficial Soil. Surficial soil sites contain soil that was essentially contaminated by windblown dust and pose potential risks to biota. Surficial soil sites include P1 soil areas selected by the BAS for residual biota risk remediation. Areas in the northeastern and southeastern corner of Section 35 will be remediated under this project.

Sampling was typically limited to the uppermost two inches of soils. Results indicate the primary COCs to be OCPs.

Project Sites/History:

Secondary Basins Site

- NCSA-5a – Secondary Basins – Basin B – used as a surface disposal area.

Chemical Sewers Site

- NCSA-6a – Sewer Systems-South Plants/Basins F (Chemical) – used as waste lines. Removed in 1982 along with surrounding soil.

Sand Creek Lateral Sites

- NCSA-5b – Buried Sediments/Ditches – A, B, C, D Ditches – surface disposal area.

- NCSA-5c – Buried Sediments/Ditches – Sand Creek Lateral – surface disposal area.

Ditches/Drainage Areas Sites

- NCSA-1c – Buried Sediment/Ditches – North Plants Ditch – surface disposal area.

- NCSA-5d – Ditches/Drainage – Surface Canal/Basin A – surface disposal area.

Surficial Soil – No SAR sites are associated with this project.

Project Description:

a) Close or protect monitoring wells, as required.

b) Excavate contaminated soil from the Secondary Basin, Sand Creek Lateral, Ditches, and Surficial Soil Medium Groups in Section 35.

c) Dispose of excavated HHE soil into the On-Post HWL. Consolidate excavated biota exceedance soil into Basin A.

d) Backfill with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion.

e) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: There are no dependent projects for the Section 35 Soil Remediation project.

6.8 North Plants Structure Demolition and Removal

Site Description: The North Plants Structure Demolition and Removal project encompasses a wide variety of structural types and materials located in Section 25 including all aboveground structures, buildings, foundations, basements, tanks (including underground storage tanks), process and non-process equipment (including boneyards), aboveground chemical and non-chemical pipelines, ACM, equipment and materials contaminated with PCBs, and other man-made objects placed at RMA. The structures have been divided into two groups identified as AH Structures and OCH Structures. Also included with structure demolition is soil remediation of the Agent Storage Medium/North Plans Subgroup and portions of the Sewer Systems Medium/Chemical Sewers Subgroup located in the North Plants area.

The North Plants Subgroup is composed of sites potentially containing agent based on historical use or based on the presence of agent breakdown products. In addition, these sites contain isolated HHE in soil to a depth of approximately one foot and contaminants at concentrations that potentially pose a risk to biota. Arsenic is the only contaminant that exceeds the human health SEC at these sites.

Chemical Sewers Site. The portion of the North Plants chemical sewer line that is located in the North Plants complex is included in this project. This sewer served the manufacturing areas in the North Plants. Release of contaminants was caused by spillage

or leakage from broken pipes or faulty joints and manholes in the sewer lines. The majority of the sewer piping is vitrified clay, although some sections are steel or cast-iron pipe.

The COCs present that may exceed the human health SEC include OCPs, chloroacetic acid, and arsenic. Portions of the sewer lines may be characterized by the potential presence of agent. The average depth of the sewer line is approximately eight to nine feet.

Project Sites/History: Structures

- NFU-A – Structures – No Future Use, Agent-contaminated buildings.

- NFU-MNP – Structures – No Future Use, Manufacturing, Nonprocess–contaminated buildings.

- NFU-MP – Structures – No Future Use, Manufacturing, Process-contaminated buildings.

Project Sites/History: Soils

- NPSA-3 – Agent Testing – Sarin (GB) Manufacturing Area – used as GB Manufacturing Area.

- NPSA-5 – Agent Testing – Special Weapons Plant – used as a Special Weapons Plant.

- NPSA-6 – Agent Testing Underground Spill Area – underground Spill Area.

- Soil surrounding and beneath:
  Building 1601 (GB and Bomb Plant)
  Building 1606 (Cluster Assembly Building)
  Building 1607 (Warehouse)

- NPSA-8c – Surface Drainage Area – contaminated sediments.

- NPSA-9f – Investigated Area – Arsenic Detection – spill site area.

Chemical Sewer Sites

- NPSA-1 – Sewer Systems – Chemical Sewers – used as waste lines.

Project Description:

a) Demolish all North Plants AH and OCH Group structures in Sections 25 including removal of all aboveground piping, utilities, and selected foundations. Asbestos-containing material and PCBs encountered will be disposed of in the On-Post HWL.

b) Destroy, document and dispose of specialized equipment in accordance with the Detailed Destruction Plan under the Chemical Weapons Convention Treaty.

c) Screen potentially agent-contaminated building debris and excavated soil by sampling for agent and treat any material exceeding Army regulatory criteria.

d) Remove AH Group structural debris and equipment and dispose of in the On-Post HWL. Consolidate OCH Medium Group structural debris into Basin A.

e) In most cases, floor slabs and foundations for the OCH Structures will be left behind after demolition (unless contaminated soil is to be subsequently excavated from beneath the slabs or foundations). Floor slabs will be cracked or broken to reduce ponding of water.

f) Backfill foundation and basement excavations with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion.

g) Close or protect monitoring wells, as required.

h) Excavate North Plants and Chemical Sewer Medium Group contaminated soil and associated sewer line debris in Section 25 up to a depth of 10 feet. Screen potentially agent-contaminated excavated soil by sampling for agent and treat any soil exceeding Army regulatory criteria.

i) Dispose of approximately 17,000 bcy of excavated HHE soil and debris into the On-Post HWL.

j) Backfill with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion.

k) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: This project may be dependent upon the availability of a structure agent treatment and soil agent treatment facilities if the screening process to determine actual quantities of agent-contaminated materials indicates a need for one or both facilities.

7.0 PHASE IV – BASIN F/LIME BASINS

This final phase of the RMA ROD remedy contains four projects. This section will provide site descriptions, project sites/history, project descriptions, and related project discussions.

7.1 Basin F Wastepile Remediation

Site Description: This project consists of the Basin F Wastepile, a subgroup of the Basin F Medium Group, which was formed as a result of the Basin F IRA. The IRA included incineration of Basin F liquids in the Submerged Quench Incinerator, excavation of Basin F soil from below the original asphalt liner, and the final grading, capping, and revegetation of the excavated area.

The Basin F Wastepile consists of excavated sediment and soil that are contaminated with organic compounds, arsenic, and metals at concentrations exceeding human health and principal threat criteria. The total concentrations of organics are inferred to be in the order of 1,000 to 10,000 ppm. This material also contains elevated levels of salts due to the high chloride content in the wastewater stored in the former Basin F.

Project Site/History:

- FWASTEPILE – Basin F Wastepile – contaminated soil pile.

Project Description:

a) Perform necessary treatability studies during design to select the best odor control technology.

b) Excavate Basin F Wastepile soil and debris in Section 26, including the bottom liners. Prior to excavation of the wastepile, set aside clean overburden from the existing cover. This material will subsequently be used to either backfill the excavated area (along with clean soil borrowed from other RMA areas) to achieve desired grade or used for odor control purposes. Soil exceeding the EPA's paint filter test will be dried by blending with an absorbent in an enclosed structure. Volatile and semivolatile organic compounds released during the drying process will be recovered and treated.

c) Dispose of the wastepile materials in a dedicated cell at the ELF.

d) Control vapors and odors at every stage of the remediation using any necessary measures.

e) Backfill with the stockpiled clean overburden and clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion.

f) Re-establish vegetation over the borrow areas.

Dependent Projects: The Basin F PT Soil project is partially dependent upon this project along with the Basin F and Basin F Exterior Remediation project.

7.2 Former Basin F Principle Threat Soil Remediation

Site Description: This project addresses principal threat soil within the Former Basin F, which is a subgroup of the Basin F Medium Group. This site consists of a portion of the former basin area. Basin F received wastewater through the chemical sewer system, and the site is expected to contain elevated levels of salts due to the high chloride content in the wastewater. The Basin F IRA was conducted in 1988-1989, to remove Basin F liquid and sludge, the asphalt liner of the basin, and highly contaminated soil from beneath the liner. The soil, sludge, and liner material were placed in the Basin F Wastepile during the IRA. The thick soil cover (average thickness of 3 feet) and up to ten feet of gradefill was placed over the former Basin F following construction of the wastepile. The soil cover was revegetated at the conclusion of the IRA.

The Former Basin F contains soil contaminated by wastewater that infiltrated during Basin F operations. The human health criteria are exceeded by average concentrations of OCPs and maximum concentrations of CLC_2A. Concentrations of aldrin and dieldrin also exceed the principal threat criteria in specific areas. The human health COCs were found from 0 to 10 feet below ground surface, but were primarily detected in the 0- to 5-foot depth interval. However, residual contamination exists from below 10 feet to the water table (approximately 40 feet).

Project Site/History:

- NCSA-3 – Secondary Basins – Former Basin F – surface impoundment/lagoon.

Project Description:

a) Perform necessary field investigations and pre-design studies prior to design to select the best odor control technology.

b) Close or protect wells, as required.

c) Excavate and dispose of designated Basin F PT soil in the ELF.

d) Excavate the additional volume of HHE soil Identified by the Regulatory Agencies in the October 2005 ROD Amendment to the Basin F/Lime Basin Projects and dispose of the ELF.

e) Backfill with soil from a designated borrow area or Basin F Exterior.

f) Excavate and relocate Basin F Key Cut soil as gradefill within the RCRA-Equivalent cover boundary to reduce the overall quantity of gradefill required for RCRA-Equivalent cover construction.

Dependent Projects: The Basin F and Basin F Exterior Remediation are dependent upon this project.

7.3 Basin F and Basin F Exterior Remediation

Site Description: This project includes Former Basin F and Basin F Exterior. Other sites within the Sand Creek Lateral, Secondary Basins, and Surficial Soil Medium Groups/Subgroups that are located in the project area will also be remediated under this project. The Chemical Sewers site has been transferred to the Section 35 Soil Remediation Project.

Sand Creek Lateral Site Description. The Sand Creek Lateral, a subgroup within the Buried Sediments/Ditches Medium Group, is an active drainage ditch that enters RMA at the southern boundary, travels north through Sections 2, 26, and 35, and joins First Creek in Section 25. It serves as part of the RMA stormwater management system. Flows are intermittent and include runoff from the adjacent areas during storm events and snowmelt. The habitat varies from weedy forbs to native grasses.

The primary COCs at this site are OCPs that exceed human health SEC in surficial soils.

Secondary Basins Site Description. The Deep Well Site (NCSA-4a) is a remediation site within the Secondary Basins Medium Group. It contains isolated contamination that is probably the result of spills or leaks that occurred during operation of the well in the early 1960s. The habitat contains weedy forbs and areas of disturbed vegetation.

COC detected in the soil above the human health SEC include OCPs to depth ranging from 0 to 10 feet; the majority of contamination potentially poses risks to biota only.

Surficial Soil Site Description. The Basin F Exterior is a large site adjacent to Former Basin F and is part of the Surficial Soil Medium Group. This site contains soil that was essentially contaminated by windblown dust and primarily poses potential risks to biota and surficial contamination. However, this site contains several locations where OCPs were detected above the human health SEC in the top 1-foot of soil.

Project Site/History:

Sand Creek Lateral Site Description

- NCSA-5c – Buried Sediment/Ditches – Sand Creek Lateral – surface disposal area.

Secondary Basins Site Description

- NCSA-4a – Secondary Basins-Deep Well – disposal pit/dry well.

Surficial Soil Site Description

- NCSA-4b – Secondary Basins – Basin F Exterior – surface contamination.

Chemical Sewers Site

- NCSA-6a – Chemical Sewer Sites – sewers/surface contamination.

Project Description:

a) Close or protect monitoring wells, as required.

b) Excavate contaminated soil from Sand Creek Lateral, Surficial Soil, and Secondary Basins Medium Groups in Sections 23, 25, and 26.

c) Dispose of principal threat and HHE soil into the On-Post HWL.

d) Consolidate biota exceedance surface soil into the site of former Basin F and Basin A.

e) Grout chemical sewer pipe.

f) Contain the consolidated biota exceedance, and the remaining HHE soil in Basin F, and the chemical sewer pipe and sewer related HHE soil, by placing a RCRA-equivalent cap, which includes a burrowing animal barrier (biota barrier), and soil to establish and support vegetation over the former Basin F including the site of the former wastepile.

g) Backfill with clean soil borrowed from other RMA areas and grade as necessary to provide adequate drainage and to control erosion over the excavation areas outside of Basin F.

h) Re-establish vegetation over the disturbed remediation and borrow areas.

Dependent Projects: There are no projects dependent upon the Basin F and Basin F Exterior Remediation project.

7.4 Section 36 Lime Basins Soil Remediation

Site Description: This project addresses the Section 36 Lime Basins, which are a subgroup within the Lime Basins Medium Group. The Lime Basins subgroup contains one site (Site NCSA-1b), which was used for the neutralization of process wastes related to agent production. The IRA activities at this site involved placing a soil cover over the entire site. The boundary between the Basin A Consolidation Area and the Section 36 Lime Basins Project was relocated to a topographic feature (i.e., top of berm), which is the operational boundary between the two projects.

The basins are characterized by soil/sludge mixtures to a thickness of ten feet with high pH levels and the potential presence of agent. Contaminants of concern in the soil/sludge exceeding human health criteria include primarily OCPs, but low-level inorganic contamination is also present.

Project Site/History:

- NCSA-1b – Lime Basins – Settling Basins – surface disposal area.

Project Description:

a) Close or protect monitoring wells, as required.

b) Install multiple groundwater extraction wells for dewatering of the site. Treat extracted groundwater at the Basin A Neck Treatment System. Treated groundwater will be recharged in the Basin A Neck recharge trenches.

c) Install a groundwater barrier wall around the Basins using deep soil mixing construction methods. The barrier wall will be keyed into competent bedrock. Conduct agent screening during barrier wall installation.

d) Place gradefill over the Lime Basins area in Section 36 and grade as necessary to provide adequate drainage.

e) Construct a RCRA-Equivalent Cover, including final vegetation and Engineering Controls over the entire Lime Basin site.

Dependent Projects: There are no dependent projects for the Section 36 Lime Basin Soil Remediation project.

8.0 SITE-WIDE PROGRAMS

The site-wide programs consist of studies, monitoring, and agent treatment and borrow operations. This section will provide a brief narrative of the program and any related projects.

8.1 RCRA Cap Equivalency

The RCRA-Equivalent Cap effort is to assess alternative cost-effective cap designs compared to the typical Subtitle C cap design(s) recommended by EPA guidance. The primary basis for evaluating alternative designs is because of unique climatological characteristics (i.e., high evapotranspiration rates versus precipitation) in the Denver area. These characteristics significantly limit natural deep percolation rates through well-drained vegetated areas. Thus, the focus of the effort is to develop alternative designs that are cost-effective and rely primarily on the natural materials in the vegetative cover and evapotranspiration to limit deep percolation.

The effort to demonstrate equivalence is being conducted in a phased manner. The first phase involves hydrologic modeling to evaluate whether alternative designs can provide adequately low deep percolation based on theoretical considerations. Collection of field data to develop model parameters is also being conducted to provide some additional assurance as to the representativeness of model predications.

If modeling results indicate that RCRA equivalence can likely be achieved for alternative designs, and then a field program is envisioned to demonstrate that the model results are reliable. The details of the field program will be developed after the modeling work has been completed and a decision to proceed on the field program has been made.

Six projects are dependent upon this study: Basin F and Basin F Exterior Remediation, Complex (Army) Disposal Trenches Remediation, Shell Disposal Trenches Remediation, South Plants BOA and Central Processing Areas Soil Remediation – Phase II, Lime Basins, and Basin A Consolidation and Remediation.

8.2 Borrow Area Operations

The RMA remedy, as described in the ROD and based upon the design assumptions in the DAA, will require approximately 12 million cubic yards of borrow materials to backfill excavations, build structural fills, establish cover grades, and construct liner and cover components to complete the various remedial actions. The Army has completed an initial borrow plan that identifies those areas within the RMA boundary where borrow operations would be appropriate, estimates the material types available at the sources, estimates sizes of areas impacted by borrow excavations, allocates and manages BA operations, and provides operational alternatives and options for the BA. The Army will update this plan on an annual basis throughout the execution of the remedy projects. Borrow operations will impact nearly all the implementation projects.

Note: The BAS has identified potential biota residual risk areas and classified them as containing either P1 or Terrestrial Residual Ecological Risk (TRER) soils. These soils are located within the upper one foot of the soil profile in these areas. The BA boundary

selection was focused on inclusion of areas containing P1 soils. TRER soils will be excavated and used as borrow if necessary. The P1 borrow soils will not be used as top soil or liner soil, nor will it be placed within the upper two feet of backfilled excavations or cap/cover system. Development of BA 10 will screen for agent (Reference: Design Refinement of Excavation Boundaries for Surficial Soil and Reduction of Residual Biota Risk, Section 4.0, Appendix C). The BAS, through subsequent risk evaluation, identified additional soil with residual ecological risk. This soil, termed TRER soil, was identified for remediation through either soil tilling or removal. Remediation of the TRER soil areas is also documented in the annual borrow plan updates.

8.3 Structures and Soil Agent Treatment Facilities

The ROD states that all AH Structures will be monitored for the presence of Army chemical agents during dismantling operations. Building debris or soils that are determined to contain agent will be treated by caustic washing as necessary prior to disposal. The agent treatment facilities will potentially support four main projects: South Plants Structures Demolition, SPCPA Soil Remediation, North Plants Structures Demolition, and North Plants Soil Remediation. The design efforts of these projects will provide a process to screen and determine actual quantities of agent-contaminated materials and provide for their segregation and special handling. This information will allow for a more effective design of agent treatment facilities, if necessary, at a later date. As such, agent treatment facilities have been removed from the RDIS as site-wide programs. However, placeholders will be preserved within the RDIS in the event the facilities are required (Reference: Section 4, Appendix C).

8.4 Site-Wide Biota Monitoring – BAS

The BAS was established as a result of the "Agreement for a Conceptual Remedy for the Cleanup of the Rocky Mountain Arsenal" to permit the further investigation of other identified areas of potential residual risk outside the areas set for remediation. The BAS will focus on the planning and conduct of both the USFWS biomonitoring programs and the Supplemental Field Study/risk assessment process and will provide interpretation of results and recommendations to the Parties' decision makers. The BAS will serve as a technical resource to the Parties' decision makers by using technical expertise in analyzing, and potentially collecting data sufficient to support design refinement for surficial soil areas and aquatic resources in order to break unacceptable exposure pathways in consideration of minimizing habitat disturbance. Further, it will assess through monitoring, the efficacy of remedies on breaking unacceptable exposure pathways to biota.

8.5 Site-Wide Air Monitoring – Air Pathways Analysis

The Air Pathways Analysis (APA) program is designed to protect the health of all on-site construction and management personnel, RMA visitors, and nearby communities. It is also designed to minimize nuisance odors. It is comprised of six individual tasks: Air Criteria Development; Tier I Emission Measurements; Integrated Comprehensive APA Model Packaging; Predictive Emission Model Development; Air Monitoring during Remediation; and Development of Remediation and Waste Handling Scenarios. All six tasks are basically complete, although refinements to the air pathway modeling scenarios and emissions controls will continue throughout the remedy. Specific protocols and reporting mechanisms are identified in the site-wide air and odor plans, if certain air, odor or dust criteria are met. Site-wide ambient air and odor monitoring will be performed at the RMA fenceline, at on-site locations, and in the community to verify that impacts from remediation activities are below Air Criteria

8.6 Contingent Soil Volume

Contingent Soil Volumes (CSV) will be identified based on visual field observations and analytical results of confirmatory samples. Fourteen samples from the North Plants, Toxic Storage Yards, Lake Sediments, Sand Creek Lateral, and Burial Trenches and up to 1,000 additional confirmatory samples may be used to identify the CSV requiring excavation. A total remedy CSV of up to 150,000 bcy may be identified for excavation and landfill.

Identification, sampling, and excavation of CSV will be performed as part of each project. However, for purposes of costing and incorporation of all ROD elements, CSV are identified as a separate project in the RDIS.

8.7 Site-Wide Plume Monitoring

Site-wide monitoring will be conducted to evaluate the effectiveness of the remedy and verify that the remedy is protective of human health and the environment with regard to groundwater and surface water. Site-wide monitoring also is intended to measure changing conditions during and after remediation and provide data for the CERCLA 5-Year Site Reviews. Site-wide monitoring is divided into three categories: Groundwater Monitoring, Surface Water Monitoring, and Surface Water Management. Each of these categories will be discussed in more detail in subsequent sections.

Groundwater Monitoring

Groundwater monitoring at RMA includes many components with the purposes of evaluating the effectiveness of the remedy, measuring changing conditions during and after remediation, and providing data for the CERCLA 5-Year Site Reviews. These groundwater monitoring components include groundwater containment system monitoring, project-specific monitoring, confined flow system monitoring, Off-Post CSRG exceedance monitoring, site-wide monitoring, and HWL monitoring. Each of these groundwater-monitoring components may include different monitoring categories. For example, groundwater containment system monitoring supports system performance validation and includes operational, conformance, and compliance monitoring categories. Monitoring reports for the groundwater containment systems are submitted to the Regulatory Agencies. Project-specific monitoring conducted at specific sites such as soil cover areas and closure/post closure areas include water level and water-quality components. Confined flow system (CFS) monitoring is conducted to determine if groundwater contamination is migrating into the CFS. The CFS underlies the unconfined flow system, which contains the majority of the groundwater contamination. Off-post CSRG exceedance monitoring is intended to track the changes in off-post plumes exceeding CRSGs and is conducted twice in each five-year period. Site-wide monitoring evaluates changes in the hydrology and the effectiveness of the site-wide remedy and is conducted annually.

Some of the more rigorous groundwater monitoring is associated with the HWL. Groundwater monitoring is required prior to waste placement, during operations, and during closure and post closure of HWL. The HWL and ELF groundwater-monitoring project includes quarterly monitoring for up to 39 monitoring wells surrounding the HWL and proposed ELF site. Results from the sampling events are submitted to the Rocky Mountain Arsenal Environment Database (RMAED) and summarized in monitoring reports that are approved by the Regulatory Agencies.

Surface Water Monitoring

The implementation of the surface water-monitoring program serves two objectives: the off-post surface water monitoring is performed in accordance with the Off-Post ROD to evaluate the effect of groundwater treatment on surface water quality, while the on-post objective is the protection of aquatic ecosystems. Surface water monitoring includes the collection of water quality samples and water stage measurements on all lakes and major inflows and outflows from the RMA. Samples are collected at various sites annually or semiannually and after storm events. Upon review of all quality control and quality assurance data, the data is placed in the RMAED.

Surface Water Management

Planning for the utilization of surface water at RMA is conducted each year. A Surface Water Management Plan is developed which provides an assessment of water needs at RMA and establishes priorities for the use of this water. The implementation of the Surface Water Management Plan is monitored using continuous water-stage recorders on lakes and streams at the RMA that transmit water-level data every four hours. These data are used in conjunction with daily well-pumpage rates to determine where surface water supplies are to be stored and to meet requirements of water rights accounting with the State Engineers Office.

8.8 Confined Flow System Monitoring

As part of site-wide plume monitoring, deep (confined aquifer) wells are monitored in the South Plants, Basin A, and Basin F areas. Initially, wells are expected to be monitored twice in five years for water quality, and annually for water levels. However, the frequency of monitoring may be increased if the data indicates that conditions are changing more rapidly as a result of implementation of the remedy. Specific wells and analytes are identified in the approved Long-Term Monitoring Plan.

8.9 Medical Monitoring Program

The ROD included a provision for a medical monitoring program for communities surrounding the RMA for the duration of the soil cleanup. This was incorporated due to citizen concerns that potentially hazardous levels of airborne chemicals could be released from contaminated soil during the remediation. The Colorado Department of Public Health and Environment (CDPHE) have taken the lead role in facilitating the medical monitoring program development.

The ROD also called for the formation of a Medical Monitoring Advisory Group (MMAG), a diverse panel of community members, physicians, nurses, scientists, and state and local health officials, and representatives from EPA, Army, Shell, and the USFWS. The MMAG is responsible for using scientific and medical data and community input to prepare sound and responsive recommendations on program components.

The MMAG submitted twelve core recommendations to the CDPHE in October 1998 as the “Rocky Mountain Arsenal Medical Monitoring Program Recommendation Final Report.” All of the recommendations were accepted and are being implemented as the RMA Medical Monitoring Program. The program will continue through the duration of the environmental cleanup.

8.10 Traffic Management Plan

The purpose of the Traffic Management Plan is to coordinate traffic flow to accommodate RMA site activities. This plan addresses the conceptual layout for site traffic, the final layout, design factors, site access requirements, and haul roads. Several types of traffic will use RMA site roads during remediation. The road use philosophy of the RVO is to maximize site access to all users while maintaining safe construction practices.

Project waste haul, borrow haul, and construction traffic will be separated from public and administrative traffic. The PMC is responsible for road layout and organizing work activities and schedules to provide traffic separation. This plan provides a conceptual input to the phased approach of the site-wide remediation and addresses concerns and issues of the various entities at the site. The specifics of this plan provide guidance to the PMC for planning. The PMC changes to the Traffic Management Plan must be approved by the RVO prior to implementation.

All site roads including haul roads for waste material will be maintained and considered clean. Preventive measures, such as covered haul vehicles and decontamination and excavation practices, will be used to maintain non-contaminated roads. If an accidental spill occurs, all waste will be cleared from the road and removed. Traffic management will also maintain roadbeds, stormwater drainage systems, install, and maintain traffic controls, and designate safety standards during haul road use.

As site cleanup progresses, many roads in the outlying areas will not be needed for further operations. The RVO may then direct the PMC to remove those roads. At the direction of the RVO, the PMC will remove the identified road, use the excavated material where possible, and restore the former road area to blend with the natural topography. At RVO direction, the PMC may also convert all or portions of former haul roads into tram routes for USFWS use.

8.11 Geophysical Surveying

The purpose of the Geophysical Surveying is to minimize the risk of potential hazards from Munitions and Explosives of Concern (MEC) and underground anomalies during the remediation process. Geophysical Surveying will be done in areas designated by the RVO as potential MEC sites prior to the commencement of work in those areas.

8.12 UXO Disposal

An onsite UXO team has been assembled to provide emergency response to identify and manage anomalies that have the potential for being explosively energetic or containing recovered chemical warfare materials. The UXO manager is responsible for managing UXO subcontractors and UXO related geophysical activities in support of remediation efforts.

Additional support is available if needed from the Technical Escort Unit (TEU). The TEU is an Army unit based in Aberdeen, Maryland and specializes in the identification, handling, transportation, and emergency destruction of OE and UXO.

8.13 Biota Barrier

The Stapleton concrete project identifies and provides funds for the purchase of reclaimed concrete from the former Stapleton International Airport for the use as biota barrier materials for several remediation projects at RMA. The concrete will be reclaimed, processed, and stockpiled at Stapleton until required for cap construction. The concrete, which must be reclaimed from Stapleton redevelopment acreage, is a cost-effective purchase for RVO remediation due to short travel distance and the correct match of source quantities with required end use quantities. The project has developed standards for concrete of acceptable strength, density, gradation of concrete pieces, and purity of content to serve as biota barrier material. The project will also designate stockpile areas and methods of supplier delivery. The project is not a remediation activity in itself, but takes advantage of economies of scale, answers a current civic need, and provides a large quantity of material essential to remediation activities.

8.14 Permanent Revegetation/Irrigation/Mitigation Program

The ROD-required remedy components include reconditioning the surface soil and revegetation of areas disturbed during remediation with locally adapted perennial vegetation. The objective of this program is to design, schedule and implement a plan for efficient permanent revegetation of disturbed sites, as well as other areas of low quality habitat at RMA. Work will be conducted jointly by the USFWS and the PMC. The plan will be based upon the 1997 Habitat Restoration Plan and updates to the associated Terrestrial Revegetation Map. Soil amendments, site-wide water requirements, seeding, irrigation, erosion potential, prairie dog colony expansion and small mammal recolonization will be considered. The plan will determine a year-by-year schedule and be updated annually based upon current revegetation requirements.

8.15 Drummed Waste Handling (Plan Development Only)

This project includes an evaluation of a centralized versus decentralized drummed waste disposal handling facility. If a centralized facility is recommended, the location of the centralized facility will be identified. Also included will be a determination of how drummed waste will be managed, including, but not limited to; inventory and waste profile analysis, transportation requirements, storage requirements, liquids management, compatibility, evaluation of shredding empty versus full drums, verification that material will pass paint filter, work plans which include health and safety requirements, quality assurance and air monitoring plans, and coordination with HWL operations.

8.16 Site-Wide Well Abandonment

The Well Abandonment project is tasked with abandonment of wells within the Central Remediation Area (CRA) that will not be used in long-term groundwater monitoring. In the past, wells were abandoned each year based on the implementation projects scheduled for that year. To save costs for mobilization and oversight, a consolidated campaign to abandon all wells that will not be used in the CRA will be implemented. The second half of this site wide program was the development of a well network retention and closure program. On an annual basis, a listing of all remaining wells will be reviewed and all wells not needed for monitoring purposes will be included in a list of wells available for closure. Wells will be closed from this list based on available funding.

9.0 WATER TREATMENT/MONITORING

The water treatment and monitoring activities consist of operation and maintenance of existing treatment plants, deep well abandonment, and South Adams County water supply. This section will provide a brief narrative of the programs.

9.1 South Adams County Water Supply/Henderson Distribution

The Army and Shell are to provide $48.8 million to South Adams County Water and Sanitation District (SACWSD). The money is to be used for two projects. The first project is to acquire and deliver 4000 acre-feet of potable water as an additional water source for the residents served by SACWSD. To accomplish this, SACWSD, with the concurrence of the Army and Shell, hired an independent qualified agent (water resource expert) to research potential sources of water and negotiate the acquisition of 4000 acre-feet of Denver Water. Currently, SACWSD and Denver Water are obtaining storage reservoirs and conveyance systems as part of the water agreement signed in November 1998 by the SACWSD, Denver Water Board, U.S. Army, and the USFWS. If a complete water delivery system is not in place and operational by September 2004, the unused portion of the money and responsibility for acquiring a supplemental water supply reverts to the Army and Shell. The Army has completed all National Environmental Policy Act requirements. The second project is to complete and provide potable water to the residents within the DIMP plume footprint north of RMA, primarily in Henderson.

9.2 On-Post Water Supply

The Army and the USFWS will seek to enter into an agreement with the Denver Water Board to acquire an interim and long-term nonpotable water supply. The interim water, will service the RMA's remediation and revegetation needs. The permanent water deliveries will maintain lakes and wetlands on the National Wildlife Refuge in perpetuity.

9.3 Section 36 Bedrock Ridge Groundwater Plume Extraction System (Monitoring)

This item is the long-term operations and maintenance (O&M) of the Bedrock Ridge Groundwater Plume Extraction System. Long-term O&M will be performed under the Basin A Neck system (See Sections 4.8 and 9.6).

9.4 Confined Flow System Well Closures

Monitoring wells that penetrate the deep (confined) aquifer were evaluated to determine if they represent pathways for water from the overlying (unconfined) aquifer to migrate downward to the deep aquifer. Fifty-one wells are to be closed and sealed. No replacement wells are to be installed during this task.

9.5 Irondale Containment System

The Irondale System, located in Sections 33 and 28, consists of extraction and recharge wells and carbon adsorption for removal of organic contaminants. In addition, extraction systems located in Sections 3 and 4 remove contaminants from the rail classification yard and motor pool plumes. Contaminants for which CSRGs have been established in the ROD include TCE and DBCP. The Army and Shell will continue to operate the system for two years from the signing of the ROD, or until the railyard and motorpool plumes no longer require treatment at the Irondale system.

9.6 Basin A Neck System

The Basin A Neck System (BANS), located in Sections 35 and 26, consists of extraction wells and recharge trenches, a slurry wall, and carbon adsorption for removal of organics. Contaminants for which CSRGs have been established in the ROD include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds related to mustard agent and herbicides, organophosphorus compounds related to pesticides, organochlorine pesticides, arsenic, and mercury. The Army and Shell will continue to operate the system until the shutdown criteria identified in the ROD, Chapter 9 have been met.

In addition, water from the well north of former Basin F is piped to the system for treatment and reinjection. The water north of Basin F is air-stripped for volatiles prior to mixing with the BANS influent. Starting in FY00, groundwater from the Section 36 Bedrock Ridge Groundwater Plume Extraction System will be piped to the system for treatment and reinjection.

North of Basin F Groundwater Plume Remediation

The north of Basin F groundwater contamination plume is located to the north of the central area of the Arsenal. The contamination plume contains many organic chemicals, including TCE, tetrachloroethylene, chloroform, methylene chloride, vinyl chloride, dieldrin, dicyclopentadiene, and DIMP. Up until August 2000 this groundwater plume was pumped from the ground and treated at Basin A Neck. This type of treatment is very costly and creates secondary hazardous waste that must be disposed.

Under an EPA lead program, the EPA will test an in situ groundwater treatment using Hydrogen Release Compound (HRC). The HRC is an environmentally safe, food quality product that increases bacterial breakdown of groundwater contamination. The program will first conduct laboratory tests to show that HRC works to destroy the groundwater contamination present at the Arsenal. Based on favorable lab results, the next step will be to construct a field test at the Arsenal. The test will consist of injecting HRC at 41 points to a depth of 50 to 54 feet and installing monitoring wells both up and down gradient of the test area. Reduction in the contamination levels will be determined by the testing of samples from the monitoring wells, and sample results will be evaluated to determine the effectiveness of the technology.

9.7 CERCLA Wastewater Treatment Facility

The CERCLA Wastewater Treatment Facility was built primarily for treatment of investigation or remediation derived liquid waste. The CERCLA Wastewater Treatment Facility treats wastewater using any or all of a multistage process including chemical precipitation, dual media filtration, activated alumina adsorption, air stripping, carbon adsorption, and ultraviolet oxidation. Treated water is piped to the BANS for reinjection.

Mass Removal System

Modifications to the existing treatment plant will be performed to allow for the treatment of groundwater extracted from the South Tank Farm Plume and Lime Basins Groundwater Mass Removal Systems. These modifications will include: the addition of storage and pumping systems to allow for the return of the tested groundwater to its respective recharge systems; and minor modification to the piping and control systems to accommodate the revised process configurations planned for the existing systems.

9.8 Northwest Boundary Containment System

The Northwest Boundary Containment System (NBCS), located in Sections 22 and 27, consists of extraction and recharge wells and trenches, a slurry wall, and carbon adsorption for removal of organics. Contaminants for which CSRGs have been established in the ROD include volatile halogenated organics, DIMP,

n-nitrosodimethylamine (NDMA), organochlorine pesticides, and arsenic. The Army and Shell will continue to operate the system until the shutdown criteria as identified in Chapter 9 of the ROD have been met.

9.9 North Boundary Containment System

The NBCS, located in Sections 23 and 24, consists of extraction and recharge wells and trenches, a slurry wall, and carbon adsorption for removal or organics. Based on the results of the NDMA Alternatives Evaluation study, a future modification will also treat NDMA by ultraviolet oxidation following the carbon adsorption treatment. Although CSRGs have been defined for chloride and sulfate, the system is not designed to treat for them. They are expected to attenuate naturally as described in the Site Wide Plume project. In addition, part of the high sulfate is naturally occurring; the CSRG may be the background concentration. Contaminants for which CSRGs have been established in the ROD include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds related to mustard agent and herbicides, DIMP, organophosphorus compounds related to pesticides, organochlorine pesticides, DBCP, NDMA, arsenic, and the anions fluoride, chloride, and sulfate. The Army and Shell will continue to operate the system until the shutdown criteria identified in the ROD, Chapter 9 have been met.

An agreement by the RMA Committee to modify the NBCS was signed May 28, 1997. The modification includes acquiring and installing a ultraviolet oxidation treatment system to remediate NDMA contaminants.

Following a EPA Superfund Innovative Technology Evaluation (SITE) program demonstration to test the effectiveness of a HRC bioremediation process; a HRC enhancement program has been added to the NBCS.

9.10 South Lakes Plume Monitoring

The ROD states: “Lake level maintenance or other means of hydraulic containment or plume control will be used to prevent South Plants plumes from migrating into the lakes at concentrations exceeding CSRGs in groundwater at the point of discharge. Groundwater monitoring will be used to demonstrate compliance.” Monitoring wells have been constructed to monitor contamination and lake levels.

9.11 Groundwater Mass Removal

Site Description: Per an agreement entitled, Resolution Agreement Groundwater Extraction/Contaminant Mass Removal Systems at the RMA; this remedy entails the extraction of groundwater from the South Tank Farm Plume and the Lime Basins area with treatment of the extracted groundwater to reduce the contaminant mass within the respective plumes.

As part of this agreement, extracted groundwater is to be processed at the CERCLA Wastewater Treatment Plant for recharge to the vicinity of the respective extraction well fields.

South Tank Farm Plume. The South Tank Farm Plume is located in the southern half of Sections 1 and 2 on the RMA. Benzene is the primary component of a composite plume. Benzene has the highest concentrations and comprises the majority of the dissolved contaminant mass in groundwater in the South Tank Farm Plume. Other contaminants include 1, 2-dischloropropane, 1, 3-dimethylbenzene, chlorobenzene, ethylbenzene, toluene, xylene, bicyclohepta, and dicyclopentadiene.

Lime Basins Groundwater. The extraction system will be located in the southwestern corner of Section 36. Chloroform is the primary component of the composite groundwater plume with numerous constituents. Chloroform has the highest concentrations and comprises the majority of the dissolved contaminant mass in groundwater. Other contaminants with high concentrations include 1, 2-dichlorobenze, 1,4-dichlorobenzene, arsenic, benzene, chlorobenzene, acetone and methylene chloride.

Project Description:

a) Install mass removal system in the South Tank Farm Plume to include extraction wells, recharge trenches, pumps electrical supply, and piping.

b) Install mass removal system in the Lime Basins area to include extraction wells recharge trench, pumps, electrical supply, and piping.

c) Install upgrades to the CERCLA Water Treatment Plant.

9.12 North Plants Light Non-Aqueous Phase Liquid

Site Description: This project is related to the North Plants Structure Demolition and Removal Project and the North Plants Soil Remediation Cover Project, and includes the North Plants Subgroup of the Agent Storage Medium Group and portions of the Chemical Sewer Medium Group located in the North Plants Area.

A Petroleum Release Evaluation and Action Plan (PREAP)(TTFW 2007) was prepared by the RVO to address the investigation of a potential remediation of the groundwater contamination associated with the historical release of fuel oil in the North Plants. Characterization and evaluation of the groundwater contamination was conducted in accordance with the requirements of Division of Oil and Public Safety (OPS) Guidance (CDLE 1999), and concluded that no action was required for groundwater. As concluded in the PREAP, concentrations of contaminants in soil do not exceed the Tier 1 RBSLs presented in the guidance. However, the presence of light non-aqueous phase liquids (LNAPL) also referred to as free product, in several monitoring well locations requires evaluation of actions to satisfy requirements under the OPS Guidance for LNAPL

removal. Specifically, the LNAPL must be removed to the maximum extent practicable and in a manner that minimizes the spread of contamination. To satisfy these requirements, the RVO has agreed to undertake an LNAPL removal action that will include: 1) implementation of a pilot LNAPL removal action for gathering of operating data necessary to support the implementation of a full-scale LNAPL removal action; and 2) potential implementation of a full-scale LNAPL removal system based on the data and criteria developed during the pilot action.

Project Sites/History:

There are no specific SAR sites in this implementation project.

Project Description:

Pilot LNAPL Removal Action

a) Install new monitoring piezometers to refine characterization of LNAPL Plume.

b) Install two LNAPL recovery wells with pumps for recovery of LNAPL.

c) Operate the pilot LNAPL removal system and monitor the plume for a duration necessary to support the design of the full-scale LNAPL removal system.

Full-Scale LNAPL Removal System

a) Incorporate pilot action piezometers and LNAPL recovery wells into the full-scale system to the maximum extent possible.

b) Install additional piezometers and LNAPL recovery wells necessary to achieve the project objective for LNAPL removal.

c) Operate full-scale LNAPL removal system until project objectives are met.

d) Decommission the LNAPL removal system when project objectives are met.

e) Removal or abandon in-place the piezometers and LNAPL recovery wells.

Dependent Projects: This project is not dependent on the completion or execution of other projects.

9.13 Dense Non-Aqueous Phase Liquid Remedial Investigation/Feasibility Study

Site Description: The Dense Non-Aqueous Phase Liquid (DNAPL) Investigation project is located near the Section 36 Lime Basins, where DNAPL was discovered in two dewatering wells.

Project/Sites History: The Site falls within the Section 36 Lime Basins Slurry Wall project Boundary. In August 2009, field monitoring of the Lime Basins dewatering wells indicated the potential presence of DNAPL. Subsequent sampling confirmed DNAPL was present in two of the wells.

Project Description: Prepare an RI/FS Work Plan and conduct an RI/FS to assess the nature and extent of the DNAPL. The RI/FS will include review of existing hydrogeological and chemical analytical data, development of trend analysis evaluations including data presentation, and preparation of a Remedial Investigation Summary Report (RISR) with recommendations for future activities if required.

Dependent Projects: This project is not dependent on the completion or execution of other projects.

10.0 Remediation Venture Office

The RVO (Army, Shell, and USFWS) is responsible for the overall management and execution of the remedy to include: Program Management; Remedy Support and Operations; Remedy Execution; Mitigation/Restoration; Program Controls; and Public Outreach. For scheduling purposes, this section includes mission support shared costs, such as EPA and State costs, facilities maintenance, estimated PMC costs, and other costs incurred during the execution of the ROD remedy.

11.0 Program Management

This section includes party-specific costs for five major sections: Program Management, Remedy Support, Remedy Execution, Mitigation/Restoration, and Program Controls. This section also includes discussion of the completion of the remedial action and the trust fund.

11.1 Completion of Remedial Action

A milestone date defined as when all remediation/construction (fieldwork) excluding long-term operations and maintenance activities, are complete.

11.2 Trust Fund

The ROD states, “During the formulation and selection of the remedy, members of the public and some local government organizations expressed keen interest in the creation of a Trust Fund to help ensure the long-term operation and maintenance of the remedy once the remedial structures and systems are installed. In response to this interest, the Parties have committed to good-faith best efforts to establish a Trust Fund for the operation and

maintenance of the remedy, including habitat and surficial soil." The target date to have the trust fund established is 2008.

12.0 OFF-POST REMEDY

The Off-Post remedy section discusses three projects identified in the Off-Post Implementation Plan: off-post surficial soil, off-post water treatment, and off-post well closure. These three items are provided on the On-Post RDIS schedule to account for the funds necessary to accomplish these projects. A more detailed discussion of the projects may be found in the Off-Post ROD.

12.1 Off-Post Surficial Soil

Approximately 160 acres located in the southeast portion of Section 14 and the southwest portion of Section 13 are to be revegetated. The surficial soil is to be tilled and thoroughly mixed to a depth of about 12 inches below the surface; then, the area is to be seeded with a mix of plant species to protect soil from erosion and establish a self-sustaining plant community.

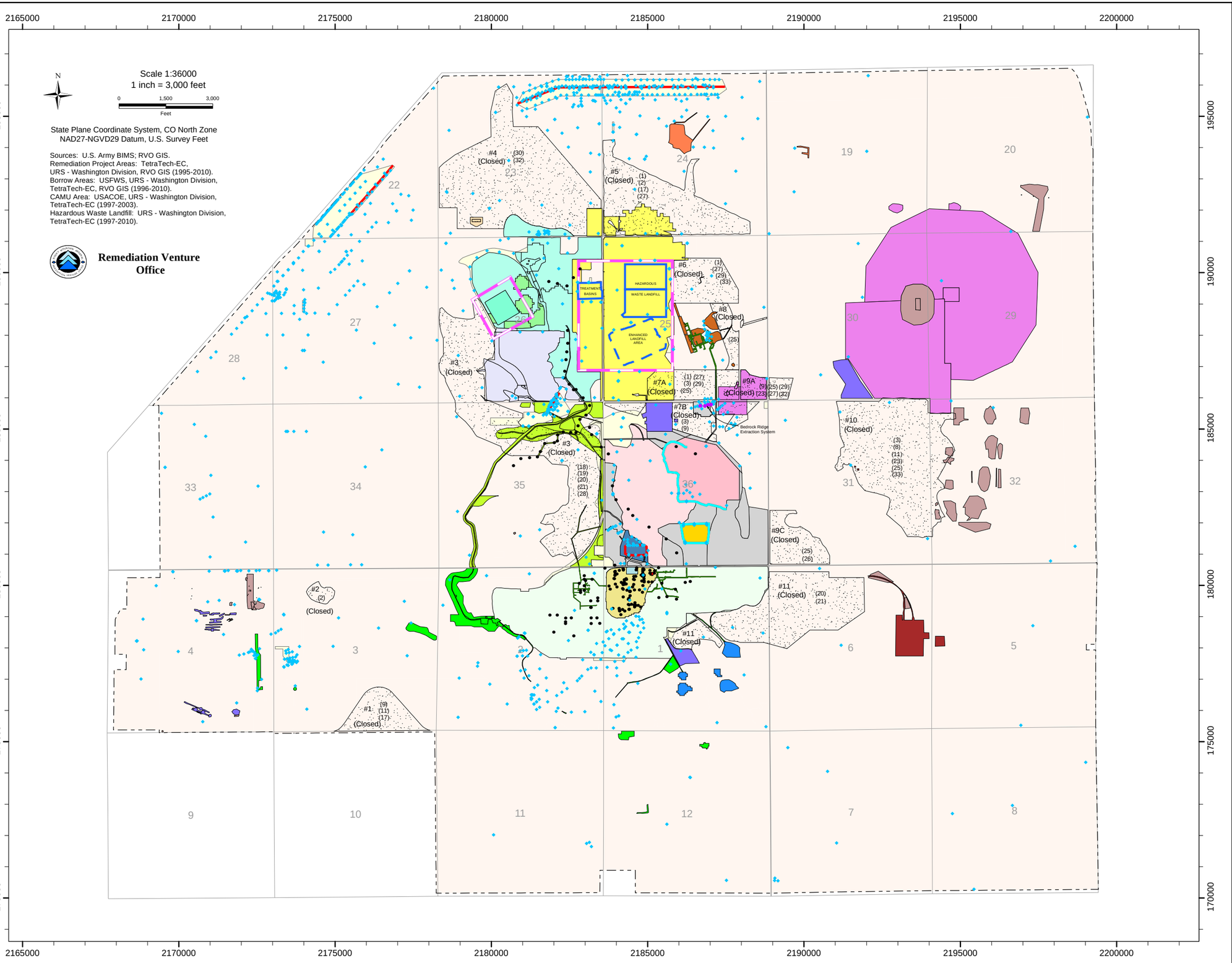
12.2 Off-Post Water Treatment Facility

The Off-Post Groundwater Intercept and Treatment System was designed to extract and treat contaminated alluvial groundwater from the First Creek and Northern Pathways downgradient of the NBCS, and return treated water to the alluvial aquifer. The system consists of a network of upgradient extraction wells, located in two separate well fields, an activated carbon adsorption treatment system for removal of organics, and a network of recharge wells or trenches. Contaminants for which CSRGs have been established in the Implementation Plant for the Off-Post Operable Unit (OU) include volatile halogenated organics, volatile hydrocarbon compounds, volatile aromatic organics, organosulfur compounds, DIMP, organophosphorus pesticides, organochlorine pesticides, DBCP, NDMA, arsenic, and the anions fluoride, chloride, and sulfate. The Army and Shell will continue to operate the system until the shutdown criteria identified in the Implementation Plan for the Off-Post OU have been met.

12.3 Off-Post Well Closure

Five wells located within the off-post study area are to be closed because the wells were poorly constructed and potentially acting as a downward contaminant migration pathway into the Arapahoe Aquifer. Monitoring wells that are no longer in use will also be closed. Specific criteria to determine if wells will be closed are identified in Section 7.4 of the Implementation Plan for the Off-Post OU. A list of wells meeting the closure criteria was

agreed to by the technical staffs representing the RVO, EPA, CDPHE, and Tri-County Health Department.



Disposal Facilities - Basin A/Landfills

- Construct Hazardous Waste Landfill, Associated Influent/Effluent Basins, and Uncontaminated Detention Basin (1)
- CAMU Area Site Project (1)
- Operational Construction of Enhanced Hazardous Waste Landfill (2)
- Basin A Consolidation & Remediation (3)

Early Start Projects

- Sanitary Sewer Manhole Plugging - Phase I (4)
- South Plants Central Processing Area and Complex Trench Chemical Sewer Plugging (5)
- Shell/Complex Trench Slurry Walls (6)
- Post-ROD Removal Actions for Structures (7) (Not Shown)

PHASE I: Outlying Areas

- Toxic Storage Yards Soil Remediation (8)
- Existing Sanitary Landfill Remediation (9)
- Lake Sediments Remediation (10)
- Burial Trenches Soil Remediation (11)
- Munitions (Testing) Soil Remediation (12)
- Miscellaneous Northern Tier Soil Remediation (13)
- Miscellaneous Southern Tier Soil Remediation (14)
- Section 36 Bedrock Ridge Extraction System (15)
- South Plants Structures Demolition (16) and Removal (Not Shown)
- Miscellaneous Structures Demolition (17) and Removal (Not Shown)

PHASE II: South Plants

- Buried M-1 Pits Soil Remediation (18)
- Hex Pit Soil Remediation (19)
- South Plants Central Processing Area (20) Soil Remediation
- South Plants Balance of Areas Soil Remediation (21)

PHASE III: Sections 35 & 36 Sites

- Sanitary Sewer Manhole Plugging - Phase II (22)
- Section 36 Balance of Areas Soil Remediation (23)
- Secondary Basins Soil Remediation (24)
- Complex (Army) Disposal Trenches Remediation (25)
- Shell Disposal Trenches Remediation (26)
- North Plants Soil Remediation (27)
- Section 35 Soil Remediation (28)
- North Plants Structures Demolition and Removal (29) (Not Shown)

PHASE IV: Basin F and Lime Basins

- Basin F Waste Pile Remediation (30)
- Former Basin F Principal Threat Soil Remediation (31)
- Basin F & Basin F Exterior Remediation (32)
- Section 36 Lime Basins Soil Remediation (33)

Site Wide Programs

- R.C.R.A. Cap Equivalency (34)
- Borrow Areas: # = Borrow Number, () = WBS Project Number; (35)
- CAMU Configuration (47)
- On-Post Long Term Monitoring Plan Wells (41, 42)
- Treatment System Slurry Walls (48, 50, 51)
- Chemical Sewer Excavation in South Plants Balance of Areas (Phase II) and North Plants Soil Remediation (Phase III).
- Rocky Mountain Arsenal (U.S. Army Jurisdiction)
- USFWS National Wildlife Refuge

Rocky Mountain Arsenal
Commerce City, Colorado

Remediation Implementation Areas

Project Phases

Figure 1 FY 11

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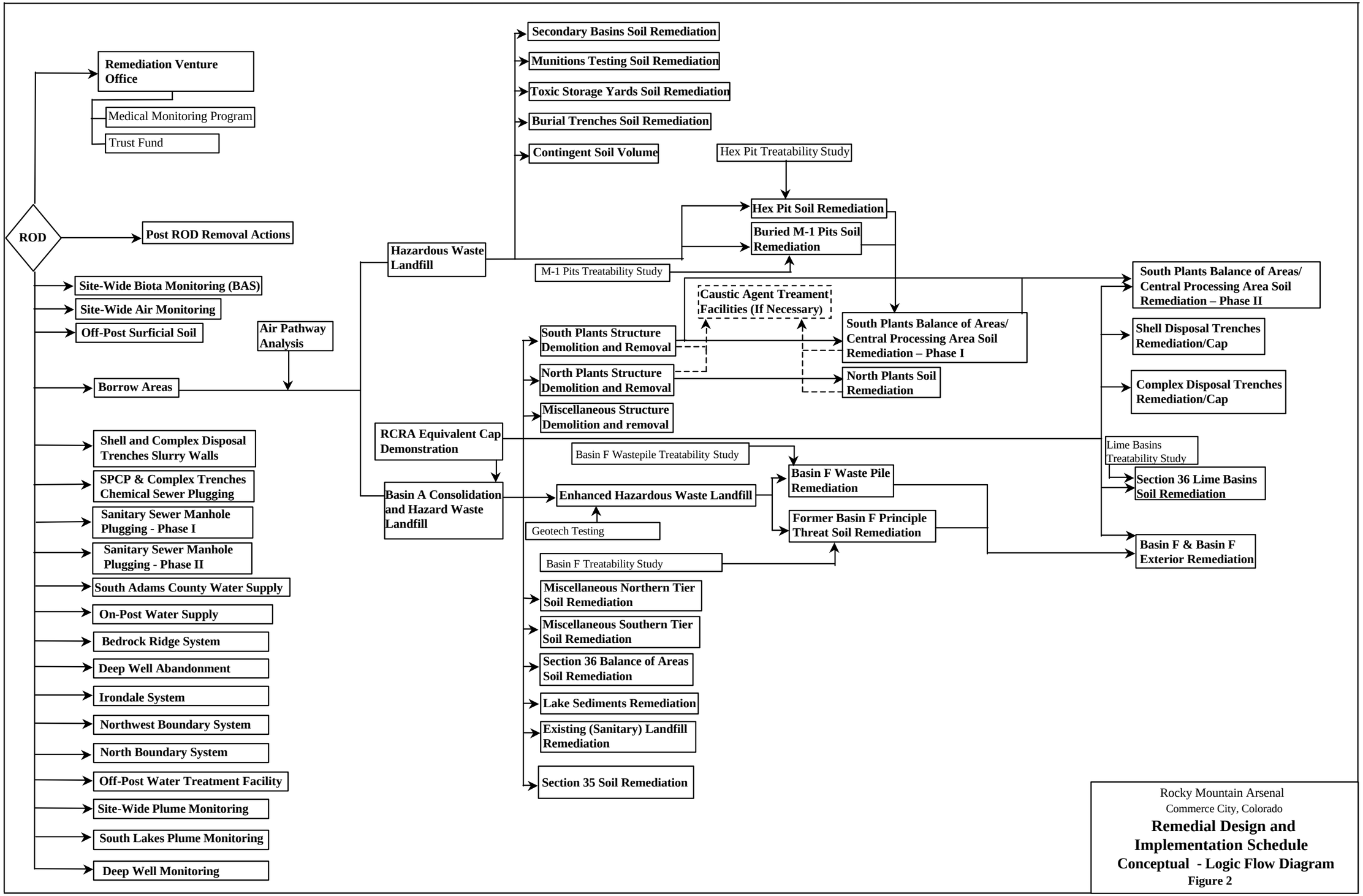

Rocky Mountain Arsenal
Commerce City, Colorado

Remedial Design and Implementation Schedule
Conceptual - Logic Flow Diagram
Figure 2

APPENDIX P:

Remediation Design and Implementation Schedule

Annual Update
Fiscal Year 2011

November 2010

Appendix P – Remediation Design and Implementation Schedule Annual Update, Fiscal Year 2011

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APPENDIX P
REMEDIATION DESIGN AND IMPLEMENTATION SCHEDULE ANNUAL UPDATE, Fiscal Year 2011

1.0 MILESTONE DATES

Included in this Appendix are a series of graphical depictions of the current progressed schedule and a listing of the enforceable deadline dates that are currently in effect. Changes to enforceable deadlines are documented in Section 4.1 of this Appendix. The previous sections of the Remediation Design and Implementation Schedule (RDIS) provided an overall understanding of the process and philosophy used to develop this schedule and established guidelines for its use and modification throughout the Remedial Design and Remedial Action process. This Appendix serves as the annual RDIS update, which provides current implementation project progress and modifications, current schedules, and enforceable deadlines, as agreed to by the Regulatory Agencies.

Notice: As the status of the remedy execution in nearing completion, this will be the final annual update to the RDIS document. The RMA is expected to achieve its final remedy execution milestone in the Second Quarter of FY11. As such, and in accordance with Section 4.3.5 of the mainbody document, documentation of the final remedy schedule will be provided within the Remedial Action Summary Report (RASR). Any remaining activities that are required for site completion will be identified within the RASR along with identification of the responsible organization for that activity and the anticipated dates for completion of those activities.

1.1 Current Deadline Dates

The following is a list of current deadline dates that have been estimated based on the best information available to date. The deadline dates are shown in three separate sections, design activities, remedy implementation, and water treatment plant operations and other Record of Decision (ROD) components. The list shows current forecast or enforceable dates and the current status (actual dates) is noted.

1.1.1 Design Deadline Dates

Compliance Order on Consent			
Implementation Project	**Enforceable Milestone Date**	**Current Forecast Date**	**Actual Date**
Disposal Facilities –Landfills			
Construct Hazardous Waste Landfill:			
30% design	31 Mar 97		31 Mar 97
60% design – 60 days after receipt of 30% comments	9 Jun 97		9 Jun 97
100% design – 35 days after receipt of 90% comments	13 Feb 98		13 Feb 98
Construction of Enhanced Hazardous Waste Landfill:			
30% design	17-May-01		15-May-01
95% design	28-Mar-02		28 Mar 02

Federal Facility Agreement				
Implementation Project	**Enforceable Draft Design SOW**	**Actual/Forecast Draft Design SOW**	**Enforceable Draft Final Design**	**Actual/Forecast Draft Final Design**
Disposal Facilities – Basin A				
Basin A Consolidation and Remediation	30 Sep 96	30 Sep 96 A	21 Jul 97	21 Jul 97 A
Early Start Projects-				
Sanitary/Chemical Sewer Manhole Plugging – Phase I	30 Sep 96	30 Sep 96 A	7 Mar 97	7 Mar 97 A
Shell Complex Trench Slurry Walls	30 Sep 96	30 Sep 96 A	23 Jun 97	23 Jun 97 A
Phase I – Outlying Areas -				
Toxic Storage Yards Soil Remediation	18 May 98	15 May 98 A	7 Dec 98	7 Dec 98 A
Existing (Sanitary) Landfill Remediation	14 Oct 97	14 Oct 97 A	23 Jun 98	22 Jun 98 A
Lake Sediments Remediation	24 Nov 97	24 Nov 97 A	4 Aug 98	3 Aug 98 A
Burial Trenches Soil Remediation	1 Oct 97	1 Oct 97 A	15 Sep 99	15 Sep 99 A
Munitions (Testing) Soil Remediation	1 Oct 97	1 Oct 97 A	15 Sep 99	15 Sep 99 A
Misc. Northern Tier Soil Remediation	24 Nov 97	24 Nov 97 A	4 Aug 98	3 Aug 98 A
Misc. Southern Tier Soils Remediation	24 Nov 97	24 Nov 97 A	4 Aug 98	3 Aug 98 A
Section 36 Bedrock Ridge Groundwater Plume Extraction System	18 Apr 97	18 Apr 97 A	2 Nov 98	2 Nov 98 A
South Plants Structure Demolition and Removal: Work Packages Nos. 1-4, Nonagent Structures Work Packages No. 5, Agent Structures	20 Oct 97	20 Oct 97 A	17 Aug 98 30 Apr 99	14 Aug 98 A 30 Apr 99 A

Implementation Project	Enforceable Draft Design SOW	Actual/Forecast Draft Design SOW	Enforceable Draft Final Design	Actual/Forecast Draft Final Design
Misc. RMA Structure Demolition and Removal	13 Nov 98	13 Nov 98 A	2 Nov 99	2 Nov 99 A
Phase II – South Plants Area-				
Buried M-1 Pits Soil Remediation	17 Mar 00	17 Mar 00 A	18 Oct 00	18 Oct 00 A
Hex Pit Soil Remediation Hex Pit Re-design	16 Feb 00 21 Mar 03	16 Feb 00 A 21 Mar 03 A	2 Aug 00 26 Aug 03	2 Aug 00 A 26 Aug 03 A
South Plants Balance of Areas and Central Processing Area Soil Remediation - Phase II	4 Sep 98	4 Sep 98 A	7 Aug 00	7 Aug 00 A
South Plants Balance of Areas and Central Processing Area Soil Remediation - Phase I	4 Sep 98	4 Sep 98 A	15 Dec 99	15 Dec 99 A
Phase III – Sections 35 & 36 Sites-				
Sanitary Sewer Manhole Plugging – Phase II	12 Feb 02	12 Feb 02 A	19 Sep 07	19 Sep 07 A
Section 36 Balance of Areas Soil Remediation	12 Feb 01	6 Feb 01 A	26 Nov 02	26 Nov 02 A
Secondary Basins Soil Remediation	17 Sep 99	17 Sep 99 A	26 May 00	26 May 00 A
Complex (Army) Disposal Trenches Remediation – Cover	10 Mar 03	6 Mar 03 A	8 Jun 06	8 Jun 06 A
Shell Disposal Trenches Remediation – Cover	10 Mar 03	6 Mar 03 A	24 Feb 05	24 Feb 05 A
North Plants Soil Remediation	20 Sep 04	14 Sep 04 A	NA	NA
Section 35 Soil Remediation	20 Jan 99	20 Jan 99 A	20 Nov 01	20 Nov 01 A
North Plants Structure Demolition and Removal	31 Mar 00	31 Mar 00 A	18 Apr 01	18 Apr 01 A
Phase IV –Basin F Lime Basins-				
Basin F Wastepile Remediation	31 Jan 01	31 Jan 01 A	1 Jul 02	1 Jul 02 A
Former Basin F Principal Threat Soil Remediation	1 Nov 05	1 Nov 05 A	30 Nov 06	14 Nov 06 A
Basin F and Basin F Exterior Remediation-Part 1	17 Sep 99	17 Sep 99 A	26 May 00	26 May 00 A
Basin F and Basin F Exterior Remediation- Part 2	15 May 01	15 May 01 A	30 Dec 03	30 Dec 03 A
Revised 95% Design – Part 2			19 Oct 07	18 Oct 07 A
Section 36 Lime Basins Soil Remediation	1 Nov 05	1 Nov 05 A	15 Dec 06	14 Dec 06 A
Water Treatment Monitoring-				
Confined Flow System Well Closure	22 Sep 97	22 Sep 97 A	30 Mar 98	30 Mar 98 A

Note: Shaded areas denote significant changes in forecast or enforceable milestone dates not previously documented by letter. Reference the status write-up for each implementation project.

1.1.2 Implementation Deadline Dates

Compliance Order on Consent			
Implementation Project	**Enforceable Milestone Data**	**Current Forecast Date**	**Actual Date**
Disposal Facilities – Landfills			
Construct Hazardous Waste Landfill			
Landfill Open to Receive Waste	3 May 99		30 Apr 99
Landfill Closed∉	NA		30 Apr 04
Construct Enhanced Hazardous Waste Landfill			
Landfill Open to Receive Waste	10 Apr 06		7 Mar 06
Landfill Closed∉	NA	Jun 08	5 May 08

Federal Facility Agreement				
Implementation Project	**Enforceable Start Dates∠**	**Actual/Forecast (A)/(F)**	**Enforceable Finish Dates∠**	**Actual/Forecast (A)/(F)**
Disposal Facilities – Basin A -				
Basin A Consolidation and Remediation (Landfill Closed)	19 Jan 98	14 Nov 97 A	NA	30 Jun 04 A
Early Start Projects -				
Sanitary/Chemical Sewer Manhole Plugging – Phase I	10 Sep 97	3 Sep 97 A	27 Feb 98	23 Feb 98 A
Shell/Complex Trench Slurry Walls	27 Apr 98	24 Apr 98 A	14 Apr 00	7 Apr 00 A
Post-ROD Removal Actions for Structures: Asbestos Removal Phase I Chemical Process Equipment Removal (Exterior) Phase II Chemical Process Equipment Removal (Interior)		 3 Jun 96 A 3 Jun 96 A 19 Jan 98 A	 1 Dec 97 19 Jan 98 31 Dec 99	 1 Dec 97 A 19 Jan 98 A 28 Dec 99 A
Phase I – Outlying Areas -				
Toxic Storage Yards Soil Remediation	3 May 99	3 May 99 A	27 Sep 99	15 Sep 99 A
Existing (Sanitary) Landfill Remediation	24 Nov 98	22 Nov 98 A	31 Aug 04	16 Jun 04 A
Lake Sediments Remediation	22 Dec 98	13 Dec 98 A	27 Oct 99	25 Aug 99 A
Burial Trenches Soil Remediation	1 Mar 00	28 Feb 00 A	28 Mar 03	6 Mar 03 A
Munitions (Testing) Soil Remediation Additional remediation, includes ESA-4a	1 Mar 00 NA	1 Mar 00 A NA	17 Nov 00 30 Apr 08	8 Nov 00 A** 25 Mar 08 A
Misc. Northern Tier Soil Remediation	22 Dec 98	22 Dec 98 A	7 Oct 99	7 Oct 99 A
Misc. Southern Tier Soils Remediation	22 Dec 98	22 Dec 98 A	6 Oct 99	30 Sep 99 A

Implementation Project	**Enforceable Start Dates∠**	**Actual/Forecast (A)/(F)**	**Enforceable Finish Dates∠**	**Actual/Forecast (A)/(F)**
Section 36 Bedrock Ridge Groundwater Plume Extraction System	21 May 99	19 May 99 A	25 Feb 00	25 Feb 00 A
South Plants Structure Demolition and Removal	25 Nov 98	22 Nov 98 A	11 Oct 01	30 May 01 A
Misc. RMA Structure Demolition and Removal	24 Feb 00	24 Feb 00 A	19 Nov 10	19 Nov 10 F
Phase II – South Plants Area -				
Buried M-1 Pits Soil Remediation	9 Feb 01	1 Feb 01 A	4 Dec 01	1 Nov 01 A
Hex Pit Soil Remediation	21 Mar 01	21 Mar 01 A	15 Jul 02	27 Jun 02 A
Implementation of Hex Pit Soil Re-design	20 Nov 03	19 Nov 03 A	9 Feb 04	28 Jan 04 A
South Plants Balance of Areas and Central Processing Area Soil Remediation – Phase II	5 Dec 01	3 Dec 01 A	19 Nov 10	29 Oct 10 F
South Plants Balance of Areas and Central Processing Area Soil Remediation – Phase I	28 Feb 00	28 Feb 00 A	31 Oct 01	12 Oct 01 A
Phase III – Sections 35 & 36 Sites -				
Sanitary Sewer Manhole Plugging – Phase II	6 Mar 08	13 Dec 07A	12 Sep 08	12 Aug 08 A
Section 36 Balance of Areas Soil Remediation	30 May 03	19 May 03 A	14 Nov 06	14 Nov 06A
Secondary Basins Soil Remediation	27 Apr 01	21 Mar 01 A	31 Mar 03	26 Feb 03 A
Complex (Army) Disposal Trenches Remediation	15 Aug 05	27 Jul 05 A	19 Nov 10	29 Oct 10 F
Shell Disposal Trenches Remediation	1 Mar 05	4 Feb 05 A	30 Apr 10	21 Apr 10 A
North Plants Soil Remediation		NA	NA	NA
Section 35 Soil Remediation	15 Jul 02	28 Jun 02 A	7 Apr 03	26 Feb 03 A
North Plants Structure Demolition and Removal	21 Mar 01	21 Mar 01 A	29 Aug 03	4 Jun 03 A
Phase IV – Basin F Lime Basins -				
Basin F Wastepile Remediation	5 Aug 05	30 Mar 05 A	15 Apr 08	10 Jan 08 A
Former Basin F Principal Threat Soil Remediation	3 Apr 07	3 Apr 07 A	9 Dec 08	24 Oct 08 A
Basin F and Basin F Exterior Remediation Part 1	19 Feb 02	20 Dec 01 A	11 Apr 03	24 Jan 03 A
Basin F and Basin F Exterior Remediation Part 2	3 Apr 07	3 Apr 07 A	30 Sep 10 F	20 Sep 10 A
Section 36 Lime Basins Soil Remediation	20 Apr 07	20 Apr 07 A	19 Nov 10	20 Oct 10 F
Water Treatment Monitoring -				
Confined Flow System Well Closure	2 Apr 99	22 Mar 99 A	1 Oct 99	24 Sep 99 A
RMA Remediation Completion			30 Sep 11*	19 Nov 10 F

∉ Finish Dates are linked to the completion of implementation projects dependent upon the availability of the disposal facilities. Closure also represents when full scale operations ended and subgrade/cover efforts began.

∠ Enforceable start and finish dates shall be established upon acceptance of final design.

* Enforceable milestone date of September 30, 2011 was established by the RDIS dispute resolution (August 8, 1997). The date shown is the current baseline target date for internal Remediation Venture Office (RVO) control.

** Date denotes enforceable finish date of original Scope of Work (SOW). Changes resulting from the summary team finding were added after this date.

Note: Shaded areas denote significant changes in forecast or enforceable milestone dates not previously documented by letter. Reference the status write-up for each implementation project.

1.1.3 Water Treatment Operations and Other ROD Components

Description	Start Date Actual/Forecast (A)/(F)	Finish Date Actual/Forecast (A)/(F)
Water Treatment:		
Section 36 Bedrock Ridge System	29 Jan 99 F	Not Established∇
Irondale System	3 Jun 96 A	Not Established∇
Basin A Neck System	3 Jun 96 A	Not Established∇
CERCLA Wastewater Treatment Facility	3 Jun 96 A	30 Jun 10 F
Northwest Boundary System	3 Jun 96 A	Not Established∇
North Boundary System	3 Jun 96 A	Not Established∇
South Lakes Plume Management	3 Jun 96 A	Not Established∇
Groundwater Mass Removal	March 2005 A	31 May 11 F⚡
North Plants LNAPL Remediation	July 2001 A	29 Oct 10 F⊕
DNAPL RI/FS	30 Nov 09	25 Apr 11 F¢
Other ROD Components:		
Medical Monitoring Program	13 Jun 95 A	17 Feb 11 FΩ
Biological Advisory Subcommittee	3 Jun 96 A	21 April 11 F¥
Trust Fund	18 Aug 96 A	20 Apr 06 A
SACWSD Water Distribution (Finish Milestones): Distribution Line Hookup Complete Water Supply Under Contract SACWSD Water Supply Operational		 14 Aug 98 A® 1 Feb 99 A® 28 Apr 00 A®
5-Year Reviews: 1st 2nd 3rd	Nov 99 A© Oct 04 A 30 Sept 09 A	31 Jan 01 Aⓘ 20 Dec 07 A ⓘ May 11 F

∇ These systems will be operated until shut-off criteria as described in the ROD are met.

® Enforceable date for South Adams County Water and Sanitation District (SACWSD) Water Supply to be operational is September 30, 2011.

© This date represents the first periodic (5 year) review based upon signature of off-post ROD, and will be conducted every 5 years thereafter as required by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
Start date represents date five-year review team charter was approved and signed.

ⓘ This date represents final acceptance by letter from the U.S. Environmental Protection Agency (EPA).

⚡ This date represents approval of the Construction Completion Report (CCR) (Construction & Operation) for the Groundwater Mass Removal.

⊕ This date represents final submittal of Light Non-Aqueous Phase Liquid (LNAPL) Pilot Study Report.

Ω This date represents approval of the Monitoring Completion Report (MCR) for the Medical Monitoring Program (MMP).
¥ This date represents approval of the MCR for the Biomonitoring Program.
¢ This date represents completion of the RI/FS Report and signing of the Final Decision Document.

Note: Shaded areas denote significant changes in forecast or enforceable milestone dates not previously documented by letter.

1.2 Establishment and Modifications to Enforceable Deadline Dates

The enforceable and target deadline dates provided, as of the original issue date of this RDIS (December 9, 1996), were based upon the best information available at that time. Through the dispute resolution process (August 8, 1997), the Regulatory Agencies agreed to the following:

- The RDIS will be revised so that all target draft final design dates become enforceable deadlines.
- Upon acceptance of the final design, implementation start and finish deadlines will become enforceable. Modifications of extensions of enforceable milestones shall be handled in accordance with Federal Facility Agreement Section XXVI (v).
- An enforceable deadline of September 30, 2011 has been established in the RDIS for the completion of the entire remediation.
- The RDIS will include an enforceable deadline for the Enhanced Landfill Cell 30 Percent Design Package Document (December 13, 1999).
- Section 5.5, Modification Methods, will be updated to reflect that the Rocky Mountain Arsenal (RMA) Council will be involved in annual schedule reviews. These annual reviews will include: the overall status of the RMA cleanup, budget analysis and discussion of potential problems or funding constraints that might affect the schedule, and a presentation of the revised schedule.

2.0 RMA Construction Completion Report - Tracking
Month End October 1, 2010

WBS	PHASE/IMPLEMENTATION PROJECT/CCR	PARTIAL CCR	FINAL CCR	COMMENTS
2	**RMA On-Post Operable Unit**			
2.01	**Disposal Facilities – Basin A/Landfill**			
2.01.01	**Construct Hazardous Waste Landfill**			
	CAMU/Basin A Well Abandonment Project CCR	30-Sep-98A		
	CAMU Soil Remediation CCR	30-Sep-98A		Includes closure of 71 wells in Basin A area
	Landfill Wastewater Treatment System (LWTS) Project CCR	27-Sep-00A		Includes placement of 1 foot soil foundation layer over Basin A
	Hazardous Waste Landfill Phase I Project CCR	27-Sep-00A		
	CAMU Soils Remediation Completion and Support Project CCR	29-Sep-00A		
	Section 26 HHE and Biota Exceedance Soils Removal Project CCR	17-Oct-00A		
	Hazardous Waste Landfill Phase II Project CCR	18-Apr-01A		
	Section 26 HHE and Biota Exceedance Soils Removal Project CCR Addenda	30-Mar-06A		Additional CSV
	Hazardous Waste Landfill Operations/Waste Placement CCR	08-Apr-08A		
	Hazardous Waste Landfill – Cap Construction CCR	21-Jul-10A		
	Landfill Waste Water Treatment System (LWTS) – Closure CCR	20-Apr-11F	**29-Apr-11F**	
2.01.02	**Construction of Enhanced Hazardous Waste Landfill (ELF)**			
	Enhanced Hazardous Waste Landfill Construction CCR	01-Feb-07A		
	Enhanced Hazardous Waste Landfill-Ion Exchange Installation – LWTS Modification CCR	17-Jul-08A		
	Enhanced Hazardous Waste Landfill Operations/Waste Placement CCR	05-May-09A		
	Enhanced Hazardous Waste Landfill Cover Construction	19-Nov-10F	**19-Nov-10F**	
2.01.03	**Basin A Consolidation and Remediation**			
	Basin A Consolidation and Remediation Operations/Subgrade CCR	03-Sep-09A		On hold until Notch interim ops is complete
	Basin A Consolidation and Remediation Cover-ICS Cover Construction CCR – Part 1	07-Oct-10F	**07-Oct-10F**	Documents Cover Constr Per Design-1 CCR for entire ICS
	Basin A Consolidation and Remediation Cover-ICS Cover Construction CCR – Part 2 (Amendment)	18-May-15F	**18-May-15F**	Dsgn documents Operational and Functional (O&F)
2.02	**Early Start Tasks**			
2.02.04	**Sanitary/Chemical Sewer Manhole Plugging – Phase I**			
	RMA Sanitary and Chemical Sewer Plugging Project CCR		**30-Sep-98A**	
2.02.06	**Shell/Complex (Army) Disposal Trenches Slurry Walls**			
	Shell Section 36 Trenches Groundwater Barrier Project CCR	08-Jun-01A		
	Complex (Army) Trenches Groundwater Barrier Project CCR	03-Jul-01A		
	Addendum Complex Army Groundwater Barrier Project O&F Report	30-Sep-02A		
	Dewatering of Army Trenches – CCR	TBD	**TBD**	
2.02.07	**Post-ROD Removal Actions for Structures**			
	Asbestos IRA			
	Asbestos Remediation Final CCR		**30-Sep-03A**	
	Chemical Process Related Activities			
	Chemical Process Related Equipment Outside Pipe and Tank Removal CCR	30-Sep-98A		
	Interior Building Chemical Related Activities for South Plants CCR	29-Sep-00A	**29-Sep-00A**	See South Plants Structure Demo & Removal – Phases I & II
2.03	**Phase I – Outlying Areas**			
2.03.08	**Toxic Storage Yards Soil Remediation**			
	Toxic Storage Yards Soil Remediation Project CCR		**20-Jun-00A**	

WBS	PHASE/IMPLEMENTATION PROJECT/CCR	PARTIAL CCR	FINAL CCR	COMMENTS
2.03.09	**Existing (Sanitary) Landfills Remediation**			
	Existing (Sanitary) Landfills Remediation – Section 1 CCR	29-Feb-00A		
	Existing (Sanitary) Landfills Remediation – Section 4 CCR	25-May-00A		
	Existing (Sanitary) Landfills Remediation – Section 36 CCR	15-Jul-04A		
	Existing (Sanitary) Landfills Remediation – Section 30 CCR	16-Aug-05A	**16-Aug-05A**	
	Existing (Sanitary) Landfills Remediation – Section 1 Addenda	30-Mar-06A	**30-Mar-06A**	Additional CSV
2.03.10	**Lake Sediments Remediation**			
	Lake Sediments Remediation Project CCR		**20-Apr-00A**	
2.03.11	**Burial Trenches Soil Remediation**			
	Burial Trenches Soil Remediation Project CCR Part I	25-Sep-02A		
	Burial Trenches Soil Remediation Project CCR Part II	30-Sep-04A	**30-Sep-04A**	
2.03.12	**Munitions (Testing) Soil Remediation**			
	Munitions (Testing) Soil Remediation Project CCR Part I	15-Jul-04A		
	Munitions (Testing) Soil Remediation Project CCR Part II	08-Apr-08A		
	Munitions (Testing) Soil Remediation Project CCR Part III	26-Mar-08A		
	Munitions (Testing) Soil Remediation Project CCR Part IV	14-May-09A	**14-May-09A**	
2.03.13	**Miscellaneous Northern Tier Soil Remediation**			
	Miscellaneous Northern Tier Soil Remediation Project CCR		**20-Apr-00A**	
	Miscellaneous Northern Tier Soil Remediation Project CCR Addenda1		**30-Mar-06A**	Additional CSV
2.03.14	**Miscellaneous Southern Tier Soil Remediation**			
	Miscellaneous Southern Tier Soil Remediation Project CCR	14-Jul-00A		
	Miscellaneous Southern Tier Soil – Deep Acute – CCR Addenda	30-Mar-06A		
	Miscellaneous Southern Tier Soil – Sand Creek Lateral Soil Remediation – CCR	02-Sep-08A	**02-Sep-08A**	
2.03.15	**Section 36 Bedrock Ridge Groundwater Barrier Plume Extraction System**			
	Section 36 Bedrock Ridge Groundwater Barrier Plume Extraction System Project CCR		**30-Sep-08A**	
2.03.16	**South Plants Structure Demolition and Removal**			
	South Plants Structure Demolition and Removal Project Phase I CCR	29-Sep-00A		
	South Plants Structure Demolition and Removal Project Phase II CCR	02-Jul-02A	**02-Jul-02A**	
2.03.17	**Miscellaneous RMA Structures Demolition and Removal**			
	Miscellaneous RMA Structures Demolition and Removal Project Phase I CCR	30-Sep-02A		Rev 1 CCR issued July 01, 2003
	Miscellaneous RMA Structures Demolition and Removal Project Phase II CCR	30-Mar-06A		
	Miscellaneous RMA Structures Demolition and Removal Project Phase III CCR	08-Dec-09A		
	Miscellaneous RMA Structures Demolition and Removal Project - CERCLA WTP Demo	25-Mar-11F	**25-Mar-11F**	
2.04	**Phase II – South Plants Area**			
2.04.18	**Buried M-1 Pits Soil Remediation**			
	Buried M-1 Pits Soil Remediation Project CCR		**18-Jul-02A**	
2.04.19	**Hex Pit Soil Remediation**			
	Hex Pit Soil Remediation Project CCR		**21-Jul-04A**	
2.04.20	**South Plants Balance of Areas and Central Processing Area Soil Remediation - Phase II**			
	South Plants BOA & CPA Soil Remediation Project – Part I Soil Remediation CCR	19-Jan-10A		Documents Cover Constructed Per Design
	South Plants BOA & CPA Soil Remediation Project –ICS Cover Construction CCR-Part 1	07-Oct-10F	**07-Oct-10F**	Documents Operational and Functional (O&F)
	So Plants BOA & CPA Soil Remediation Project –ICS Cover Construction CCR Part 2-Amendment	18-May-15F	**18-May-15F**	

WBS	PHASE/IMPLEMENTATION PROJECT/CCR	PARTIAL CCR	FINAL CCR	COMMENTS
2.04.21	**South Plants Balance of Areas and Central Processing Area Soil Remediation – Phase I**			
	South Plants Balance of Areas & Central Processing Area Soil Remediation Project – Phase I CCR		**24-Sep-02A**	
2.05	**Phase III – Sections 35 and 36 Sites**			
2.05.22	**Sanitary Sewer Manhole Plugging – Phase II**			
	Sanitary Sewer Manhole Plugging Project – Phase II CCR		**17-Feb-09A**	
2.05.23	**Section 36 Balance of Areas Soil Remediation**			
	Section 36 Balance of Areas Soil Remediation Project CCR – Part 1 Section 36 Balance of Areas Soil Remediation Project CCR – Part 2		**05-May-09A** **22-Feb-10A**	
2.05.24	**Secondary Basins Soil Remediation**			
	Secondary Basins Soil Remediation Project CCR Secondary Basins Soil Remediation – (Ditch) HHE Removal		**15-Jul-04A** **15-Jun-09A**	
2.05.25	**Complex (Army) Disposal Trenches Remediation - Cover**			
	Complex (Army) Disposal Trenches Remediation Sub-grade Construction CCR Complex (Army) Disposal Trenches Remediation-ICS Cover Construction CCR–Part 1 Complex (Army) Disposal Trenches Remediation–ICS Cover Construction CCR-Part 2 (Amendment)	17-Jul-08A 07-Oct-10F 18-May-15F	 **07-Oct-10F** **18-May-15F**	 Documents Cover Constructed Per Design Documents Operational and Functional (O&F)
2.05.26	**Shell Disposal Trenches Remediation – Cover**			
	Shell Disp Trenches Rem RCRA Equiv Cover Construction Project – Part 1 CCR Shell Disp Trenches Rem-ICS Cover Construction CCR-2 Foot Soil Covers Shell Disp Trenches Rem-ICS Cover Construction CCR–Part 2 CCR (Amendment)	05-Jan-09A 07-Oct-10F 21-May-13F	**05-Jan-09A** **21-May-13F**	Documents Cover Constructed Per Design Documents Operational and Functional (O&F)
2.05.27	**North Plants Soil Remediation – Cover**			
	North Plants Soil Remediation Cover Construction Project CCR	NA	**NA**	ESD to eliminate cover requirement approved January 2009
2.05.28	**Section 35 Soil Remediation**			
	Section 35 Soil Remediation Project CCR Section 35 Soil Remediation – Sand Creek Lateral Soil Remediation –CCR		**15-Jul-04A** **02-Sep-08A**	
2.05.29	**North Plants Structure Demolition and Removal**			
	North Plants Structure Demolition and Removal Project CCR		**30-Sep-04A**	Includes GB equipment. Awaiting Completion and Approval of Soil Volume ESD.
2.06	**Phase IV – Basin F/Lime Basins**			
2.06.30	**Basin F Wastepile Remediation**			
	Basin F Wastepile Remediation Project CCR		**15-Jun-09A**	
2.06.31	**Former Basin F Principal Threat Soil Remediation**			
	Former Basin F Principal Threat Soil Project CCR		**16-Jul-09A**	
2.06.32	**Basin F and Basin F Exterior Remediation**			
	Basin F and Basin F Exterior Remediation Project – Part 1/Phase I CCR Basin F and Basin F Exterior Remediation Project – Part 1/Phase II Remaining Biota Soil CCR Basin F/ F Exterior Project RCRA Equiv Cover Construction CCR-Part 1 (Part 2 Design) Basin F and Basin F Exterior Project RCRA Equiv Cover Construction CCR-Part 2 (Amendment)	21-Sep-06A 09-Dec-08A 10-Dec-10F 18-May-15F	 **10-Dec-10F** **18-May-15F**	Errata sheets issued June 08, 2006-Awaiting acceptance letters from Regulatory Agencies Documents Cover Constructed Per Design Documents Operational and Functional (O&F)
2.06.33	**Section 36 Lime Basins Soil Remediation**			
	Section 36 Lime Basins Soil Remediation Slurry/Barrier Wall CCR	10-Sep-10F		

WBS	PHASE/IMPLEMENTATION PROJECT/CCR	PARTIAL CCR	FINAL CCR	COMMENTS
	Section 36 Lime Basins Soil Remediation – ICS Cover Construction CCR-Part 1 Section 36 Lime Basins Soil Remediation –ICS Cover Construction CCR-Part 2 (Amendment)	07-Oct-10F 18-May-15F	**07-Oct-10F** **18-May-15F**	Documents Cover Constructed Per Design Documents Operational and Functional (O&F)
2.07	**Site Wide Programs**			**No CCRs required**
	Residual Ecological Risk Soil Remediation – Part 1 CCR Residual Ecological Risk Soil Remediation – Part 2 CCR	30-Mar-06A	 **03-Sep-09A**	
2.08	**Water Treatment/Monitoring**			
2.08.15	**Section 36 Bedrock Ridge Groundwater Plume Extraction System - Monitoring**		**N/A**	**See Implementation Project (WBS 2.03.15)**
2.08.44	**South Adams County Water and Sanitation District (SACWSD)**			
	SACWSD Henderson Pipeline Construction CCR Acquisition and Delivery of 4,000 Acre-Feet Potable Water Supply – Completion Report	30-Sep-99A 29-Sep-00A	**29-Sep-00A**	Reference April 28, 2000 letter – Army fulfills obligation to SACWSD
2.08.45	**On-Post Water Supply**			
			N/A	Acquisition/agreement for 1,200 Acre-feet re-use water (October 1, 2011) and 50 acre-feet of potable water (Dec 1, 1998) are in place. What about delivery system to RMA site and distribution system to lake or wherever within RMA?
2.08.46	**Confined Flow System Well Closure**			
	Confined Flow System Well Closure CCR		**27-Sep-00A**	
2.08.47	**Irondale Containment System**			
	Irondale: Main Well Field Treatment Shutdown CCR Irondale: Motor Pool Area Treatment Shutdown CCR Irondale: Rail Classification Yard Treatment Shutdown CCR	21-May-03A 11-Nov-10F TBD	 **TBD**	Interim CCR = IRA Report See Table A-2 Appendix A RDIS Report #4
2.08.48	**Basin A Neck System**			
	Groundwater Intercept and Treatment System North of Basin F CCR Basin A Neck System – Lime Basin Groundwater Treatment Relocation & A-Neck Expansion Basin A Neck System – Achieve Shutdown Criteria CCR	28-Sep-05A 12-May-11F	 **TBD**	Interim CCR = IRA Report See Table A-2 Appendix A RDIS
2.08.49	**CERCLA Wastewater Treatment Facility**			**Pre-treatment, no shut-down criteria listed in ROD, no CCR required**
2.08.50	**Northwest Boundary System**			
	Northwest Boundary Containment System Achieve shutdown Criteria CCR		**TBD**	Interim CCR = IRA Report See Table A-2 Appendix A RDIS Report #3
2.08.51	**North Boundary System**			
	North Boundary Containment System Modification for Treatment of NDMA CCR North Boundary Containment System: Achieve Shutdown Criteria CCR	30-Sep-98A	 **TBD**	Interim CCR = IRA Report See Table A-2 Appendix A RDIS Report #2
2.08.52	**South Lakes Plume Management**			
	South Lakes Monitoring Program Results CCR	NA		ESD was written to eliminate Lake Level Monitoring Req.
2.08.77	**Mass Removal Systems**			
	Installation and Operations of South Tank Farm And Lime Basins Area Mass Removal Systems - CCR		**31-May-11F**	
2.08.78	**North Plants LNAPL Remediation**		**TBD**	

WBS	PHASE/IMPLEMENTATION PROJECT/CCR	PARTIAL CCR	FINAL CCR	COMMENTS
3	**RMA Off-Post Operable Unit**			
3.11	**Off-Post Remedy**			
3.11.60	**Off-Post Surficial Soil**			
	Off-Post Tillage Task (Report) CCR		**30-Sep-98A**	
3.11.61	**Off-Post Water Treatment Facility**			
	Off-Post Water Treatment Facility Achieve Shutdown Criteria CCR		**TBD**	Interim CCR = IRA Report See Table A-2 Appendix A RDIS Report #1
3.11.62	**Off-Post Well Closures**			
	Off-Post Well Abandonment CCR		**30-Sep-99A**	

*A = Actual completion date F = Forecast completion date TBD = Completion date to be determined

3.0 IMPLEMENATION PROJECT STATUS

It is intended that the information in this appendix provide a general overview of each projects status and a highlight of the major activities accomplished through the defined data date for this update. While the RVO strives to ensure the accuracy of this information, details concerning specific scope changes are documented in the appropriate design documents, operations manuals, and/or CCR reports for that project. To that extent such changes may not be completely reflected within the text of this document. For that reason the scope and status descriptions within the RDIS should only be used as a reference for understanding the schedule status of the RMA remediation program.

The following subsections detail current implementation project status.

3.1 Disposal Facilities – Basin A/Landfills

3.1.1 Construction of Hazardous Waste Landfill (Double Lined)

Status - Active

History

- Design began in March 1996 by the U.S. Army Corp of Engineers for a forecast volume of 1.8 million bank cubic yards (bcy).
- Final design was approved by the Regulatory Agencies on February 13, 1998.
- The design of the Landfill Wastewater Treatment Facility (LWTF) and Influent/Effluent Basins was approved by the Regulatory Agencies on April 13, 1998.
- The CCR for Corrective Action Management Unit (CAMU) Soils Remediation and CAMU/Basin A Well Abandonment were accepted as complete by the EPA and Colorado Department of Public Health and Environment (CDPHE) on September 30, 1998.
- Cell 1 approved by the Regulatory Agencies to receive waste on April 30, 1999.
- Cell 2 approved by the Regulatory Agencies to receive waste on December 7, 2000.
- The redesign of the final cap commenced in July 2002 and was completed in August 2003.
- Based on revised waste volume estimates during November 2002, a decision was made to revert to the original waste volume of 1.8 million bcy rather than an anticipated reduced volume. The cap geometry was revised to reflect the updated waste placement plan.
- Settlement monitoring of the landfill began June 10, 2003.
- Construction began on the Hazardous Waste Landfill (HWL) Intermediate Cover on July 3, 2003.
- Waste was received at the HWL on a full-time basis through April 30, 2004. Part time (Interim) operations began on May 1, 2004.
- The HWL operations concluded in October 2006 with completion of the Phase V intermediate Cover.

- The HWL Closure Plan was approved by the CDPHE in September 2006. The Closure Plan includes discussion of the fact that the 180 day limit will be exceeded due to the scope of the Cap Construction project.
- The HWL Ramp Removal and Closure activities concluded in October 2006. The Certification Report for the Ramp Removal and Closure was submitted to the Regulatory Agencies as Final in November 2006.
- Mobilization for Final Cap construction began in November 2006.
- The HWL Operations CCR was submitted for the Regulatory Agencies' acceptance in January 2007; final Regulatory Agencies' acceptance of the CCR was received in December 2007.
- Final Cap Construction activities concluded in May 2009.
- Preparation of the Final Cap Construction CCR began in July 2009.
- The revised HWL Post Closure Plan was approved in July 2009.
- The HWL Cap Short-Term Monitoring & Maintenance and Post-Closure Groundwater Monitoring activities began in May 2009, upon completion of the HWL Cap Construction Final Inspection.

Review of Last Year

The Regulatory Agencies' acceptance of the Final HWL Cap Construction Quality Assurance (CQA) Engineer's Certification Report and the HWL Closure Certification Report was received in March 2010.

The 2009 Annual Cover Report was prepared in FY10 and issued as Final in May 2010.

The Regulatory Agencies' acceptance of the HWL Final Cap Construction CCR was received in July 2010.

The HWL Post-Closure Groundwater Monitoring Continued in FY10 with quarterly sampling, analysis, evaluation, and reporting on the Regulatory Agencies approved network of monitoring wells and the Leachate Collection System and Leak Detection System Sumps. Analytical results will be included as an Appendix in the 2010 Annual Covers Report for Resource Conservation and Recovery Act (RCRA) Caps.

The LWTS Closure Plan (including closure design) was approved following the Regulatory Agencies' review and public comment in April 2010. Procurement of the LWTS closure subcontractor was completed in June 2010 based on the requirements of the LWTS Closure Plan and design. In conjunction with the approval of the LWTS Closure Plan, modifications were made to the landfill wastewater conveyance system to allow for the transfer of the landfill wastewater from the wastewater lift station to the Landfill Leachate Storage and Loadout Facility (LS/LF) to facilitate the off-post disposal of wastewater from the HWL.

The closure of the LWTS began with the approval of the LWTS Closure Plan starting with the treatment and discharge of wastewater inventory to allow for the closure of the facility. The Demolition of the LWTS began in August 2010 starting with the removal of the floating cover from the influent equalization basin.

The Decontamination of the treatment equipment and piping inside the LWTS building was conducted in September 2010, and the analytical results to certify successful completion of this activity are pending.

Look Ahead
The 2010 Annual Covers Report for RCRA Caps, documenting HWL Post-Closure Monitoring & Maintenance activities for the period beginning October 2009 through April 2010 will be issued in October 2010. This report will include the 2009 HWL Post-Closure Groundwater Monitoring results as an Appendix.

The 2011 Annual Covers Report for RCRA Caps, documenting both HWL and Enhanced Hazardous Waste Landfill (ELF) Post-Closure activities for the period beginning May 2010 through April 2011 is scheduled to be issued in June 2011. This report will include the 2010 HWL and ELF Post-Closure Groundwater Monitoring results as an Appendix.

The LWTS Closure construction activities will continue through December 2010 including: demolition and disposal of the liner systems of the influent and treated water equalization basins; removal of equipment from the LWTS building for salvage, recycling or disposal; decontamination and confirmatory sampling of the LWTS building interior services to certify acceptability of the building for future use; and the preparation of the LWTS Closure Certification Report upon the completion of closure activities.

3.1.2 Construction of Enhanced Hazardous Waste Landfill

Status - Active

History

- Treatability Studies for the Basin F Wastepile and Section 36 Lime Basins Soil Remediation, which are keys to the design of the ELF facility, have been completed and the final reports were submitted to the Regulatory Agencies in November 2000, and September 2000 respectively.
- The design of the ELF started in November 2000 and was completed in July 2002.
- An Integrated Conceptual Design (ICD) for the Basin F Wastepile, Section 36 Lime Basins and the ELF was completed in January 2001. The ICD focuses on design interfaces particularly waste management and the control and treatment of the impacted stormwater from the three concurrent projects.
- An amendment to the Final Chemical Compatibility Testing Report was submitted to the Regulatory Agencies during July 2003; thereby completing the testing program.
- The design to upgrade the LWTS began in July 2001 and was suspended in July 2002.
- The Design for the LWTS Ion Exchange System addition began in August 2003 and was completed in June 2004.
- The design of the Contingent Contaminated Stormwater Control System started in December 2002 and was completed in August 2003. As part of the overall wastewater management strategy, this temporary storage system is needed to provide for storage of the potentially contaminated wastewater in the event that commingling of the contaminated with the potentially contaminated wastewater was to occur.

Under such circumstances the commingled wastewater will be sent off-post for disposal.

- Site preparation work for the ELF started during August 2003 and was completed in November 2003.
- Installation of the LWTF Ion Exchange System began in November 2004 and was completed in August 2005. This component is necessary to treat potentially contaminated stormwater from ELF Operations and the Basin F Wastepile.
- Per specification, the LWTS receives and treats for discharge ELF Operations generated fluids including decontamination water, potentially contaminated storm water and leak detection water. In addition, the LWTS receives and treats leak detection water and leachate from the HWL.
- Construction of the ELF began in October 2003. Cell excavation and construction of the perimeter berms were completed in May 2004. Construction of the liner system started in May 2004 and was completed in October 2005.
- The Regulatory Agencies approved the Construction Quality Assurance Engineer (CQAE) certification report in March 2006. The Regulatory Agencies approval to place waste in the ELF was also received in March 2006.
- The ELF operations subcontractor mobilized in the 1st Quarter of FY06. Waste placement activities at the ELF began in April 2006 in conjunction with the Basin F Wastepile Slow Start activities.
- Waste placement operations at the ELF were completed on May 5, 2008. In June of 2008, the ELF Operations staff was tasked to identify an area within the ELF waste mass to accommodate disposition of debris generated by the closure of the on-site agent laboratory, Building 130. On July 17, 2008, the Building 130 support activities were completed at the ELF, and on July 18, 2008, the ELF Intermediate Cover was re-established as complete. At the conclusion of FY08, a total of 1,100,930 compacted cubic yards (ccy) of material had been placed in the ELF and all scheduled waste placement operations were complete.
- The ELF Cap Construction procurement process began as scheduled in May 2008. However, the contract was awarded in August 2008, approximately 4 months ahead of schedule. Construction subcontractor mobilization activities began in September 2008.
- The ELF Closure Plan was approved by the CDPHE in August 2008 and it includes discussion of the fact that the 180 day limit will be exceeded due to the scope of the Cap Construction project.
- The ELF Cap Construction project began in October 2008.

Review of Last Year

The ELF Cap Construction project continued and was completed in May 2010.

The field activities under the ELF Operational and Closure Groundwater Monitoring Program concluded in May 2010 with the start of Post-Closure activities at the ELF. The 2008 Annual Groundwater Monitoring Report, including ELF Closure Groundwater Monitoring , was issued in October 2010.

The Post-Closure Monitoring & Maintenance activities began in late May 2010 following completion of Cap Construction final inspection activities.

The ELF Post-Closure Plan received CDPHE approval in August 2010, and acceptance from the other Regulatory Agencies' by October 2010.

Look Ahead
The 2009 Annual Groundwater Monitoring Report, including ELF Closure Groundwater Monitoring through May 2010, is planned to be issued in December 2010. The 2011 Annual Covers Report for RCRA Caps, documenting both HWL and ELF Post-Closure activities for the period beginning May 2010 through April 2011 is scheduled to be issued in June 2011. This report will include the 2010 HWL and ELF Post-Closure Groundwater Monitoring results as an Appendix.

3.1.3 Basin A Consolidation and Remediation:

Status - Active

History

- Design began in June 1996 by the RVO and was completed on September 29, 1997.
- Placement of biota and Priority 1 (P1) soils from the CAMU area began in January 1998, and was completed in April 1998. The placement of soils to a minimum depth of one-foot over the entire footprint of Basin A provided the required separation between potential Unexploded Ordnance (UXO) and future equipment and personnel that will travel over the area during the waste consolidation phase of the project.
- A Basin A Dispute Resolution Subcommittee was formed in December 1997. The work of the subcommittee resulted in a dispute resolution agreement, which was signed by the RMA Committee and RMA Council in March 1998 that identifies actions to be taken to resolve EPA and CDPHE disputes.
- Design of the Basin A Operators Support Facilities began in May 1998 and was completed in October 1998.
- Construction of Basin A Support Facilities was completed in April 1999.
- During FY03, Basin A imported gradefill from both BA 3, and 9A, and P1 soil removal from Section 25.
- The redesign of the Basin A Cover began in August 2003. This design is to address an RVO/Regulatory Agencies agreement to make the Basin A Cover a RCRA-Equivalent Cover. The re-design of the cover will be integrated into the design of the covers of adjoining projects to ensure continuity and consistency of stormwater management and routing.
- Basin A continued to receive waste on a full-time basis through June 30, 2004, and part-time (Interim) operations began July 1, 2004. The Basin A Operations Plan was modified prior to the start of Interim Operations to address the reduced level of activities.
- The redesign of the Basin A Cover continued with preparation of a Subgrade DCN-BAOPS-064. Revision two was approved in April 2004.

- Interim O&M of the entire Basin A Consolidation Area concluded in the 3rd Quarter of FY05. Interim Operations continued in the Notch area during 2008, primarily supporting the MSD 3 project and various other RMA performers.
- Interim operations/waste placement activities at Basin A were completed with the Notch (2009) an area located near the central/western portion of the Consolidation Area. Based on the final survey, a total of 249,305 ccy of material were placed in the Basin A Notch Area.
- The Basin A Consolidation and Remediation Operations/Subgrade CCR was finalized and approved by the Regulatory Agencies on September 3, 2009. This CCR describes the waste consolidation operations and gradefill placement that occurred prior to cover construction.

Review of Last Year
Construction activities for FY10 primarily included installation of engineering controls, construction of the perimeter access road and Integrated Cover System (ICS) construction subcontractor demobilization. ICS Cover Construction Final Inspection activities were completed in April 2010.

Short-Term Monitoring & Maintenance of the Basin A cover continued throughout FY10.

The Final ICS CQA Certification Report was transmitted to the Regulatory Agencies in September 2010. The Final ICS CCR was transmitted to the Regulatory Agencies in September 2010.

Look Ahead
Upon Regulatory Agencies' approval of the CCR, planned for early October 2010, this Remedy Project will be complete.

The FY10 Short-Term Monitoring & Maintenance activities for RCRA-Equivalent, 2-, and 3-Foot Cover will be documented in the 2010 Annual Covers Report, which is scheduled to be issued in November 2010.

3.2 Early Start Projects

3.2.1 Sanitary/Chemical Sewer Manhole Plugging – Phase I

Status - Complete

History
- Design began in June 1996 by the RVO, and was completed on May 30, 1997.
- Subcontract was awarded to Spectrum Services on September 3, 1997.
- Pre-Final Inspection was conducted on February 2, 1998.
- Fieldwork was completed on February 23, 1998 and the Final Inspection was conducted.
- Draft CCR submitted to the Regulatory Agencies on April 24, 1998.

- Project accepted as complete (CCR was approved) by the Regulatory Agencies on September 30, 1998.

3.2.2 Shell/Complex (Army) Disposal Trench Slurry Walls

Status - Active

History

- Design began in June 1996 by the RVO and was completed on September 12, 1997.
- Program Management Contractor (PMC) separates implementation project into six major work packages:
  - Construction of Access Roads/Working Benches (completed in July 1998)
  - Subsurface Exploration (completed in October 1998)
  - Deep Soil Mixing; Construction of the Complex Army and Shell Trenches Slurry Walls (completed in April 1999)
  - Installation of Extraction Trench/Well System (completed in February 2000)
  - Installation of Monitoring Well System (completed in March 2000)
  - Interim Revegetation (Fall 2000)
  - Records review completed in March 2001
- The Shell Trenches project was accepted as complete (CCR approved) by the Regulatory Agencies on June 8, 2001.
- The Complex (Army) Trenches CCR was approved on July 3, 2001. It was noted that the project was constructed according to the approved design, but that future documentation was required to demonstrate that the extraction trench is operational and functional.
- Received the Regulatory Agencies' approval of the Operational and Functional Report on September 30, 2002.
- Record documents transferred to RVO Document Tracking Center on August 3, 2001.

Review of Last Year

Dewatering operations continue; see Basin A Neck for operation detail.

Look Ahead

Dewatering of the Complex (Army) Trenches is ongoing. Achieving the dewatering calls is not required until five years after the cover vegetation is established. Cover construction, revegetation and initial irrigation were completed in September 2009; consequently, achievement of the dewatering goals is expected to occur by September 2014. Dewatering will continue until the shut-off goals are met.

3.2.3 Post-ROD Removal Action for Structures

Asbestos Removal: **Status – Complete**

History

- This removal action is the completion of work begun under the Asbestos Removal Interim Response Action (IRA). For a description and brief history of this IRA refer to Appendix A.
- The RVO prepared a CCR for the completion of three Asbestos Containing Material (ACM) removal projects that were conducted after the Asbestos Removal IRA, but prior to any ROD Implementation Projects.
- The RMA Administrative Area Asbestos Remediation Projects final CCR dated January 14, 2003 was accepted as complete (CCR approved) by the Regulatory Agencies on September 30, 2003.

Chemical Process Equipment Removal (Non-Agent) (Exterior) **Status - Complete**

History

- This removal action is the completion of work begun under the Chemical Process-Related Equipment IRA. For a description and brief history of this IRA refer to Appendix A.
- The Shell Outside-Pipeline Removal project was completed in January 1998 after approximately 1,300 tons of steel was recycled.
- The completion report was issued in March 1998, and the EPA and CDPHE accepted the project as complete on September 30, 1998.

Chemical Process Equipment Removal (Non-Agent) (Interior) **Status – Complete**

History

- This removal action began in January 1998. In preparation for structure demolition, the equipment and piping were characterized and partially removed.
- The project was completed in December 1999, and approximately 308 tons of steel was recycled.
- A Pre-Final Inspection was held on January 10, 2000, and upon completion of the site inspection, the Regulatory Agencies attending agreed that the Pre-Final Inspection would also serve as the Final Inspection.
- The final draft of the CCR was sent to the Regulatory Agencies for final approval in September 2000, and the EPA and CDPHE accepted the project as complete on September 29, 2000.

3.3 Phase I – Outlying Areas

3.3.1 Toxic Storage Yards Soil Remediation

Status - Complete

History

- Design began in April 1998 and was completed on March 1999.
- Fieldwork began in June 1999.
- Fieldwork completed in September 1999.
- Final Inspection was held on October 13, 1999.
- Project accepted as complete (CCR was approved) by the Regulatory Agencies on June 20, 2000.
- Record documents transferred to RVO Document Tracking Center on August 21, 2000.

3.3.2 Existing (Sanitary) Landfills Remediation

Status - Complete

History

- Design began in August 1997 and was completed in August 1998.
- Fieldwork began in May 1999.
- Section 1 Landfill fieldwork completed in September 1999.
- Final Inspection held for Section 1 - September 20, 1999.
- Section 4 Landfill fieldwork completed in December 1999.
- Final Inspection held for Section 4 – November 16, 1999.
- Section 1 Landfill accepted as complete (CCR approved) by the Regulatory Agencies on February 29, 2000. Record documents transferred to RVO Document Tracking Center on April 28, 2000.
- Section 4 Landfill accepted as complete (CCR approved) by the Regulatory Agencies on May 25, 2000. Record documents transferred to RVO Document Tracking Center on July 24, 2000.
- Section 30 Landfill was potholed in September and October 2000 to determine the percentage of asbestos present in the debris. This work was necessary to forecast the asbestos debris for the HWL. Minimal ACM was found.
- A design revision (DCN-ESL36-19A) to incorporate Lessons Learned from the Section 1 and Section 4 Landfill(s) was completed in May 2003.
- Remediation of the Section 36 Landfill was completed in August 2003. Record documents transferred to the RVO Document Tracking Center on November 3, 2005.
- Additional biota soil was identified in Section 1 and remediated as additional Contingent Soil Volume (CSV) in July 2003 by the subcontractor performing the Section 36 work.

- Remediation of the Section 30 Landfill began in November 2003 and was completed in July 2004. Record documents transferred to the RVO Document Tracking Center on July 27, 2004.
- The Section 36 Landfill was accepted as complete (CCR approved) by the Regulatory Agencies on July 15, 2004.
- Explanation of Significant Differences (ESD) to explain volume difference was approved in May 2005.
- The Section 30 Landfill was accepted as complete (CCR approved) by the Regulatory Agencies on August 16, 2005.

3.3.3 Lake Sediments Remediation

Status - Complete

History

- Design began in September 1997 and was completed in October 1998.
- Fieldwork began in June 1999.
- Fieldwork completed in August 1999.
- Final Inspection was held on October 7, 1999.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on April 20, 2000.
- Record documents transferred to RVO Document Tracking Center on June 7, 2000.

3.3.4 Burial Trenches Soil Remediation

Status – Complete

History

- Design began in August 1997 and was completed in December 1999.
- Physical fieldwork began in April 2000.
- The remediation subcontractor completed the base SOW as outlined in the 100 Percent Design Package (dated December 1999) in October 2000.
- In addition, the RVO has incorporated 15 new sites from Sections 4 and 9 into the Burial Trenches (BT) work scope, and these sites were designated as BT4-01 through BT4-14 and BT9-01. The sites included both surface debris and trenches and were remediated as a "housekeeping" exercise. Sites BT4-01 through -07 was completed in October 2000, Sites BT4-08 through BT4-14 was completed in April 2001, and BT9-01 was completed in August 2001.
- Project accepted as complete (Part 1 CCR approved) by the Regulatory Agencies on September 25, 2002.
- The Army approved amendments to the Chemical Site Safety Submission and Explosive Site Safety Submission in August 2002.
- Remediation activities recommenced during August 2002 focused on Sites ESA-2c, BT20-01, BT29-01, BT29-02, BT30-01 and BT30-01. BT4-15, a site north of the Building 111 parking lot, consisting of railroad ballast with munitions debris was also remediated. Remediation activities were completed in January 2003.

- The Part 2 CCR was accepted as complete (CCR approved) by the Regulatory Agencies on September 30, 2004.
- Project record documents transferred to the RVO Document Tracking Center on February 4, 2005.

3.3.5 Munitions (Testing) Soil Remediation

Status - Complete

History

- Design began in August 1997 and was completed in December 1999.
- Mobilization of equipment for Munitions (Testing) (MT) and BT began in April 2000.
- Physical fieldwork began in July 2000.
- Completed the Final Inspection (Part 1) in November of 2000 and the Regulatory Agencies records review was conducted in January of 2001 without issue.
- Decision by the Summary Team to expand Site ESA-4a beyond the ROD boundary and perform an additional electromagnetic (EM-61) geophysical survey documented in May 2002. The Summary Team also identified additional work in CSA-2c; additional work in CSA-2c is documented in CCR Part 1.
- The process for development of final target clearance criteria was approved by the Regulatory Agencies on April 15, 2003 (Ref: DCN-MTBT-057).
- A Council Meeting to develop a mutually agreeable Path Forward for continued characterization of Site ESA-4a was held on December 10, 2003. The Path Forward for Site ESA-4a was signed by the Regulatory Agencies and the RVO on January 6, 2004.
- The MT CCR Part 1 was approved by the Regulatory Agencies on July 15, 2004.
- An Amendment to the Resolution on the Path Forward for Site ESA-4a, that documented the final target clearance criteria of 3.5 mV for the interval from 0 to 1 foot below ground surface established by the working group in DCN-MTBT-068, was approved by the Regulatory Agencies and the RVO on August 24, 2004.
- Characterization of targets continued during FY05; all target characterization work was completed in July 2005. Approximately 12.4 acres were added to the original site area (approximately 205 acres) during March 2005 when Munitions and Explosive of Concern (MEC) were found in close proximity to the southeast corner of Site ESA-4a in Section 29. Target characterization in this area was completed in June 2005
- A surface sweep of the Borrow Area (BA) BA 10 Burn Area and a geophysical survey and target characterization of the ground surface surrounding BT32-10 were added to the project via DCN and performed under MT Part II in 2005. There were no MEC recovered from either site.
- In June 2005, the RVO directed that site assessment activities for the MT Demolition Range Exclusion Zone (DREZ) (initial sample area of approximately 7.6 acres) be added to the SOW of the MT Project to assist with future decision making for remediation of the DREZ. The RVO expanded the sample area for the MT DREZ in late July 2005 adding an additional 10.7 acres. Target characterization work in the

MT DREZ commenced in July 2005 and was completed in August 2005. The Demolition Range will be remediated as MT Part IV.

- Activities to support permanent revegetation of Site ESA-4a were deferred until early September 2005 to mitigate potential environmental impacts to the burrowing owls that reside in the site area during the summer. Ripping to a nominal depth of 1-foot commenced early in September 2005. Seedbed preparation began in September 2005.
- In July of 2005, the RVO directed the PMC to perform a site assessment of the area contiguous to the historic M47 test pad (intersection of the current North Plants Haul Road and 8th Avenue). This assessment led to a munitions response action requirement for sites BA 9A (Parcel 2) and Site CSA-2c. Southwest/Northwest that was completed in September 2006.
- The site assessment activities for DREZ subsequently led to proposed munitions response action for DREZ. Field operations for the DREZ munitions response were completed in September of 2006. This effort involved the characterization of 41,888 targets and resulted in the recovery of 133 MEC.
- Sampling of the MT site ESA-4a demolition/burn/burial pits was performed in the 1st Quarter of FY07 and the analytical results indicated that there was no concern related to munitions constituents. The Final Inspection for site ESA-4a was performed in December of 2006. The MT CCR Part II final revision was issued as Final in September 2007.
- The Final Inspection of the DREZ and for the munitions response action for sites BA 9A (Parcel 2) and Site CSA-2c Southwest/Northwest was completed in February 2007. The munitions response action for the DREZ, BA 9A (Parcel 2) and Site CSA-2c Southwest/Northwest are addressed in the MT CCR Part III, which was prepared in FY07.
- With approval of DCN-MTBT-092 in Spring 2007, the PMC began efforts to close the RMA Demolition Range and MT Part IV. Effort included the development/approval of the Remediation Plan for the RMA Demolition Range, performance of a surface sweep, initial/Quality Assurance (QA) geophysical surveys, and initial QA target characterization.
- All field work associated with the munitions response portion of the closure of the Demolition Range was completed in November of 2007. All field efforts, including removal of biota soil, were completed in the 2nd Quarter of FY08 and the Final Inspection was performed in March 2008.
- All administrative closure efforts associated with the MT Implementation Project are complete. Final Regulatory Agencies' acceptance of the MT ESD was received on November 18, 2008. Final Regulatory Agencies' acceptance of the MT CCR Part IV was received on May 14, 2009.

3.3.6 Miscellaneous Northern Tier Soil Remediation

Status - Complete

History

- Design began in September 1998 and was completed in October 1998.
- Fieldwork began in April 1999.
- Fieldwork completed in October 1999.
- Final Inspection was held on October 7, 1999.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on April 20, 2000.
- Record documents transferred to RVO Document Tracking Center on June 7, 2000.
- Additional CSV identified during the summer of 2002 and CSV removed in early 2003. CCR addendum issued in March 2004.

3.3.7 Miscellaneous Southern Tier Soil Remediation

Status - Complete

History

- Design began in September 1998 and was completed in October 1998.
- Fieldwork began in April 1999.
- Fieldwork completed in September 1999.
- Final Inspection was held on October 7, 1999.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on July 20, 2000.
- Record documents transferred to RVO Document Tracking Center on August 29, 2000.
- This project was reopened due to soils from the Sand Creek Lateral (SCL) and the South Lake Ditches, located in Section 1 and 2, identified by the Biological Advisory Subcommittee (BAS) to be removed. These soils are referred to as Deep Acute. Work to remove these soils and place them in the HWL began in September 2004.
- Work performed in the fall of 2004 at sites SSA-2a and SSA-2b involved CSV excavation of acute Human Health Exceedance (HHE) level soils at depth and backfilling of the excavated sites. A total of 4,254 bcy of CSV was excavated from the SSA-2a deep acute CSV sites and 3,565 bcy of CSV was excavated from the SSA-2b deep acute CSV sites. The work was performed under the Bald Eagle Management Area (BEMA) guidelines and was completed in December 2004.
- An addendum to the Miscellaneous Southern Tier Soils (MSTS) CCR was submitted to the Regulatory Agencies in June 2005.
- Late in FY04, the U.S. Fish and Wildlife Service (USFWS) tilled a Terrestrial Residual Ecological Risk (TRER) site near the SCL (and the Visitor's Center) in Section 2 as part of the remediation plan for TRER sites. Planned post-TRER remediation soil samples identified HHE and Biota soil contamination. Historical photographic analysis indicated that dredging activities of the Lateral in the 1950s spread contamination onto the Lateral's banks. To address this issue, a site

characterization effort was completed in FY05 to delineate the extent of contamination.

- At the conclusion of the FY05 site characterization effort, a DCN for the remediation of the SCL in Section 2 (MSTS) was prepared and approved in early FY06. A contract to remediate the SCL Biota and HHE soils was awarded in January 2006. The Biota soils were disposed in the Basin A Notch and HHE was placed in the HWL. When the HWL met final waste grades the remaining HHE was disposed in the ELF. The MSTS Remediation included excavation and disposal of approximately 88,000 bcy of HHE and Biota Soils. The MSTS Project finished in the winter of 2006 and revegetation will be performed by the USFWS.
- The Draft CCR for MSTS and Section 35 was submitted to the Regulatory Agencies on February 2007.
- The Final SCL CCR for the MSTS and Section 35 Soil Remediation was accepted as complete (CCR approval) by the Regulatory Agencies on September 2, 2008.

3.3.8 Section 36 Bedrock Ridge Groundwater Plume Extraction System

Status – Complete

History

- Design began in February 1997 by the RVO and was completed in March 1999.
- Contract award made to Morrison Knudsen, May 19, 1999; letter dated May 25, 1999 sent to the Regulatory Agencies informing them that Shell Oil Company (Shell) had assumed lead party responsibility.
- Fieldwork began in July 1999 and was completed in February 2000.
- One year Operational Verification of System Performance was completed in March 2001.
- A two-month-long extraction test began in September 2004 to determine the aquifer response based on use of the monitoring well as an extraction well. Based on the results of the long-term pump test, a DCN will be prepared to best achieve plume capture.
- Fourth extraction well was installed and become operational in August 2005.
- The Bedrock Ridge project was accepted as complete (CCR approved) by the Regulatory Agencies on September 30, 2008.

3.3.9 South Plants Structure Demolition and Removal

Status - Complete

History

The South Plants Structure Demolition project is divided into two phases and five work packages (WP).

Phase I - Work Packages 1-4

- 100 Percent Design Package for Phase I (WPs 1-4 – non-agent) was completed and issued to the Regulatory Agencies in October 1998.
- Phase I (WPs 1-4) consist of nonagent-related structures and is field complete. A total of 148 structures were demolished, with debris from 138 structures transported

to Basin A and debris from 10 structures transported to the HWL. The CCR for Phase I was approved by the Regulatory Agencies on September 29, 2000.
- Record documents transferred to RVO Document Tracking Center on October 18, 2000.

Phase II – Work Package 5

- 100 Percent Design Package for Phase II (WP5 – agent) was completed and issued to the Regulatory Agencies in October 1999.
- Phase II (WP5) mainly consists of agent-related structures.
- A total of 50 structures were demolished, with debris from 49 of the structures transported to the HWL for disposal.
- Fieldwork was completed in May 2001.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on July 2, 2002.
- Record documents transferred to RVO Document Tracking Center on September 16, 2002.

3.3.10 Miscellaneous RMA Structures Demolition and Removal

Status - Active

History

- Design began in November 1998 and was completed in January 2000.
- Phase I Structure Demolition original SOW was completed in November 2000. A total of 102 structures within Phase I have been demolished, with debris from 87 structures transported to Basin A and debris from 15 structures transported to the HWL.
- The final CCR for Phase I, including demolition of Building 809, (added scope) was transmitted to the Regulatory Agencies in May 2002, with the Regulatory Agencies acceptance on September 30, 2002. Revision 1 of the CCR was transmitted to the Regulatory Agencies on July 1, 2003.
- Record documents transferred to the RVO Document Tracking Center September 30, 2002.
- DCN-MSD2-002 was prepared to update specifications and drawings and to add the removal of debris piles to the design; the DCN was approved in October 2003.
- Phase II began in August 2003 and was completed in October 2004. A total of 53 debris piles and 30 structures were removed/demolished as part of Phase II.
- The Phase II CCR was completed in January 2006 and accepted by the Regulatory Agencies in June 2006.
- DCN-MSD2-013 was prepared and approved in FY06 which incorporated into the design the refinement of 17 ROD identified “No Future Use” structures “No Future Use” Sub Stations to “Future Use” structures.
- The RVO identified two potential new sites associated with the North Plants construction and/or operations requiring investigation for potential contamination. The RVO requested that PMC prepare a task order proposal to perform this new

SOW under Miscellaneous RMA Structure Demolition and Removal Project – Phase III.

- During FY07 it was decided, based on an assumed program-wide funding availability projection, that the implementation schedule for the Miscellaneous RMA Structure Demolition and Removal Project – Phase III would be accelerated from FY09 to FY08. To meet the accelerated schedule the Phase III DCN was distributed to the Regulatory Agencies for approval in September 2007.
- In addition, the RVO elected to remove the asbestos containing material and miscellaneous debris in Section 25 under the Miscellaneous phase III Project. A DCN proposing remediation of the site was approved in September 2007 by the Regulatory Agencies.
- Building 884 refinement to Future Use classification (DCN-MSD3-003) was accepted by the Regulatory Agencies in August 2007. Building 132 refinement to Future Use classification (DCN-MSD3-004) was accepted by the Regulatory Agencies in November 2007.
- Phase III began in February 2008 remediation included:
    - Excavation of asbestos-containing soil and miscellaneous construction debris (Section 25 Asbestos Remediation)
    - Section 29 Magazine Area Munitions Response that included soil excavation and clearance of the soil beneath three magazines
    - Demolition of 25 aboveground and belowground structures
    - Removal Asbestos-Containing Soil in Building 111 Crawl Space
    - Removal of transite and Thermal System Insulation (TSI) from Structures 111,618, 619 and 1726. After close of the ELF asbestos containing soil from Structure 111 Crawl Space Remediation and friable TSI were transported off-site.
- In October 2008 and subsequently in March 2009, previously unidentified features (i.e., concrete pad, sump and manhole) were discovered in Section 4; removal backfill and grading were completed in May 2009. The Data Summary Report (DSR) which was in progress was revised to include the results of the two CSV samples that were collected. The Final DSR and responses to the Regulatory Agencies comments were transmitted to and accepted by the Regulatory Agencies in May 2009.
- A DCN was prepared in responses to the Regulatory Agencies' comments on the Draft CCR regarding documentation for the RMA Primary Electrical Substation and the future demolition of CERCLA Building 318 the CERCLA Waste Water Treatment Plant (WWTP). The DCN was approved in July 2009, which resulted in a Miscellaneous Structure Phase IV to demolish and document the demolition of Building 318.
- The Draft CCR for Phase III was issued to the Regulatory Agencies in October 2008; the Final Records Review was conducted in November 2008. The Final Inspection for Phase III structure portion was completed in August 2009.

Drummed Waste Handling and Disposal *Status - Completed*

- The drum processing and disposal task for drums in the South Plants/Miscellaneous Structures began operations in June 2000 and completed task in December 2000.
- Close to 13,000 items were processed through the drum shredder and disposed of in the HWL.
- The drum shredding project completion report was included in the Miscellaneous RMA Structure Demolition and Removal – Phase I CCR.
- The task for drums stored in the North Plants was awarded in August 2000 and completed in December 2000. 4,446 drums were processed, of which 197 poly drums were shredded and the remaining drums were emptied and crushed. All debris was disposed of in the HWL.
- The North Plants drum removal project completion report was included in the Miscellaneous RMA Structure Demolition and Removal – Phase I CCR.

Section 36 Boneyard Screening and M139 Bomblet Destruction Task *Status - Completed*

- Discovery, handling and destruction of M139 bomblets and final screening and debris removal of the Section 36 Boneyard are documented in the Miscellaneous RMA Structures Demolition and Removal Project Phase I CCR. See the section entitled "UXO Emergency Response" for further information.

Review of Last Year
The Final CCR for Phase III was issued in November 2009 and received the Regulatory Agencies' approval in December 2009.

Prepared a DCN to address CERCLA demolition design requirements. Miscellaneous RMA Structures Demolition and Removal Phase IV, including demolition of the CERCLA Wastewater Treatment Facility began late August 2010.

Look Ahead
Phase IV demolition and removal activities are planned to finish in November 2010. The phase IV CCR will be prepared and is planned to be approved in late March 2011.

3.4 Phase II – South Plants Area

3.4.1 Buried M-1 Pits Soil Remediation

Status - Complete

History
- Treatability Study was completed in 1999 and a Treatability Study Report was issued in early 2000.
- Cement Soil Stabilization was selected as the best option for meeting the ROD goals and standards for stabilizing the contaminated soil prior to disposal in the HWL.

- Design began in January 2000 and was completed in January 2001.
- Fieldwork awarded in February 2001 and completed in November 2001.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on July 18, 2002.

3.4.2 Hex Pit Soil Remediation

Status - Complete

History

- In-Situ Thermal Desorption (ISTD) was selected as the remedy method (March 2000).
- Shell Corporation donated the patent rights to the ISTD technology to the University of Texas at the end of 1999.
- TerraTherm (TT) LLC, was formed as the sole licensee to use this technology in early 2000.
- Design began in February 2000 and was completed in March 2001.
- TT mobilized in September 2001 and began site preparation in October 2001.
- System evaluation began on March 18, 2002, after failure of remedy method, with the decision to terminate on April 17, 2002.
- The working group, with concurrence of Restoration Advisory Board (RAB) members selected soil excavation and disposal in the HWL. Due to the change in the method of remediation, a ROD Amendment was required.
- A Treatability Study was performed to demonstrated Hex Pit leachate and HWL liner compatibility, and completed in November 2002.
- ROD amendment began in June 2002; with the Regulatory Agencies approval (Transmittal of document, signed by the RVO and the Regulatory Agencies), April 17, 2003.
- Redesign of the Hex Pit Soil Remediation Project began in October 2002 and was completed in October 2003.
- Excavation and disposal to the HWL began in November 2003 and was completed in January 2004. Approximately 4,310 bcy were placed in the HWL (2,795 bcy of HHE, 1,436 bcy of P1 soils, and 79 bcy of debris).
- The project was accepted as complete (CCR approved) by the Regulatory Agencies on July 21, 2004.

3.4.3 South Plants Balance of Areas and Central Processing Area Soil Remediation – Phase II

Status - Active

History

- The Draft Design Scope of Work (DDSOW) was submitted to the Regulatory Agencies in September 1998. The South Plants Central Processing Area (SPCPA) Soil Remediation and South Plants Balance of Areas (BOA) Soil Remediation were separated into two phases.
- The Phase II Design Deadline (95 Percent Design) was submitted August 7, 2000.

- The Phase II 100 Percent Design Package was submitted to the Regulatory Agencies in June 2001. Phase II includes the excavation of HHE soil in the Central Processing Area (CPA), consolidation of biota soil, and the construction of a soil cover for all the South Plants Area. The implementation of this design will be accomplished in two distinct parts: 1) Excavation of HHE soil, consolidation of biota soil, and subgrade construction; and 2) Final cover construction.
- The Phase II Part 1 remediation began in December 2001.
- During Phase II Part 1 approximately 16,000 bcy of HHE soil from CPA was excavated and transported to the HWL. 124 foundations were removed from the CPA. 136 foundations were removed in BOA, 300,000 bcy of biota soil excavated and 150,000 bcy excavated from Borrow Area 11 and placed in Complex Army Trenches, and 1.3 million bcy of gradefill was excavated and placed in CPA. Phase II Part 1 remediation was completed in June 2003.
- Cover redesign began in April 2003 to meet the RCRA-Equivalent Cover specifications.
- The procurement cycle for the SPCPA and BOA subgrade construction was initiated in January 2004 and the subcontract was awarded on June 14, 2004. Mobilization activities began in early July 2004. The work was completed in November 2004.
- The cover redesign work was dependent upon the Basin F/Basin F Exterior Soil Remediation – Part II project to provide resolution of the remaining Regulatory Agencies design issues pertaining to RCRA-Equivalent Covers.
- The Borrow Area characterization sampling and testing were performed to find acceptable soils from within Borrow Area 10 for the RCRA-Equivalent Cover and soils with acceptable fines content and agronomic characteristics for the 3.5-foot cover from Borrow Area 3.
- In Summer 2007, based on a 2006 EPA evaluation of ditch banks, the Regulatory Agencies directed CSV soil sampling was performed in SAR Site SPSA-9A, which is located in the 1-Foot Backfill Area. In Spring/Summer 2007 soil sampling was performed in the 1-Foot Backfill Area for the purpose of eliminating the 1-Foot Backfill requirement. The requirement for placement of 1-foot of backfill was eliminated form sampled areas and, as a result of this and the CSV sampling, in Spring/Summer 2008, approximately 18,000 cy of additional biota exceedance soil was excavated and consolidated within the CPA boundary. The requirements of remediation of the biota soil identified in 2007 were proposed in DCN-ICSC-6, which was approved by the Regulatory Agencies in April 2008.
- The Integrated Cover System Design (ICSD) Revised 95 Percent Design Package was disputed by the Regulatory Agencies, specifically the agreed upon redesign of the capillary barrier system. Revised 95 Percent Design was resolved and documented in the Dispute Resolution Agreement for the Revised 95 Percent ICSD – Signed by all Parties on June 6, 2007. The revisions as documented in the Dispute Resolution were incorporated and presented in Revision 1 of the ICSD 100 Percent Design, dated July 24, 2007.
- Completion of Revision 1 of the South Plants Phase 2, Part 1 and Part 2 CCR was delayed during FY08 due to the additional biota soil removal activities in the South Plants 1-Foot Backfill Area performed in Spring/Summer 2008.

- Draft ICS Project Subgrade and Cover Construction CCR – Part 1, which documented all ICS work completed through the end of FY08, was transmitted to the Regulatory Agencies in December 2008.

Review of Last Year
The South Plants Phase 2, Part 1 and Part 2 CCR Revision 1 was approved by the Regulatory Agencies in January 2010.

Construction activities for FY10 primarily included installation of engineering controls, construction of the perimeter access road and ICS construction subcontractor demobilization. ICS Cover Construction Final Inspection activities were completed in April 2010.

Short-Term Monitoring & Maintenance of the South Plants covers began in April 2010 after completion of the first season of irrigation and final inspection activities.

The Final ICS CQA Certification Report was transmitted to the Regulatory Agencies in September 2010. The Final ICS CCR was transmitted to the Regulatory Agencies in September 2010.

Look Ahead
Upon Regulatory Agencies' approval of the ICS CCR, planned for early October 2010, this Remedy Project will be complete.

The FY10 Short-Term Monitoring & Maintenance activities for RCRA-Equivalent, 2-, and 3-Foot Covers will be documented in the 2010 Annual Covers Report, which is scheduled to be issued in November 2010.

3.4.4 South Plants Balance of Areas and Central Processing Area Soil Remediation – Phase I

Status - Complete

History

- The Draft SOW was submitted to the Regulatory Agencies in September 1998. This acceleration was essential in order to support the requirements of a 3:1 ratio of soil to debris the HWL. HHE soil excavation must be concurrent with WP 5 of the South Plants Structure Demolition project to support this effort. The SPCPA Soil Remediation and South Plants BOA Soil Remediation were separated into two phases.
- The Phase I 100 Percent Design Package was submitted to the Regulatory Agencies in March 2000. Phase I included the excavation of HHE soil within the South Plants BOA. Phase I activities commenced in Spring 2000 and were completed in October 2001.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on September 24, 2002.

3.5 Phase III – Sections 35 And 36 Sites

3.5.1 Sanitary Sewer Manhole Plugging – Phase II

Status – Complete

History

- The Final Design Scope of Work (DSOW) was issued in July 25, 2002.
- The majority of the sanitary sewers included in the scope serve structures that are currently scheduled for demolition under Phase III of Miscellaneous RMA Structure Demolition and Removal Project. Therefore, the Sanitary Sewer Manhole Plugging Project – Phase II design has been placed on hold and is scheduled to resume in 2009 to coincide with the implementation of Phase III of the Miscellaneous RMA Structure Demolition and Removal Project.
- The design will commence at the 95 Percent level as identified in the Final DSOW.
- Revision 1 of the Final DSOW was issued on February 2006 to clarify the scope of the project regarding use of specific manholes.
- The 95 Percent Sanitary Sewer Manhole Plugging Project – Phase II Design Package was issued to the Regulatory Agencies in September 2007.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on February 17, 2009.

3.5.2 Section 36 Balance of Areas Soil Remediation

Status – Complete

History

- Design began in December 2000.
- The 30 Percent Design Package issued to the Regulatory Agencies in May 2001.
- The issue of Maximum Credible Event (MCE) was introduced to the project in December 2001. Due to MCE issues, the plan was for two designs, MCE areas and non MCE areas.
- Following revised MCE determinations, "it is not possible to determine an MCE for this project," (3rd Quarter FY 2002) from the Department of Defense Explosives Safety Board (DDESB), the scope reverted back to a single design for the entire project.
- Final 100 Percent Design Package was completed in April 2003. This included a Sampling and Analysis Plan (SAP) to Determine Potential Residual Biota Risk for Soil Cover Deletion Areas.
- Implementation start occurred in May 2003. The work has been divided into two parts due to budget constraints. Part 1 includes all remediation and backfill. Part 2 includes excavation and grading for contours to allow run-off from Basin A, Complex (Army) Trenches, and Shell Disposal Trenches (SDT).
- A Surface Sweep by UXO personnel began late in June 2003 and was finished in August 2003. An area within the boundaries of Site CSA-4 is the Explosive Site Safety Submission boundary, which is believed to have the greatest potential to produce MEC during the remediation process. This boundary was established using

a characterization process, which included a surface sweep using magnetometers to help identify which areas, had the densest sub-surface debris. During this characterization process the PMC UXO sweep team members recovered five M15 White Phosphorus grenades. A Site Safety Submission was prepared by the project team approved by the DDESB; remediation was completed in April 2004.

- In FY03, the operations subcontractor for Basin A removed biota soils from an area of Section 36 BOA and placed them as gradefill in Basin A, initiating Part 1 of the project.
- A subcontract for soil remediation was awarded in July 2003 to excavate and transport HHE soils to the HWL, and Biota and P1 soils to Basin A. The SOW for this subcontract comprised the majority of the Section 36 BOA Part 1 project.
- The subcontractor mobilized in September 2003 to remediate HHE and debris designated by the ROD for placement in the HWL, and all other debris for placement in Basin A. The original SOW was completed in January 2004.
- Scope changes identified in FY04 included excavation and disposal of additional P1 soils along the Complex (Army) Trenches boundary and the excavation of additional chemical sewer lines. Sampling results indicated additional excavation was required to meet the ROD-specified width of 20 feet and a depth of either 10 feet or 2 feet below the bottom of pipe, whichever was greater. This action was consistent with the chemical sewer line SAP and Appendix M-1 to the 100 Percent Design.
- The final grade design of the primary drainage channel in the southeastern portion of Section 36 BOA was raised 3 feet due to revised design criteria. This change reduced the volume of gradefill available in the area by approximately 91,000 cy.
- Mobilization for the first phase of Section 36 BOA – Part 2 began in April 2005. The scope of Part 2, Phase 1 established the flow lines of the southeast drainage areas and constructed the subgrade for the SDT 2-foot soil cover, the SDT RCRA-Equivalent cover and Basin A South RCRA-Equivalent cover. Part 2, Phase 1 was completed in October 2005.
- Mobilization for Part 2, Phase 2 began in September 2005. Part 2, Phase 2 work activities finished the southeast drainage areas, provided gradefill for the Complex (Army) Trenches RCRA-Equivalent cover subgrade and established drainage for the northwest part of the section into Borrow Area 3.
- Upon approval from the RVO, the PMC demolished Building 312, (Fire and Emergency Services Building) and Building 307 (potable water meter pits). Debris from this effort was transported to the HWL and the Basin A Consolidation Area Notch for disposal.
- The Draft CCR for Section 36 BOA – Part 1 was submitted to the RVO for review in March 2006.
- Sampling of the final graded surface in the southeastern drainage area was performed in the September 2006. No additional contaminated soil was identified by the sampling.
- The southeastern drainage area was prepared for revegetation in the Spring and Summer 2007. The area was ripped, disced, rocks were removed from the site, and soil amendments were applied.
- A DCN was prepared in March 2008 which added the removal of a drainage pipe identified during the geophysical survey of site CSA-4 North to the project scope.

The drain pipe was excavated and disposed in Basin A in March 2008. The area was subsequently screened by UXO personnel for anomalies. No anomalies were identified during the screening process.

- Final Inspections were performed on the subgrade of the SDT 2-foot cover, which was constructed as part of the Section 36 BOA – Part 2 project. The subgrade was inspected in two parts in March 2008 and August 2008 prior to cover construction.
- The Section 36 BOA Munitions Response Report, Revision 1 was transmitted to the Regulatory Agencies in April 2008, and was subsequently approved.
- The Section 36 BOA – Part 1 CCR, was approved by the Regulatory Agencies on May 5, 2009.
- The Section 36 BOA Waste Volume and Cost ESD received the Regulatory Agencies approval on October 8, 2009.
- The Section 36 BOA – Part 2 CCR received the Regulatory Agencies approval on February 22, 2010.

3.5.3 Secondary Basins Soil Remediation

Status - Complete

History

- Design began August 1999 and was finalized in August 2000.
- Implementations are divided into two parts: Part 1 includes HHE removal in support of demolition of the North Plant structures to maintain an appropriate soil to debris ratio at HWL. Part 2 includes excavation and disposal of biota and P1 soils into Basin A.
- HHE soil removal began in June 2001 and completed in September 2001.
- Verification sampling to support backfill instead of 2-foot soil cover completed in the summer of 2001; results indicated that there was no material remaining in the secondary basins project area that contained contaminants above the HHE criteria for the Chemical of Concern or contained contaminants that could affect groundwater.
- ESD reflecting change from soil cover to backfill approved in January 2002.
- Excavation of biota and P1 soils began in June 2002 and was completed in February 2003.
- The project was accepted as complete (CCR approved) by the Regulatory Agencies on July 15, 2004. Record document transferred to the RVO Document Tracking Center on July 20, 2004.
- CSV excavation in 2007 was added to the Secondary Basins Soil Remediation Project after the discovery of human health exceedance soil near a former ditch as a result of sampling conducted as part of the site-wide investigation of ditches at RMA. This CSV excavation was completed on December 7, 2007. A total of 1,909 bcy of CSV soil was excavated from the Secondary Basins area and disposed in the ELF.
- Backfill of the Secondary Basins ditch CSV excavation began on February 21, 2008 and was completed on February 28, 2008. Preparation of the Secondary Basins CSV CCR began in April 2008 following completion of backfill and Final Inspection activities. The CCR was temporarily suspended to allow for a 5-point composite sample for Biota risk to be collected of the backfill material, as this material was

obtained from an area southeast of Basin F that was subsequently suspected to have residual biota risk.

- Based on the analytical results of the 5-point composite sample for Biota risk, the backfill material was excavated in October 2008 and disposed in the Basin A Consolidation Area Notch and the removed backfill material was replaced with clean fill.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on June 15, 2009.

3.5.4 Complex (Army) Disposal Trenches Remediation - Cover

Status - Active

History

- Design began in December 2002.
- The 30 Percent Design Package was submitted to the Regulatory Agencies in August 2003.
- As outlined in a letter to the Regulatory Agencies in June 2003, the strategy for this project design schedule has been to follow the Basin F/Basin F Exterior – Part 2 Design (RCRA-Equivalent Cover Design).
- Approximately 150,000 bcy of P1 soil excavated from BA 11 were placed in Complex Army Trenches by the SPCPA project in FY03 as gradefill. This closed Borrow Area 11.
- The RVO/PMC linked the start of 60 Percent Design to the completion of the Regulatory Agencies review and comment period for the Basin F/Basin F Exterior – Part 2 95 Percent Design. The Basin F/Basin F Exterior – Part 2 Design comments were received in April 2004.
- The Complex (Army) Trenches Remediation design was separated into two phases: Phase I – Subgrade Construction and Phase II – Cover Construction. The subgrade design started in May 2004 and the 95 Percent Design were completed in September 2004.
- During FY04, additional scope was developed for BAs 10 and 9c soils characterization for use as RCRA-Equivalent Cover soils and a surface sweep for the subgrade phase of the design were performed.
- A subcontract was awarded in September 2005 to construct the Complex (Army) Trenches Subgrade including placement of approximately 914,801 bcy of gradefill from the Section 36 BOA excavation area and approximately 283,592 bcy of gradefill from BA 10 into the Complex (Army) Trenches. This effort was completed in October 2006.
- The ICSD Revised 95 Percent Design Package was disputed the Regulatory Agencies, specifically the agreed upon redesign of the capillary barrier system. The dispute of the ICSD Revised 95 Percent Design Package was resolved and document in the Dispute Resolution Agreement for the revised 95 Percent Design Package ICSD – signed by all Parties on June 6, 2007. The revisions as documented in the Dispute Resolution were incorporated and presented in Revision 1 of the ICSD 100 Percent Design, submitted in July 2007. Comments from the Regulatory Agencies on Revision 1 of the 100 Percent Design Package were received in August 2007.

- Completion of ICS construction has been accelerated from September 2011 to September 2010, based on availability of funds and proceeding with the phased construction approach. The phased construction approach was approved by the RVO and accepted by the Regulatory Agencies.

Review of Last Year
Construction activities for FY10 primarily included installation of ICS engineering controls, construction of the ICS perimeter access road and ICS construction subcontractor demobilization. ICS Cover Construction Final Inspection activities were completed in April 2010.

Short-Term Monitoring & Maintenance of the CAT cover continued throughout FY10.

The Final ICS CQA Certification Report was transmitted to the Regulatory Agencies in September 2010. The Final ICS CCR was transmitted to the Regulatory Agencies in September 2010.

Look Ahead
Upon Regulatory Agencies' approval of the ICS CCR, planned for early October 2010, this Remedy Project will be complete.

The FY10 Short-Term Monitoring & Maintenance activities for RCRA-Equivalent, 2-, and 3-Foot Covers will be documented in the 2010 Annual Covers Report, which is scheduled to be issued in November 2010.

3.5.5 Shell Disposal Trenches Remediation – Cover

Status - Active

History
- Design began in December 2002; the 30 Percent Design Package was submitted to the Regulatory Agencies in August 2003.
- As outlined in a letter to the Regulatory Agencies in June 2003, the strategy for this project design schedule has been to follow behind the Basin F/Basin F Exterior – Part 2 Design (RCRA-Equivalent Cover Design).
- The RVO/PMC linked the start of 60 Percent Design to the completion of the Regulatory Agencies' review and comment period for the Basin F/Basin F Exterior – Part 2 95 Percent Design. The Basin F/Basin F Exterior – Part 2 Design comments were received in April 2004.
- The comments led to a recommendation by the RVO/PMC team for the SDT RCRA-Equivalent Cover to be the first of the covers to be constructed. In addition, the Regulatory Agencies requirement for the inclusion of moisture probes will allow the earliest start of data collection.
- The Shell Trenches RCRA-Equivalent Cover Design was separated into two phases: Phase I – Subgrade Construction and Phase II – Cover Construction. The subgrade design (started in April 2004) and the 95 Percent Design were completed in July 2004.

- The RCRA-Equivalent Cover Design began in June 2004.
- The 100 Percent Design was issued in December 2005 and revised in May 2006.
- The Regulatory Agencies approval was received in June 2006.
- A subcontract was awarded and work began on construction of the RCRA-Equivalent Cover in August 2006.
- Between the end of December 2006 and March 2007 field activities were suspended due to heavy snow. Construction continued in March 2007 with geotextile placement followed by protective soil layer placement in March 2007 as well.
- After approximately 70% of the protective soil layer was placed, a DCN was issued calling for the removal of the upper portion of the protective soil layer based on RVO concerns regarding soil compaction and future root penetration.
- Physical construction of the SDT RCRA-Equivalent Soil Cover, through completion of permanent revegetation was completed in June 2007.
- Irrigation of the RCRA-Equivalent Soil Cover was completed in September 2007.
- Preparation of the CQAE Certification Report for construction of the RCRA-Equivalent Soil Cover began in June 2007 and was approved by the CDPHE in June 2008.
- Final Inspection activities for the SDT RCRA-Equivalent Soil Cover were completed in October 2007.
- Short-Term Monitoring & Maintenance of the RCRA-Equivalent Cover began in October 2007 after completion of the first season of irrigation.
- The Part 1 CCR for the RCRA-Equivalent Cover Construction Project was approved by the Regulatory Agencies on January 5, 2009.

Review of Last Year

Construction activities for FY10 primarily included installation of ICS engineering controls, construction of the ICS perimeter access road and ICS construction subcontractor demobilization. The ICS Cover Construction Final Inspection activities were completed in April 2010.

Short-Term Monitoring & Maintenance of the SDT cover continued throughout FY10.

The Final ICS CQA Certification Report was transmitted to the Regulatory Agencies in September 2010. The Final ICS CCR was transmitted to the Regulatory Agencies in September 2010.

Look Ahead

Upon Regulatory Agencies approval of the ICS CCR planned for early October 2010 this Remedy Project will be complete.

The FY10 Short-Term Monitoring & Maintenance activities for RCRA-Equivalent, 2-, and 3-Foot Covers will be documented in the 2010 Annual Covers Report, which is scheduled to be issued in November 2010.

3.5.6 North Plants Soil Remediation

Status - Complete

History

- All soil remediation Study Area Report (SAR) sites were transferred to the North Plants Structure Demolition and removal project in FY01. The design of the soil cover remains in this implementation project.
- During the North Plants Structures Demolition project, a petroleum-contaminated soil was discovered, along with free product on the water table. The discovery of the petroleum-contaminated soils resulted in a revised scope to the North Plants Soil Remediation project, and a design analysis.
- Design began in June 2003. The SAP was presented in July 2003 and approved in November 2003 to further delineate the free product plume within the North Plants boundary and determine a plan for remediation.
- Sampling, analysis, and characterization were conducted between November 2003 and February 2004 to determine the extent of the petroleum contamination. A Petroleum Release Evaluation Report (PRER) describing the historical diesel fuel spill, and the current conditions of the water table was prepared and presented to the Regulatory Agencies in March 2004.
- Work on the DDSOW began in July 2004 and the DSOW was submitted in September 2004. It includes the design of the Free Product Recovery System.
- The North Plants Soil Remediation 30 Percent Design was submitted to the Regulatory Agencies for review in January 2005. The 95 Percent Design Deadline was delayed due to issues raised by the Regulatory Agencies regarding Free Product characterization and removal from groundwater.
- Water table and Light Non-Aqueous Phase Liquids (LNAPL) thickness measurements were obtained in July 2007 and discussions between the RVO and Regulatory Agencies were held to resolve the manner in which the site would be remediated. By the end of FY07, it appeared likely that the RVO would pursue remediation of the site in manner consistent with the Colorado Division of Oil and Public Safety (OPS) guidelines.
- A formal evaluation of the existing water table and LNAPL data, titled Petroleum Release Evaluation Action Plan (PREAP), was prepared in early FY08 by RVO. Following the review and comment process with the Regulatory Agencies, the Final PREAP was issued in April 2008.
- As a result of the PREAP, the RVO prepared a LNAPL Action Plan in FY08 which presented pilot study and remediation options for the area.
- Based on evaluation of new and historic data, the LNAPL-related actions were separated from the North Plants Soil Remediation project for implementation. LNAPL Action Plan preparation and related treatment activities, if any, will be implemented under the Water Treatment Work Breakdown Structure.
- As a result of the FY08 LNAPL-related actions, the RVO was able to finalize and submit the ESD for elimination of the 2-foot Cover in early FY09 and the ESD was approved on January 6, 2009, completing this Implementation Project.

3.5.7 Section 35 Soil Remediation

Status – Complete

History

- Design began in December 1998.
- An ESD was submitted and approved by the Regulatory Agencies to eliminate further remedy of the Former Chemical Sewer site (NCSA-6a) located in Sections 26 and 35, as the work was already performed in 1982. A portion of the surficial biota soil that fell in Section 26 was transferred to the Secondary Basins Soil Remediation Project – Part 1 during the 30 Percent Design Package.
- The Final Design for Section 35 was completed in February 2002.
- Remediation for this project was performed by the same subcontractor on the Secondary Basins project for Part 2. Excavation of contaminated soils began in June 2002 and was completed in February 2003.
- The project was accepted as complete (CCR approved) by the Regulatory Agencies on July 15, 2004. Record documents transferred to the RVO Document Tracking Center on July 20, 2004.
- Late in FY04, the USFWS tilled a TRER site near the SCL (and the Visitor's Center) in Section 2 as part of the remediation plan for TRER sites. Planned post-TRER remediation soil samples identified HHE and Biota soil contamination. Historical photographic analysis indicated that dredging activities of the Lateral in the 1950s spread contamination onto the Lateral's banks. To address this issue, a site characterization effort was completed in FY05 to delineate the extent of contamination.
- At the conclusion of the FY05 site characterization effort, a DCN for the remediation of the SCL in Section 35 was prepared and approved in early FY06. The Biota soils were disposed in the Basin A Notch and HHE was placed in the HWL. When the HWL met final waste grades the remaining HHE was disposed in the ELF. Section 35 Soil Remediation included excavation and disposal of approximately 75,500 bcy of HHE and Biota soils.
- The Draft CCR for MSTS and Section 35 was submitted to the Regulatory Agencies February 2007.
- The Final SCL CCR for the MSTS and Section 35 Soil Remediation received the Regulatory Agencies' approval on September 2, 2008.

3.5.8 North Plants Structure Demolition and Removal

Status - Complete

History

- The 100 Percent Design Package for the Structures Demolition was delivered to the Regulatory Agencies in July 2001.
- The 100 Percent Design Package for the Destruction of Specialized Equipment was delivered to the Regulatory Agencies in April 2001.
- Soil remediation and chemical sewer removal have been transferred from the North Plants Soil Remediation Project and have been included in the design.

- A portion of the SOW, which is identified under the Chemical Weapons Convention (identified in the schedule as Specialized Equipment) started in May 2001. A stop work order was issued by the RVO in July 2001 (for chemical weapons treaty declared equipment only) due to the lack of an approved "verification plan" to document destruction of declared equipment. The subcontractor completed the remaining SOW other than the declared equipment in September 2001 and demobilized from the site. The subcontract for the North Plants Structures Demolition and Removal Project was awarded on October 10, 2001. This subcontractor has completed the destruction of the remaining "specialized equipment". This work began in December 2001.
- In June 2001, an SAP was issued with the design and approved in July 2001. The purpose is primarily to provide the Regulatory Agencies with groundwater data, which they will use to determine where confirmatory samples will be taken. Verification samples were taken in support of potentially eliminating the requirement for a soil cover much like what occurred in the Secondary Basins Soil Remediation project. If the results of the confirmatory samples are favorable, an ESD will be prepared for the Regulatory Agencies review and public comment for the purpose of eliminating the requirement for a soil cover.
- All HHE soil and biota soil associated with SAR sites have been excavated and disposed in the HWL. Approximately 2,100 linear feet of chemical sewer downstream from Sump 1727 has been excavated and backfilled. Fifty-two structures have been demolished and completely removed.
- All treaty equipment was destroyed in 2001 with the exception of ten Sarin (GB) fill machines and 23 drums containing valves, miscellaneous items, residues, asbestos, or salts. These items required additional decontamination. To decontaminate this equipment, a vapor containment structure was built and decontamination was completed in April 2003.
- All treaty equipment destroyed in 2001 has been disposed of in the HWL. The ten destroyed fill machines were inspected by treaty personnel and were disposed in the HWL in 2003.
- Implementation Finish (Final Inspection) was in June 2003.
- Work began on the CCR in June 2003 and continued through FY04. The CCR was delayed while an ESD for the increase in soil volume excavation was prepared and approved. The ESD was approved on September 28, 2004.
- This project was accepted as complete (CCR was approved) by the Regulatory Agencies on September 30, 2004. Record documents transferred to the RVO Document Tracking Center on February 15, 2005.

3.6 Phase IV – Basin F/Lime Basins

3.6.1 Basin F Wastepile Remediation

Status - Complete

History

- The RVO submitted the Wastepile Treatability Study Draft Final Report to the Regulatory Agencies in November 2000.
- ICD submitted to the Regulatory Agencies in January 2001.
- The 95 Percent Design Package was submitted to the Regulatory Agencies in July 2002.
- The public comment period for the 95 Percent Design Package ended in August 2002.
- The Final 100 Percent Design Package was approved in December 2002.
- A design revision on the Basin F Wastepile Remediation project was approved in June 2005. The revision relocated project facilities which will be used by the Basin F Wastepile Remediation project and by the Former Basin F PT Soil Remediation project. The facilities that were relocated include the Drying Facility, Decontamination Pad, Stromwater Transfer Line, and Haul Road to the ELF. The DCN was approved by the Regulatory Agencies in June 2005.
- Mobilization and site preparation activities for the project began in October 2005.Construction of the Drying Facility/Leachate Storage Facility was completed in December 2005. Site Preparation work was completed in March 2006.
- The Odor control Evaluation/Slow Start began in April 2006 upon receiving the Regulatory Agencies approval to place waste in the ELF. After the results of the Slow Start we evaluated, excavation of the Basin F Wastepile began at the normal operations excavation rate.
- Wastepile excavation was completed on July 30, 2007. A total of 489,396 bcy of wastepile material was excavated, transported, and disposed in the ELF. Subcontractor demobilization activities were completed in August 2007.
- Preparation of the Basin F Remediation Closure Certification Report – Part 1 (for wastepile excavation), began in July 2007. Preparation of the CCR began in August 2007 following completion of backfill and Final Inspection activities.
- The Closure Certification Report – Part 1 was issued to the Regulatory Agencies in January 2008.
- The Basin F Wastepile Remediation CCR received the Regulatory Agencies' approval on June 15, 2009.
- The Closure Certification Report for the entire Basin F Remediation project that includes: Part 1 (Basin F Wastepile), Part 2 (PT Soil Remediation), Part 3 (Basin F RCRA-Equivalent Cover Construction), and a Closure Certification statement were submitted in August 2010 and the Regulatory Agencies' approval was received on September 29, 2010.

3.6.2 Former Basin F Principal Threat Soil Remediation

Status - Complete

History

- Project planning and preparation of the Solidification Treatability Study protocol began in April 2001.
- Procurement of a Solidification Treatability Study laboratory subcontract began in August 2001.
- Field activities to collect soil samples were conducted in November and December 2001.
- Laboratory Testing began December 17, 2002.
- The Treatability Study progressed to near completion, when a revised remedy for the Section 36 Lime Basins site was proposed. The proposed revised Lime Basins remedy is contain-in-place, in lieu of excavation and disposal in the ELF. The revision to the Lime Basins remedy would make the ELF Lime Basins disposal cell available. The proposal was made to utilize the available cell for the disposal of Basin F PT Soil, identified in the ROD for solidification. Therefore, the final tier of the Treatability Study was suspended.
- The PMC issued the Final Treatability Study Report to the RVO for transmittal to the Regulatory Agencies in January 2005. This concluded the Solidification approach to this material.
- To support the proposed Former Basin F PT Soil Remediation, odor and chemical flux testing was performed in July 2005.
- ROD Amendment was approved in October 2005, and included the following: changed selected remedy for Section 36 Lime Basins from excavate/landfill to RCRA-Equivalent cover and groundwater barrier wall. Change selected remedy for Basin F PT Soil from in-situ solidification to excavate and dispose in ELF.
- A pilot demonstration of odor control measures (soil, geomembrane, foam, and combinations) was performed on the most odorous principal threat soils in March and April 2006.
- The Full-Scale Excavation and Odor Controls Demonstration Work Plan were submitted to the Regulatory Agencies for review in July 2006. The Regulatory Agencies' comments received in August 2006 and included consensus suggestion that the scope should be significantly reduced. In September 2006 it was suggested that the Full-Scale Demonstration was unnecessary to prove that the design could be implemented. The basis for this included the odor and chemical flux testing and demonstration of odor control measures performed after the ROD Amendment strongly indicated that very high odor soils are not as prevalent as initially conceived and conventional odor control measures were shown to be 98 to 100% effective.
- A DCN to add the excavation of Key-Cut soils to support Basin F Cover construction was finalized in August 2007. The subcontract for the Basin F PT Soil Remediation Project was awarded in April 2007. Mobilization and site preparation began in June 2007. Excavation began in July 2007.
- Excavation of the PT soils was completed in November 2007. Excavation of the HHE soils to utilize airspace in the ELF began in August 2007 and was completed in February 2008. Excavation and placement of Key-Cut soils was completed in March

2008. The Project Final Inspection of the Basin F PT Soil Remediation Project was completed in April 2008.

- Preparation of Part 2 of the Basin F Remediation Closure Certification Report and the Drying Facility Closure Certification Report began in March 2008. Preparation of the CCR began in April 2008.
- Part 2 of the Basin F Remediation Closure CQA Certification Report (the Certification Report for the Basin F PT Project) was submitted to the Regulatory Agencies in October 2008.
- The Drying Facility Closure CQA Certification Report was accepted as complete and approved in November 2008.
- The CCR for the Basin F PT Soil Remediation and Wastepile Drying Facility Demolition was accepted as complete and approved by the Regulatory Agencies in July 2009.
- The Closure Certification Report for the entire Basin F Remediation project that includes: Part 1 (Basin F Wastepile), Part 2 (PT Soil Remediation), Part 3 (Basin F RCRA-Equivalent Cover Construction), and a Closure Certification statement were submitted in August 2010 and the Regulatory Agencies' approval was received on September 29, 2010.

3.6.3 Basin F and Basin F Exterior Remediation

Status - Active

History

- Design was separated into two parts: Part 1 design involves removal of HHE and biota soils on the exterior of the former Basin F Area. Part 2 design includes final grading and construction of the RCRA-Equivalent Cover. Part 1 design was implemented in two phases: Phase I involved removal of HHE and disposal in the HWL and biota removal and disposal in Basin A. Phase II involves the excavation of remaining biota soils and consolidation in the foot print of the RCRA-Equivalent Cover.
- Part 1 design began in August 1999 and was completed in August 2000.
- Part 1 implementation began in March 2002 (fieldwork) and was completed in February 2003.
- Part 2 design began in March 2001.
- The Part 2 95 Percent Design was completed in December 2003. Comments from the Regulatory Agencies were received and responses were prepared. Prior to finalizing this effort, design resources were shifted over to the Shell Trenches Cover Design as a decision was made that the first RCRA-Equivalent Cover would be constructed for the Shell Trenches project beginning in FY05, or later. Therefore, the Basin F Cover 100 Percent Design, which began in May 2004, has been tabled until Summer 2007, and the resolution of RCRA-Equivalency issues will be presented in the Shell Trenches Cover Design and the ICSD.
- BA 4 characterization sampling was completed to identify acceptable soils for RCRA-Equivalent Cover construction.
- A capillary break workplan was developed to confirm that various construction materials would sufficiently form a capillary break at the biota barrier and cover soil

layer interface in full-scale covers. The capillary break testing was very successful and confirmed that any of the three scenarios tested would be acceptable for full-scale cover construction.

- The Moisture Probe Assessment draft report was completed and issued to the Regulatory Agencies for review and comment. Although it has been agreed that moisture probes will not be used to determine compliance with the cover performance criterion, the RVO/Regulatory Agencies did agree to use moisture probe sensors to monitor one cover site for a specified duration due to a strong desire by EPA to collect additional data to evaluate how the covers are performing. A draft moisture probe installation workplan was prepared for use by the Shell Trenches Cover project.
- Excavation of Deep Acute HHE CSV soils from the North Central Study Area-4a (NCSA-4a) was completed in September 2004.
- A draft Long-Term Care Program Plan, including related Standard Operating Procedures, was prepared in January and February 2004. The plan provides for long-term monitoring and maintenance following construction of all RCRA-Equivalent 2-foot and 3-foot covers. Comments were received from the Regulatory Agencies and a draft final version of the plan was transmitted in August 2004.
- The Regulatory Agencies' comments on the 95 Percent Design were completed in August 2004.
- The Summary Report for Acceptance Zone Development and Density Requirements for RCRA-Equivalent cover Soils (aka The AZ Report) was issued final in February 2005.
- The BBM Placement and Gradation Evaluation (aka The WipFrag demonstration) was performed in March and April 2005. This included construction of a 50 ft by 150 ft Biota Barrier test pad and demonstration of WipFrag software as a means of evaluating and documenting gradation of BBM after placement.
- The RVO continued to modify responses to the Regulatory Agencies' comments on comments regarding the Basin F/Basin F Exterior Soil Remediation – Part 2 95 Percent Design to be consistent with the revised SDT RCRA-Equivalent Cover 95 Percent Design. Additional design activities, initial preparation of the Basin F/Basin F Exterior Soil Remediation – Part II 100 Percent Design, and BA 4 soil characterization were also performed.
- The CCR for Part 1 Design (Phase I Implementation) was approved September 21, 2006.
- The excavation of remaining biota soil (Part 1/Phase II), was included in the Basin F PT Soil Remediation Project subcontract and was awarded in April 2007.
- In June 2007, the Regulatory Agencies provided the RVO with notification of their dispute issues on the Final LTCP (Revision 0). The Regulatory Agencies disputed the RVO's proposed compliance and performance standards (seeking more stringent standards) for RCRA-Equivalent, 2- and 3 foot Covers that will be applied during the 30+ year maintenance period.
- Excavation of remaining biota soil (Part 1/Phase II) began in October 2007 and was completed in February 2008. The biota soil was used as backfill for the PT soil excavation.

- The Revised 95 Percent Design of the Basin F Cover Project was issued to the Regulatory Agencies for review in October 2007. The 100 Percent Design was approved in May 2008.
- The Basin F RCRA-Equivalent Cover construction began in May 2008. Final approval of the Long-Term Care Plan was received in September 2008.
- The PMC supported the RVO in the successful resolution of the dispute of the final LTCP, Revision 0, for 2- and 3-foot Soil Covers and RCRA-Equivalent Covers. Support included participation in the LTCP Working Group and participation, as requested, in issue resolution during the RMA Committee, Council, and/or Steering Policy Committee meetings. The final LTCP, Revision 1 was transmitted to the RVO for distribution to the Regulatory Agencies in September 2008. The EPA issued a letter of approval on October 2, 2008.
- The CCR for Part 1/Phase II Implementation (remaining biota soils) was accepted as complete on December 9, 2008.
- An ESD for the Chemical Sewer Cover Extension was accepted as complete in January 2009.
- The Basin F RCRA-Equivalent Cover construction was completed (through permanent revegetation and irrigation) in September 2009.

Review of Last Year

Short-Term Monitoring & Maintenance of the RCRA-Equivalent Cover began in April 2010 after completion of the first season of irrigation (completed in September 2009) and final inspection activities (completed in March 2010).

A draft of the ESD for the Basin F/Basin F Exterior was submitted in September 2010.

The CCR for the Basin F RCRA-Equivalent Cover was submitted in August 2010 with the understanding that replacement pages would be issued for references to the Basin F Closure Certification Report, the ICS Certification Report and the ESD for the Basin F/Basin F Exterior after the dates of all 3 of these documents are established.

The Closure Certification Report for the entire Basin F Remediation project that includes: Part 1 (Basin F Wastepile), Part 2 (PT Soil Remediation), Part 3 (Basin F RCRA-Equivalent Cover Construction), and a Closure Certification statement was submitted in August 2010 and the Regulatory Agencies' approval was received on September 29, 2010.

Look Ahead

The FY10 Short-Term Monitoring & Maintenance activities for RCRA-Equivalent, 2-, and 3-Foot Covers will be documented in the 2010 Annual Covers Report, which is scheduled to be issued in November 2010.

The ESD for the Basin F/Basin F Exterior is scheduled to undergo public review in November 2010 and be accepted as complete in December 2010.

The CCR Part 1 for the cover is scheduled to be accepted as complete in December 2010.

3.6.4 Section 36 Lime Basins Soil Remediation

Status - Active

History

- The Lime Basins Treatability Study Final Report was issued for the Regulatory Agencies' approval in September 2000.
- The PMC prepared an Analysis of Alternative Remedies for the Lime Basins remediation and presented it to the Regulatory Agencies in early FY02. The intent was to use the Lessons Learned from M-1 and provide viable remediation alternatives to the Regulatory Agencies. The Regulatory Agencies ultimately directed the RVO to proceed with the ROD prescribed remedy.
- The PMC issued the draft DSOW on May 16, 2002 and the final SOW on July 2, 2002.
- The PMC initiated another treatability study including installation of seven groundwater monitoring wells, collection of geotechnical samples, ROD 3X screening and a demonstration mix pad to test at full scale various mixing approaches. The PMC did this as a direct application of Lessons Learned from the M-1 with the plan to determine appropriate mixing techniques for the lime basins clays and to control odors. The first phase of this (wells, geotechnical testing and ROD 3X screening) took place in September 2002.
- The demonstration mix pad activity was conducted in the first quarter of FY03, and successfully demonstrated wet, plastic lime basins material can be stabilized by blending with soil.
- The 30 Percent Design Package was issued in March 2003.
- The 60 Percent Design Package was issued in September 2003.
- The RVO submitted formal proposed change with justification to the Regulatory Agencies on May 5, 2004. The RVO considered this document to meet requirement of Federal Facility Agreement.
- In June 2004, the RMA Committee and Council reached a conceptual agreement (Decision Document DD-FBF-02) on proposed alternative remedies for Lime Basins and the Former Basin PT Soils Remediation. These alternative Remedies are described as follows: Alternative Remedy for Section 36 Lime Basins – An alternative remedy for Section 36 Lime Basins replaced excavation, stabilization, and disposal of Lime Basin soils in the ELF cell with containment of the three Lime Basins with slurry wall and RCRA-Equivalent Cover. Alternative Remedy for Former Basin F Solidification – An alternative remedy for the Former Basin F Solidification was the Basin F PT Soil Remediation which replaced in-situ soil solidification with excavation and disposal of Former Basin F PT Soils in the ELF.
- EPA requested Technical Summary of Alternatives (TSA) document to meet same Federal Facility Agreement requirements.
- TSA, Revision B submitted on October 26, 2004.
- TSA, Revision D submitted on December 16, 2004.
- Resolution Agreement signed by the RMA Council on March 15, 2005.
- TSA, Revision 0 submitted on April 12, 2005.

- ROD Amendment was approved in October 2005, and included the following: changed selected remedy for Section 36 Lime Basins from excavate/landfill to RCRA-Equivalent cover and groundwater barrier wall. Change selected remedy for Basin F PT Soil from in-situ solidification to excavate and dispose in ELF.
- The compatibility testing for the slurry/barrier wall began in September 2005 and was completed in October 2006.
- The 100 Percent Design for the Lime Basins Slurry/Barrier Wall was approved in June 2007.
- The subcontract for the Lime Basins Slurry/Barrier Wall was awarded in August 2007. A drilling subcontract to support the slurry/barrier wall project was awarded in August 2007. Well abandonment activities began in September 2007.
- Slurry wall installation began in October 2007. An air monitoring sample tested positive for lewisite on October 31, 2007. A stop work order was implemented to allow further investigation on the source of the lewisite detection. Work resumed on November 23, 2007.
- Slurry wall installation was completed in February 2008. Soil stabilization and demobilization was completed in April 2008.
- Monitoring well installation began in April 2008 and was completed in June 2008.
- Piping and instrumentation installation began in May 2008 and was completed in August 2008.
- DNAPL were detected in two dewatering wells inside of the Lime Basins Slurry Wall. The RVO extended the Regulatory Agencies' review period for the Draft Section 36 Lime Basins Slurry/Barrier Well CCR, during the investigation of the DNAPLs. The DNAPL RI/FS will be completed under the Site Wide Programs, Water Treatment/Monitoring work breakdown structure.

Review of Last Year

The ICS cover construction activities for Lime Basins in FY10 consisted of the construction of engineering controls, demobilization and completion of Final Inspection. Short-Term Monitoring & Maintenance activities continued.

The Lime Basins CCR, Revision 0, was prepared and transmitted to the Regulatory Agencies in August 2010.

The Final ICS CCR, Part 1, which documented all ICS work, including construction of the Lime Basins subgrade and RCRA-Equivalent Cover, was transmitted to the Regulatory Agencies in September 2010. The Final ICS CQA Certification Report was also transmitted to the Regulatory Agencies in September 2010.

Look Ahead

The Regulatory Agencies' approval letter expected on the Lime Basins CCR, Revision 0, the ICS CCR, and the CQA Certification Report is planned for early FY11.

The FY10 Short-Term Monitoring & Maintenance activities for RCRA-Equivalent, 2-, and 3-Foot Covers will be documented in the 2010 Annual Covers Report, which is scheduled to be issued in November 2010.

3.7 Site-Wide Programs

3.7.1 RCRA – Equivalent Cover Demonstration Project

Status - Active

History

- The design process began in June 1996 and was completed in January 1998.
- Construction of test covers - March 1998 through September 1998.
- Vegetation establishment period - Summer 1998 through Summer 2000.
- Test year period – September 2000 through August 2001.
- The PMC transferred the construction record documents to the RVO Document Tracking Center in June 2000.
- The PMC issued the RCRA-Equivalent Cover Construction Report to the RVO and Regulatory Agencies on August 21, 2000.
- Two formal cover inspections were held during the test period, in addition to the final project inspection held September 4, 2001.
- Results of the final project inspection indicated that all four test covers were successful in meeting performance criteria and passing the field test.
- A draft final report was issued on November 29, 2001.
- The test covers were monitored quarterly through FY04. They continued to perform successfully and provided information to support full scale cover construction.
- A formal cover inspection for the 2004 operating year was conducted on August 31, 2004.
- Work was focused on full-scale cover projects and long-term care planning for covers, as the need for the test covers no longer existed.
- In the Committee Meeting on September 11, 2008, the RVO informed the Regulatory Agencies of the plan to proceed with closing out the tests covers in late 2008. There were no objections from the Regulatory Agencies.
- Work to remove and close out the test covers was started in September 2008 and completed in December 2008.

Review of Last Year

No activities performed in FY10.

Look Ahead

The RCRA-Equivalent Cover Demonstration project final report will be finalized, to complete the demonstration project and document the removal and close out of the test covers.

3.7.2 Borrow Areas

Status - Active

History

- 100 Percent Design Package issued to the Regulatory Agencies in October 1998.
- Annual updates completed each year since 1998.

- 1997 Committee Agreement included management of P1 soil sites under the Borrow Management Plan.
- June 2003 Committee Agreement included management of TRER soil sites under Borrow Management Plan and documented in annual updates. After all remedy actions for P1 and TRER sites are complete, a final CCR will be written.
- TRER areas remediation boundary refinements, June 2004.
- TRER Soil Tilling Demonstration Study Report, March 2006.
- TRER Soil Remediation Part 1 CCR, project accepted as complete (CCR approved) by the Regulatory Agencies on March 30, 2006.

Review of Last Year
Borrow Areas 3, 4, 5, and 10 were active in FY10 in support of the ICS and ELF Cap Construction projects.

During FY10, the PMC/RVO Team prepared the Final BA and RER Soil Update documenting completions of all borrow activities at RMA.

Look Ahead.
No further BA Operations are planned for the RMA Remedy. Upon completion of associated final administrative functions, this implementation project will be complete.

3.7.3 Site-Wide Biota Monitoring – Biological Advisory Subcommittee

Status - Active

History
- Supplemental Field Study – Phase I, July 1996
- Design Refinement of Excavation Boundaries for Surficial Soil and Reduction of Residual Biota Risk, (P1 Soil agreement) May 1997.
- Dioxin/Furan Tier 1 Field Study results in Wildlife Tissues Final Report, June 2001.
- Assessment of RER Management Recommendation Part 1: Terrestrial Pathways and Receptors, April 2002.
- Assessment of RER and Risk Management Recommendations, Part 2: Aquatic Pathways and Receptors, July 2003.
- Long-Term Contaminant Biomonitoring Program for Terrestrial Ecological Receptors at RMA Revision 0, November 2006.
- The BAS completed all-ROD related tasks assigned to it and disbanded in 2006.

Review of Last Year
The 2007/2008 Annual DSR was finalized in February 2010. Starling brain and kestrel egg samples were collected in FY10.

Look Ahead
An Annual DSR for 2009 data was transmitted to the Regulatory Agencies on November 1, 2010. Analytical results from 2010 samples are expected to be received by December 2010. If the 2010 biomonitoring data are satisfactory, the biomonitoring program will be deemed complete for the purposes of the Remedial Action Summary Report. A (MCR) for the

Biomonitoring Program will be prepared and submitted to the Regulatory Agencies for review. Additional biomonitoring data collected in 2011 and 2012 will be submitted as addenda to the Bionmonitoring Program MCR.

3.7.4 Site-Wide Air Monitoring – Air Pathways Analysis

Status - Active

History

- Remedy Air Monitoring Program began in October 1997.
- Site-Wide Odor Monitoring Plan approved in July 1999.
- Site-Wide Air Quality Monitoring Program (SWAQMP) approved in September 1999.
- Revised SWAQMP approved in February 2006.
- The final version of the Interactive Comprehensive Air Pathway Analysis Annual Screening Analysis for 2008 projects were transmitted to the Regulatory Agencies in July 2008.
- The 2008 Air Pollutant Emissions Notice (APEN) was submitted to the Air Pollution Control Division in February 2008.
- Decision document to phase out routine air monitoring plan after completion of contaminated soil work was developed by the RVO and approved by the Regulatory Agencies on June 5, 2008.
- As per the decision document, 24 hour integrated PM-10 monitoring at 4 locations was initiated on August 1, 2008.
- An outline for air and odor program MCRs was approved by the Regulatory Agencies.
- The Air and Odor Monitoring Data Assessment Report for Calendar Year (CY) 2007 (CY07) was prepared and transmitted to the Regulatory Agencies for review and comment.

Review Last Year

The Air MCR was accepted by the Regulatory Agencies in April 2010. The Final APEN for RMA 2010 projects was submitted on March 25, 2010. 24 hour integrated PM-10 monitoring at AQ3 was conducted until May 1, 2010.

Look Ahead

The PM-10 monitoring data collected from January 1, 2009 – May 1, 2010 was summarized in an addendum to the Air MCR in November 2010. The addendum will be the final deliverable for the Site-Wide Air Monitoring Program.

3.7.5 Contingent Soil Volume

Status - Active

Confirmatory sampling and CSV identification and removal are being conducted according to the RMA CSV procedure. Review of sampling results and CSV removal is provided at weekly project status meetings and a summary of program-wide samples and volume is provided monthly to the RMA Committee.

History

- To date the following projects have removed CSV:
  - Miscellaneous Northern Tier Soil Remediation
  - Miscellaneous Southern Tier Soil Remediation
  - Lake Sediments Remediation
  - Existing Sanitary Landfills – Sections 1 and 4
  - HWL – Section 26 HHE and Biota Exceedence Soils Removal Project
  - South Plants BOA and CPA Soil Remediation-Phase I
  - Secondary Basins Soil Remediation
  - Miscellaneous RMA Structures Demolition and Removal – Phase I
  - Basin F and Basin F Exterior Remediation
  - Section 35 Soil Remediation
  - South Plants BOA and CPA Soil Remediation-Phase II
  - Section 36 BOA
  - Basin F PT Soil Remediation
- In September 2003, the RVO issued the Calculation Summary for CSV based on Deep Acute Exceedances.

Note: All CSV activities and related costs are scheduled and collected under the appropriate implementation project.

Review of Last Year

There were no confirmatory samples collected during FY10. The total number of confirmatory samples collected remains at 1,006, leaving 8 samples remaining of the 1,014 available per the ROD. Through September 2010 approximately 204,907 bcy of CSV have been identified and excavated by the projects listed above.

Look Ahead

Remaining confirmatory samples are planned for CERCLA WWTF demolition under Miscellaneous RMA Structure Demolition and Removal Project – Phase IV or as identified by the Regulatory Agencies.

3.7.6 Site-Wide Plume Monitoring

Status - Active

History

- The initial Long Term Monitoring Plan (LTMP) for Groundwater was issued in December 1999 and was replaced with a revised version, the 2010 LTMP for Groundwater and Surface Water, in March 2010.
- Per the Regulatory Agencies request a Surface Water Quality Monitoring Report was issued in 2003; covering the data period from the signing of the ROD through 2000. The Surface Water Quality Monitoring Report transmitted to the Regulatory Agencies in 2008 remains to be finalized.
- An RMA Surface Water Management Plan is prepared for the RVO to help balance forecast water demands with forecast water supplies.

Review of Last Year

Surface Water Management

- Collected continuous stream flow data at ten gauging stations.
- Collected continuous stage data at five lakes and ponds.
- Presented Monthly Hydrologic Conditions Reports at monthly surface water management team meeting.
- Implemented data collection on Section 4 Well aquifer in cooperation with SACWSD.
- Operated Lake Ladora Pump House (LLPH) Dechlor and Tapwater Discharge System.
- Completed and implemented Substitute Water Supply Plan approved by Colorado Water Court and State Engineer to allow Section 4 Wells groundwater production above decreed groundwater rights.
- Submitted monthly RMA water management accounting reports to Colorado State Engineer.
- Section 12 Well decree application retained by the RVO to finish adjudication by Colorado Water Court.
- Completed successful rehab of south Section 4 Well.
- Completed FY10 Surface Water Management Plan.

Surface Water Monitoring

- Collected twelve stream water-quality samples.
- Collected four Lake water-quality samples.

Groundwater Monitoring

- Annual project-specific water level monitoring was conducted in FY10 for the annual site-wide water table map. A revised LTMP was issued in March 2010.

An ESD for groundwater that addresses the ROD changes resulting from the LTMP revisions was transmitted to the Regulatory Agencies in September 2010 and will be finalized in FY11.

Look Ahead

Surface Water Management

- Continue SACWSD data collection activity, as necessary.
- Maintain stream flow gauging station network for water rights accounting and surface water management through December 31, 2010. Thereafter, the Water Resources Division of the USFWS, Region 6 will provide RMA stream flow and lake level monitoring for water rights accounting and surface water management.
- Maintain seasonal wetland gauging stations for habitat management.
- Present Monthly Hydrologic Conditions Reports at Surface Water Management Team Meetings through December 2010. Thereafter, the Surface Water Management Team will be disbanded.

- Complete implementation of Inter-Governmental Agreement with the Urban Drainage and Flood Control District and City and County of Denver regarding Havana Ponds Dam reconstruction, Uvalda Interceptor reconstruction and debris/sediment catchment basin construction to improve stormwater management on RMA.
- Finalize and implement 2011 Substitute Water Supply Plan for Section 4 Wells.
- Develop and submit monthly RMA water management accounting reports to the Colorado State Engineer.

Surface Water Monitoring

- A Surface Water Quality Monitoring Report will be finalized in FY11.
- Off-Post Water Quality Monitoring is part of the revised LTMP.
- A Surface Water Monitoring Completion Report (MCR) will be finalized in FY11.

Groundwater Monitoring

- Annual project-specific water level monitoring will be conducted in FY11.
- The Groundwater ESD will be finalized in FY11.

3.7.7 Confined Flow System Monitoring

Status - Active

History

- The Confined Flow System (CFS) monitoring is included in the LTMP to meet the ROD requirement for tracking water quality in CFS wells in the South Plants Basin A, and Basin F areas.
- The 19 wells in the CFS network are monitored for water quality (if specified twice in 5 years) and water levels annually.

Review of Last Year

Water level (where specified in the LTMP) were measured in FY10.

Look Ahead

The new LTMP was approved in March 2010. There are 20 wells in the On-Post CFS network and three alternates. Nineteen wells will be sampled for water quality twice in five years (one well is damaged and can only be measured for water levels) and twenty wells are measured for water levels annually. The next water quality sampling will be in 2012.

3.7.8 Medical Monitoring Program

Status - Active

Review of Last Year

Birth Defects Surveillance:

An existing state program, Colorado Responds to Children with Special Needs (CRCSN), is being used to track birth defects specifically in the neighborhoods around the RMA during the remediation. Birth defect rates are being tracked and analyzed temporally and spatially. Specific

case records have been reviewed for clarification of diagnoses and other reporting details. Data were collected for the RMA birth defects surveillance program through March 2009. A report was presented to the CAB at a meeting on May 4, 2010.

Cancer Surveillance:

A final cancer surveillance report based on data from 1997-2005 was prepared and presented to the CAB on May 4, 2010.

Look Ahead
CDPHE to confirm cancer surveillance results from 1997-2005 when 2010 census data become available. Results from the evaluation, as well as evaluation of any additional cancer surveillance data collected up to the availability of the 2010 census data, will be summarized in the 2015 Five Year Review Report.

A Medical Monitoring Program MCR is expected to be complete by January 2011.

3.7.9 Traffic Management

Status - Active

History

- The 100 Percent Design Package was submitted to the Regulatory Agencies in September 1998.
- The Traffic Management Plan was reviewed annually and revised as indicated.
- The Haul Road Operations Plan will be updated annually.
- Haul road construction began in July 1998 and was completed in April 1999.
- Approximately 12.5 miles of primary haul roads have been constructed.
- Haul road Operations and Maintenance (O&M) have been ongoing since January 1, 1999. The O&M contract expires on September 30 of each year and is awarded on a FY basis.
- The SWTM Haul Road and Lay Down Area Removal Plan was finalized in FY09. This plan guides future removal/modification of all Haul Roads and Lay Down Areas on RMA.

Review of Last Year
During FY10 the PMC continued to maintain the RMA haul road system, maintained stormwater drainage systems, installed and maintained traffic controls, removed snow and/or ice, implemented haul road safety standards, performed parking area and perimeter fence maintenance, performed soil ripping in revegetation areas, recovered and recycled jersey barriers and parking markers and removed subcontractor laydown areas.

Look Ahead
Traffic and haul road management in FY11 will include the continuance of activities performed in FY10 as noted above. Traffic and haul road management activities will be completed as schedules require with additional activities managed as resources allow.

Haul Roads/Lay Down Areas will be removed/modified per the SWTH Haul Road and Lay Down Area Removal Plan during FY11: Opportunities will be evaluated during the FY to determine availability of road sections for removal. The Recycled Asphalt Pavement will be reused to support cover access roads or to build future roads as part of the Wildlife Refuge.

3.7.10 Biota Barrier

Status – Complete

History

- Biota Barrier design issues (Material Specifications) were resolved with the Regulatory Agencies in the fourth quarter of FY00.
- The PMC negotiated a unit price for production of concrete BBM with Recycled Materials Company.
- Production for FY01 was 386,500 tons.
- Production for FY02 was 449,310 tons.
- Production for FY03 was 594,000 tons.
- Production for FY04 was 410,452 tons.
- Production for FY05 was 67,700 tons.
- No BBM produced in FY06.
- The remainder of BBM stockpile at the former Stapleton International Airport, was used for construction of caps and covers or stockpile for future use.
- The last load of BBM was removed from the Stapleton stockpile on April 23, 2009.
- A total of 1,907,962 tons of BBM have been hauled from the Stapleton stockpile and placed on the following caps and covers, and in stockpiles, based on truckload count, as follows:

- Shell Disposal Trenches = 80,800 tons
- Complex (Army) Trenches = 385,824 tons
- Basin A South = 203,376 tons
- Basin A North = 293,784 tons
- Basin A Notch = 50,544 tons
- SP = 187,560 tons
- LB spoils stabilization = 29,640 tons
- HWL = 115,488 tons
- Basin F = 363,360 tons
- ELF stockpile = 103,776 tons

The remainder of the BBM was placed in two stockpiles for future use by the RVO and USFWS.

3.7.11 Geophysical Surveying

Status – Complete

History

- The survey was conducted to facilitate a non-intrusive geophysical screening of the site for subsurface targets. The subcontract was awarded in May 1998. Site work

was conducted from May 1998 through October 1998 covering an area of 3,240 acres. Arrays of total field magnetometers were deployed via a nonmagnetic cart system over the site to efficiently cover the 3,240 acres at an average rate of 34 acres per workday.

- The magnetometer data were positioned using global positioning system (GPS) navigation technology, and integrated within a Geographic Information System (GIS) for processing and analysis.
- Surveying took place in 12 different sections within RMA and a total of 10,693 targets were detected and located. Of these, 90.9 percent were characterized. Characterization was performed using the subcontractor's software system that utilized analytical modeling of the magnetic field data, comparison of targets against a database of known signatures, and expert operator opinion. Detections ranged from small shallow targets estimated to be near the surface and weighing a pounds or less, to large deep targets in excess of 15 feet deep and weighing 500 pounds or more. Additional features were observed in the data and interpreted as burn pits, trenches, and landfills.
- In addition to the geophysical data, several sets of GPS-positioned surface cultural information associated with visible features were also collected. This data was also incorporated into the GIS to aid in data interpretation.

3.7.12 UXO Emergency Response

Status - Complete

History

- The UXO Department has supported a number of project specific tasks, which included a munitions response component, the majority of which are related to the Remediation of Toxic Storage Yards, BT and MT Sites, Existing Sanitary Landfills, Section 36 BOA, Miscellaneous Structure and Lime Basins. As a function of supporting each project, the PMC UXO personnel were tasked with management, including disposal, of all recovered MEC. Potential and confirmed Recovered Chemical Warfare Material (RCWM) was managed and disposed by the U.S. Army Technical Escort Unit.
- During 2007, a three-person UXO Emergency Response team identified and recovered anomalies, managed project-specific munitions response activities, performed utility locates, and responded to on-site discovery of MEC or other anomalies having the potential to contain energetic materials or RCWM.
- The Management Plan for Recovered Material Potentially Presenting an Explosives Hazard (MPPEH) (Revision 3) received the Regulatory Agencies approval during FY09 and is currently guiding the management of all MPPEH recovered on RMA.

M139 Bomblets *Status - Complete*

- Six M139 bomblets containing chemical agent GB discovered in the Section 36 "boneyard" between October 15, 2000 and November 20, 2000.
- Large Area Maintenance Shelter was constructed over the boneyard to provide containment and a temperature controlled working environment.
- The Explosive Destruction System was used to destroy the bomblets.

- Destruction of the six bomblets is documented in the Final Destruction Completion Report issued on August 9, 2001.
- Four additional M139 bomblets were discovered during the screening process of the remaining debris removed from the boneyard (May 2001 through June 2001).
- Destruction of the last four bomblets was documented in a second Destruction Completion Report issued on November 29, 2001.

Summary Team *Status – Complete*

- Addressing the discovery of M139 bomblets on the Arsenal, the EPA issued a letter on November 26, 2000 indicating, "a comprehensive Arsenal-wide assessment and response is needed." With this as a charter, the Summary Team was formed in January 2001, for the purpose of performing the requested review and assessment. During the latter stages of the review, the team came to be called the Summary and Evaluation Team. The team members include representatives from the EPA, CDPHE, Tri-County Health Department, and RVO.
- To accomplish the requested task, team members reviewed each section of the Arsenal. Members reviewed aerial photographs from 1937 to present, reviewed existing technical reports, and compared aerial photographs to investigated areas. The team focused on Ordnance and Explosives and recovered chemical warfare materiel. The team members inspected sites for which the record did not include adequate data to draw a clear conclusion. If an inspection of the site also was inadequate to support a conclusion the site was investigated by mean of exploratory investigation. As a direct result of the summary team's efforts, six additional sites were identified and added to the BT Soil Remediation project, (see "Burial Trenches Soil Remediation" Appendix B for further information). The summary team's efforts are documented in a final report, which was issued and approved by the Regulatory Agencies in June 2002.

Review of Last Year

During 2010, the PMC UXO Emergency Response team identified recovered anomalies, managed project-specific munitions response activities, performed utility locates, and responded to on-site discovery of MEC or other MPPEH. The RMA no longer maintains sited magazines for storage of recovered MEC or donor explosives.

Look Ahead

It is currently anticipated that PMC UXO Emergency Response services will not be required during FY11.

3.7.13 Permanent Revegetation/Mitigation/Irrigation

Status - Active

History

- RMA National Wildlife Refuge: Habitat Restoration Plan, August 1999.

- A Vegetation Management Plan is prepared on an annual basis for the vegetation management activities for the current CY.
- ESD to clarify revegetation requirements to be consistent with USFWS Management Plan and require USFWS certification for implementation, March 2006.

Review of Last Year
About 460 acres were seeded and irrigated for mitigation revegetation projects during 2010. Revegetation/mitigation/irrigation activities anticipated through 2013 are being scheduled with Primavera Systems software for tracking and documentation of annual completed work. Modifications to this schedule are made annually dependant on field conditions. Approximately 840 acres were scheduled for non-irrigated fall seeding in 2010. Maintenance activities such as weed control and mowing were conducted on areas revegetated in previous years.

The PMC prepared the 2010 Final Site-Wide vegetation Management Plan for the project.

Look Ahead
After the 2010 seeding is completed, there will be approximately 3,335 acres of mitigation restoration seeding remaining. About 350 acres will be seeded in the spring of 2011 and 550 acres are scheduled to be seeded in the Fall of 2011. These projects will not be irrigated. However, approximately 150 acres seeded in 2010 may be irrigated by the USFWS in 2011. Maintenance activities will continue on previously seeded areas.

The PMC will continue to coordinate the vegetation management team meetings with the RVO and USFWS as needed. The PMC will continue to provide weed management services (mowing, herbicide application, and soil discing and cover crop seeding) in areas identified by the vegetation management team. The PMC will continue to provide mulch/soil amendment, mowing and other agricultural activities as directed.
It is the Army's intention to provide the USFWS a final funding appropriation through a Memorandum of Agreement to assume responsibility for completion of all remaining mitigation/restoration work at RMANWR.

3.7.14 Drummed Waste Handling – Plan Development

Status - Complete

History
- The draft drummed waste handling plan was submitted to the Regulatory Agencies in August 1999. The draft plan described performance-based requirements for drum disposal operations. The performance requirements are outlined in the HWL operations plan and will be specified in the SOW and specifications.
- The final plan was submitted to the Regulatory Agencies as DCN #1 to the Miscellaneous RMA Structures Demolition and Removal Project, in January 2000. The DCN was approved by the Regulatory Agencies in March 2000. DCN #1 includes all drums stored within the South Plants and miscellaneous structures outside the boundary of the South Plants. Disposal of these drums is currently being performed under the Miscellaneous RMA Structures Demolition and Removal Project – Phase I.

- In June 2000 the PMC submitted to the Regulatory Agencies DCN #2 under the Miscellaneous RMA Structures Demolition and Removal Project. DCN #2 includes drummed waste stored in the North Plants area and was approved by the Regulatory Agencies in August 2000.

3.7.15 Well Abandonment

Status - Active

History

- Well abandonment activities are completed on a yearly basis to accommodate field implementation projects.
- In late 2001, a consolidated well abandonment campaign was initiated to complete well abandonment's for all remaining areas within the Central Remediation Area.
- 350 wells were abandoned in 2002 under the consolidated well abandonment campaign.
- For FY03, a comprehensive program of well retention, maintenance, and closure for both On-Post and Off-Post Operable Unit (OU) was developed. This program is currently ongoing and includes a systematic evaluation of monitoring networks, proposes potential network reductions where appropriate, proposes well lists for closure, as funding becomes available, and identifies wells requiring repair or replacement. All wells proposed for abandonment are approved through an annual Well Networks Update that is reviewed and approved by the Regulatory Agencies. In FY03 approximately 150 wells were abandoned. Abandoned wells in FY03 were in support of deletion areas (Western Tier) and in Off-Post development areas.
- In FY04 183 wells were closed.

Review of Last Year

There were no well abandonment activities in FY10.

Look Ahead

The Water Team Plans to re-evaluate the well network in FY11 and identify potential candidates for well closure.

3.8 Water Treatment/Monitoring

3.8.1 South Adams County Water Supply/Henderson Distribution

Status - Complete

History

Negotiations have been completed to secure 4,000 acre-feet of supplemental water supply for the SACWSD. In November 1998, the Army, SACWSD, Denver Water Board, and USFWS finalized an agreement for Denver to provide SACWSD with the supplemental supply. Currently, SACWSD and Denver Water are obtaining storage reservoirs and conveyance systems. The Army has completed all National Environmental Policy Act requirements and documentation.

The Henderson pipeline project (construction) was completed in August 1998. The project connected approximately 145 homeowners and businesses to the municipal water supply, taking them off their groundwater wells for drinking water. The closure of this activity completes the ROD obligation for the Henderson water distribution system on schedule.

3.8.2 On-Post Water Supply

Status - Active

History

- In 1998, RMA acquired 2,800 acre feet of High Line Canal water per year to support the remedy as a Temporary Supply (1998 – 2011) from the Denver Water Board (Denver Water) through a Nonpotable Water Lease Agreement (1998 Agreement).

- The 1998 Agreement also provided a Permanent Supply (2011 and beyond) of up to 1,200 acre feet per year of Denver Recycled Water to maintain lakes and wetlands on the RMA National Wildlife Refuge.

- By 2004, RMA had received less than 120 acre feet per year of Temporary Water due to drought-caused water conveyance problems in the High Line Canal system. This shortfall in Temporary Water deliveries triggered RMA negotiations with Denver Water to revise the 1998 Agreement to provide more dependable Temporary Water supplies.

- Discussions between RMA and Denver Water to revise the 1998 Agreement continued through CY07 because of complex water negotiations required to provide dependable alternatives to the High Line Canal as Temporary Water.

- RMA drilled and pump tested a new groundwater production well in Section 12 to enhance and diversify future RMA nonpotable water supplies. This well is expected to yield 300 acre feet of water per year when completed and permitted.

- Nonpotable water supplies at RMA through CY07 were fully adequate to meet remedy requirements. Nonpotable water from the Section 4 groundwater production wells (averaging 700 acre feet per year) coupled with surface water runoff into the RMA Lakes (averaging 500 acre feet per year) were sufficient to supply remedy demands and maintain healthy aquatic ecosystems in RMA lakes and wetlands.

Review of Last Year

Based on provisions of the 2008 Nonpotable Water Lease Agreement (2008 Agreement) between RMA and Denver Water, the RVO dechlorinated and discharged only 95.52 acre feet of Denver potable water (tap water) into Lake Ladora during FY10. Lake level maintenance in Lake Ladora required this relatively small volume of Denver tap water because the RMA lakes remained at or near full pool throughout FY10 due to significant surface water runoff into the lakes from the Upper Irondale Gulch Drainage Basin located upstream from RMA. The

dechlorination and discharge system in the Lake Ladora Pump House operated without incident throughout FY10.

The RVO and Denver Water continued discussions on the design and schedule for construction of Denver Water's Recycled Water main pipeline (Conduit 302) along 56th Avenue, including the location of two turnouts (taps) on this pipeline to deliver Recycled Water onto RMA beginning October 2011. Denver Water is on schedule to complete the construction of Conduit 302 and the RMA taps by October 31, 2011. To coincide with this availability of Recycled Water at RMA, the RMA Refuge developed a concept design for RMA Recycled Water pipelines to deliver Recycled Water from each tap on Conduit 302 to the RMA lakes and wetlands. This concept design was prepared as part of the FY11 design and construction funding requires submitted to Region 6 of the USFWS during June 2010. RMA has a contract right with Denver Water for up to 700 acre feet of Recycled Water per year based on provisions of the 2008 Agreement.

The RVO Decided in March 2010 to continue processing a groundwater rights decree application for the RMA Section 12 Well and Division 1 of the Colorado Water Court, rather than transferring this responsibility to the Water Resources Division of the USFWS, Region 6. This change in strategy was driven by the importance of the Section 12 Well decree application to ongoing negotiation with the SACWSD regarding the future of the Section 4 Wells at RMA. When groundwater rights are decreed, the Section 12 Well will serve as the primary ground water supply for the RMA Refuge, with the Section 4 Wells as a backup groundwater supply.

RMA obtained and implemented a State Engineer-approved 2010 Substitute Water Supply Plan for the Section 4 Wells, allowing groundwater extraction above the 466 acre feet of groundwater rights for these wells previously (1973) decreed by the Colorado Water Court.

2009 groundwater production from the Section 4 Wells through September 2010 (366.48 acre feet) was below the 2002-2008 average (about 700 acre feet) for these wells due to reduced pumping throughout most of FY10. Pumping was reduced because the RMA lakes remained at or near full pool throughout FY10 due to significant surface water runoff into the lakes from the Upper Irondale Gulch Drainage Basin located upstream from RMA.

A 2009 amendment to the 2008 Agreement with Denver Water allows Denver tap water to be used directly from RMA tap water pipelines (e.g., fire hydrants) for remedy activities (e.g., dust control, compaction, and irrigation). The RMA remedy used a total of 2.37 acre feet of Denver tap water by this method during FY 2010. RMA authority for direct use of Denver tap water for remedy purposes terminates on December 31, 2010, under terms of the 2009 amendment.

2008 RMA Nonpotable Water Lease Agreement Summary

Temporary Water (2008 – 2013)

Water Source	Annual Amount of Water
Denver Tap Water	Up to 800 Acre-Feet

(Delivered to L. Ladora after dechlorination)

RMA Section 12Well Water [S. Platte River depletions augmented (replaced) by Denver Water]	300 Acre-Feet
TOTAL	1,100 Acre Feet

Permanent Water (2014 and beyond)

Water Source	Annual Amount of Water
Denver Reuse (Recycle Plant) Water (Delivered to L. Ladora or Lower Derby Lake after dechlorination)	Up to 700 Acre Feet
RMA Section 12 Well Water [S. Platte River depletions augmented (replaced) by Denver Water]	300 Acre-Feet
TOTAL	1,000 Acre Feet

Look Ahead

RMA will continue 24/7 operation of the Denver tap water dechlorination and discharge into Lake Ladora as needed to maintain lake levels and supply remedy water demands during FY 2011.

The RVO and Denver Water will continue coordination discussions on the design and construction of the Recycled Water main pipeline along 56th Avenue to assure adequate connections for delivery of Recycled Water onto RMA beginning October 2011.

The RVO will finalize all required groundwater rights and well permitting documents for the Section 12 Well submitted to the Colorado Water Court and State Engineer. The Section 12 Well is no longer needed as a water supply for the RMA remedy, but will become the primary groundwater supply for the RMA Refuge.

RMA has submitted and will pursue Colorado State Engineer approval of a 2011 Substitute Water Supply Plan for the Section 4 Wells, allowing groundwater extraction above the 466 acre feet of groundwater water rights for these wells previously (1973) decreed by the Colorado Water Court. 2011 definitely will be the final year when a Substitute Water Supply Plan is required because there will be little or no remedy demand for nonpotable water in 2012 or thereafter.

RMA anticipates a CY10 nonpotable water supply at or above 1,600 acre feet with a nonpotable demand estimated at less than 1,000 acre feet. As a result, the 2011 water supply outlook is very favorable.

3.8.3 Section 36 Bedrock Ridge Groundwater Plume Extraction System

Status - Active

History
Operations began in the first quarter of FY00. All operations, maintenance and monitoring will be included under operations of the Basin A Neck System. Refer to Basin A Neck System, and Section 36 Bedrock Ridge Groundwater Plume Extraction System for status.

3.8.4 Confined Flow System Well Closure

Status - Complete

History

- Design started September 1997.
- Dispute Resolution process envoked at the 95 Percent Design Package review; April 1998.
- 100 Percent Design Package issued January 1999.
- Contract awarded on March 22, 1999.
- Fieldwork began June 1999.
- Fieldwork completed September 1999.
- Final Inspection held on October 7, 1999.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on September 27, 2000.

3.8.5 Irondale Containment System

Status - Active

History

- The skid mounted absorber units were installed at the metering station in FY01.
- The original Irondale Treatment plant was demolished in FY02.
- Irondale main well field extraction system shut down criteria accepted as complete (CCR approved) by the Regulatory Agencies on May 21, 2003.
- Shut down monitoring for the Motor Pool system was extended through the end of FY03.

Review of Last Year
Two wells in the railyard are operating at approximately 120 gallons per minute (gpm).

Look Ahead
The CCR for the Motor Pool System is scheduled for completion in the First Quarter of FY11. The Railyard System continues to approach shutoff criteria.

3.8.6 Basin A Neck System

Status - Active

History

- A new air stripper was installed in January 2002. The new air stripper was designed to treat the increased flow from the Bedrock Ridge and Complex Trench extraction well fields.
- The Basin A Neck Recharge Trenches were evaluated for recharge capacity; reasons for reduction in recharge flow, and options for rejuvenating capacity during the summer and fall of 2002.
- New recharge trenches were installed in 2004 to accept overflow from the original trenches, which were becoming plugged.
- The airstripper was relocated to the front of the plant to allow stripping of entire plant flow. This modification was completed in 2004.
- A forth extraction well was installed in the Bedrock Ridge area between DW-1 and DW-2 in 2004.
- Design of the Lime Basins Groundwater Treatment relocation project began in April 2009.

Review of Last Year

Operation of the Basin A Neck System continues within effluent parameters at approximately 20 gpm. This includes a flow from the Section 36 Bedrock Ridge Groundwater Plume Extraction System of approximately 3.3 gpm and a flow from the Complex (Army) Disposal Trench Extraction Trench of approximately 1.7 gpm.

The 100 Percent Design Package for the Lime Basins Groundwater Treatment Relocation Project was completed and issued in March 2010. Procurement was completed in May 2010 and award was made to Hudspeth & Associates for the construction of the treatment building foundation, pre-engineered metal building; elevated access platforms for major equipment items; access road construction; and general site earthwork.

Construction under the Hudspeth & Associates subcontract commenced in May 2010 and was completed in September 2010. By September 2010, URS Corporation had procured and installed the major equipment items inside the treatment building expansion including equipment relocated from the CERCLA Wastewater Treatment Plant.

Look Ahead

Construction of the Lime Basins Groundwater Treatment Relocation Project will continue and start-up of the system is anticipated in December 2010. System start-up will include the start-up of the Lime Basins slurry wall dewatering system that will be discharged to the modified Basin A Neck treatment facility for treatment and disposal.

3.8.7 CERCLA Wastewater Treatment Facility

Status - Active

History

- In FY06 the CERCLA Waste Water Treatment Plant was modified to allow for two separate treatment trains to be dedicated to groundwaters from the South Tank Farm Plume and Lime Basins.
- Design of the Groundwater Mass Removal Project was completed in December 2006.
- Construction of the Groundwater Mass Removal Project began in November 2005 (following earlier completion of the Extraction and Recharge System design).
- Construction of the Groundwater Mass Removal Project was completed in June 2006.
- ESD for groundwater remediation and revegetation requirements was completed in March 2006. The ESD added contaminant reduction system for South Tank Farm Plume and South Plants North Plume.

Review of Last Year

Over the past year the South Tank Farm Plume System has processed approximately 505,700 gallons of groundwater and the Lime Basins Groundwater System has processed approximately 433,440 gallons of groundwater. To date, the Groundwater Mass Removal Project has removed approximately 3,923 kilograms of contaminant mass from the South Tank Farm Plume and Lime Basins Groundwater. The GWMR extraction wells were turned off on May 27, 2010 to allow adequate time to treat and rinse all lines in the CERCLA treatment plant before plant demolition. Recharge of the last treated water occurred on June 28, 2010.

Look Ahead

The Lime Basins Groundwater Treatment Relocation Project design was started in FY08 and will expand the Basin A Neck treatment facility to treat and dispose of the groundwater extracted from the Lime Basin slurry wall dewatering system. The shutdown of CERCLA treatment plant operations started in September 2009 and the transfer of treatment of the Lime Basins slurry wall dewatering groundwater will be completed in December 2010.

3.8.8 Northwest Boundary Containment System

Status - Active

Review of Last Year

Operations of the Northwest Boundary Containment System continues with effluent parameters of approximately 825 gpm.

Look Ahead

The south west extension will be evaluated to determine if the system can be shutdown.

3.8.9 North Boundary Containment System

Status - Active

Review of Last Year
Operation of the North Boundary System continues within effluent parameters at approximately 198 gpm.

Look Ahead
Normal operations will continue through the foreseeable future.

3.8.10 South Lakes Plume Management

Status - Active

History

- The South Lakes SAP was approved and implemented in May 2001.
- Two years of monthly monitoring was completed in May 2003 without having any recorded exceedances of the Colorado Basic Standards for Groundwater.
- A Data Assessment Report was prepared showing no contamination in the lake from the South Plants groundwater. The final Data Assessment Report was issued in April 2004.
- ESD for Groundwater Remediation and Revegetation requirements was completed in March 2006. The ESD deleted the lake level maintenance requirement for purpose of groundwater contaminant plume control.

Review of Last Year
Normal monitoring was conducted through FY10.

Look Ahead
Lake-level maintenance during remediation is still required to support aquatic ecosystems in Lake Ladora, Lake Mary and Lower Derby Lake. In addition, groundwater monitoring will be conducted as part of the Long-Term Monitoring Program for groundwater to assess any change in future conditions. The next LTMP sitewide monitoring occurs in FY12.

3.8.11 Groundwater Mass Removal System

Status- Active

History

- Design of the Groundwater Mass Removal Project began in March 2005.
- Design of the Groundwater Mass Removal Project was completed in December 2006.
- Construction of the Groundwater Mass Removal Project began in November 2005 (following earlier completion of the Extraction and Recharge System design).
- Construction of the Groundwater Mass Removal Project was completed in June 2006.
- ESD for groundwater remediation and revegetation requirements was completed in March 2006. The ESD added contaminant reduction system for South Tank Farm Plume and South Plants North Plume (Lime Basins Groundwater).

- Product recovery systems were installed in two of the extraction wells (DW-1 and DW-2) of the South Tank Farm Plume System following detection of significant build-up of free product in these wells. The product recovery systems have been operated to the maximum extent possible to enhance the contaminant mass removal from the plume.
- Two (2) recharge trenches were added to the South Tank Farm Plume system to replace the recharge wells that were not responding to periodic cleanings due to irreversible biofouling.
- Monitoring for free product continues in three (3) of the extraction wells (DW-1, DW-2 and DW-3) of the South Tank Farm Plume system that have historically exhibited detectable accumulation of free product. Although significant product was evacuated from two of the extraction wells (DW-1 and DW-2) early during the operation of the system, the free product disappeared during FY08 but reappeared again in FY09. Approximately 53 gallons of free product was removed from DW-2 and DW-3 during FY09.
- The Lime Basins Groundwater System has been shut down for the majority of the year owing to the need to extend the extraction wells in order to accommodate the construction of the Lime Basins cover. The operation of the system was restarted in April 2009 following significant completion of the Lime Basins cover.

Review of last Year

Over the past year the South Tank Farm Plume System has processed approximately 516,000 gallons of groundwater and the Lime Basins Groundwater System has processed approximately 250,000 gallons of groundwater. At the conclusion of the project in May 2010, the Groundwater Mass Removal Project has removed approximately 3,923.3 kilograms or 8,650.9 pounds of contaminant mass from the South Tank Farm Plume and Lime Basins Groundwater.

DNAPL was discovered in two of the Lime Basins slurry wall dewatering wells (DW-9 and DW-10) during August/September 2009. Investigations were undertaken under a new Lime Basins DNAPL Project to investigate the nature and extent of the DNAPL and its potential impacts to the slurry wall. Meetings were conducted with the Regulatory Agencies to provide updates on the DNAPL investigation and develop an overall with the Regulatory Agencies process for continued investigation and remediation of the DNAPL. Discovery of this DNAPL caused the shutdown of the Lime Basins groundwater extraction wells of the Groundwater Mass Removal Project (DW-1 through DW-4) and the dewatering wells of the Lime Basins slurry wall dewatering system until further investigations could be performed to investigate the impact of the DNAPL.

On December 17, 2009, approximately 7.3 and 7.2 gallons of DNAPL were removed respectively from DW-9 and DW-10. Since this removal, the DNAPL levels as monitored through January 20, 2010 have remained at approximately 0.3 and 0.6 feet respectively in DW-9 and DW-10.

Owing to the lack of detection of DNAPL in the groundwater mass removal extraction wells (DW-1 through DW-4) over several months of monitoring, these extraction wells were restored to operation on November 9, 2009 to continue the system's objective of mass removal.

Owing to the lack of detection of DNAPL in the Lime Basins slurry wall dewatering wells DW-5, DW-6, DW-7, and DW-8 over several months of monitoring, these dewatering wells were restored to operation on February 1, 2010 to continue the system's objective of dewatering inside the slurry wall. This restart of the dewatering wells was proposed and obtained the Regulatory Agencies concurrence during the meeting conducted on January 28, 2010.

DNAPL was detected in dewatering well DW-5 at an approximate depth of 0.5 feet on February 10, 2010. The depth of the DNAPL and quantities evacuated are reported to the Regulatory Agencies during regular meetings conducted to provide progress updates on the DNAPL investigation.

In order to gain more information in support of the DNAPL investigation, a decision was made to begin operation of Lime Basins dewatering wells DW-9 and DW-10 that contained measureable levels of DNAPL. The primary purpose is to observe the impact of the pumping operations on the accumulation of DNAPL in the dewatering wells, and secondarily to continue the objective of dewatering inside the slurry wall. With the concurrence of the Regulatory Agencies, the two (2) wells were re-started on February 24, 2010.

During the week of April 12, 2010, deterioration was observed of the PVC piping components associated with dewatering well DW-10. Deterioration in the form of softening was observed of the down-well pump discharge pipe, strainer cage and ball valve. The piping associated with the other dewatering wells were also inspected for similar deterioration but none were observed, either with the PVC or HDPE piping components. The deterioration of the piping associated with DW-10 appears to be a function of the specific high concentration of compounds (mostly isomers of dichlorobenzene and chloroform) associated with this well. Details of the investigation were summarized and presented to the Regulatory Agencies during a DNAPL project meeting conducted on April 21, 2010. In accordance with the corrective actions proposed during that meeting, the RVO prepared a DCN detailing the required modifications to the piping system to address the material incompatibility. A non-routine action plan (NRAP) was also prepared for the Regulatory Agencies approval given the need to replace underground piping and, therefore, perform intrusive work inside Army maintained areas. Both the DCN and NRAP have been approved by the Regulatory Agencies.

Consistent with the Committee level agreement for the GWMRP and the current RDIS, the RVO obtained the Regulatory Agencies concurrence and shut down the GWMRP within a time frame that will allow for the decommissioning of the CWTP by June 30, 2010. Based on the need to process the remaining wastewater inventory from the CWTP, the extraction systems of the GWMRP were shut down on May 28, 2010. The start-up of the modified Basin A Neck treatment facility is anticipated in December 2010 and the re-start of groundwater extraction for the Lime Basins Slurry Wall Dewatering System, and the treatment and reinjection of this groundwater at the BANS is expected to occur at this time.

Treatment of the remaining wastewater inventory of the GWMRP at the CWTP was completed in June 2010, after which, URS Corporation decontaminated the equipment and piping at the CWTP. This work was completed in August 2010 and the CWTP structure and the equipment,

piping, electrical, and instrumentation/control items contained therein were turned over to the PMC for demolition.

Decommissioning and demolition of the South Tank Farm System of the Groundwater Mass Removal Project commenced in August 2010 including removal of pumps, piping, and appurtenances from the extraction wells; flushing of the underground piping that will be abandoned in-place; and the flushing of piping in the meter building that will be demolished along with the building.

Look Ahead

The project will complete the replacement of piping and appurtenances to address the incompatibility of some of the plastic components in accordance with the approved DCN and NRAP. The project will continue and complete the decommissioning and demolition of the components of the South Tank Farm System of the Groundwater Mass Removal Project. Once this has been completed, a CCR will be prepared for the project to capture the work completed during the design, construction, operation, and shut down phases of the project.

3.8.12 North Plants Light Non-Aqueous Phase Liquid

Status – Active

History

- LNAPL associated with groundwater was first identified beneath the North Plants manufacturing area during water level monitoring in Well 25055 in 1993 (TtEC 2007). Follow-up sampling in 1993 showed low levels of BTEX.
- Delineation of the LNAPL was conducted in July 2001 as part of the North Plants Structures Groundwater Monitoring (FWENC 2001a).
- In September 2001, passive recovery of the LNAPL was initiated in September 2001 and continued until demolition activities in the area required abandonment of the well and cessation of recovery in February 2002 (FWENC 2002a). Continuation of LNAPL recovery was planned to follow completion of North Plants surface remediation actions.
- Petroleum-impacted soils were observed during excavation of the chemical sewers surrounding Building 1712 in December 2002. This triggered two rounds of soil sampling to delineate the extent of petroleum contaminated soil. The investigation and evaluation of the petroleum contaminated soil was documented in the North Plants Soil Remediation PRER (TtFW 2004a). The PRER concluded based upon the Remedial Investigation results, groundwater monitoring result and the two rounds of soil sampling (TtFW 2004b), that no action was required for soil.
- The RVO prepared a draft North Plants Free Product Remediation Plan (TtFW 2004c) in March 2004 presenting a concept for LNAPL recovery. This concept was modified in Fall 2004 and presented in the North Plants Soil Remediation Project DSOW (TtFW 2005a) and subsequently in the North Plants Soil Remediation Project 30 Percent Design Analysis (TtFW 2005b). Since that time, experience with the groundwater mass removal system located in South Plants underscored the importance of both site-specific data and site-specific recovery experience when implementing a contaminant recovery system. For that reason, the PREAP identified

the need to update the LNAPL characterization data collected since late 2004 and present the action plan for a pilot system for LNAPL recovery.

- A PREAP (TtEC 2007) was prepared by the RVO to address the investigation and potential remediation of the groundwater contamination with the historical release of fuel oil in the North Plants. Characterization and evaluation of the groundwater contamination was conducted in accordance with the requirements of Division of OPS Guidance (CDLE 1999), and concluded that no action was required for groundwater. As concluded in the PREAP, concentrations of contaminants in soil do not exceed the Tier 1 Risk-Based Screening Level (RBSLs) presented in the guidance. However, the presence of LNAPL also referred to as free product, in several monitoring well locations, requires evaluation of actions to satisfy requirements under the OPS Guidance for LNAPL removal. Specifically, the LNAPL must be removed to the maximum extent practicable and in a manner that minimizes the spread of contamination.
- The design of the pilot LNAPL removal action as defined in the North Plants Pilot LNAPL Removal System Action Plan was started and completed in FY09. The construction of the LNAPL recovery and monitoring wells was completed in March 2009. Following construction completion and development of the wells, monitoring commenced in the LNAPL recovery and monitoring wells for the presence of LNAPL.

Review of Last Year

Monitoring of the recovery and monitoring wells continued through April 2010 which marked the completion of one (1) year of monitoring and by agreement, the requirement to prepare an Operations Evaluation Report for review and comment by the Regulatory Agencies. The draft North Plants LNAPL Operations Evaluation Report was submitted to the Regulatory Agencies in June 2010 and comments have been received that are currently being addressed by the RVO. The draft report concluded to measureable LNAPL in any of the monitoring or recovery wells and as a result, recommended the continued monitoring of the system for LNAPL for an additional year. At the end of the additional year of monitoring another evaluation report will be prepared to share the results with the Regulatory Agencies. At that time, a determination will be made regarding the future actions for the projects. These recommendations have been acknowledged and accepted by the Regulatory Agencies.

Look Ahead

The RVO will continue the monitoring for LNAPL in the recovery and monitoring wells. If sufficient accumulation of LNAPL has been observed in the recovery wells during the additional year of monitoring, bail down tests will be conducted to predict the potential yield of LNAPL. Following the completion of the bail down test, LNAPL recovery pumps will be installed in the recovery wells and operation will commence to begin active removal of LNAPL. The monitoring data, results of the bail down tests and operations/maintenance data will be compiled in a Pilot System Report that will be submitted to the Regulatory Agencies for review. Contained within the report will be recommendations for remedial action, if any, that could include the installation of additional LNAPL recovery wells.

3.8.13 Dense Non-Aqueous Phase Liquid Remedial Investigation/Feasibility Study

Status – Active

History

- The first indication of the potential for DNAPL to exist in the Lime Basins slurry wall dewatering wells occurred on July 30, 2009 when the readings of level sensing transducers did not correlate with the field measurements.
- Visual confirmation of the presence of DNAPL in dewatering well DW-10 occurred on August 4, 2009 through collection of samples using a sludge judge. The visual confirmation of the presence of free product lead the RVO, with the Regulatory Agencies concurrence, to shut down the dewatering wells until further investigation can be performed to characterize the free product. This action was taken to protect the treatment system and to determine further courses of action that needed to be taken to address free product.
- On August 11 and 12, 2009, field monitoring for DNAPL was conducted in dewatering wells DW-1 through DW-10 and influent tank T-101 using a free product interface probe. Samples of the potential DNAPL, the overlying groundwater, and well pump discharge from the meter building for dewatering well DW-10 were collected and sent off-post for analysis. The analytical results for these samples were received on August 18, 2009 that confirmed the presence of a free phase liquid at the bottom of the well comprised of in descending order of concentration, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,3-dichlorobenzene, and chlorobenzene.
- On August 25, 2009, the RVO proposed a second phase of field investigation based on the results of the initial phase as previously summarized. This second phase of investigation encompassed depth sampling in select wells and influent tank to investigate the potential for DNAPL stratification based on relative density of its compounds. This depth sampling was proposed to be conducted in dewatering wells DW-1, DW-3, DW-8, and DW-10 based on the historical high detections of organic compounds in these wells and their relative locations along the northern boundary of the slurry wall. Three depth samples were collected from each of these dewatering wells and influent tank T-101 corresponding to the top 2 feet, middle 2 feet, and bottom 2 feet relative to the total liquid column in the tank or well.

Review of Last Year

During a meeting conducted on October 1, 2009, the results of the second phase of investigation were reported to the Regulatory Agencies. In general, the analytical results for the depth samples collected in the wells indicated dissolved concentrations of benzene, chloroform, and various isomers of dichlorobenzene that were typical of the historical concentrations detected in the area, and the concentrations did not indicate any variations with the depth of the sample. During this same meeting and based on the results that were presented, the RVO proposed to perform similar depth sampling of the remaining dewatering wells DW-2, DW-4, DW-5, DW-6, DW-7, and DW-9. This phase of investigation was conducted on October 13 and October 15, 2009 and the results were reported to the Regulatory Agencies on October 29, 2009. The bottom interval sample collected from DW-9 revealed the presence of a DNAPL comprised of 1,2-dichlorobenzene, 1,4-dichlorobenzen, 1,3-dichlorobenzene, and chlorobenzene.

Given the confirmation of DNAPL presence in wells DW-9 and DW-10, both visually and with analytical results, the RVO proposed to begin in the removal of DNAPL from these dewatering wells to observe the continued accumulation of DNAPL in these wells that provide insight into the nature, extent, and behavior of the DNAPL.

The DNAPL accumulated in wells DW-9 and DW-10 was removed on December 17, 2009. A QED brand gas displacement pump specifically designed for DNAPL use removed approximately 7.2 gallons of fluid from DW-9 and an additional 7.0 gallons of fluid from DW-10. Prior to pumping, DNAPL thickness was measured in DW-9 (5 feet, 2 inches) and DW-10 (2 feet, 9 inches), or approximately 9 gallons and 4.75 gallons of DNAPL, respectively.

Based on the lack of DNAPL in the dewatering wells outside the slurry wall, the dewatering wells DW-1 through DW-4 resumed pumping on November 11, 2009. Based on the relatively stable DNAPL measurements (i.e., no apparent change in measured DNAPL thickness) following the removal of DNAPL from the two wells, pumping was started in wells DW-5 through DW-8 on February 1, 2010, and pumping from wells DW-9 and DW-10 began on February 24, 2010.

Water level and DNAPL thickness measurements were conducted on a weekly basis in the 10 Lime Basins dewatering wells beginning on December 21, 2009, up through March 23, 2010, when the frequency was revised by bi-weekly with the Regulatory Agencies' concurrence. DNAPL was detected in dewatering well DW-5 at an approximate depth of 0.5 feet on February 10, 2010. Since then the weekly monitoring of DNAPL in this well has detected relatively constant DNAPL depths ranging from 0.3 to 0.6 feet.

DNAPL was detected in well 36231 (MW-1), where it was measured at 0.28 feet. Originally, only water-level measurements were taken in this well, as the intended purpose of well 36231 is to function as a piezometer to evaluate the effectiveness of the slurry wall, in particular as determined by the reverse hydraulic gradient.

On May 28, 2010, dewatering wells DW-1 through DW-10 were shut down to allow for the decommissioning and demolition of the CWTF and the Groundwater Mass Removal Project. The dewatering wells of the Lime Basins Slurry Wall (DW-5 through DW-10) will be restored to operation when the Lime Basins Groundwater Treatment Relocation Project has been completed and commissioned to receive and treat the Lime Basins Groundwater from slurry wall dewatering operations. This is anticipated to occur near the end of 2010.

To fully investigate the nature and extent of the DNAPL and its impact on the existing Lime Basins Slurry Wall and other existing remedies in the Lime Basins Area, the RVO proposed to undertake a RI/FS in accordance with the CERCLA requirements. The approach to executing the RI/FS was presented in a Lime Basin DNAPL RI/FS Work Plan that was transmitted to the Regulatory Agencies for review and comment. This document was issued final in March 2010 following revisions to the document to address the Regulatory Agencies' comments on the draft version of the document.

The RI phase of the project was completed in accordance with the Work Plan and the results, conclusions, and recommendations of the RI were captured in a draft Lime Basins DNAPL RI Summary Report issued in July 2010 for the Regulatory Agencies' review. The document was finalized in September 2010 following revisions to address the Regulatory Agencies' comments on the draft version of the document. At the same time, a project Decision Document was prepared in accordance with the Work Plan to document the completion of the RI and the agreement to proceed with the FS based on the conclusions and recommendations of the RISR. The Decision Document will be signed by Committee level members to document the agreement to proceed accordingly on the project.

Look Ahead

The project will seek concurrence by the Regulatory Agencies through the Decision Document of the agreement that the RI has been completed and the FS will be conducted based on the conclusions and recommendations of the RISR. The project will then proceed with the execution of the FS to address the potential impacts of the DNAPL on the existing Lime Basins Slurry Wall as well as other completed remedies within the Lime Basins area. The efforts of the FS will be captured in an RI/FS Report that will provide recommendations for future remedial actions to address the existence and remediation of the DNAPL.

3.9 Remediation Venture Office

3.9.1 Program Management Contractor (PMC Acquisition)

Status - Complete

History

- The PMC selection process began in July 1996 by publicizing the availability of the contract solicitation in targeted publications and on the Internet. The process involved an innovative two-phase approach. After presenting the PMC solicitation to more than 150 interested contractors, nine prospects were evaluated in Phase I using the criteria of previous related experience, key personnel, and safety performance. Eight finalists were then invited to participate in Phase II, and were evaluated on management, performance risk, approach to an implementation scenario, design approach, and cost.

- The PMC acquisition effort was completed on May 23, 1997, with award of the PMC. Five unsuccessful offerors protested the award to the PMC on the basis of an alleged organizational conflict of interest and other issues. The Army agreed to delay the implementation of the contract to review its procurement procedures. Arsenal staff reevaluated the revised proposals and conducted exhaustive negotiations with all of the bidders to determine which provided the best value for the Arsenal. The PMC proposal still was determined to be the best of the six that were resubmitted, and was re-awarded the contract on December 3, 1997.

3.9.2 Site-Wide Implementation Planning Team

Status - Complete

History

- The Site-Wide Implementation Plan Team (SWIPT) has completed its primary task of technical support to the PMC acquisition. Version 4 of the SWIPT Report was completed in July 1997 and provided to the Regulatory Agencies. No further updates to the SWIPT are anticipated.

3.9.3 Land Transfers/Partial Deletions

To date five partial deletions have been approved, reducing the area at the RMA listed on the National Priorities List (NPL) from an original total of 27 square miles to approximately 1.6 square miles.

Transfer of the Western Tier Parcel *Status – Complete*

The Refuge Act (as amended in 1998) stipulates that approximately 815 acres (later more accurately defined as 917 acres), referred to as the Western Tier Parcel (WTP), will be transferred to the adjacent community of Commerce City for fair market value. The first step in the transfer process was the partial deletion of this property from the NPL. In 1997, RMA proposed to EPA the deletion of this property from the NPL. A Notice of Intent of Partial Deletion (NOIDp) was published in the Federal Register in October 1998. The deletion was subsequently postponed to allow for additional soil sampling of the parcel. During the soil sampling, a site reconnaissance was performed that identified approximately eight areas requiring subsurface investigation. An investigation of seven of the eight areas was performed and indicated no evidence of subsurface contamination. The eighth area, a trench, was excavated. Reports documenting the fieldwork, Site Reconnaissance Report and Confirmation Soil Sampling Risk Report were finalized upon finalization of a comprehensive site-wide reevaluation for UXO, which was required after GB bomblets were recovered in October 2000. A second NOIDp was published in the Federal Register in September 2002. A NODp was published in the Federal Register in January 2003. A public notice was published in the local newspapers in July 2003 for review of a Finding of Suitability to Transfer (FOST). The FOST was signed in August 2003 and a Report of Excess (ROE) package was submitted to the Corps of Engineers (COE). The COE transmitted the ROE package to the General Service Administration (GSA) in September 2003. GSA signed the deed in June 2004 and the property was sold to Commerce City.

Perimeter Area *Status - Complete*

The Refuge Act specifies that upon receipt of certification from the EPA that all response actions required at RMA have been completed (NPL deletion), the Army shall transfer to the Department of the Interior - USFWS jurisdiction over RMA, except for facilities required to be retained for water treatment or for the disposal of contaminants. In all, the amount of land eligible to be transferred to the USFWS totals approximately 15,000 acres. A map of a portion of the 15,000 acres was presented to the Regulatory Agencies in 1999 with a request for deletion of that property from the NPL. This area was called the Perimeter Area. Discussion with the

Regulatory Agencies on the Perimeter Area map was in progress, but the Regulatory Agencies suspended all deletion activity in October 2000 when the GB bomblets were recovered. Deletion activity did not resume until the comprehensive site-wide reevaluation for UXO was completed. As the site-wide reevaluation was being finalized in November 2001, deletion discussions resumed and the EPA published two NOIDps in the Federal Register in July 2003 for a total of approximately 5,000 acres. A ROE package was submitted to the COE in December 2003. Notices of Partial Deletion were published in January 2004. The Perimeter Area was transferred to USFWS by the COE in March 2004 and the USFWS officially established the RMA National Wildlife Refuge in April 2004. The transfer ceremony included participation by the Secretary of the Interior Gail Norton, Senator Wayne Allard, Congressman Bob Beauprez and Congresswoman Diane DeGette.

Internal Parcel *Status - Complete*

Discussions were initiated with the Regulatory Agencies in August 2004 for the next deletion of property from the NPL called the Internal Parcel. Negotiations on the amount of property to be deleted continued with the Regulatory Agencies into FY05 and reached a point where a deletion justification report was able to be drafted and submitted for review in July 2005. That report was finalized in March 2006 and a NOIDp was published in the Federal Register in April 2006, for approximately 7,400 acres. A NODp was published in the Federal Register in July 2006. Transfer of approximately 7,260 acres to USFWS took place on September 1, 2006. A transfer ceremony took place on October 13, 2006; it included participation by the Secretary of the Interior Dirk Kempthorne, the EPA Administrator Stephen Johnson, the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational health Tad Davis, Senator Wayne Allard, and Congressmen Bob Beauprez, Mark Udall, and Tom Tancredo.

Central Areas and Off-Post Surface Media *Status - Complete*

A request for deletion of property from the NPL was sent to the EPA in May 2009 for the remaining on-post areas to be transferred to USFWS and for portions of the Off-Post OU. Negotiations on the amount of property to be deleted continued through FY09 with tentative agreement reached on approximately 2500 acres, known as the Central Areas, and 160 acres of the off-post surface media. A NOIDp was published in the Federal Register in June 2010 and the NODp was published in the Federal Register in September 2010. The Central Areas were transferred to the USFWS by the end of FY10. A transfer ceremony took place on October 15, 2010.

100-Foot Strip *Status - Complete*

The Refuge Act specifies that 100-feet inside the RMA boundary on the northwest, northern, and southern sides (approximately 11 miles of 100-foot strips, 126 acres), be transferred to local governments, at no cost, to allow for the improvement of public roads. This property was included in the Perimeter Area deletion from the NPL. A public notice for an Environmental Assessment was published in local newspapers in July 2003 and signed in September 2003. A public notice for a FOST was published in local newspapers in January 2003 and signed in March 2004. A ROE was submitted to the COE in March 2004. The property was transferred to local governments in September 2004.

U.S. Post Office Bulk Mail Facility *Status - Complete*

The U.S Post Office Bulk Mail Facility is located on a 63-acre parcel of land leased by the U.S. Postal Service. The land surrounding this parcel is the WTP, which has been transferred to Commerce City (see above). The Army identified this "island" of land as excess and a ROE was submitted to the COE in July 2003. The COE transmitted the ROE package to GSA in August 2003. This property was transferred to the U.S. Postal Service in July 2005.

Klein Water Treatment Plant *Status - Complete*

The Klein Water Treatment Plant is located on a 12-acre parcel of land leased by the SACWSD. A majority of the land surrounding this parcel is the WTP, which has been transferred to Commerce City (see above). The Army identified this "island" of land as excess and included it with the ROE package for the WTP. This property was transferred to SACWSD in April 2005.

3.9.4 Lake Ladora Dam and Spillway Project

Status - Complete

History

- The SOW for the Lake Ladora Dam Rehabilitation included: repair of the north embankment to reestablish 3:1 side slopes and a new crest elevation; replacement of the south embankment with a clay core and cut-off trench, sand-gravel foundation trench drain, and a new crest elevation; a new outlet works that allows water to be diverted to Lake Mary or discharged into the Lake Ladora spillway; the construction/repair of the spillway to provide a 100-foot wide channel bottom and 3:1 ration side slopes to meet applicable standards. The spillway also includes four grade-control structures to control erosion and velocity.

- The contract was awarded to Parker Excavating Inc., in June 1998 and completed in October 1999. The reason for the repairs was that the dam did not meet the Minimum Acceptable Dam Safety Standards (State of Colorado) and therefore could not have been transferred to the U.S. Department of the Interior until brought into compliance.

3.9.5 Shoreline Expansion Project

Status - Complete

History

- The Lower Derby Lake Shoreline project consists of the construction of two soil peninsulas in Lower Derby Lake, and installation of a fish screen along the Highline Canal. This project was performed at the request of USFWS.

- Lower Derby Lake is located along the south side of Section 1. The lake was drained in 1999 to accommodate the remediation (excavation) work to be performed at the east end of the lake. The construction of the two peninsulas occurred immediately following this remediation work in August 1999. The fish screen was also installed across the High Line Canal upstream from Lower Derby Lake. This project was completed in October 1999.

- Approximately 11,400 bcy of soil was necessary to construct the two peninsulas. The fish screen was purchased from an appropriate vendor, and reinforced concrete and riprap were required for its installation.

3.9.6 Five Year Site Review

Status - Active

History

- First Five Year Site Review, (December 2000), was approved by the EPA on January 31, 2001.
- Preparation of Second Five Year Site Review (December 2005) began in October 2004; draft report sent to the Regulatory Agencies in July 2005.
- Several comments received from the EPA relating to groundwater remediation issues, and being unable to resolve the key issues, the RVO raised the EPA comments to the RMA Committee and RMA Council meeting in November 2005, and then to the SAPC in December 2005.
- In January 2006 the EPA assigned Ms. Helen Dawson to act as a facilitator and help resolve key issues raised by the EPA.
- Second Five Year Site Review, was approved by the EPA on December 20, 2007.

Review of Last Year

The RVO began the third Five Year Site Review (FY10) process in October 2009. Site inspections were conducted in March 2010 through April 2010. A draft Five Year Review Report was issued to the Regulatory Agencies in July 2010, and comments were received in September 2010.

The Five Year Groundwater Summary Report was issued to the Regulatory Agencies in June 2010 and comments were received in August 2010.

Look Ahead

The final Five Year Site Review Report for the Regulatory Agencies' approval is schedule to be issued in the Third Quarter of FY11.

The final Five Year Groundwater Summary Report is forecast to be issued in October 2010.

3.9.7 Long-Term Environmental Management System

Status - Active

History

- In FY05, the RVO and the Regulatory Agencies agreed conceptually on the preparation of the Long-Term Environmental Management System (LEMS).
- During FY08 and FY09, the RVO and the Regulatory Agencies reached agreement on a draft Caps and Covers section to be used as a template for format and level of detail for other sections of the LEMS. A preliminary draft LEMS was transmitted in March 2009.

After receiving general input from the Regulatory Agencies, a revised preliminary draft LEMS was transmitted in August 2009.

Review of Last Year
The RVO worked to more fully develop incomplete sections of the LEMS, especially related to information management. Other sections were updated as component plans were completed or revised (e.g., LTMP, ELF Post-Closure Plan).

Look Ahead
The RVO plans to issue a draft LEMS for review and comment by the Regulatory Agencies during the first quarter of FY11. The forecast completion of the LEMS plan is second quarter of FY11.

3.10 Program Management

3.10.1 Trust Fund

Status - Complete

History

- During the development of the ROD, members of the public and some local governmental organizations expressed keen interest in the creation of a trust fund to help ensure that the long-term O&M obligations of the U.S. Army would be performed. The ROD provided for the formation of a trust fund group to develop a strategy to establish such a trust fund and in August 1996 a Trust Fund Work Group was established. The Group consisted of representatives from the Parties, the RAB, the Site-Specific Advisory Board, the Governor's office, Commerce City officials, and the public. The first meeting was held on August 14, 1996. The Group identified eight possible options for establishing a trust fund and, after much study and discussion, agreed that two options were the most feasible.

- The Trust Fund Working Group proposed two strategies to the Army that would establish a trust fund for long-term operations and maintenance costs. One strategy would have Shell establish a trust fund in its lead party status. The second strategy would have established a sub-account within EPA's Superfund Trust Fund. The Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health reviewed the proposed strategies and determined that both were unacceptable due to legal and policy implications.

In March 2006 CDPHE/EPA issued the "Trust Fund Work Group Summary of Work", the document summarized the major events of the Trust Fund Group from 1996 – 2006. Pages 16 of the document, last paragraph states

> *At this point, all further work on the Trust Fund ended. Based upon the activities conducted as described above, the Parties believe that they have exercised their good-faith best efforts to establish a Trust Fund for the operation and maintenance of the*

remedy, including habitat and surficial soil, as outlined in Section 9.4 of the ROD. No additional efforts to attempt the establishment of a Trust Fund are planned.

3.11 Off-Post Remedy

3.11.1 Off-Post Surficial Soil

Status - Complete

History

- The ROD for the Off-Post OU for the RMA (signed on December 19, 1995) specified that approximately 160 acres in the southeast portion of Section 14 and the southwest portion of Section 13 would be tilled and seeded with an appropriate seed mix. The objective of this project was to thoroughly mix the top eight to ten inches of soil through tillage of appropriate areas within the area of estimated dieldrin concentration greater than 0.04 ug/g, and establish self-sustaining vegetation at those sites. Operator training began on March 1, 1996, and the project was completed on April 16, 1996. The Final Inspection was conducted in October 1996. This project was accepted as complete with approval of the CCR by the Regulatory Agencies on September 30, 1998.

3.11.2 Off-Post Water Treatment Facility

Status - Active

History

- Request by local developer to modify the Northern Pathway was received in August 2003. The request is to relocate approximately 6 wells to facilitate commercial and residential development of property.
- DCN-NPS-FCD-001 approved by the Regulatory Agencies (by signature) August 16, 2006.
- DCN – NPS-FCD-003 approved by the Regulatory Agencies July 1, 2009. The DCN closed out the Northern Pathway Modifications Project.

Review of Last Year

Operation of the Off-Post System continues within effluent parameters at approximately 275 gpm.

Look Ahead

Normal operations will continue through the foreseeable future.

3.11.3 Off-Post Well Closures

Status - Complete

History

- SOW completed May 22, 1998.
- Contract awarded to Los Alamos Technical Associates July 21, 1998.
- Closure of wells and construction of new wells completed

November 24, 1998; remaining fieldwork and final inspection held December 16, 1998.
- Draft CCR issued February 26, 1998.
- Project accepted as complete (CCR approved) by the Regulatory Agencies on September 30, 1999.

4.0 Schedule and Bar Charts

4.1 Schedule Modifications and Justification

The following modifications have been made to the schedule:

Global Modifications:

None

Specific Project Modifications:

- Decision Document titled SAPC Resolution for Off-Post Institutional Controls, (reference letter dated November 9, 2009, Section 5).
- EPA and CDPHE acceptance letters of the CCR for the Miscellaneous RMA Structure Demolition and Removal Project – Phase III, (reference letter dated December 8, 2009, Section 5).
- Milestone extension request (Finish Milestone) for the ICS Projects, (reference letter dated January 12, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Basin F/Basin F Exterior Remediation – RCRA-Equivalent Cover Project, (reference letter dated January 12, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Shell Disposal Trenches Remediation Project, (reference letter dated January 12, 2010, Section 5).
- EPA and CDPHE acceptance letters of the CCR for the South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase II, Part 1 and Part 2, (reference letter dated January 19, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Shell Disposal Trenches Remediation Project, (reference letter dated February 11, 2010, Section 5).
- EPA and CDPHE acceptance letters of the CCR for the Section 36 Balance of Areas Soil Remediation Project – Part 2, (reference letter dated February 22, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the ICS Projects, (reference letter dated March 4, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Shell Disposal Trenches Remediation Project, (reference letter dated March 4, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Basin F/Basin F Exterior Remediation – RCRA-Equivalent Cover Project, (reference letter dated March 18, 2010, Section 5).

- Decision Document titled Revisions to the Basin A Consolidation and Remediation Project Groundwater Monitoring Plan Requirements, (reference letter dated March 25, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Shell Disposal Trenches Remediation Project, (reference letter dated April 1, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the ICS Projects, (reference letter dated April 22, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the ICS Projects, (reference letter dated May 20, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Basin F/Basin F Exterior Remediation – RCRA-Equivalent Cover Project, (reference letter dated May 20, 2010, Section 5).
- EPA and CDPHE acceptance letters of the CCR for the HWL Cap Construction, (reference letter dated July 21, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the ICS Projects, (reference letter dated July 22, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the Basin F/Basin F Exterior Remediation – RCRA-Equivalent Cover Project, (reference letter dated September 2, 2010, Section 5).
- Milestone extension request (Finish Milestone) for the ICS Projects, (reference letter dated September 30, 2010, Section 5).

4.2 Bar Charts

Four different bar chart views of the schedule are included at the end of this section showing various levels of details:

- Project Design Summary Bar Chart
- Project Implementation Summary Bar Chart
- Regulatory Agencies Review Activity Bar Chart (for next two years only)
- Detail Bar Chart

4.2.1 Project Design Summary Bar Chart

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4.2.2 Project Implementation Summary Bar Chart

4.2.3 Regulatory Agencies Review Activity Bar Chart

Activity ID	Rem Dur	Forecast Start	Forecast Finish	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Disposal Facilities - Basin A / Landfills																		
Construct Hazardous Waste Landfill																		
Construction Completion Report																		
LF6-300075	0		29APR11												◆ Project Complete (EPA Accept. of CCR - LWTS)			
LF6-400040	30*	07JAN11	05FEB11												▮ Regulator/Committee Review Draft CCR - LWTS			
LF6-400060	14	16APR11	29APR11												▮ EPA/State-Prepare/Issue Accept Ltr CCR - LWTS			
Operational Construction of Enhanced Haz Wst LF																		
Construction Completion Report																		
LE6-300060	14	06NOV10	19NOV10												▮ EPA/State-Prepare/Issue Accept Ltr CCR- ELF Cap			
LE6-300070	0		19NOV10												◆ Project Complete (EPA Accept. of CCR - ELF Cap)			
Basin A Consolidation and Remediation																		
Construction Completion Report																		
BA6-360040	0		07OCT10												◆ Cover CCR Part I Complete - ICS Covers			
Phase I - Outlying Areas																		
Miscellaneous RMA Structure Demolition & Removal																		
Construction Completion Report																		
MS6-117120	30	02DEC10	04JAN11												▮ Regulator/Committee Review CCR - CERCLA WTP			
MS6-117140	14	12MAR11	25MAR11												▮ EPA/State Issue Accept Ltr CCR - CERCLA			
MS6-177145	0		25MAR11												◆ Project Complete - Phase IV CERCLA WTP			
Phase II - South Plants Area																		
SP BOA & CPA Soil Remediation - PH II																		
Construction Completion Report																		
SC6-270040	0		07OCT10												◆ CCR Complete - ICS Covers			
Phase III - Sections 35 & 36 Sites & North Plant																		
Complex(Army)Disposal Trenches Remediation-Cover																		
Construction Completion Report																		
CT6-200040	0		07OCT10												◆ CCR Complete - ICS Covers			

Start Date 30DEC91
Finish Date 29NOV42
Data Date 02OCT10
Run Date 26OCT10 10:06

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Forecast Bar
Progress Bar

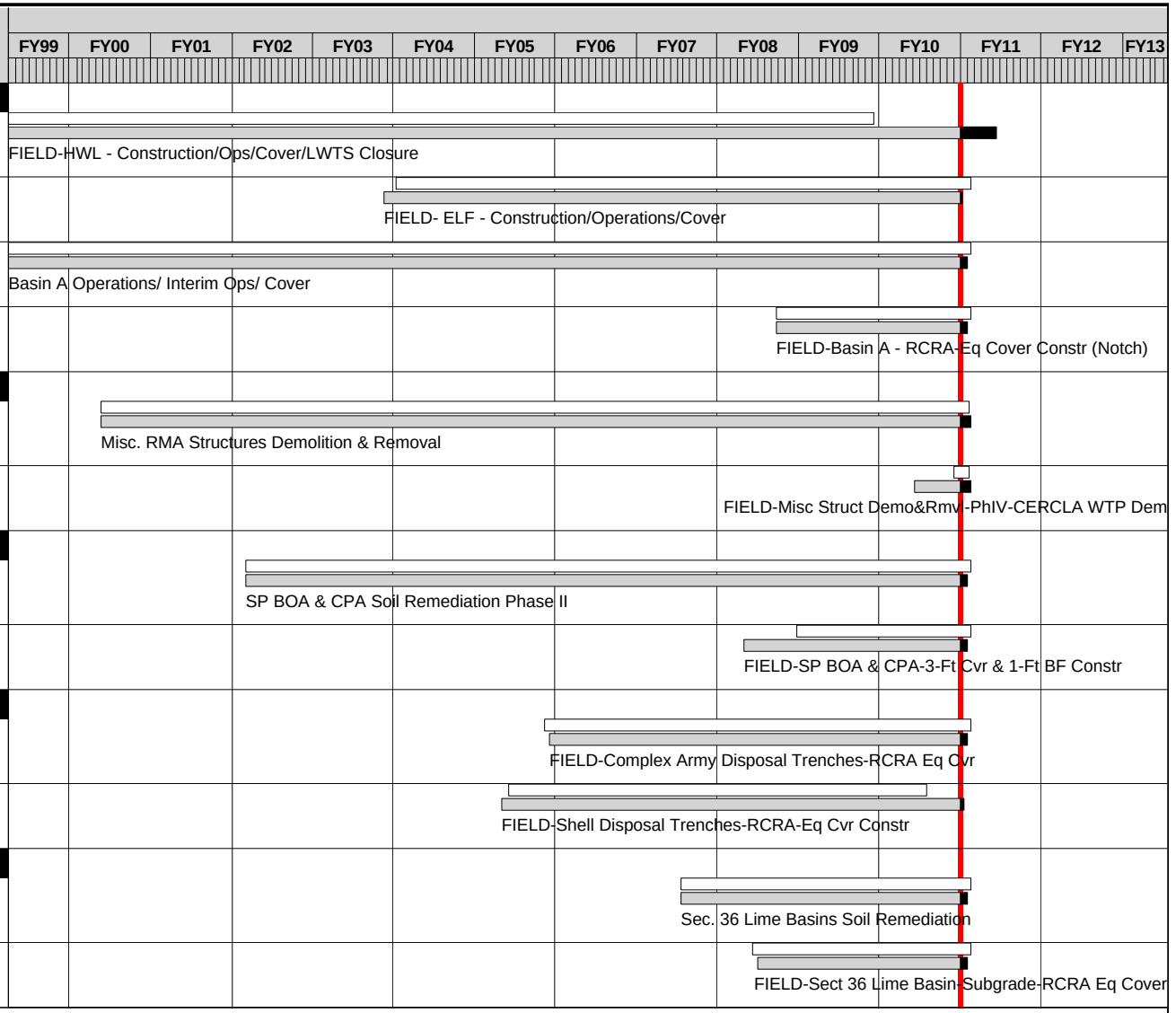
RD10 **Sheet 1 of 2**

RMA ROD IMPLEMENTATION

2 YEAR REGULATORY REVIEW BARCHART

Activity ID	Rem Dur	Forecast Start	Forecast Finish	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Shell Disposal Trenches Remediation - Cover																		
Construction Completion Report																		
ST6-210032	0		07OCT10												◆ CCR Complete - ICS Covers			
Phase IV - Basin F/Lime Basins																		
Basin F and Basin F Exterior Remediation																		
Construction Completion Report																		
FC6-300240	0		10DEC10												◆ Project Complete - Soil Cover - FBSC			
Section 36 Lime Basins Soil Remediation																		
Construction Completion Report																		
LB6-180040	0		29OCT10												◆ Slurry Wall CCR Complete- Section 36 Lime Basins			
LB6-190040	0		07OCT10												◆ CCR Complete - ICS Covers			
Water Treatment / Monitoring																		
Basin A Neck System																		
Construction Completion Report																		
AN6-730405	60	15NOV10	19JAN11												■ Prep/Submit Drft CCR to Agencies-A-Neck Epansion			
AN6-730410	30*	20JAN11	18FEB11												▮ Regulator/Committee Review CCR-A-Neck Expansion			
AN6-730440	14	29APR11	12MAY11												▮ EPA - State Prep & Iss Accept Ltr CCRA-Neck Exp			
AN6-730460	0		12MAY11												◆ Project Comp-LB GW Trtmnt Relocation to A-Neck			
Mass Removal Syst-So Tank Farm & LB																		
Construction Completion Report																		
MR6-730410	30*	08FEB11	09MAR11												▮ Regulator/Committee Review CCR - MRS			
MR6-730440	14	17MAY11	31MAY11												▮ EPA - State Prep & Iss Accept Ltr CCR - MRS			
MR6-730460	0		31MAY11												◆ Project Complete - Mass Removal Systems			
Closeout Reporting																		
RMA Remedial Action Summary Report																		
Report Preparation																		
D1S-100110	30	05MAR11	03APR11												▮ Regulator/Committee Review RA Summary Report			
D1S-100130	14	10JUN11	23JUN11												▮ EPA - Prepare/Issue Accept Ltr RA Summary Report			
D1S-100140	0		23JUN11												◆ RA Summary Report Complete			

Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish
Disposal Facilities - Basin A / Landfills					
LF5-INF	02FEB98	04SEP09	154*	26FEB98A	10MAR11
LE5-INF	10OCT03	17NOV10	3*	22AUG03A	06OCT10
BA4-INF	19JAN98	19NOV10	20*	14NOV97A	29OCT10
BA4-INF5	23JUN08	19NOV10	20*	23JUN08A	29OCT10
Phase I - Outlying Areas					
MS4-INF	24FEB00	12NOV10	35*	24FEB00A	19NOV10
MS4-INF4	01SEP10	12NOV10	35*	09MAR10A	19NOV10
Phase II - South Plants Area					
SC4-INF	05DEC01	19NOV10	20*	03DEC01A	29OCT10
SC4-INF4	22SEP08	19NOV10	20*	31JAN08A	29OCT10
Phase III - Sections 35 & 36 Sites & North Plant					
CT4-INF	15AUG05	19NOV10	20*	07SEP05A	29OCT10
ST4-INF	01MAR05	30APR10	10*	04FEB05A	15OCT10
Phase IV - Basin F/Lime Basins					
LB4-INF	20APR07	19NOV10	20*	20APR07A	29OCT10
LB4-INF2	05MAR08	19NOV10	20*	03APR08A	29OCT10



Start Date 30DEC91
Finish Date 29NOV42
Data Date 02OCT10
Run Date 26OCT10 09:24

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Current Control Baseline
Forecast Bar
Progress Bar

RD10 Sheet 1 of 1

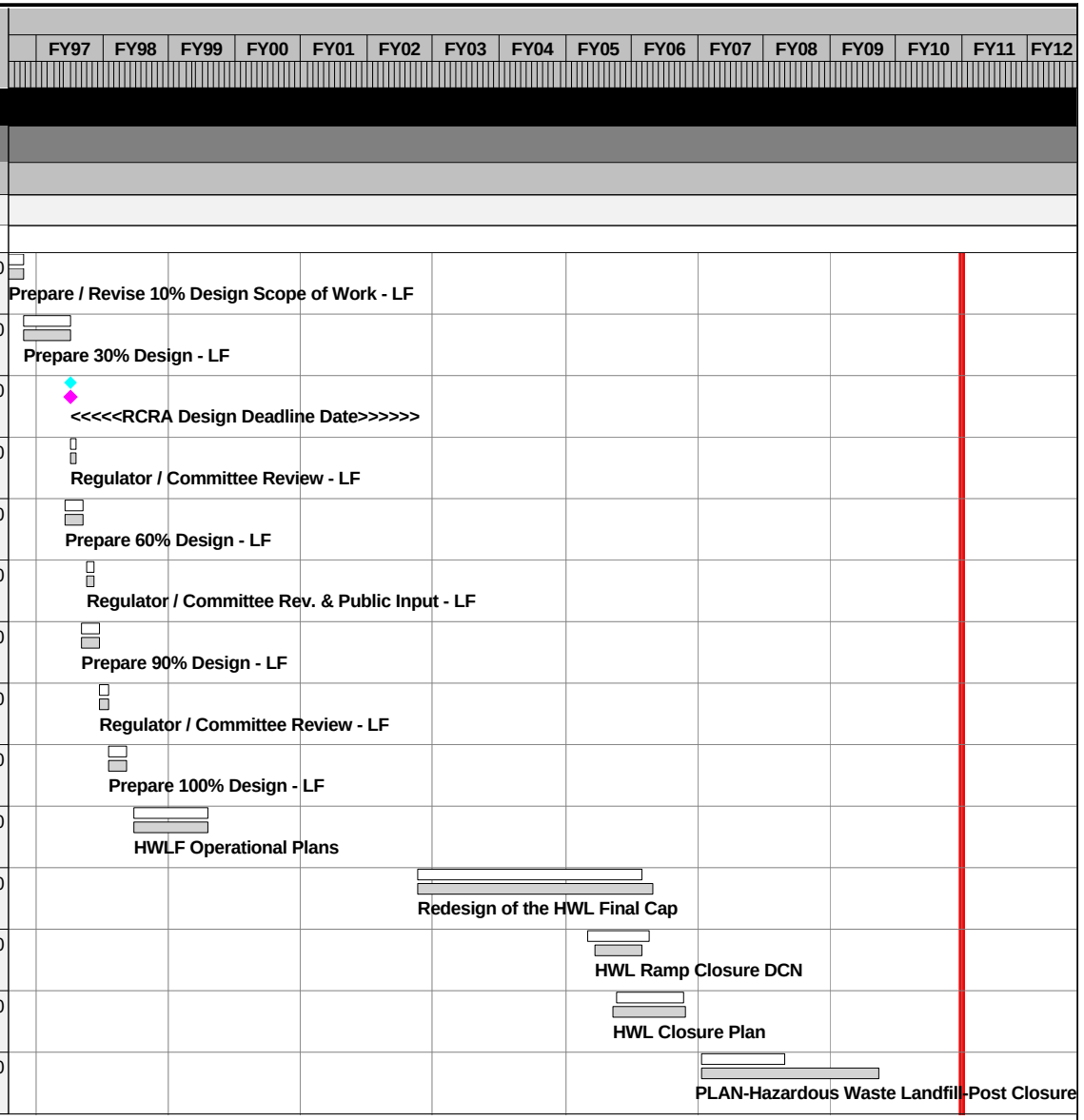
RMA ROD IMPLEMENTATION SCHEDULE

PROJECT IMPLEMENTATION SUMMARY

FISCAL YEAR ENDING-02 OCTOBER 2010

4.2.4 Detail Bar Chart

Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
MASTER RMA REMEDIATION SCH-RDIS FY11						
RMA On-Post Operable Unit						
Disposal Facilities - Basin A / Landfills						
Construct Hazardous Waste Landfill						
Remedial Design						
LF2-120000	11MAR96A	21JUL96A	0	11MAR96A	21JUL96A	100
LF2-130000	22JUL96A	31MAR97A	0	22JUL96A	31MAR97A	100
LF2-135000		31MAR97A	0		31MAR97A	100
LF2-140000	01APR97A	01MAY97A	0	01APR97A	01MAY97A	100
LF2-150000	03MAR97A	09JUN97A	0	03MAR97A	09JUN97A	100
LF2-160000	09JUL97A	14AUG97A	0	09JUL97A	14AUG97A	100
LF2-170000	09JUN97A	10SEP97A	0	09JUN97A	10SEP97A	100
LF2-180000	11SEP97A	27OCT97	0	11SEP97A	27OCT97A	100
LF2-190000	28OCT97	13FEB98	0	28OCT97A	13FEB98A	100
LF2-100900	23MAR98*	30APR99	0*	23MAR98A	30APR99A	100
LF2-DES002	08JUL02*	28NOV05	0*	08JUL02A	24JAN06A	100
LF2-100000	07FEB05*	12JAN06	0*	18MAR05A	01DEC05A	100
LF2-900000	11JUL05*	12JUL06	0*	20JUN05A	25JUL06A	100
LF2-900200	30OCT06	25JAN08	0*	30OCT06A	02JUL09A	100



Start Date	30DEC91
Finish Date	29NOV42
Data Date	02OCT10
Run Date	26OCT10 09:52

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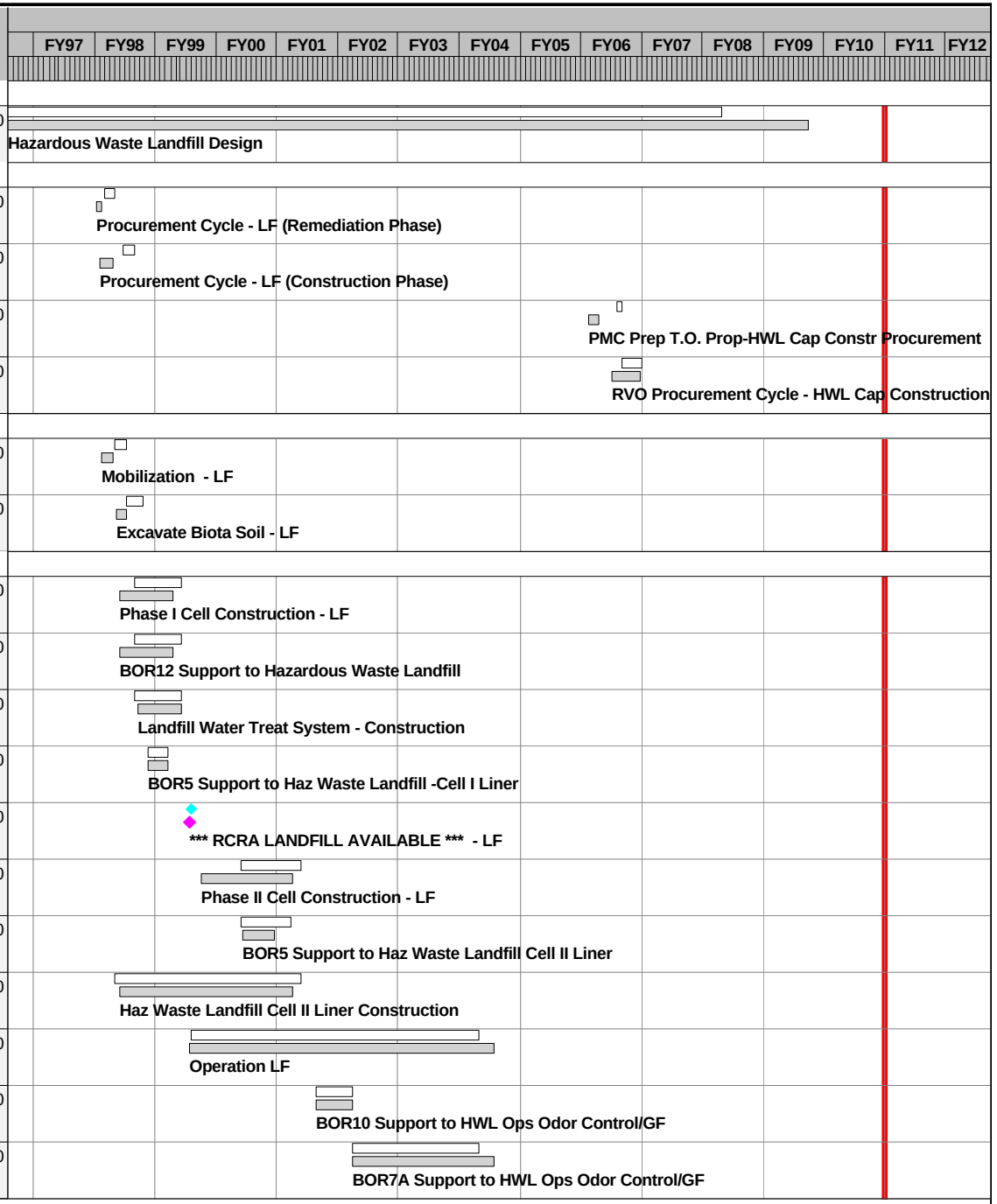
Current Control Baseline
Early Bar
Progress Bar

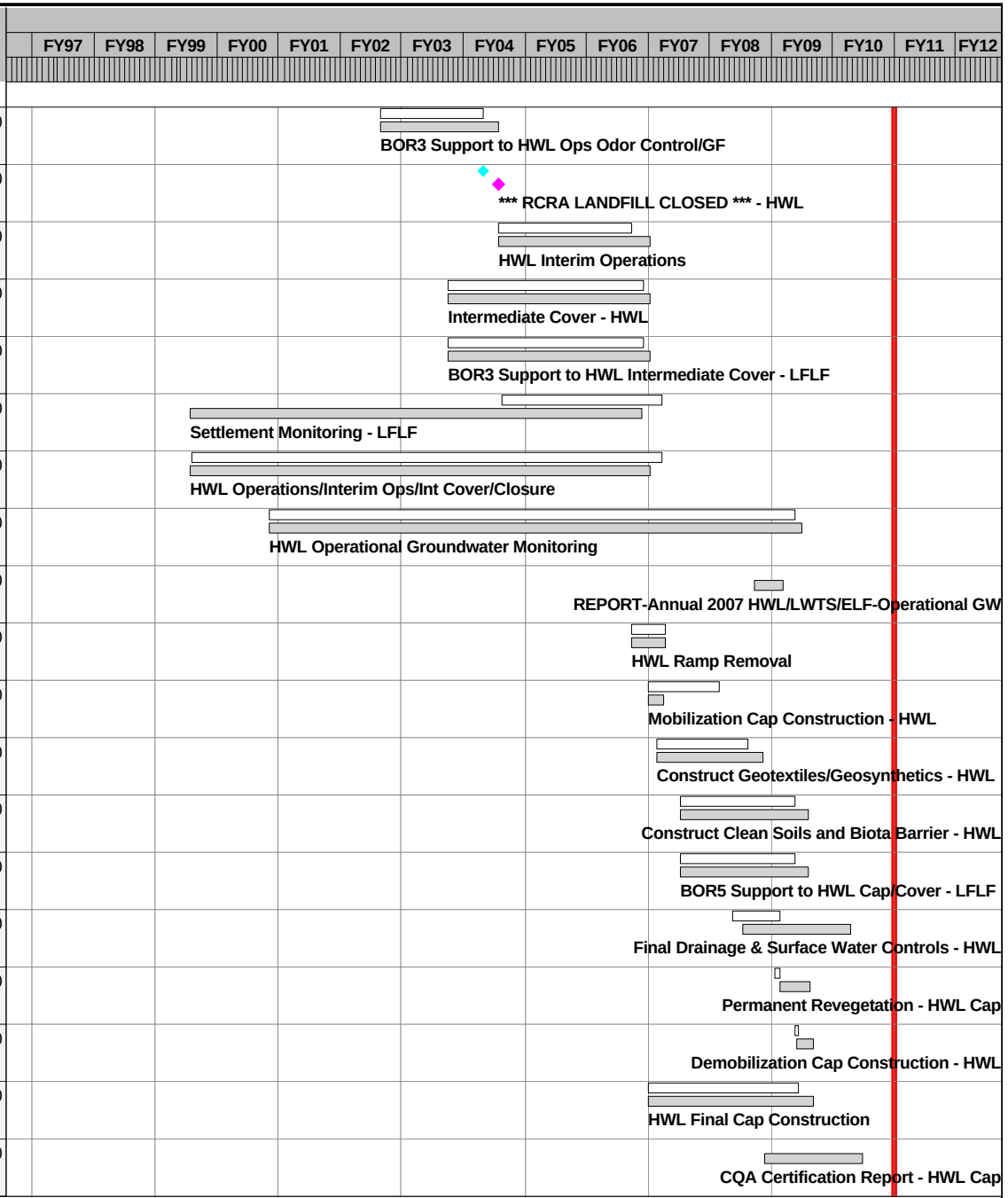
RD10 **Sheet 1 of 116**

RMA ROD IMPLEMENTATION
DETAILED REMEDIATION SCHEDULE
FISCAL YEAR ENDING-30 SEPTEMBER 2000

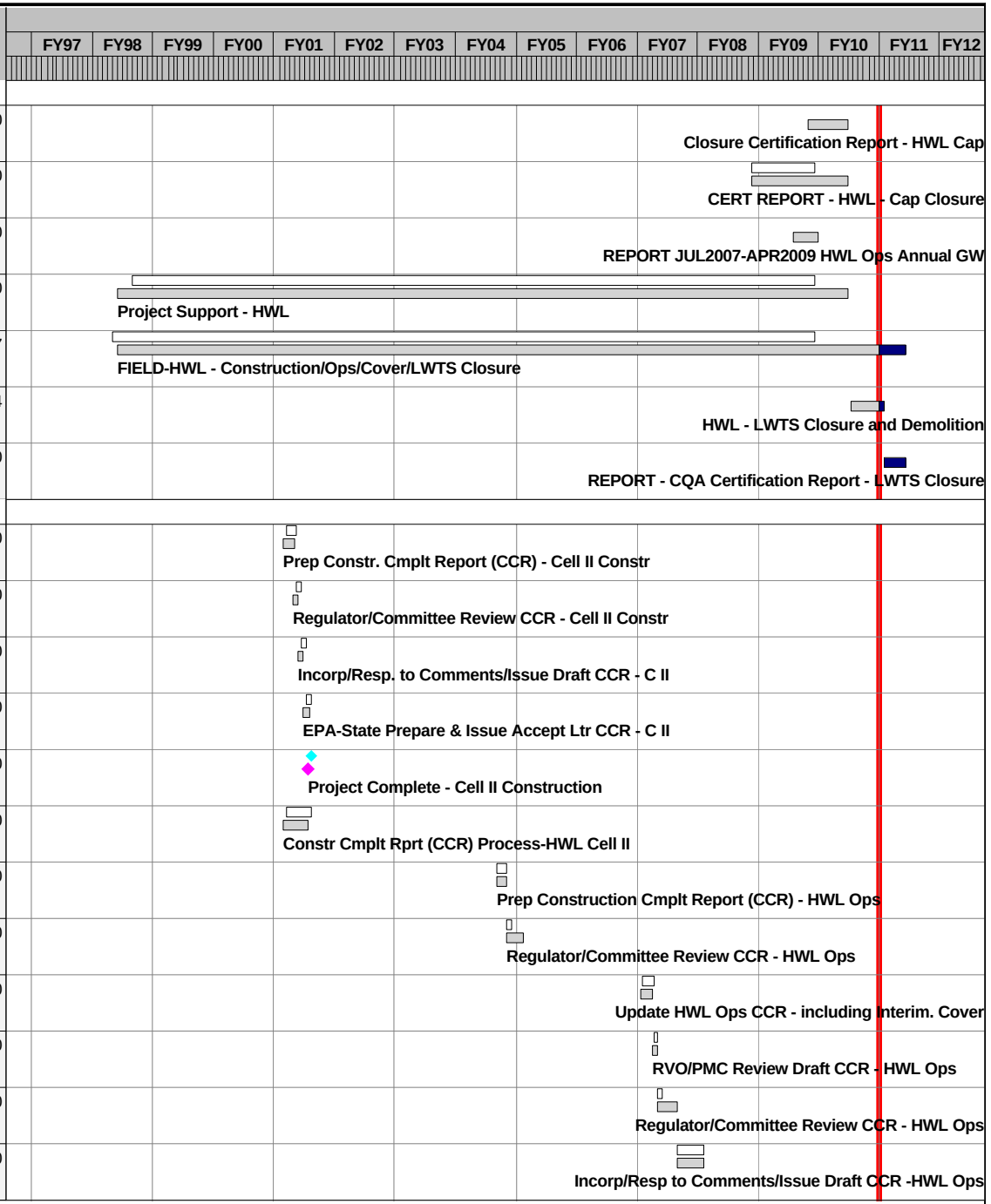
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
LF2-INF	11MAR96A	25JAN08	0*	11MAR96A	02JUL09A	100
Procurement						
LF3-620000	04DEC97	30JAN98	0*	16OCT97A	13NOV97A	100
LF3-620100	19MAR98	29MAY98	0*	03NOV97A	19JAN98A	100
LF3-714500	05MAY06	04JUN06	0	16NOV05A	13JAN06A	100
LF3-714600	05JUN06	02OCT06	0*	10APR06A	27SEP06A	100
Remediation Activities						
LF4-630000	02FEB98	10APR98	0*	14NOV97A	16JAN98A	100
LF4-640000	14APR98	20JUL98	0*	06FEB98A	09APR98A	100
Construction/Operations/Closure						
LF5-665000	01JUN98	04MAR99	0*	26FEB98A	14JAN99A	100
LF5-179000	01JUN98	04MAR99	0	26FEB98A	14JAN99A	100
LF5-666000	01JUN98	04MAR99	0*	15JUN98A	01MAR99A	100
LF5-130000	17AUG98	14DEC98	0*	17AUG98A	14DEC98A	100
LF5-680000	03MAY99		0	30APR99A		100
LF5-670000	01MAR00*	23FEB01	0*	01JUL99A	04JAN01A	100
LF5-140000	01MAR00	29DEC00	0*	07MAR00A	14SEP00A	100
LF5-INF1	02FEB98	23FEB01	0*	26FEB98A	04JAN01A	100
LF5-690000	03MAY99	26JAN04	0*	30APR99A	30APR04A	100
LF5-155010	21MAY01*	31DEC01	0*	21MAY01A	31DEC01A	100
LF5-155000	02JAN02	26JAN04	0*	02JAN02A	30APR04A	100



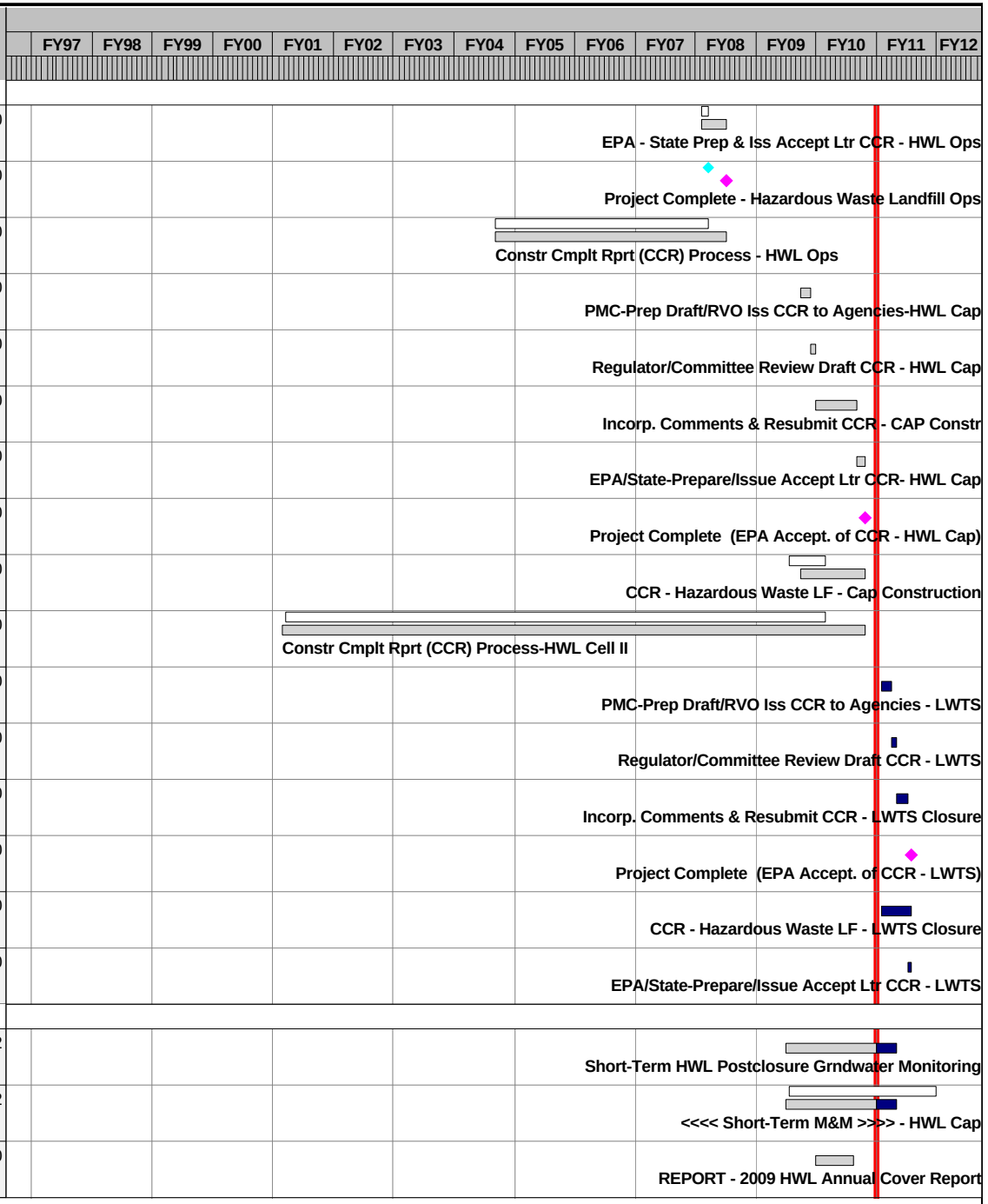
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction/Operations/Closure						
LF5-155020	29MAY02*	26JAN04	0*	29MAY02A	30APR04A	100
LF5-700000		26JAN04	0		30APR04A	100
LF5-690010	03MAY04*	27JUN06	0*	03MAY04A	13OCT06A	100
LF5-711000	07JUL03	31AUG06	0*	07JUL03A	13OCT06A	100
LF5-140010	07JUL03*	31AUG06	0*	07JUL03A	13OCT06A	100
LF5-715013	17MAY04	19DEC06	0*	30APR99A	28AUG06A	100
LF5-INF2	03MAY99	19DEC06	0*	30APR99A	13OCT06A	100
LF5-725000	10AUG00*	17FEB09	0*	10AUG00A	31MAR09A	100
LF5-002007			0*	01JUL08A	15DEC08A	100
LF5-600001	27JUN06	11JAN07	0*	27JUN06A	11JAN07A	100
LF5-715015	02OCT06*	26NOV07	0*	02OCT06A	05JAN07A	100
LF5-716000	20NOV06	21MAY08	0*	20NOV06A	15AUG08A	100
LF5-715011	09APR07	17FEB09	0*	09APR07A	12MAY09A	100
LF5-150000	09APR07	17FEB09	0*	09APR07A	12MAY09A	100
LF5-715090	14FEB08	26NOV08	0*	16APR08A	14JAN10A	100
LF5-660000	20OCT08	26NOV08	0*	20NOV08A	20MAY09A	100
LF5-720000	18FEB09	17MAR09	0*	02MAR09A	11JUN09A	100
LF5-INF3	02OCT06	17MAR09	0*	02OCT06A	11JUN09A	100
LF5-400130			0*	25AUG08A	23MAR10A	100



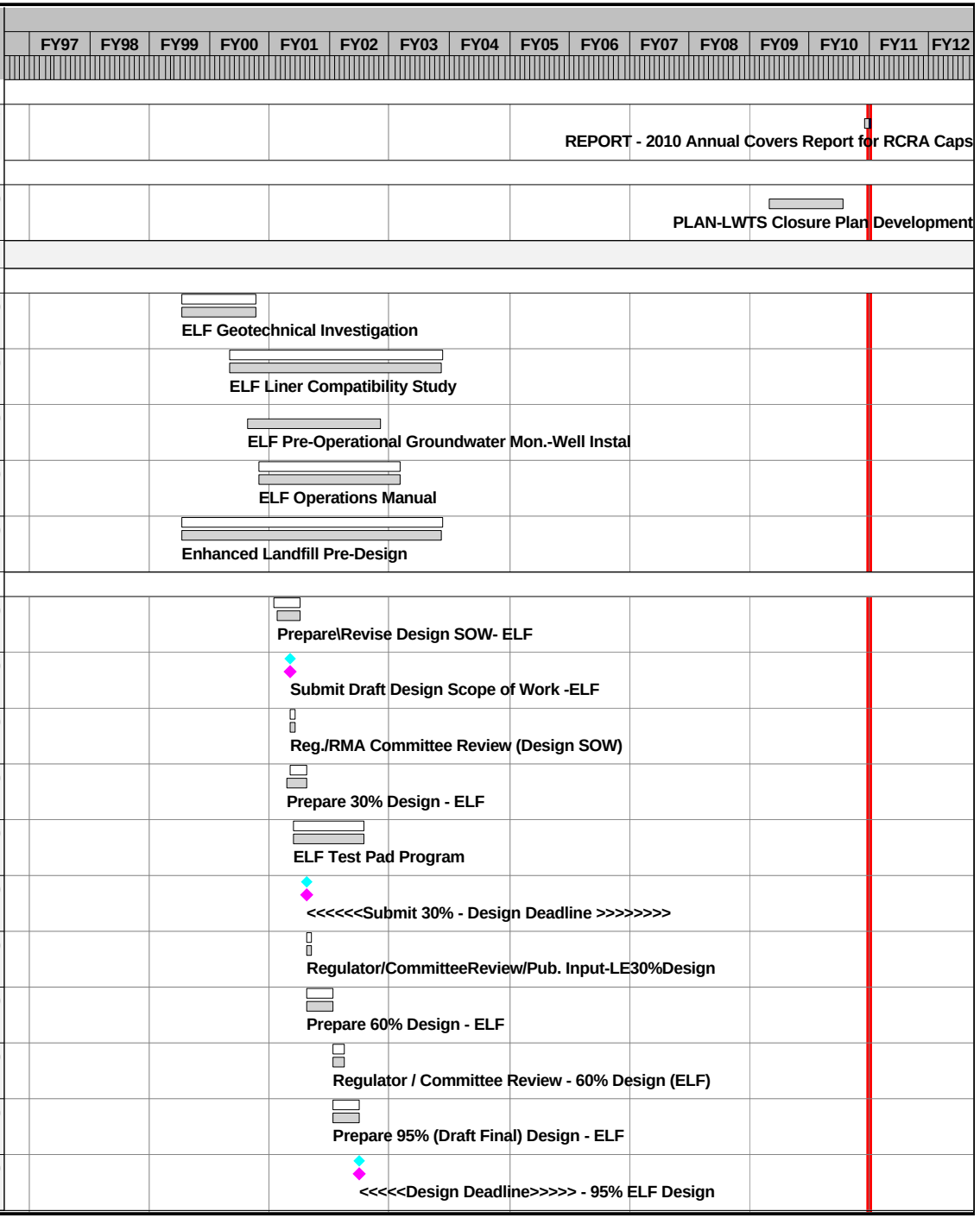
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction/Operations/Closure						
LF5-186020			0*	27JUL09A	23MAR10A	100
LF5-186010	25AUG08	04SEP09	0*	25AUG08A	23MAR10A	100
LF5-002008			0	01MAY09A	24SEP09A	100
LF5-740000	01JUN98	04SEP09	0*	26FEB98A	23MAR10A	100
LF5-INF	02FEB98	04SEP09	154*	26FEB98A	10MAR11	97
LF5-900000			23*	14APR10A	03NOV10	84
LF5-191005			88*	02NOV10	10MAR11	0
Construction Completion Report						
LF6-730100	16DEC00*	16FEB01	0	28NOV00A	29JAN01A	100
LF6-730102	17FEB01	18MAR01	0	29JAN01A	27FEB01A	100
LF6-730104	19MAR01	17APR01	0	24FEB01A	22MAR01A	100
LF6-730106	18APR01	17MAY01	0	26MAR01A	01MAY01A	100
LF6-730108		17MAY01	0		24APR01A	100
LF6-INF1	16DEC00	17MAY01	0*	28NOV00A	24APR01A	100
LF6-730200	07JUN04*	07AUG04	0*	07JUN04A	06AUG04A	100
LF6-730201	08AUG04	07SEP04	0*	07AUG04A	10NOV04A	100
LF6-730204	03NOV06	13JAN07	0	30OCT06A	04JAN07A	100
LF6-730205	14JAN07	02FEB07	0	05JAN07A	30JAN07A	100
LF6-730206	03FEB07*	04MAR07	0	31JAN07A	04JUN07A	100
LF6-730210	05JUN07*	13NOV07	0	05JUN07A	13NOV07A	100



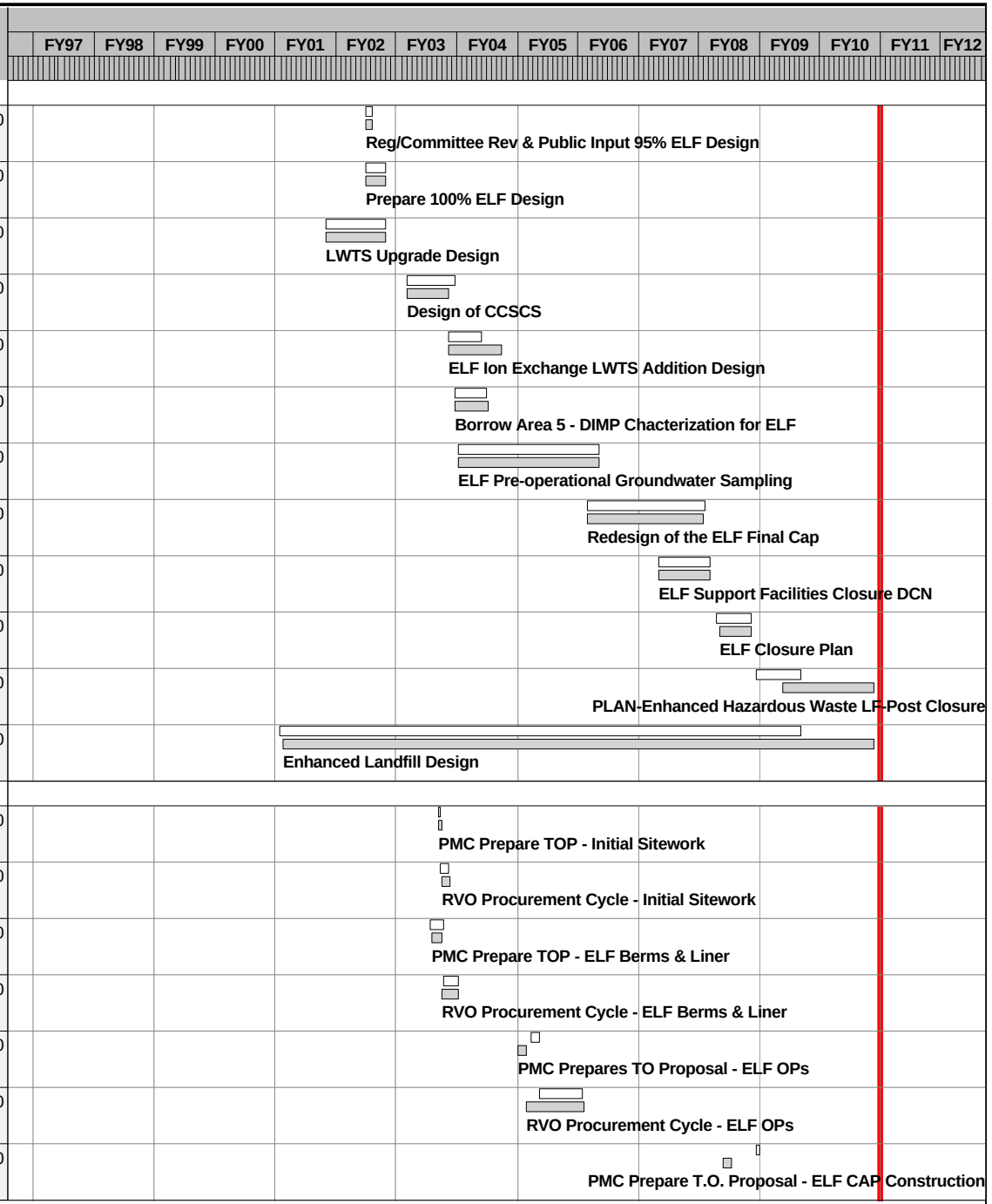
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
LF6-730220	14NOV07	17DEC07	0	14NOV07A	08APR08A	100
LF6-730230		17DEC07	0		08APR08A	100
LF6-INF2	07JUN04	17DEC07	0*	07JUN04A	08APR08A	100
LF6-300030			0*	01JUL09A	27AUG09A	100
LF6-300040			0*	28AUG09A	30SEP09A	100
LF6-300050			0*	01OCT09A	01JUN10A	100
LF6-300060			0	04JUN10A	21JUL10A	100
LF6-300070			0		21JUL10A	100
LF6-INF3	25APR09	23NOV09	0*	01JUL09A	21JUL10A	100
LF6-INF	18DEC00	23NOV09	0*	28NOV00A	21JUL10A	100
LF6-400030			60*	02NOV10	06JAN11	0
LF6-400040			30*	07JAN11	05FEB11	0
LF6-400050			65*	06FEB11	11APR11	0
LF6-300075			0		29APR11	0
LF6-INF4			173*	02NOV10	29APR11	0
LF6-400060			14	16APR11	29APR11	0
Short-Term Monitoring/Maintenance/Operations						
LF7-726000			84*	01APR09A	03FEB11	82
LF7-980000	27APR09	30SEP11	84*	01APR09A	03FEB11	82
LF7-740000			0*	01OCT09A	12MAY10A	100



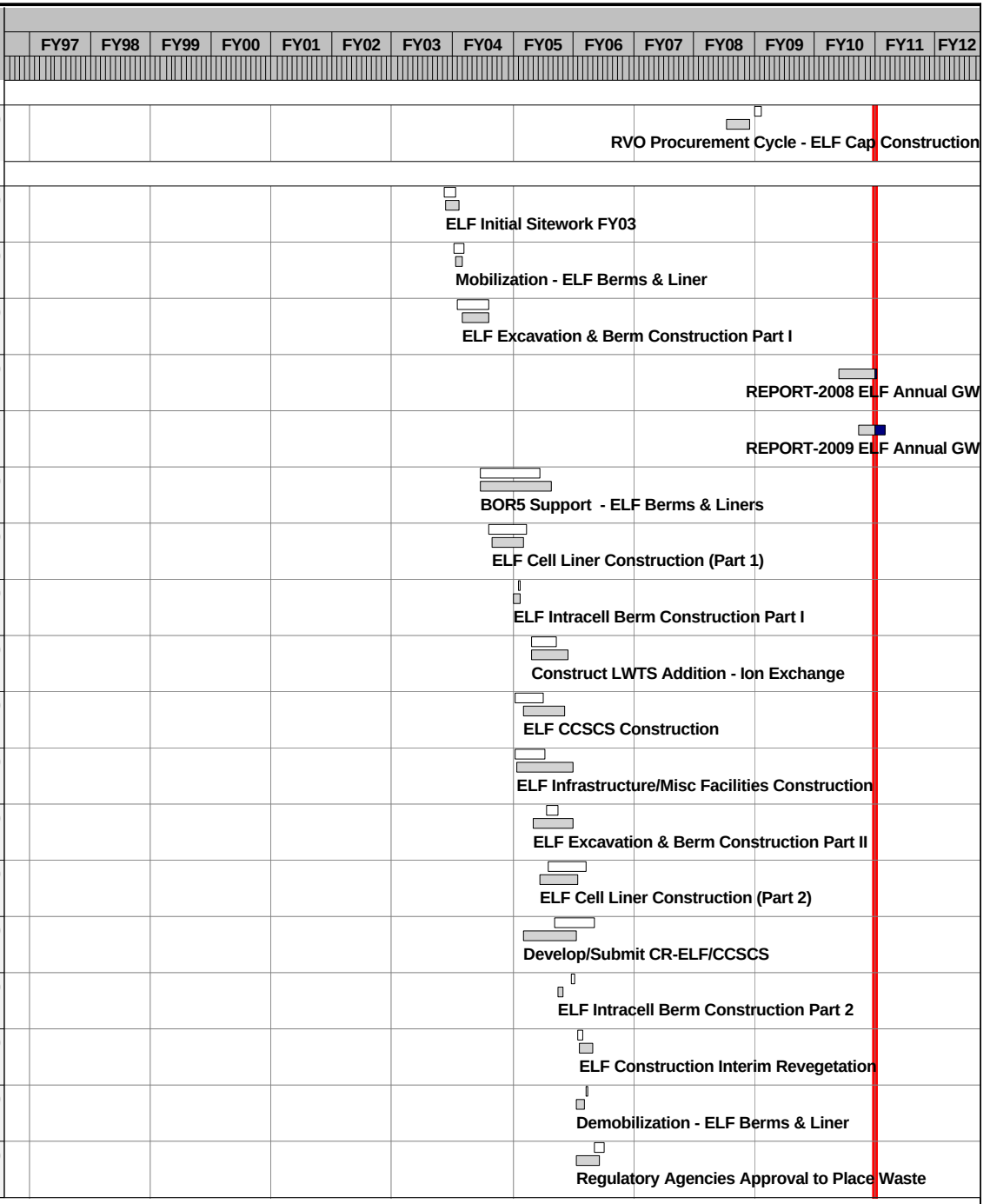
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Short-Term Monitoring/Maintenance/Operations						
LF7-840000			15*	01SEP10A	16OCT10	67
Plan Development or Revision						
LFR#200220			0*	02FEB09A	23APR10A	100
Operational Construction of Enhanced Haz Wst LF						
Predesign Activities						
LE1-DES030	12APR99*	06JUL00	0*	13APR99A	06JUL00A	100
LE1-DES040	02FEB00*	20AUG03	0*	02FEB00A	12AUG03A	100
LE1-030940			0*	23MAY00A	06AUG02A	100
LE1-040960	01AUG00*	02DEC02	0*	01AUG00A	02DEC02A	100
LE1-INF	12APR99	20AUG03	0*	13APR99A	12AUG03A	100
Remedial Design						
LE2-100000	30OCT00*	30MAR01	0*	17NOV00A	04APR01A	100
LE2-101500		31JAN01	0		30JAN01A	100
LE2-101600	01FEB01	02MAR01	0*	31JAN01A	02MAR01A	100
LE2-130000	01FEB01	17MAY01	0*	10JAN01A	15MAY01A	100
LE2-195000	26FEB01*	29APR02	0*	26FEB01A	29APR02A	100
LE2-132500		17MAY01	0		15MAY01A	100
LE2-140000	18MAY01	17JUN01	0*	16MAY01A	15JUN01A	100
LE2-150000	18MAY01	25OCT01	0*	18MAY01A	25OCT01A	100
LE2-160000	26OCT01	28DEC01	0*	26OCT01A	28DEC01A	100
LE2-170000	26OCT01	28MAR02	0*	26OCT01A	28MAR02A	100
LE2-175000		28MAR02	0		28MAR02A	100



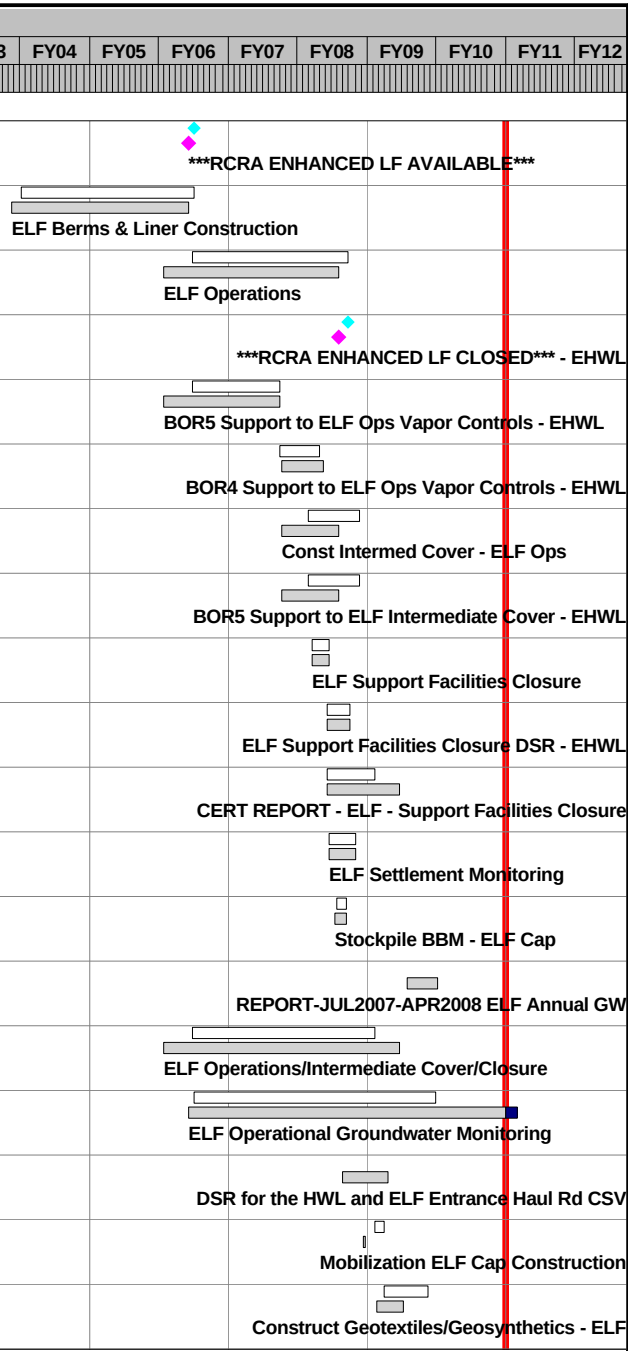
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
LE2-180000	29MAR02	12MAY02	0*	29MAR02A	13MAY02A	100
LE2-190000	29MAR02	25JUL02	0*	29MAR02A	25JUL02A	100
LE2-DES030	06AUG01*	26JUL02	0*	06AUG01A	25JUL02A	100
LE2-DES031	05DEC02*	22SEP03	0*	05DEC02A	07AUG03A	100
LE2-DES032	12AUG03*	26FEB04	0*	12AUG03A	24JUN04A	100
LE2-DES033	18SEP03*	31MAR04	0*	18SEP03A	06APR04A	100
LE2-725000	10OCT03*	10FEB06	0*	13OCT03A	10FEB06A	100
LE2-DES002	30NOV05*	07NOV07	0*	30NOV05A	26OCT07A	100
LE2-200000	29JAN07*	11DEC07	0*	29JAN07A	07DEC07A	100
LE2-210000	21JAN08*	18AUG08	0*	04FEB08A	18AUG08A	100
LE2-210010	15SEP08	10JUN09	0*	18FEB09A	25AUG10A	100
LE2-INF	30OCT00	10JUN09	0*	17NOV00A	25AUG10A	100
Procurement						
LE3-658000	18JUN03*	27JUN03	0*	18JUN03A	02JUL03A	100
LE3-658010	28JUN03	07AUG03	0*	02JUL03A	22AUG03A	100
LE3-657010	21APR03	11JUL03	0*	05MAY03A	07JUL03A	100
LE3-657020	14JUL03	10OCT03	0*	08JUL03A	10OCT03A	100
LE3-109100	27DEC04*	16FEB05	0*	04OCT04A	24NOV04A	100
LE3-110100	17FEB05	31OCT05	0*	24NOV04A	09NOV05A	100
LE3-100010	15SEP08	06OCT08	0	03MAR08A	21APR08A	100



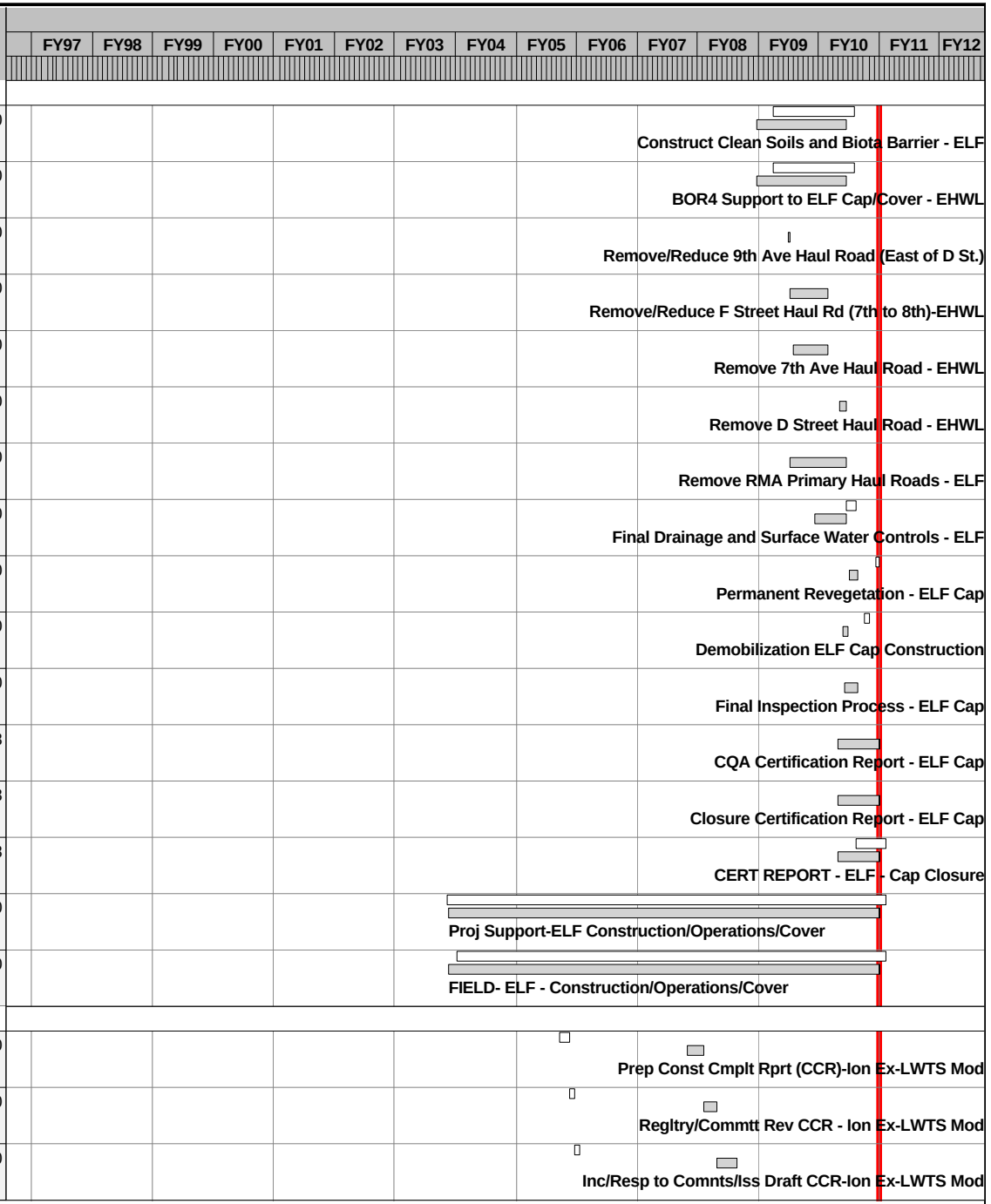
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
LE3-100020	07OCT08	10NOV08	0*	22APR08A	02SEP08A	100
Construction/Operations/Closure						
LE5-620000	08AUG03	20OCT03	0*	22AUG03A	05NOV03A	100
LE5-630000	10OCT03*	09DEC03	0*	17OCT03A	26NOV03A	100
LE5-650000	30OCT03	05MAY04	0*	04DEC03A	06MAY04A	100
LE5-002008			13	01MAR10A	14OCT10	70
LE5-002009			60	01JUL10A	02DEC10	37
LE5-176000	18MAR04	09MAR05	0*	18MAR04A	27MAY05A	100
LE5-650001	06MAY04	21DEC04	0*	25MAY04A	30NOV04A	100
LE5-656000	08NOV04	15NOV04	0*	07OCT04A	12NOV04A	100
LE5-900010	24JAN05*	20JUN05	0*	24JAN05A	26AUG05A	100
LE5-660010	19OCT04	06APR05	0*	01DEC04A	11AUG05A	100
LE5-656010	13OCT04	14APR05	0*	25OCT04A	26SEP05A	100
LE5-650002	28APR05	01JUL05	0*	03FEB05A	29SEP05A	100
LE5-656001	05MAY05	15DEC05	0*	16MAR05A	31OCT05A	100
LE5-186010	10JUN05	08FEB06	0*	01DEC04A	19OCT05A	100
LE5-656002	19SEP05	14OCT05	0*	05JUL05A	28JUL05A	100
LE5-660020	28OCT05	28NOV05	0*	14NOV05A	01FEB06A	100
LE5-710000	16DEC05	28DEC05	0*	24OCT05A	06DEC05A	100
LE5-186020	09FEB06	10APR06	0*	20OCT05A	07MAR06A	100



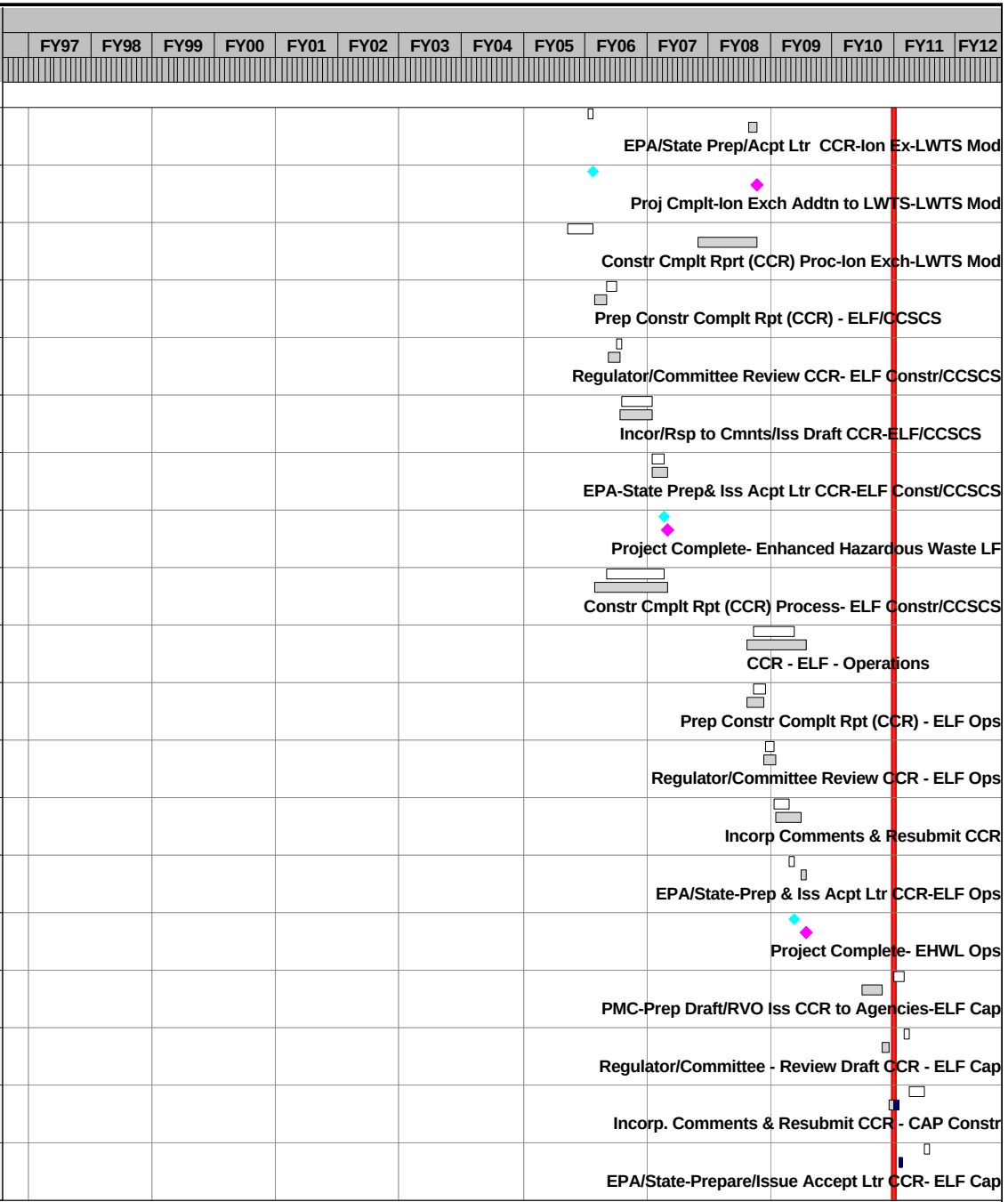
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction/Operations/Closure						
LE5-670000	10APR06		0	07MAR06A		100
LE5-INF2	10OCT03	10APR06	0*	22AUG03A	07MAR06A	100
LE5-680000	03APR06	30JUN08	0*	01NOV05A	05MAY08A	100
LE5-690000		30JUN08	0		05MAY08A	100
LE5-707010	03APR06	29JUN07	0*	01NOV05A	29JUN07A	100
LE5-707020	02JUL07	23JAN08	0*	16JUL07A	20FEB08A	100
LE5-705000	26NOV07	29AUG08	0*	16JUL07A	05MAY08A	100
LE5-176010	26NOV07	29AUG08	0*	16JUL07A	05MAY08A	100
LE5-705010	20DEC07	20MAR08	0*	20DEC07A	20MAR08A	100
LE5-600300	13MAR08	08JUL08	0*	13MAR08A	10JUL08A	100
LE5-708000	13MAR08	14NOV08	0*	13MAR08A	19MAR09A	100
LE5-711000	21MAR08	04AUG08	0*	21MAR08A	06AUG08A	100
LE5-500000	01MAY08*	16JUN08	0	14APR08A	18JUN08A	100
LE5-002007			0	01MAY09A	06OCT09A	100
LE5-INF3	03APR06	14NOV08	0*	01NOV05A	19MAR09A	100
LE5-O&M1	10APR06	30SEP09	40*	07MAR06A	30NOV10	97
LE5-350090			0*	23MAY08A	19JAN09A	100
LE5-632000	11NOV08*	31DEC08	0	12SEP08A	22SEP08A	100
LE5-718000	02JAN09	24AUG09	0	21NOV08A	09APR09A	100



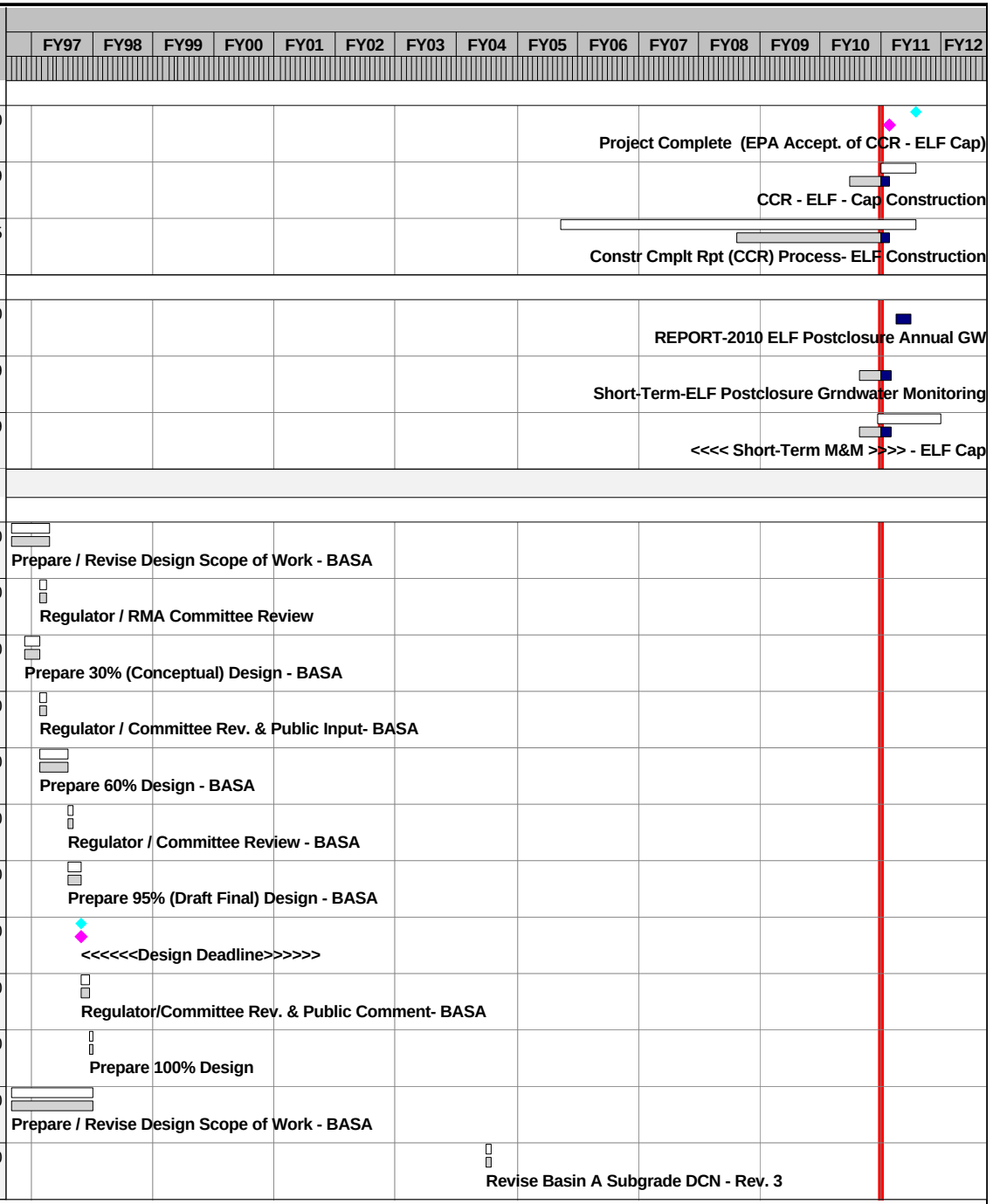
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction/Operations/Closure						
LE5-719000	02JAN09	11MAY10	0*	29SEP08A	16MAR10A	100
LE5-206010	02JAN09	11MAY10	0*	29SEP08A	16MAR10A	100
LE5-710110			0	01APR09A	07APR09A	100
LE5-710120			0	08APR09A	30NOV09A	100
LE5-710100			0	04MAY09A	30NOV09A	100
LE5-710130			0	03FEB10A	15MAR10A	100
LE5-726110			0*	08APR09A	15MAR10A	100
LE5-720000	17MAR10	18MAY10	0*	08SEP09A	16MAR10A	100
LE5-709000	15SEP10	30SEP10	0	06APR10A	25MAY10A	100
LE5-710020	09JUL10	06AUG10	0	03MAR10A	30MAR10A	100
LE5-720010			0	11MAR10A	26MAY10A	100
LE5-186040			5*	01FEB10A	06OCT10	98
LE5-186050			5*	01FEB10A	06OCT10	98
LE5-186030	19MAY10	17NOV10	5*	01FEB10A	06OCT10	98
LE5-730000	08AUG03	17NOV10	3*	22AUG03A	06OCT10	100
LE5-INF	10OCT03	17NOV10	3*	22AUG03A	06OCT10	100
Construction Completion Report						
LE6-730400	21JUN05	20AUG05	0	06AUG07A	06NOV07A	100
LE6-730410	21AUG05	20SEP05	0	07NOV07A	29JAN08A	100
LE6-730420	21SEP05	21OCT05	0	29JAN08A	22MAY08A	100



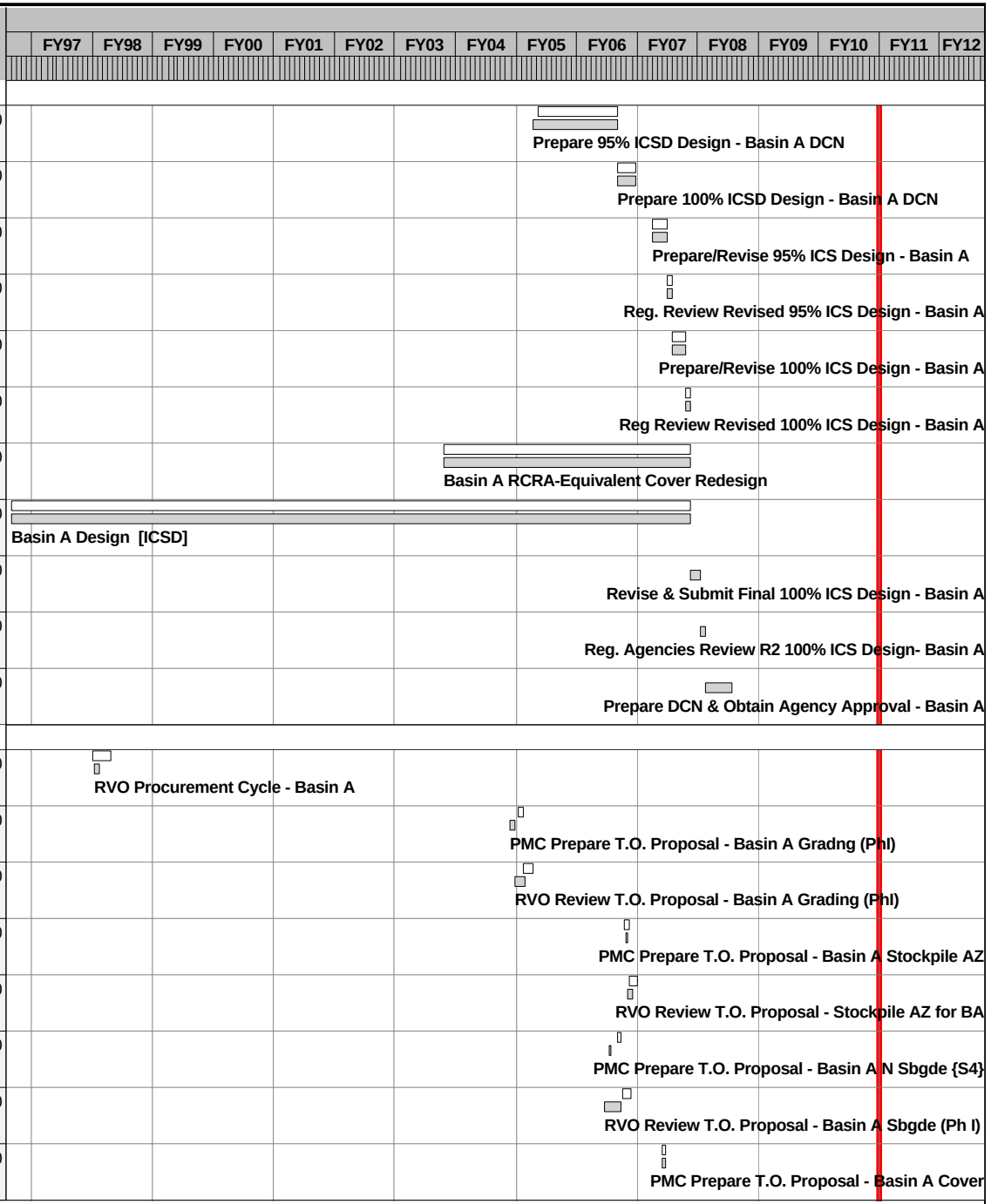
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
LE6-730430	22OCT05	21NOV05	0	23MAY08A	17JUL08A	100
LE6-730440		21NOV05	0		17JUL08A	100
LE6-INF1	21JUN05	21NOV05	0*	06AUG07A	17JUL08A	100
LE6-663002	09FEB06	10APR06	0	28NOV05A	03FEB06A	100
LE6-663003	11APR06	12MAY06	0	21FEB06A	28APR06A	100
LE6-663004	13MAY06	03NOV06	0	01MAY06A	01NOV06A	100
LE6-663006	04NOV06	08JAN07	0	06NOV06A	01FEB07A	100
LE6-663016		08JAN07	0		01FEB07A	100
LE6-INF2	09FEB06	08JAN07	0*	28NOV05A	01FEB07A	100
LE6-INF3	01JUL08	25FEB09	0*	22MAY08A	05MAY09A	100
LE6-663020	01JUL08	31AUG08	0	22MAY08A	28AUG08A	100
LE6-663030	02SEP08	27OCT08	0	29AUG08A	31OCT08A	100
LE6-663040	28OCT08	26JAN09	0*	03NOV08A	02APR09A	100
LE6-663050	27JAN09	25FEB09	0	03APR09A	05MAY09A	100
LE6-663060		25FEB09	0		05MAY09A	100
LE6-300030	30SEP10	30NOV10	0	01APR10A	22JUL10A	100
LE6-300040	01DEC10	02JAN11	0	23JUL10A	30AUG10A	100
LE6-300050	04JAN11	31MAR11	33*	31AUG10A	03NOV10	48
LE6-300060	01APR11	30APR11	14	06NOV10	19NOV10	0



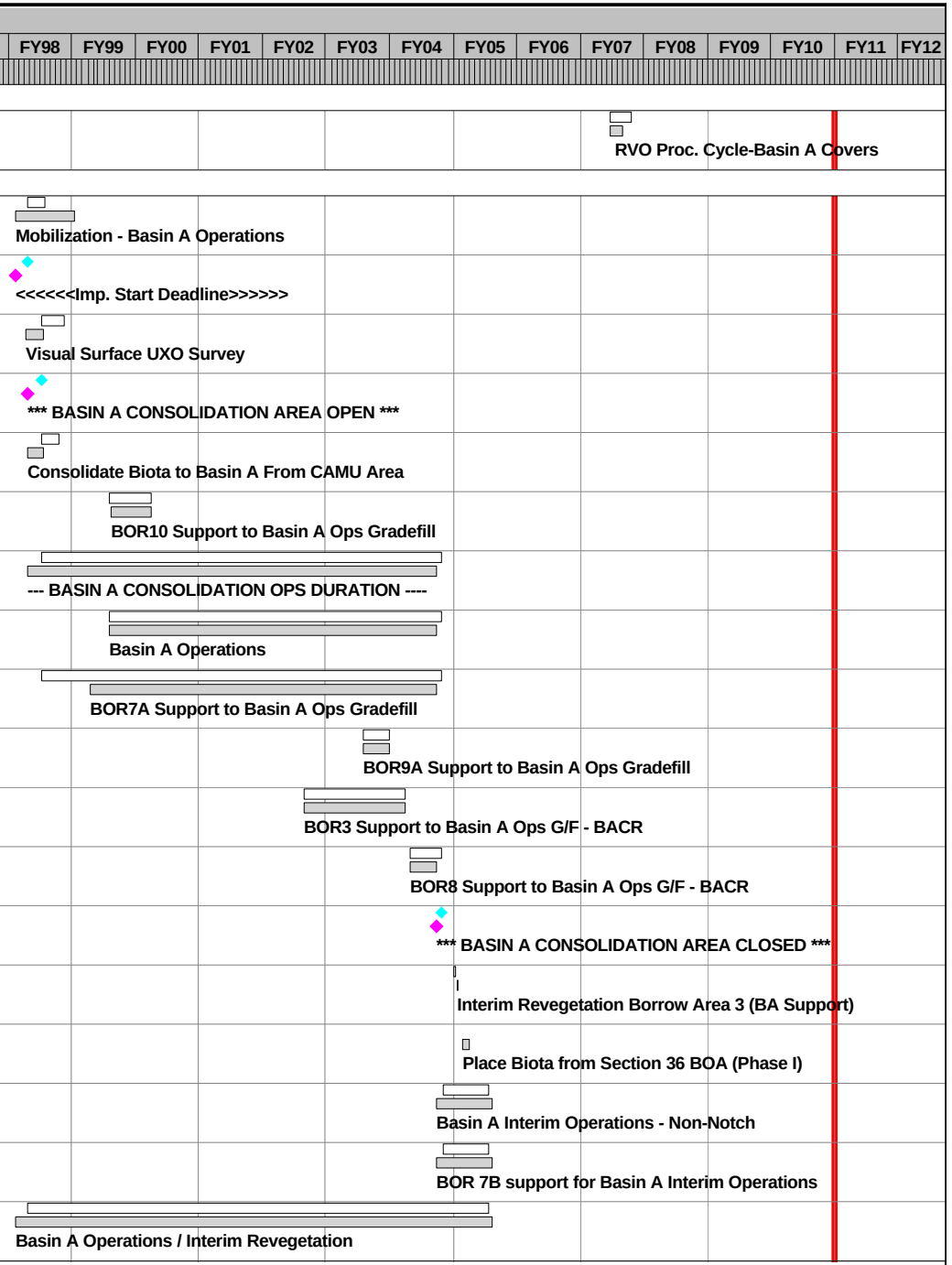
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
LE6-300070		30APR11	0		19NOV10	0
LE6-INF4	30SEP10	30APR11	49*	01APR10A	19NOV10	79
LE6-INF	21JUN05	30APR11	49*	22MAY08A	19NOV10	95
Short-Term Monitoring/Maintenance/Operations						
LE7-002010			87	04JAN11*	31MAR11	0
LE7-O&M2			40*	27MAY10A	30NOV10	69
LE7-980000	15SEP10	30SEP11	40*	27MAY10A	30NOV10	69
Basin A Consolidation and Remediation						
Remedial Design						
BA2-120000	03JUN96A	19JAN97A	0	03JUN96A	19JAN97A	100
BA2-125000	18NOV96A	22DEC96A	0	18NOV96A	22DEC96A	100
BA2-130000	19AUG96A	17NOV96A	0	19AUG96A	17NOV96A	100
BA2-140000	18NOV96A	22DEC96A	0	18NOV96A	22DEC96A	100
BA2-150000	18NOV96A	02MAY97A	0	18NOV96A	02MAY97A	100
BA2-160000	05MAY97A	30MAY97A	0	05MAY97A	30MAY97A	100
BA2-170000	05MAY97A	21JUL97A	0	05MAY97A	21JUL97A	100
BA2-175000		21JUL97A	0		21JUL97A	100
BA2-180000	22JUL97A	08SEP97A	0	22JUL97A	08SEP97A	100
BA2-190000	09SEP97A	29SEP97	0	09SEP97A	29SEP97A	100
BA2-INF1	03JUN96A	29SEP97	0*	03JUN96A	29SEP97A	100
BA2-110095	01APR04*	29APR04	0*	01APR04A	29APR04A	100



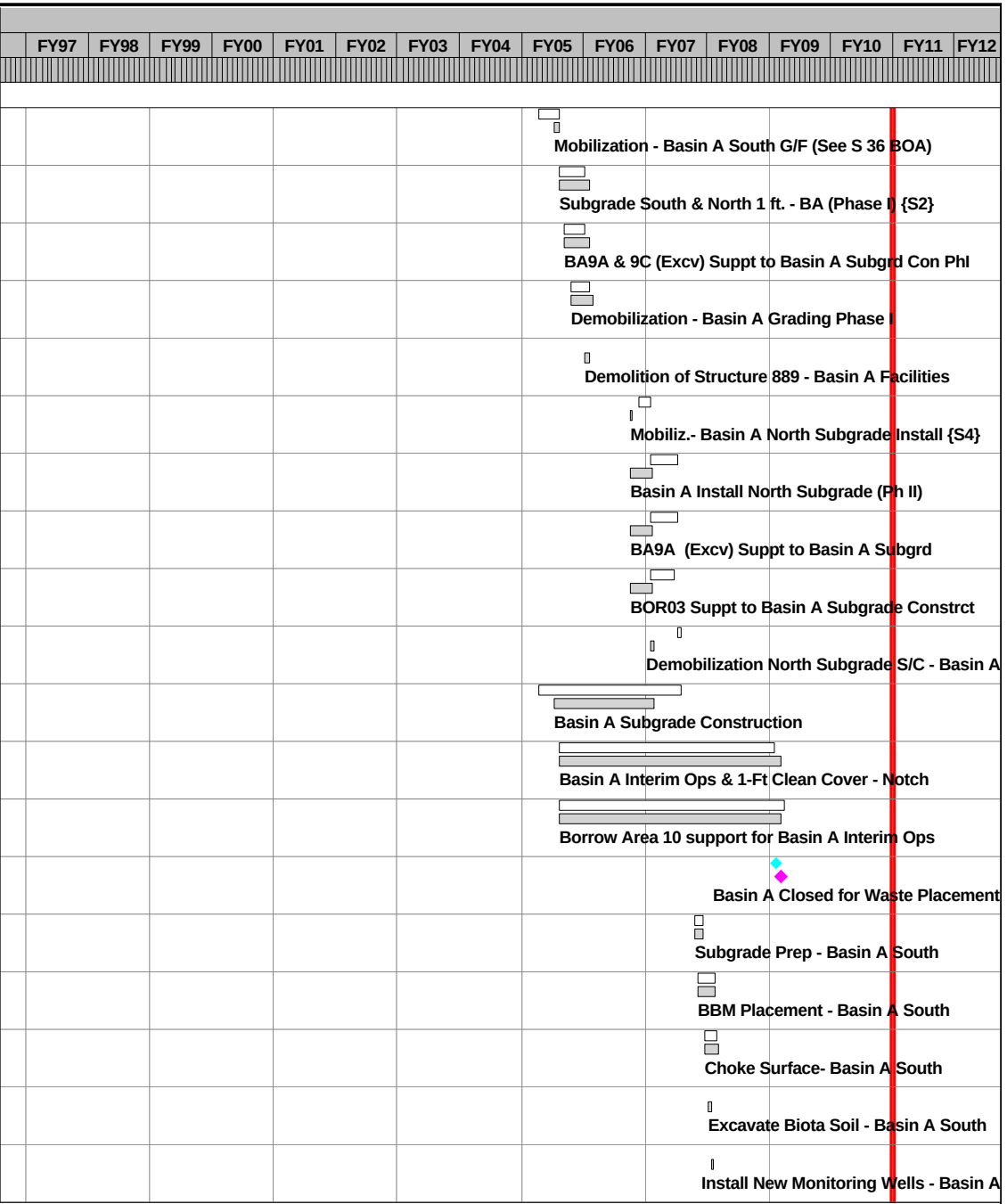
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
BA2-122000	15FEB05*	08JUN06	0*	13JAN05A	08JUN06A	100
BA2-123000	09JUN06	29SEP06	0*	09JUN06A	29SEP06A	100
BA2-120100	02JAN07*	03APR07	0	02JAN07A	03APR07A	100
BA2-120101	04APR07	03MAY07	0	04APR07A	03MAY07A	100
BA2-120102	30APR07	23JUL07	0	30APR07A	23JUL07A	100
BA2-120112	24JUL07	23AUG07	0	25JUL07A	23AUG07A	100
BA2-110000	21JUL03*	23AUG07	0*	21JUL03A	23AUG07A	100
BA2-INF	03JUN96A	23AUG07	0*	03JUN96A	23AUG07A	100
BA2-120113			0	24AUG07A	23OCT07A	100
BA2-120114			0	24OCT07A	20NOV07A	100
BA2-120120			0	21NOV07A	22APR08A	100
Procurement						
BA3-110000	30SEP97	16JAN98	0*	16OCT97A	13NOV97A	100
BA3-115000	19OCT04	15NOV04	0*	30AUG04A	23SEP04A	100
BA3-111000	16NOV04	17JAN05	0*	24SEP04A	23NOV04A	100
BA3-225000	18JUL06	14AUG06	0	28JUL06A	07AUG06A	100
BA3-222000	15AUG06	03OCT06	0	08AUG06A	08SEP06A	100
BA3-125000	05JUN06	30JUN06	0*	17APR06A	28APR06A	100
BA3-112000	03JUL06	28AUG06	0*	22MAR06A	23JUN06A	100
BA3-120000	05MAR07	23MAR07	0	05MAR07A	23MAR07A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
BA3-121000	26MAR07	20JUL07	0*	26MAR07A	04JUN07A	100
Remediation Activities						
BA4-120000	19JAN98	01MAY98	0*	14NOV97A	14OCT98A	100
BA4-125000	19JAN98		0	14NOV97A		100
BA4-131000	13APR98	18AUG98	0*	09JAN98A	16APR98A	100
BA4-190000	13APR98		0	19JAN98A		100
BA4-291000	14APR98	20JUL98	0*	19JAN98A	16APR98A	100
BA4-175000	05MAY99*	31DEC99	0*	11MAY99A	31DEC99A	100
BA4-200000	13APR98	30JUL04	0*	19JAN98A	30JUN04A	100
BA4-292000	04MAY99	30JUL04	0*	04MAY99A	30JUN04A	100
BA4-140000	13APR98	30JUL04	0*	13JAN99A	30JUN04A	100
BA4-178000	07MAY03*	30SEP03	0	07MAY03A	30SEP03A	100
BA4-176000	29MAY02*	31DEC03	0	29MAY02A	31DEC03A	100
BA4-177000	02FEB04*	30JUL04	0*	02FEB04A	30JUN04A	100
BA4-210000		30JUL04	0		30JUN04A	100
BA4-210010	04OCT04*	15OCT04	0	28OCT04A	29OCT04A	100
BA4-032002			0*	29NOV04A	04JAN05A	100
BA4-292030	02AUG04	18APR05	0*	01JUL04A	13MAY05A	100
BA4-292020	02AUG04	18APR05	0*	01JUL04A	13MAY05A	100
BA4-INF1	19JAN98	18APR05	0*	14NOV97A	13MAY05A	100

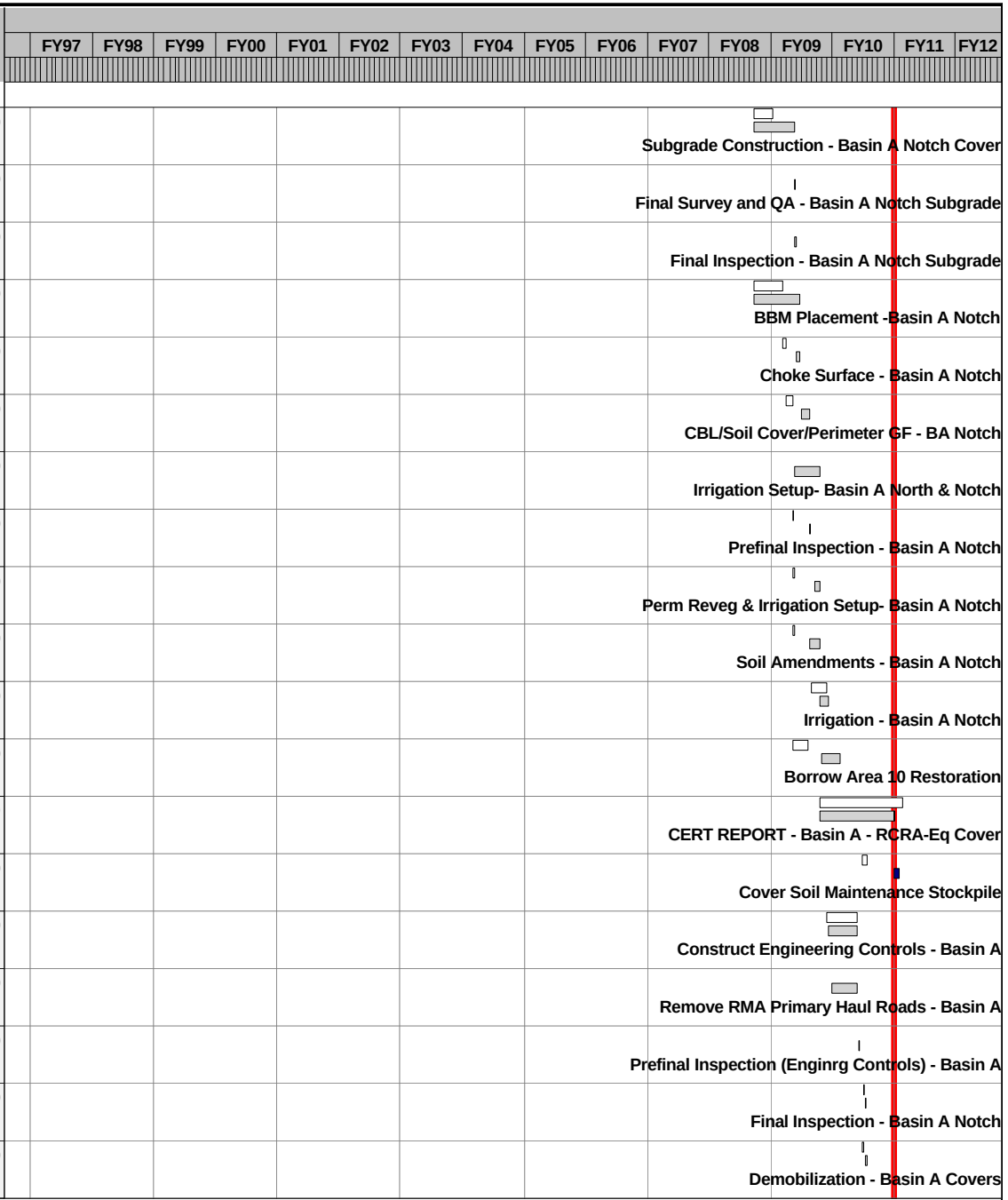


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
BA4-250000	17JAN05*	13MAY05	0*	12APR05A	13MAY05A	100
BA4-032001	16MAY05	07OCT05	0*	17MAY05A	09NOV05A	100
BA4-032003	08JUN05	07OCT05	0*	08JUN05A	09NOV05A	100
BA4-220500	27JUL05	04NOV05	0*	27JUL05A	29NOV05A	100
BA4-032004			0*	11OCT05A	08NOV05A	100
BA4-252000	28AUG06*	01NOV06	0*	03JUL06A	17JUL06A	100
BA4-300000	02NOV06	10APR07	0*	05JUL06A	14NOV06A	100
BA4-042003	02NOV06	10APR07	0*	05JUL06A	14NOV06A	100
BA4-179010	02NOV06	27MAR07	0*	05JUL06A	14NOV06A	100
BA4-300005	11APR07	01MAY07	0	09NOV06A	21NOV06A	100
BA4-INF2	17JAN05	01MAY07	0*	12APR05A	21NOV06A	100
BA4-360000	17MAY05	05NOV08	0*	17MAY05A	10DEC08A	100
BA4-360050	17MAY05	31DEC08	0*	17MAY05A	10DEC08A	100
BA4-360010		14NOV08	0		10DEC08A	100
BA4-300010	20JUL07*	10SEP07	0	20JUL07A	10SEP07A	100
BA4-310000	13AUG07	16NOV07	0	13AUG07A	16NOV07A	100
BA4-311000	24SEP07	26NOV07	0	24SEP07A	07DEC07A	100
BA4-600030			0	11OCT07A	01NOV07A	100
BA4-600020			0	31OCT07A	09NOV07A	100

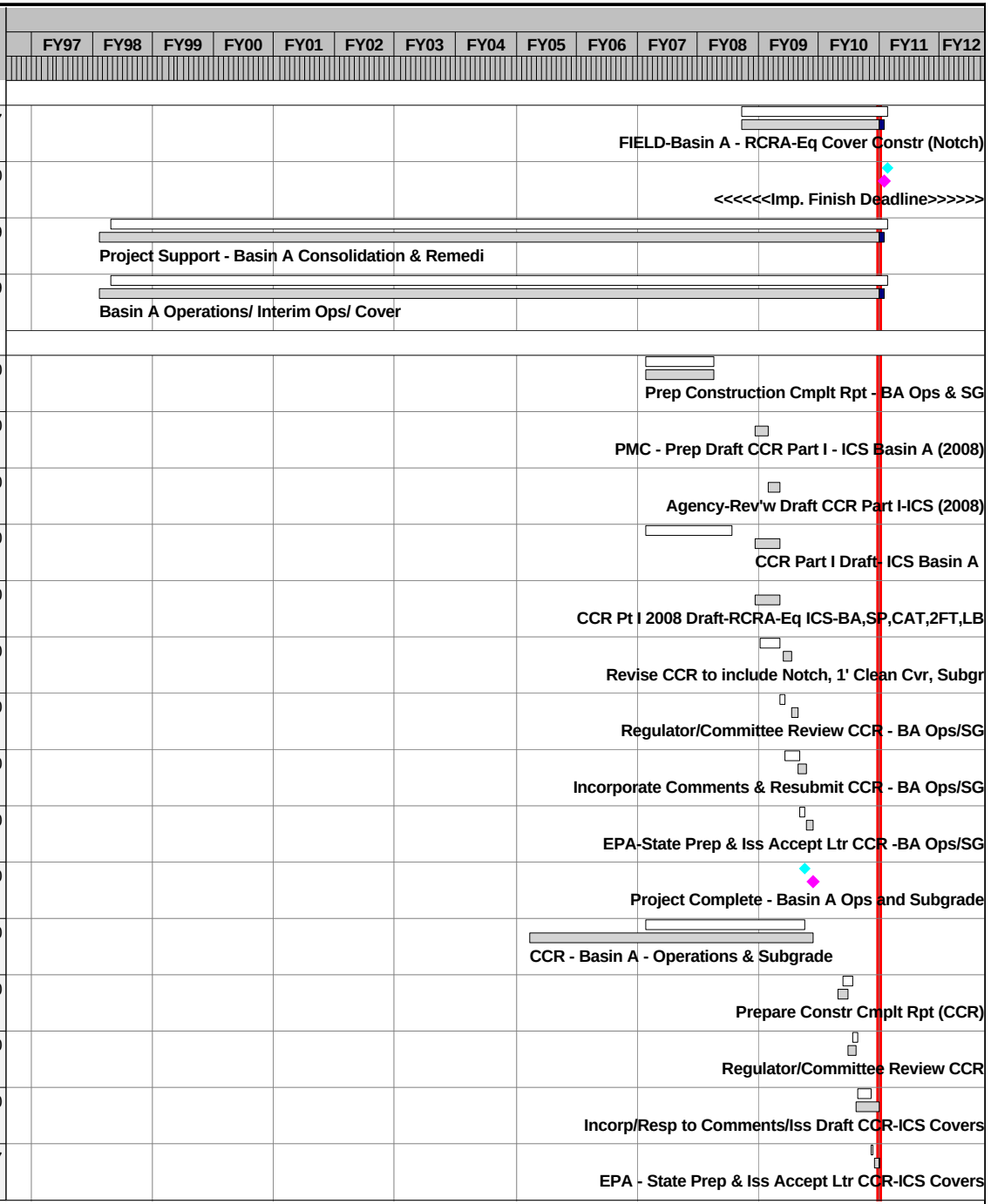


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
BA4-679000	24SEP07	24APR09	0*	24SEP07A	23MAY09A	100
BA4-310010	26NOV07	04MAR08	0	15JAN08A	25APR08A	100
BA4-325000	05MAR08	15APR08	0	25APR08A	02JUL08A	100
BA4-320000	16APR08	28MAY08	0	27MAY08A	03JUL08A	100
BA4-325001	16APR08	16APR08	0	02JUN08A	25JUN08A	100
BA4-326000	01JUN08	31AUG08	0	07JUL08A	26SEP08A	100
BA4-320002			0	23JUL09A	23JUL09A	100
BA4-320001	03MAR10	03MAR10	0	21APR10A	21APR10A	100
BA4-600010	26NOV07*	27DEC07	0	26NOV07A	12FEB08A	100
BA4-610000	28DEC07	25FEB08	0	13DEC07A	14MAY09A	100
BA4-611000	26FEB08	29SEP08	0	17DEC07A	15MAY09A	100
BA4-610010	30SEP08	24FEB09	0	17JUL08A	23MAY09A	100
BA4-625001	24APR09	24APR09	0	23SEP08A	29MAY09A	100
BA4-625000	25FEB09	23APR09	0	23SEP08A	17JUL09A	100
BA4-620000	24APR09	22JUL09	0	10NOV08A	23JUL09A	100
BA4-036001			0*	06MAR09A	30JUN09A	100
BA4-626000	23JUL09	22JUL10	0	25JUL09A	12SEP09A	100
BA4-620001	03MAR10	03MAR10	0	21APR10A	21APR10A	100
BA4-INF4	20JUL07	22JUL10	0*	20JUL07A	12SEP09A	100

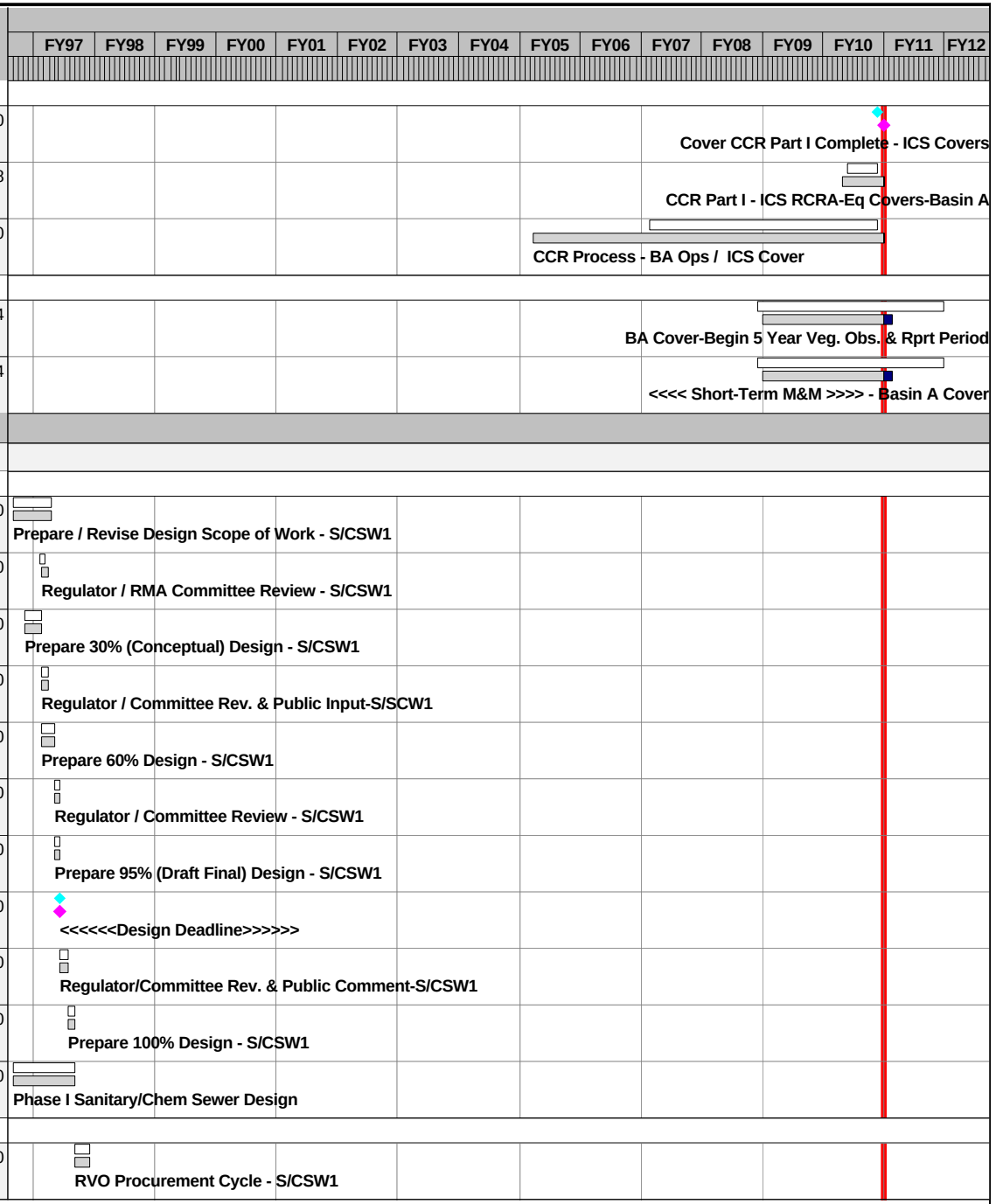
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
BA4-300110	23JUN08*	17OCT08	0	23JUN08A	23FEB09A	100
BA4-300115			0	24FEB09A	25FEB09A	100
BA4-300116			0	26FEB09A	26FEB09A	100
BA4-310100	27JUN08	12DEC08	0	27JUN08A	19MAR09A	100
BA4-310200	15DEC08	31DEC08	0	02MAR09A	27MAR09A	100
BA4-310110	02JAN09	12FEB09	0	06APR09A	23MAY09A	100
BA4-320200			0	24FEB09A	24JUL09A	100
BA4-310121	13FEB09	13FEB09	0	21MAY09A	21MAY09A	100
BA4-320100	13FEB09	19FEB09	0	23JUN09A	23JUL09A	100
BA4-310120	13FEB09	23FEB09	0	19MAY09A	21JUL09A	100
BA4-326100	01JUN09	31AUG09	0	25JUL09A	12SEP09A	100
BA4-211115	13FEB09	11MAY09	0	03AUG09A	20NOV09A	100
BA4-360320	23JUL09*	19NOV10	5*	23JUL09A	06OCT10	99
BA4-211110	29MAR10	26APR10	21	04OCT10	01NOV10	0
BA4-211100	01SEP09	02MAR10	0	14SEP09A	02MAR10A	100
BA4-326110			0	01OCT09A	02MAR10A	100
BA4-211130			0	04MAR10A	04MAR10A	100
BA4-320101	08APR10	08APR10	0	21APR10A	21APR10A	100
BA4-650000	29MAR10	09APR10	0	21APR10A	30APR10A	100



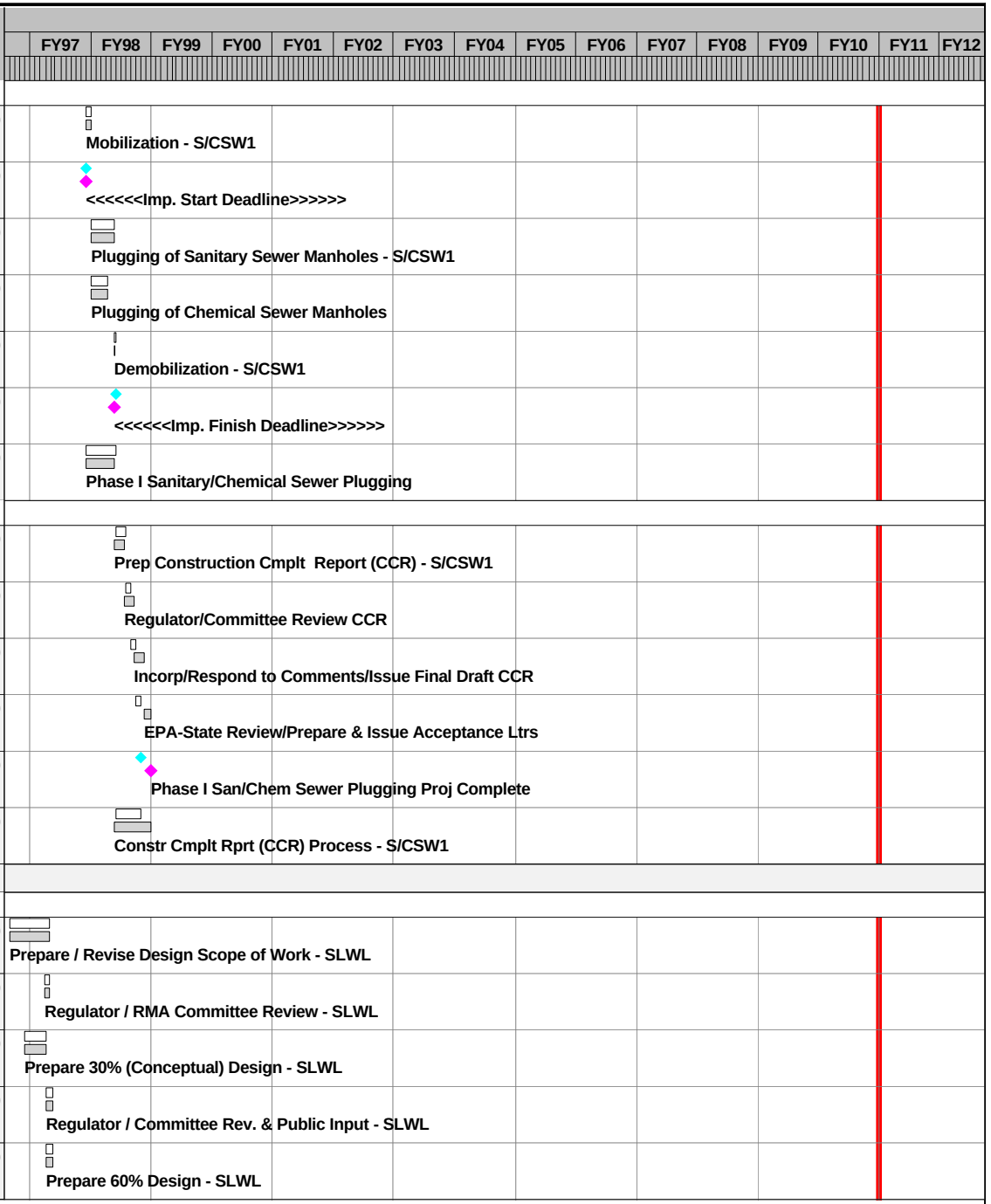
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
BA4-INF5	23JUN08	19NOV10	20*	23JUN08A	29OCT10	97
BA4-355000		19NOV10	0		29OCT10	0
BA4-370000	19JAN98	19NOV10	20*	14NOV97A	29OCT10	99
BA4-INF	19JAN98	19NOV10	20*	14NOV97A	29OCT10	99
Construction Completion Report						
BA6-360100	20NOV06*	04JAN08	0*	20NOV06A	03JAN08A	100
BA6-359950			0	15SEP08A	02DEC08A	100
BA6-359960			0	02DEC08A	12FEB09A	100
BA6-INF0	20NOV06	25APR08	0*	15SEP08A	12FEB09A	100
BA60INF0			0*	15SEP08A	12FEB09A	100
BA6-360200	18OCT08	12FEB09	0*	27FEB09A	23APR09A	100
BA6-360115	13FEB09	14MAR09	0	24APR09A	29MAY09A	100
BA6-360120	15MAR09	10JUN09	0*	01JUN09A	21JUL09A	100
BA6-360130	11JUN09	12JUL09	0	24JUL09A	03SEP09A	100
BA6-360140		12JUL09	0		03SEP09A	100
BA6-INF1	20NOV06	12JUL09	0*	27DEC04A	03SEP09A	100
BA6-360000	02MAR10	30APR10	0*	01FEB10A	01APR10A	100
BA6-360010	01MAY10	30MAY10	0*	02APR10A	13MAY10A	100
BA6-360020	01JUN10	10AUG10	0*	14MAY10A		100
BA6-360030	11AUG10	24AUG10	6	09SEP10A	07OCT10	57



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
BA6-360040		24AUG10	0		07OCT10	0
BA6-INF2	02MAR10	24AUG10	6*	01FEB10A	07OCT10	98
BA6-INF	20NOV06	24AUG10	6*	27DEC04A	07OCT10	100
Short-Term Monitoring/Maintenance/Operations						
BA7-600000	02SEP08	30SEP11	35*	01OCT08A	19NOV10	94
BA7-100000	02SEP08	30SEP11	35*	01OCT08A	19NOV10	94
Early Start Projects						
Sanitary/Chemical Sewer Manhole Plugging-Phase I						
Remedial Design						
S12-120000	03JUN96A	19JAN97A	0	03JUN96A	16JAN97A	100
S12-125000	04NOV96A	08DEC96A	0	15NOV96A	23DEC96A	100
S12-130000	05AUG96A	17NOV96A	0	05AUG96A	17NOV96A	100
S12-140000	18NOV96A	22DEC96A	0	18NOV96A	22DEC96A	100
S12-150000	18NOV96A	02FEB97A	0	18NOV96A	02FEB97A	100
S12-160000	03FEB97A	02MAR97A	0	03FEB97A	10MAR97A	100
S12-170000	03FEB97A	07MAR97A	0	03FEB97A	07MAR97A	100
S12-175000		07MAR97A	0		07MAR97A	100
S12-180000	10MAR97A	21APR97A	0	10MAR97A	21APR97A	100
S12-190000	22APR97A	30MAY97A	0	22APR97A	30MAY97A	100
S12-INF	03JUN96A	30MAY97A	0*	03JUN96A	30MAY97A	100
Procurement						
S13-110000	02JUN97A	03SEP97A	0	02JUN97A	03SEP97A	100

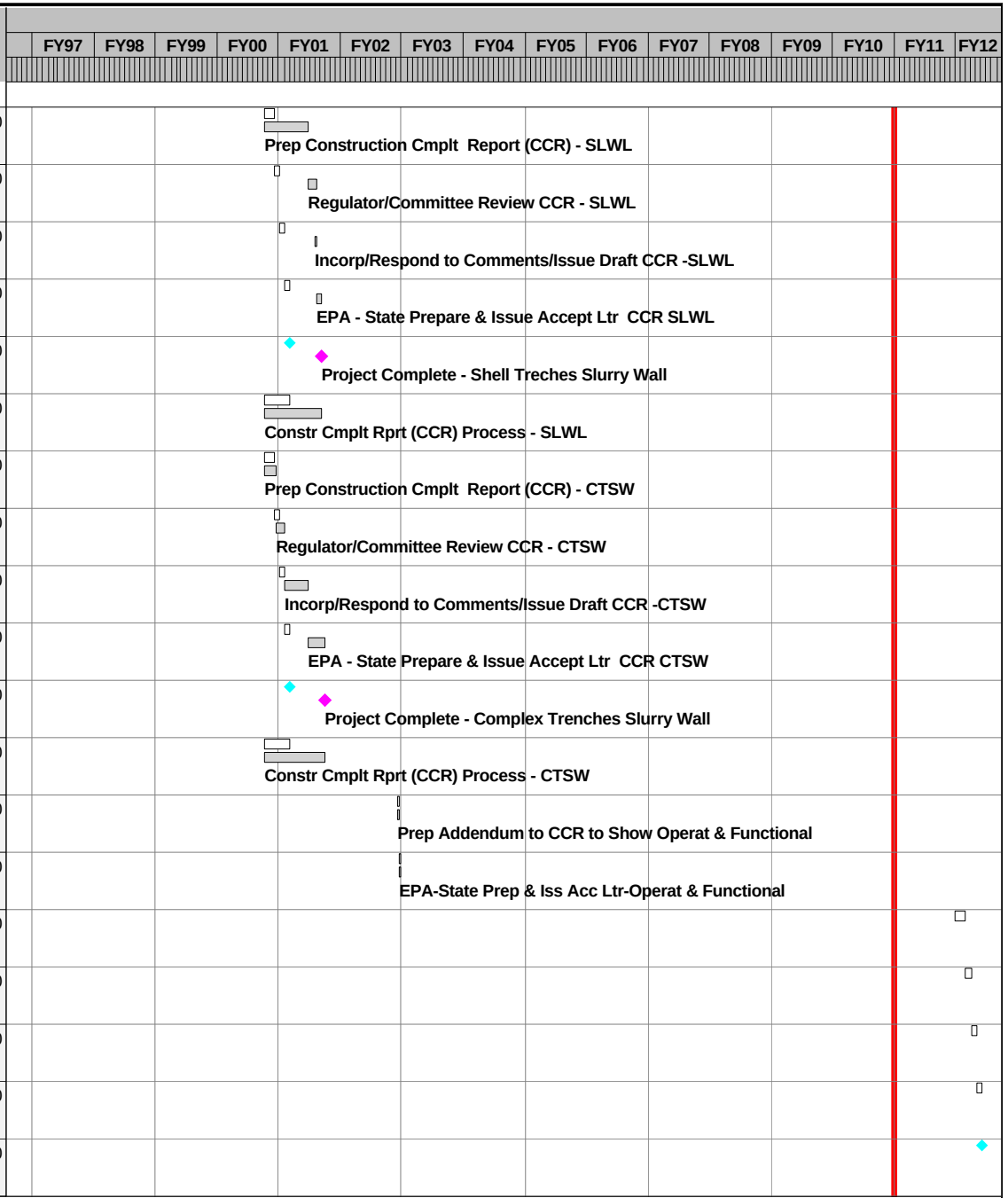


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
S14-120000	03SEP97A	03OCT97	0	03SEP97A	03OCT97A	100
S14-125000	03SEP97A		0	03SEP97A		100
S14-130000	06OCT97	20FEB98	0	06OCT97A	20FEB98A	100
S14-135000	06OCT97	14JAN98	0	06OCT97A	14JAN98A	100
S14-140000	16FEB98	27FEB98	0	16FEB98A	23FEB98A	100
S14-145000		27FEB98	0		23FEB98A	100
S14-INF	03SEP97A	27FEB98	0*	03SEP97A	23FEB98A	100
Construction Completion Report						
S16-150000	28FEB98	28APR98	0	24FEB98A	24APR98A	100
S16-150100	29APR98	29MAY98	0	25APR98A	18JUN98A	100
S16-150200	30MAY98	28JUN98	0	19JUN98A	13AUG98A	100
S16-150300	29JUN98	29JUL98	0	14AUG98A	30SEP98A	100
S16-150400		29JUL98	0		30SEP98A	100
S16-INF	28FEB98	29JUL98	0*	24FEB98A	30SEP98A	100
Shell/Complex Trench Slurry Walls						
Remedial Design						
SW2-120000	03JUN96A	26JAN97A	0	03JUN96A	26JAN97A	100
SW2-125000	23DEC96A	26JAN97A	0	23DEC96A	26JAN97A	100
SW2-130000	26AUG96A	05JAN97A	0	26AUG96A	05JAN97A	100
SW2-140000	06JAN97A	09FEB97A	0	06JAN97A	09FEB97A	100
SW2-150000	06JAN97A	16FEB97A	0	06JAN97A	16FEB97A	100

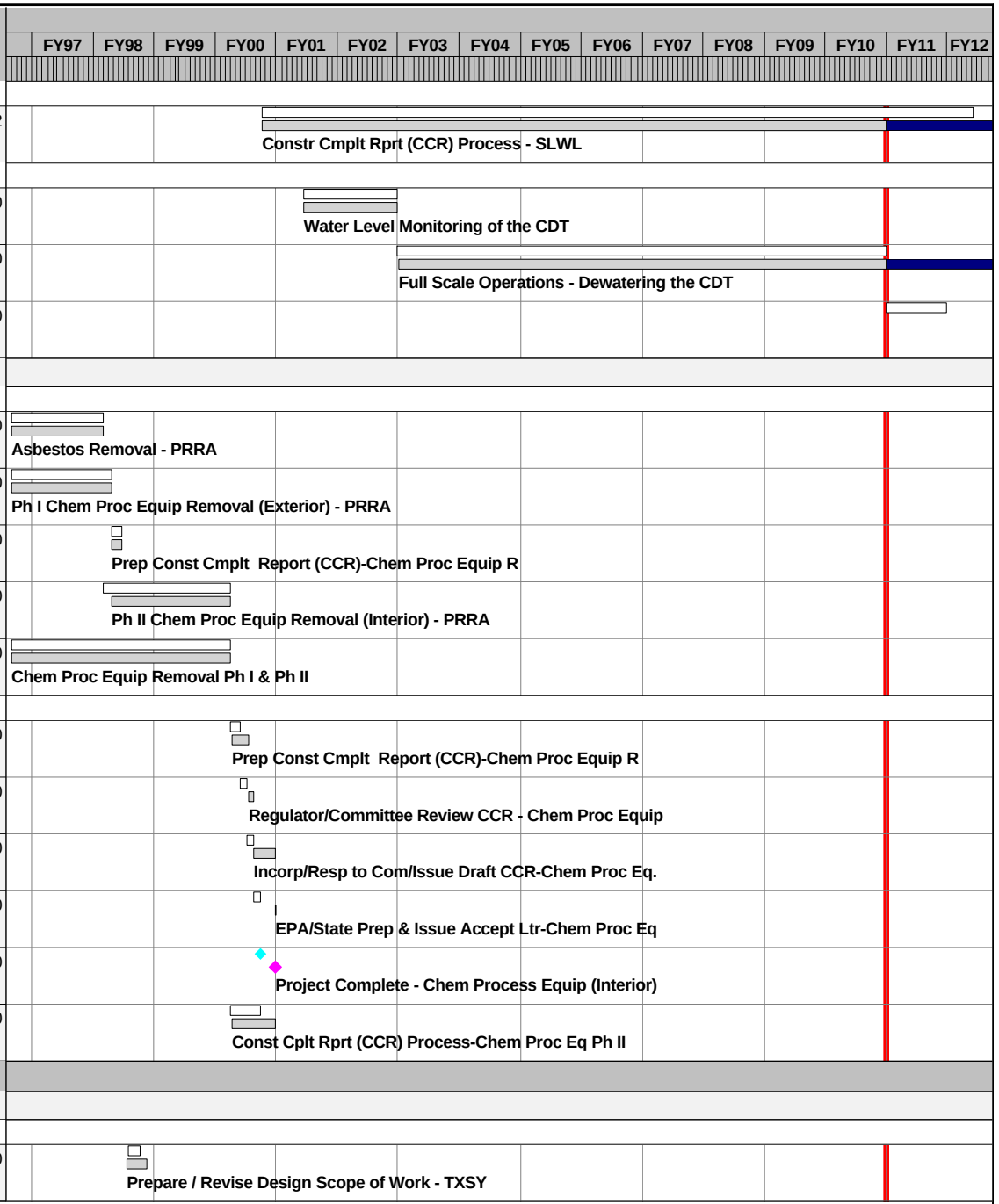


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SW2-160000	17FEB97A	03APR97A	0	17FEB97A	03APR97A	100
SW2-170000	17FEB97A	23JUN97A	0	17FEB97A	23JUN97A	100
SW2-175000		23JUN97A	0		23JUN97A	100
SW2-180000	23JUN97A	25JUL97A	0	23JUN97A	25JUL97A	100
SW2-190000	28JUL97A	12SEP97A	0	28JUL97A	12SEP97A	100
SW2-INF	03JUN96A	12SEP97A	0*	03JUN96A	12SEP97A	100
Procurement						
SW3-110000	02FEB98*	24APR98	0	02FEB98A	24APR98A	100
Remediation Activities						
SW4-120000	27APR98	17SEP98	0	27APR98A	01JUN98A	100
SW4-125000	27APR98		0	24APR98A		100
SW4-127500	06AUG98	29OCT98	0*	02JUN98A	27JUL98A	100
SW4-127510	06AUG98	14APR00	0	03JUN98A	07APR00A	100
SW4-127600			0*	20JUL98A	02OCT98A	100
SW4-130000	13AUG98	08JUN99	0*	07JAN99A	22MAR99A	100
SW4-140000	03JUN99	14APR00	0*	23MAR99A	07APR00A	100
SW4-165000		14APR00	0		07APR00A	100
SW4-430000	14MAR00	06JUL00	0*	14MAR00A	06JUL00A	100
SW4-206500	27APR98	14APR00	0*	27APR98A	07APR00A	100
SW4-INF	27APR98	14APR00	0*	02JUN98A	07APR00A	100

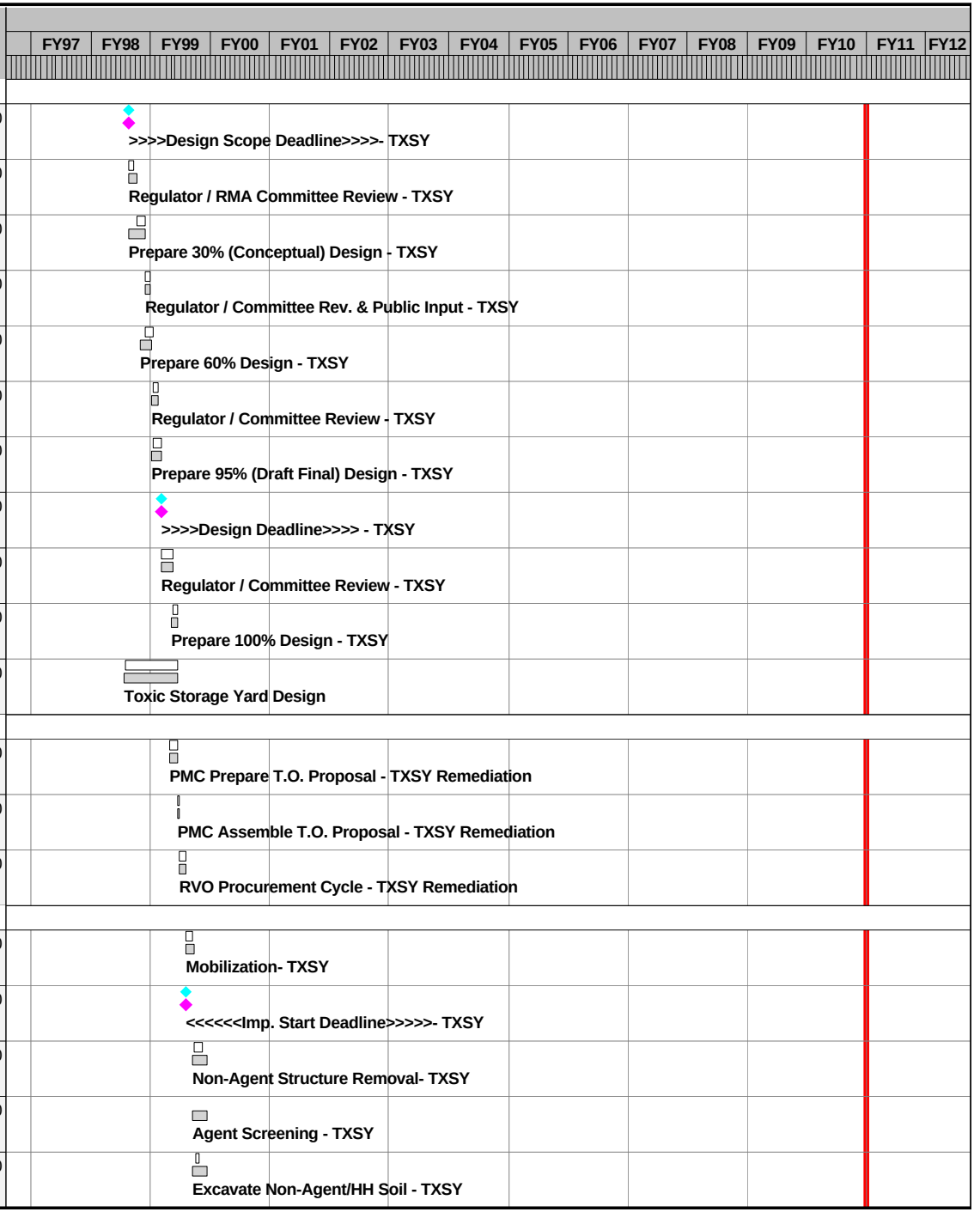
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
SW6-170000	07JUL00	05SEP00	0	07JUL00A	22MAR01A	100
SW6-170010	06SEP00	05OCT00	0	22MAR01A	09MAY01A	100
SW6-170020	06OCT00	04NOV00	0	09MAY01A	16MAY01A	100
SW6-170030	05NOV00	06DEC00	0	16MAY01A	08JUN01A	100
SW6-170040		06DEC00	0		08JUN01A	100
SW6-INF1	07JUL00	06DEC00	0*	07JUL00A	08JUN01A	100
SW6-170100	07JUL00	05SEP00	0	07JUL00A	13SEP00A	100
SW6-170110	06SEP00	05OCT00	0	13SEP00A	02NOV00A	100
SW6-170120	06OCT00	04NOV00	0	02NOV00A	21MAR01A	100
SW6-170130	05NOV00	06DEC00	0	22MAR01A	03JUL01A	100
SW6-170140		06DEC00	0		03JUL01A	100
SW6-INF2	07JUL00	06DEC00	0*	07JUL00A	03JUL01A	100
SW6-155000	03SEP02*	17SEP02	0	03SEP02A	17SEP02A	100
SW6-155030	18SEP02	30SEP02	0	18SEP02A	30SEP02A	100
SW6-175000	01OCT11	01DEC11	60	28SEP19	26NOV19	0
SW6-175010	02DEC11	04JAN12	30	27NOV19	29DEC19	0
SW6-175020	05JAN12	03FEB12	29	30DEC19	28JAN20	0
SW6-175030	04FEB12	03MAR12	29	29JAN20	26FEB20	0
SW6-175040		03MAR12	0		26FEB20	0



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
SW6-INF	07JUL00	03MAR12	3,358*	07JUL00A	26FEB20	52
Short-Term Monitoring/Maintenance/Operations						
SW7G200100	12MAR01*	30SEP02	0*	12MAR01A	30SEP02A	100
SW7G200200	01OCT02	30SEP10	1,406	03OCT02A	09SEP14	50
SW7G200210	01OCT10	30SEP11	1,281	10SEP14	27SEP19	0
Post-ROD Removal Actions for Structures						
Remediation Activities						
CI4-130000	03JUN96A	01DEC97	0	03JUN96A	01DEC97A	100
CI4-140000	03JUN96A	19JAN98	0	03JUN96A	19JAN98A	100
CI4-200000	20JAN98	20MAR98	0	20JAN98A	20MAR98A	100
CI4-205000	01DEC97*	31DEC99	0	19JAN98A	28DEC99A	100
CI4-INF	03JUN96A	31DEC99	0*	03JUN96A	28DEC99A	100
Construction Completion Report						
CI6-210000	02JAN00	29FEB00	0	10JAN00A	17APR00A	100
CI6-210010	01MAR00	11APR00	0	18APR00A	19MAY00A	100
CI6-210020	12APR00	23MAY00	0	20MAY00A	25SEP00A	100
CI6-210030	24MAY00	23JUN00	0	26SEP00A	29SEP00A	100
CI6-210040		23JUN00	0		29SEP00A	100
CI6-INF	02JAN00	23JUN00	0*	10JAN00A	29SEP00A	100
Phase I - Outlying Areas						
Toxic Storage Yards Soil Remediation						
Remedial Design						
TS2-120000	28APR98*	06JUL98	0	21APR98A	21AUG98A	100

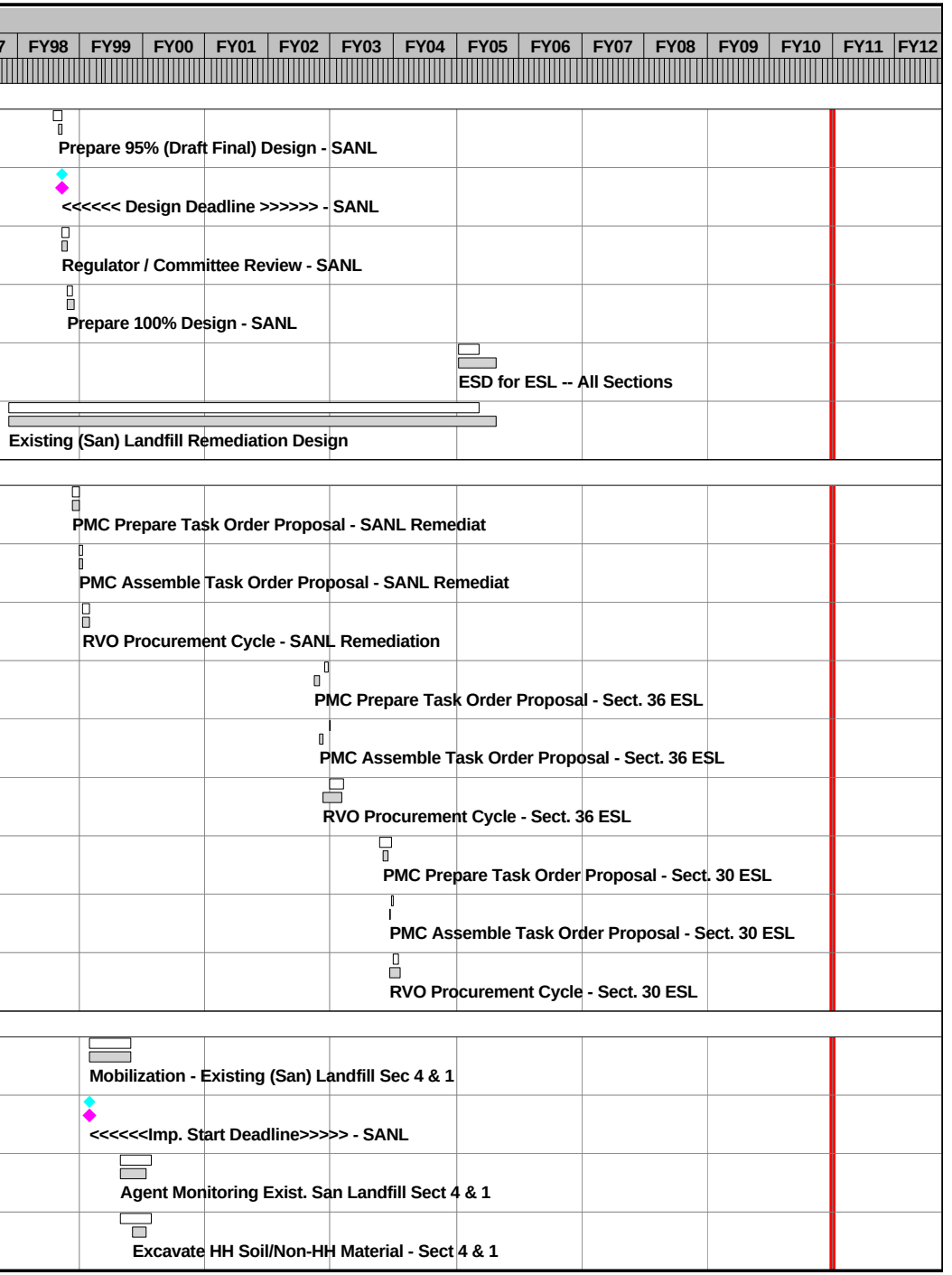


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
TS2-122000		18MAY98	0		15MAY98A	100
TS2-125000	19MAY98	18JUN98	0	18MAY98A	13JUL98A	100
TS2-130000	07JUL98	31AUG98	0	18MAY98A	28AUG98A	100
TS2-140000	01SEP98	01OCT98	0	31AUG98A	30SEP98A	100
TS2-150000	01SEP98	12OCT98	0	03AUG98A	09OCT98A	100
TS2-160000	13OCT98	11NOV98	0	12OCT98A	12NOV98A	100
TS2-170000	13OCT98	07DEC98	0	08OCT98A	07DEC98A	100
TS2-175000		07DEC98*	0		07DEC98A	100
TS2-180000	08DEC98	12FEB99	0	08DEC98A	12FEB99A	100
TS2-190000	15FEB99	17MAR99	0	01FEB99A	17MAR99A	100
TS2-INF	28APR98	17MAR99	0*	21APR98A	17MAR99A	100
Procurement						
TS3-109000	25JAN99*	12MAR99	0	25JAN99A	12MAR99A	100
TS3-109010	15MAR99	29MAR99	0	15MAR99A	29MAR99A	100
TS3-110000	30MAR99	03MAY99	0	30MAR99A	03MAY99A	100
Remediation Activities						
TS4-120000	03MAY99	14JUN99	0*	03MAY99A	24JUN99A	100
TS4-125000	03MAY99		0	03MAY99A		100
TS4-130000	29JUN99	10AUG99	0*	10JUN99A	08SEP99A	100
TS4-140000			0*	14JUN99A	15SEP99A	100
TS4-150000	07JUL99	19JUL99	0*	10JUN99A	13SEP99A	100

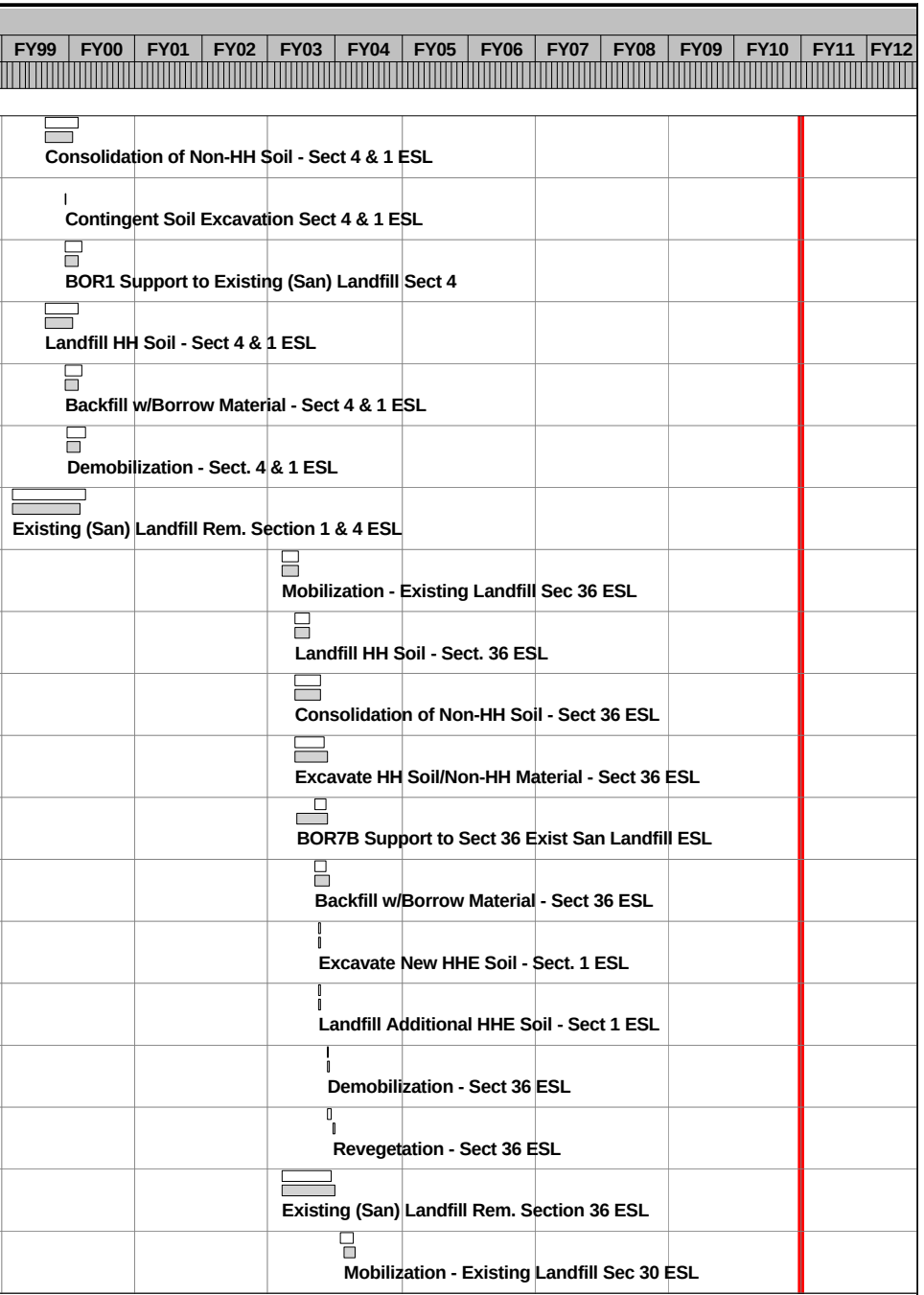


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
TS4-179600	20JUL99	27SEP99	0*	08JUL99A	30SEP99A	100
TS4-200000	18AUG99	27SEP99	0*	16SEP99A	30SEP99A	100
TS4-205000		27SEP99	0		15SEP99A	100
TS4-220100	03MAY99	12OCT99	0*	03MAY99A	30SEP99A	100
TS4-INF	03MAY99	27SEP99	0*	03MAY99A	30SEP99A	100
Construction Completion Report						
TS6-210000	28SEP99	28NOV99	0	14OCT99A	10DEC99A	100
TS6-210010	29NOV99	10JAN00	0	13DEC99A	12JAN00A	100
TS6-210020	11JAN00	21FEB00	0	13JAN00A	23FEB00A	100
TS6-210030	22FEB00	22MAR00	0	24FEB00A	20JUN00A	100
TS6-210040		22MAR00	0		20JUN00A	100
TS6-INF	28SEP99	22MAR00	0*	14OCT99A	20JUN00A	100
Existing (Sanitary) Landfill Remediation						
Remedial Design						
SF2-120000	13AUG97A	01DEC97	0	13AUG97A	12JAN98A	100
SF2-122000		14OCT97*	0		14OCT97A	100
SF2-125000	15OCT97	13NOV97	0	15OCT97A	18NOV97A	100
SF2-130000	02DEC97	24FEB98	0	19NOV97A	20FEB98A	100
SF2-140000	25FEB98	26MAR98	0	21FEB98A	31MAR98A	100
SF2-150000	25FEB98	28APR98	0	23MAR98A	28APR98A	100
SF2-160000	29APR98	29MAY98	0	29APR98A	30MAY98A	100

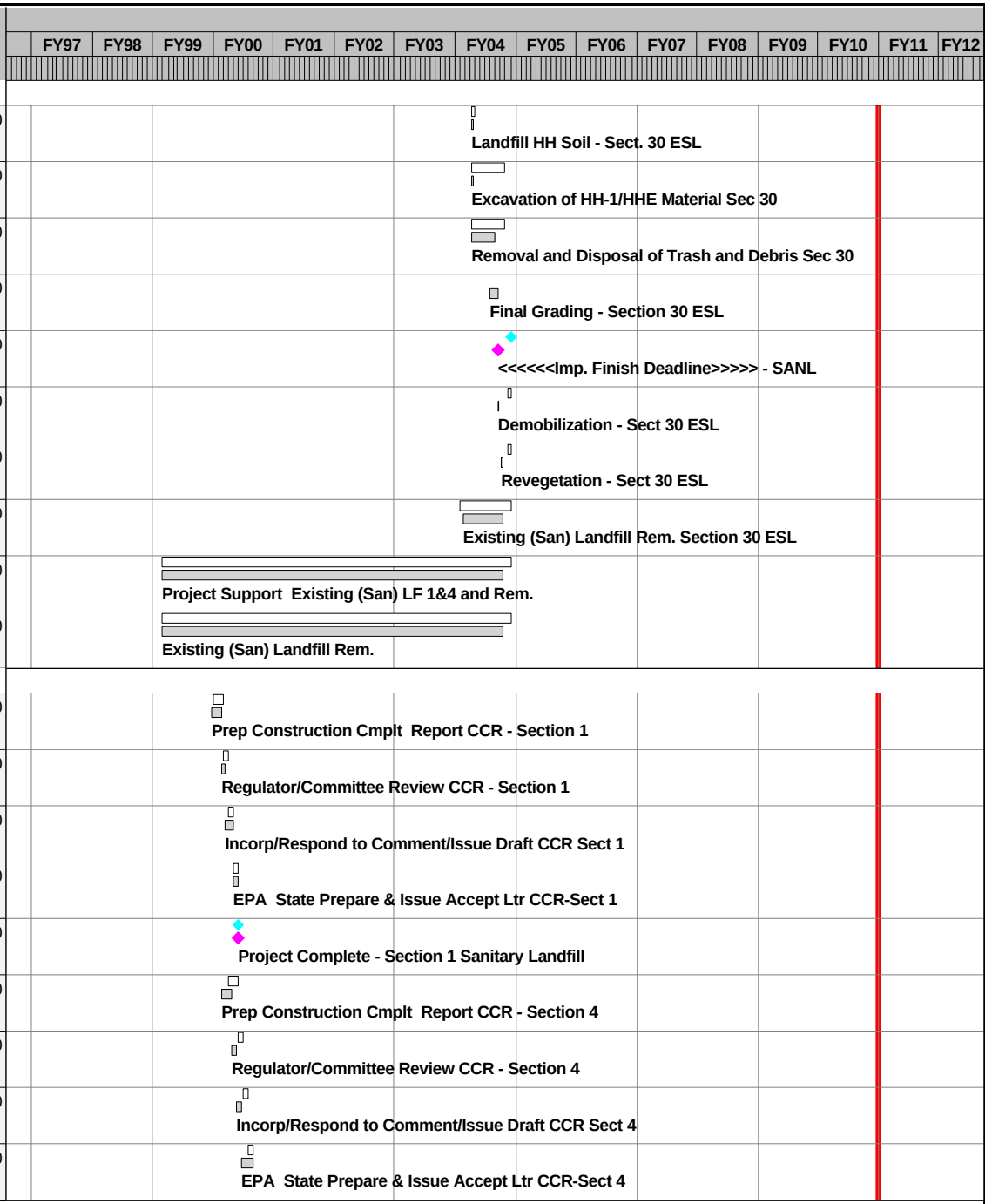
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SF2-170000	29APR98	23JUN98	0	01JUN98A	22JUN98A	100
SF2-175000		23JUN98	0		22JUN98A	100
SF2-180000	24JUN98	24JUL98	0	23JUN98A	20JUL98A	100
SF2-190000	23JUL98	21AUG98*	0	23JUL98A	24AUG98A	100
SF2-181000	19OCT04*	11FEB05	0*	19OCT04A	19MAY05A	100
SF2-INF	13AUG97A	11FEB05	0*	13AUG97A	19MAY05A	100
Procurement						
SF3-010000	17AUG98*	25SEP98	0	17AUG98A	25SEP98A	100
SF3-010001	28SEP98	19OCT98	0	28SEP98A	19OCT98A	100
SF3-110000	21OCT98*	24NOV98	0	20OCT98A	22NOV98A	100
SF3-020100	30AUG02	20SEP02	0	03JUL02A	24JUL02A	100
SF3-020101	23SEP02	27SEP02	0	25JUL02A	13AUG02A	100
SF3-120100	29SEP02	19DEC02	0	14AUG02A	04DEC02A	100
SF3-010100	18JUL03	16SEP03	0	07AUG03A	05SEP03A	100
SF3-010101	17SEP03	30SEP03	0	08SEP03A	09SEP03A	100
SF3-110100	01OCT03	04NOV03	0*	11SEP03A	07NOV03A	100
Remediation Activities						
SF4-120000	24NOV98	28JUL99	0*	22NOV98A	26JUL99A	100
SF4-125000	24NOV98		0	22NOV98A		100
SF4-125500	26MAY99	24NOV99	0*	26MAY99A	22OCT99A	100
SF4-130000	26MAY99	24NOV99	0*	02AUG99A	22OCT99A	100



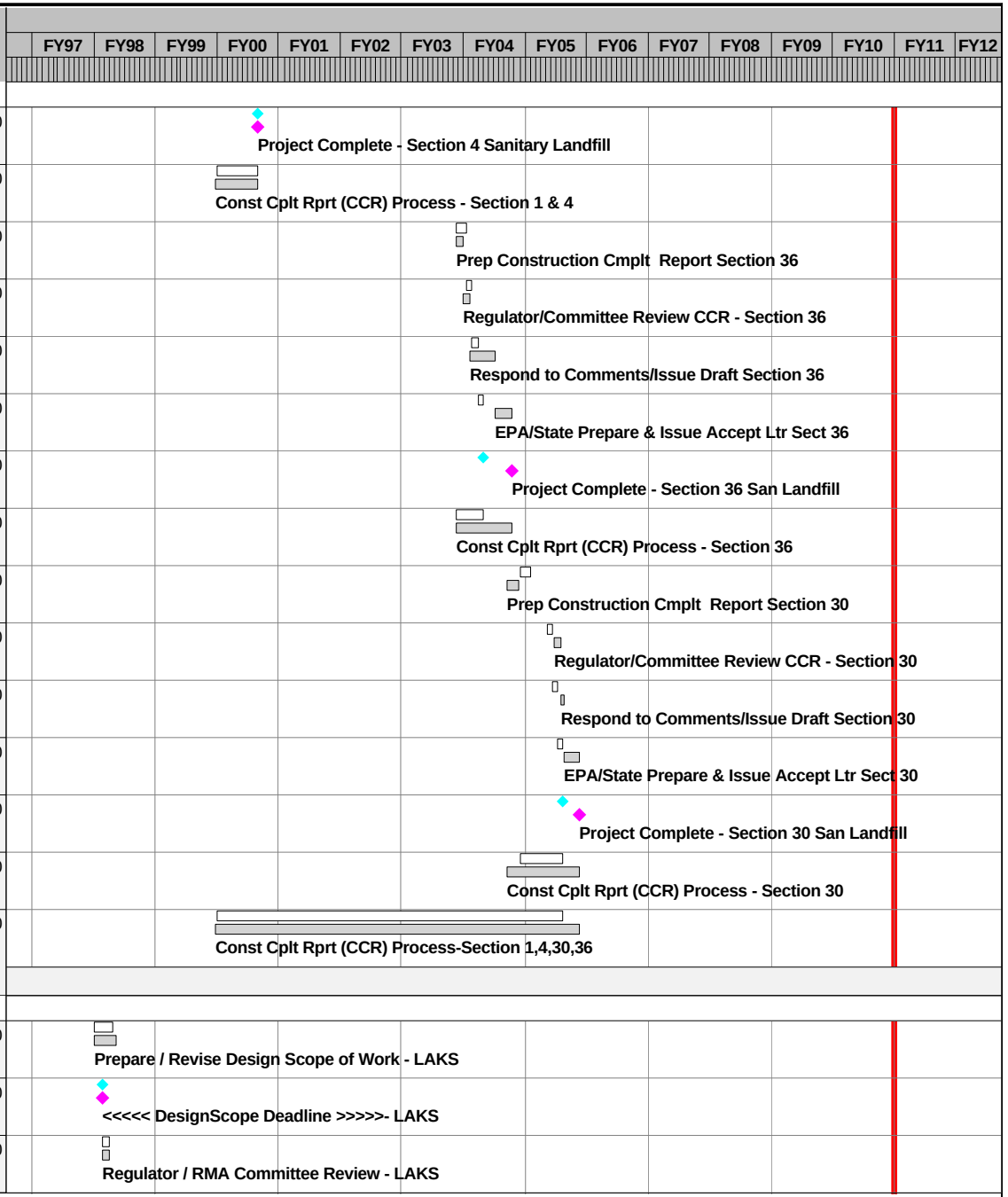
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SF4-135000	26MAY99	24NOV99	0*	26MAY99A	22OCT99A	100
SF4-200000			0*	15SEP99A	16SEP99A	100
SF4-130100	08SEP99	09DEC99	0*	08SEP99A	17NOV99A	100
SF4-140000	26MAY99	24NOV99	0*	26MAY99A	22OCT99A	100
SF4-150000	08SEP99	09DEC99	0*	08SEP99A	17NOV99A	100
SF4-170000	21SEP99	29DEC99	0*	21SEP99A	02DEC99A	100
SF4-INF1	24NOV98	29DEC99	0*	22NOV98A	02DEC99A	100
SF4-120021	20DEC02*	12MAR03	0*	20DEC02A	12MAR03A	100
SF4-140021	21FEB03	13MAY03	0*	20FEB03A	13MAY03A	100
SF4-135021	26FEB03	11JUL03	0*	26FEB03A	17JUL03A	100
SF4-130021	21FEB03	31JUL03	0*	20FEB03A	19AUG03A	100
SF4-176000	10JUN03	15AUG03	0*	03MAR03A	19AUG03A	100
SF4-150021	10JUN03	15AUG03	0*	10JUN03A	27AUG03A	100
SF4-130500	02JUL03	09JUL03	0*	02JUL03A	09JUL03A	100
SF4-140500	02JUL03	09JUL03	0*	02JUL03A	09JUL03A	100
SF4-170021	18AUG03	22AUG03	0*	21AUG03A	04SEP03A	100
SF4-177020	18AUG03	15SEP03	0*	22SEP03A	26SEP03A	100
SF4-INF2	20DEC02	15SEP03	0*	20DEC02A	26SEP03A	100
SF4-120001	04NOV03*	12JAN04	0*	19NOV03A	23JAN04A	100



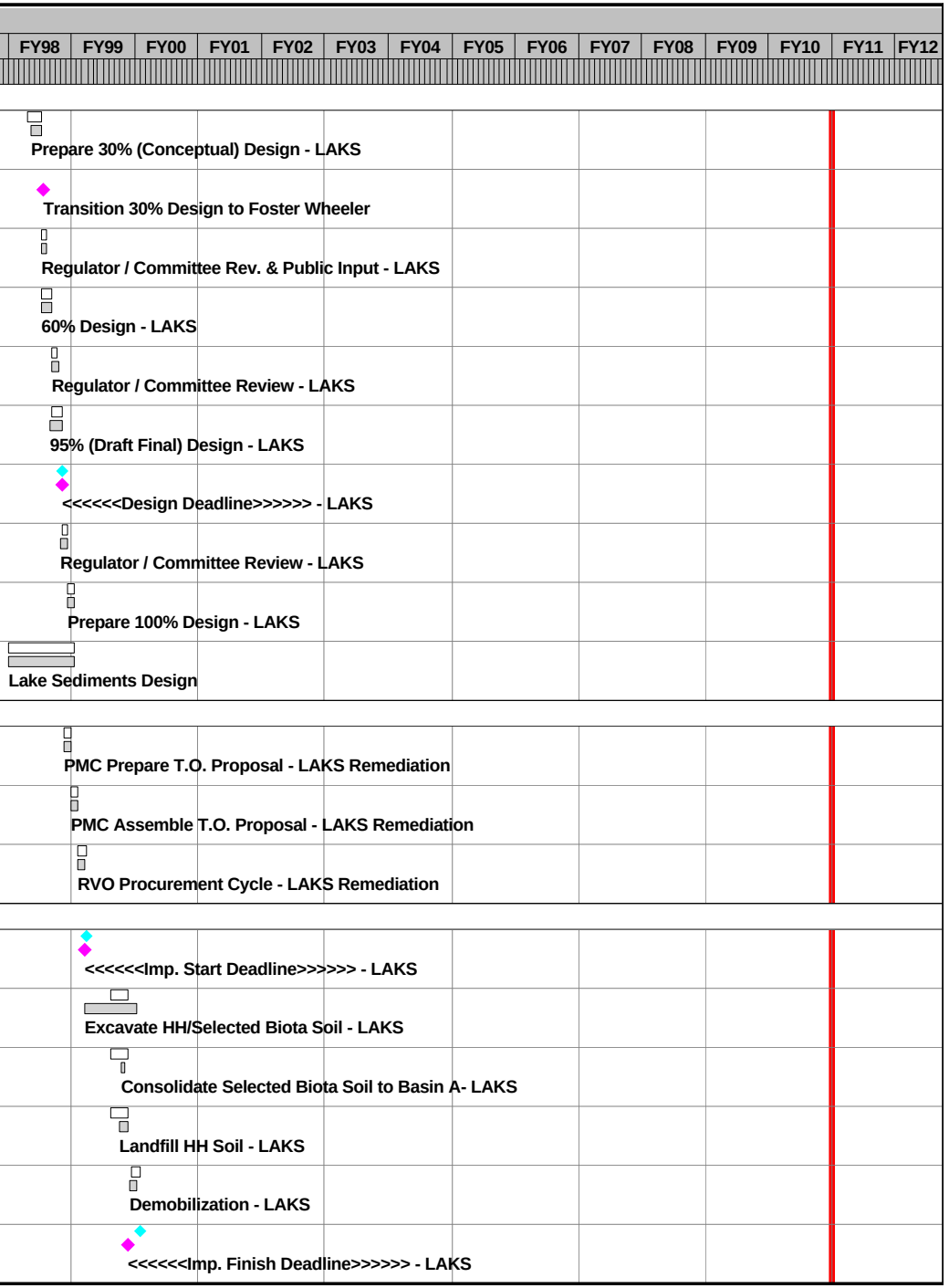
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SF4-140001	13JAN04	26JAN04	0*	12JAN04A	14JAN04A	100
SF4-130001	13JAN04	30JUL04	0*	12JAN04A	14JAN04A	100
SF4-135001	13JAN04	30JUL04	0*	05JAN04A	27MAY04A	100
SF4-141001			0*	26APR04A	16JUN04A	100
SF4-175000		31AUG04	0		16JUN04A	100
SF4-170001	17AUG04	31AUG04	0*	14JUN04A	16JUN04A	100
SF4-177000	17AUG04	31AUG04	0*	09JUL04A	20JUL04A	100
SF4-INF3	04NOV03	31AUG04	0*	19NOV03A	20JUL04A	100
SF4-190100	24NOV98	31AUG04	0*	22NOV98A	20JUL04A	100
SF4-INF	24NOV98	31AUG04	0*	22NOV98A	20JUL04A	100
Construction Completion Report						
SF6-200100	28SEP99	28NOV99	0	20SEP99A	20NOV99A	100
SF6-200110	30NOV99	31DEC99	0	21NOV99A	15DEC99A	100
SF6-200120	02JAN00	31JAN00	0	16DEC99A	28JAN00A	100
SF6-200130	01FEB00	01MAR00	0	29JAN00A	29FEB00A	100
SF6-200140		01MAR00	0		29FEB00A	100
SF6-200200	30DEC99	28FEB00	0	17NOV99A	19JAN00A	100
SF6-200210	29FEB00	29MAR00	0	20JAN00A	22FEB00A	100
SF6-200220	30MAR00	28APR00	0	16FEB00A	15MAR00A	100
SF6-200230	29APR00	28MAY00	0	16MAR00A	25MAY00A	100



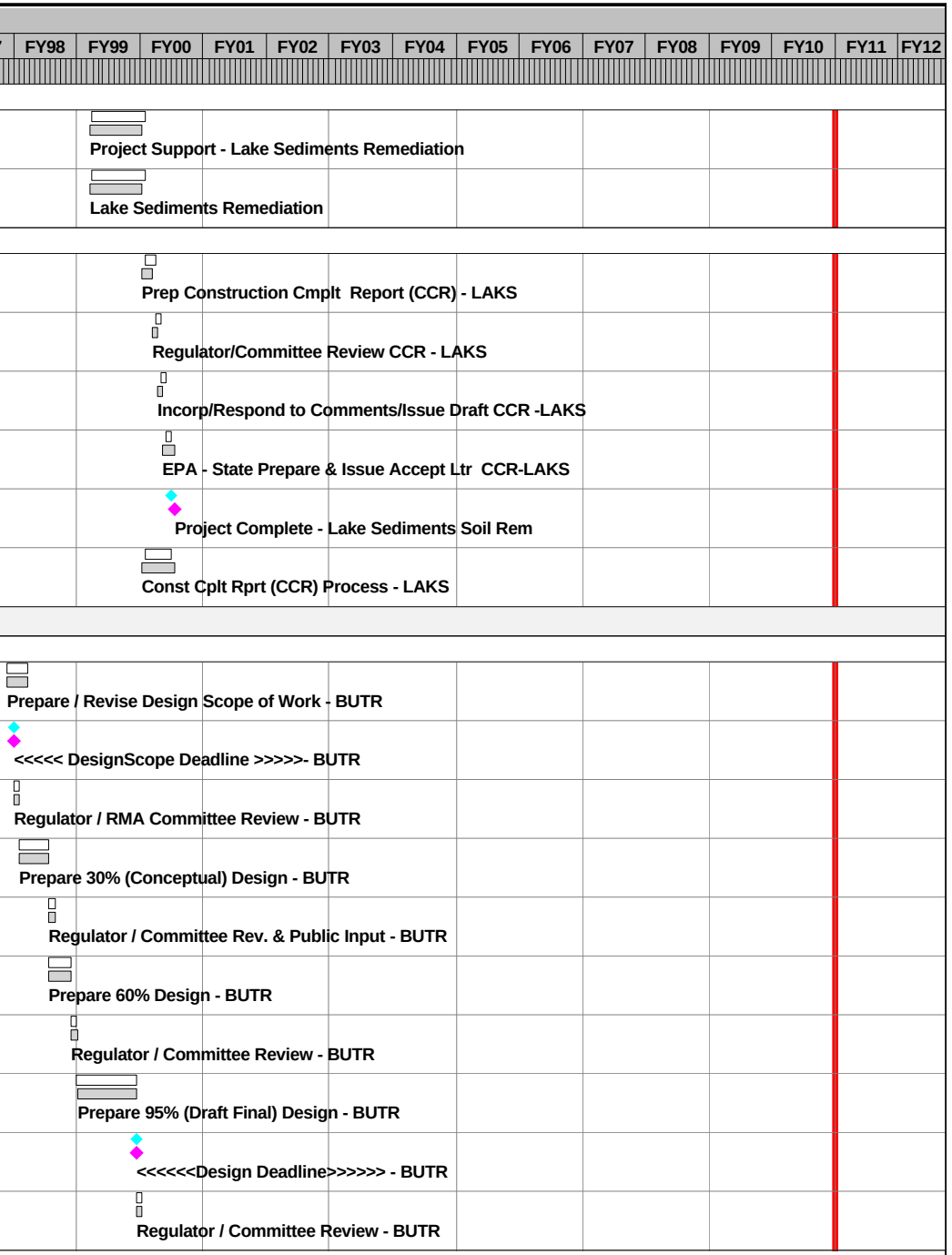
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
SF6-200240		28MAY00	0		25MAY00A	100
SF6-INF1	28SEP99	28MAY00	0*	20SEP99A	25MAY00A	100
SF6-180300	25AUG03*	24OCT03	0	25AUG03A	01OCT03A	100
SF6-180310	25OCT03	23NOV03	0	06OCT03A	08NOV03A	100
SF6-180320	24NOV03	26DEC03	0	09NOV03A	12APR04A	100
SF6-180330	27DEC03	26JAN04	0	13APR04A	15JUL04A	100
SF6-180340		26JAN04	0		15JUL04A	100
SF6-INF2	25AUG03	26JAN04	0*	25AUG03A	15JUL04A	100
SF6-180400	01SEP04	31OCT04	0	18JUN04A	23AUG04A	100
SF6-180410	12FEB05	13MAR05	0*	29MAR05A	28APR05A	100
SF6-180420	14MAR05	12APR05	0*	29APR05A	26MAY05A	100
SF6-180430	13APR05	12MAY05	0	26MAY05A	16AUG05A	100
SF6-180440		12MAY05	0		16AUG05A	100
SF6-INF3	01SEP04	12MAY05	0*	18JUN04A	16AUG05A	100
SF6-INF	28SEP99	12MAY05	0*	20SEP99A	16AUG05A	100
Lake Sediments Remediation						
Remedial Design						
LS2-120000	29SEP97*	19JAN98	0	29SEP97A	09FEB98A	100
LS2-122000		24NOV97	0		24NOV97A	100
LS2-125000	25NOV97	29DEC97	0	25NOV97A	29DEC97A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
LS2-130000	20JAN98	06APR98	0	10FEB98A	06APR98A	100
LS2-131000			0		22APR98A	100
LS2-140000	07APR98	06MAY98	0	07APR98A	08MAY98A	100
LS2-150000	07APR98	09JUN98	0	07APR98A	08JUN98A	100
LS2-160000	10JUN98	10JUL98	0	08JUN98A	16JUL98A	100
LS2-170000	10JUN98	04AUG98	0	02JUN98A	03AUG98A	100
LS2-175000		04AUG98	0		03AUG98A	100
LS2-180000	05AUG98	03SEP98	0	03AUG98A	04SEP98A	100
LS2-190000	04SEP98	14OCT98	0	08SEP98A	13OCT98A	100
LS2-INF	29SEP97	14OCT98	0*	29SEP97A	13OCT98A	100
Procurement						
LS3-109000	17AUG98*	22SEP98	0	17AUG98A	22SEP98A	100
LS3-109010	23SEP98	04NOV98	0	23SEP98A	04NOV98A	100
LS3-110000	05NOV98	22DEC98	0	04NOV98A	13DEC98A	100
Remediation Activities						
LS4-125000	22DEC98		0	13DEC98A		100
LS4-130000	11MAY99	25AUG99	0*	13DEC98A	07OCT99A	100
LS4-150000	11MAY99	25AUG99	0*	19JUL99A	06AUG99A	100
LS4-160000	11MAY99	25AUG99	0*	06JUL99A	25AUG99A	100
LS4-190000	16SEP99	27OCT99	0*	01SEP99A	07OCT99A	100
LS4-195000		27OCT99	0		25AUG99A	100

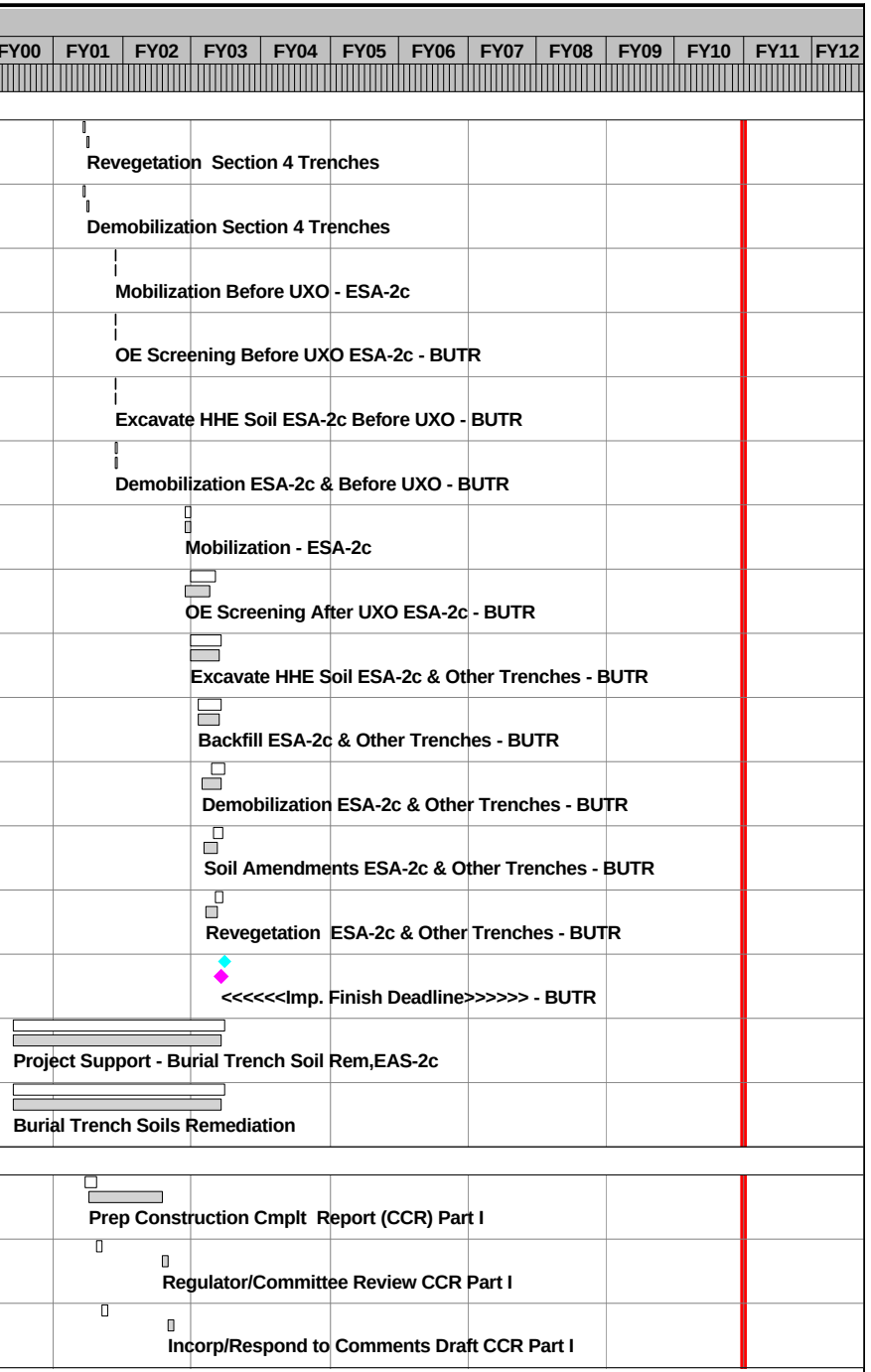


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
LS4-210000	22DEC98	27OCT99	0*	13DEC98A	07OCT99A	100
LS4-INF	22DEC98	27OCT99	0*	13DEC98A	07OCT99A	100
Construction Completion Report						
LS6-200000	28OCT99	30DEC99	0	08OCT99A	07DEC99A	100
LS6-200010	31DEC99	30JAN00	0	08DEC99A	08JAN00A	100
LS6-200020	31JAN00	29FEB00	0	10JAN00A	13FEB00A	100
LS6-200030	01MAR00	30MAR00	0	14FEB00A	20APR00A	100
LS6-200040		30MAR00	0		20APR00A	100
LS6-INF	28OCT99	30MAR00	0*	08OCT99A	20APR00A	100
Burial Trenches Soil Remediation						
Remedial Design						
BT2-120000	22AUG97A	22DEC97	0	22AUG97A	22DEC97A	100
BT2-122000		01OCT97*	0		01OCT97A	100
BT2-125000	02OCT97	05NOV97	0	02OCT97A	05NOV97A	100
BT2-130000	06NOV97	15APR98	0	06NOV97A	15APR98A	100
BT2-140000	16APR98	29MAY98	0	16APR98A	29MAY98A	100
BT2-150000	16APR98	31AUG98	0	16APR98A	28AUG98A	100
BT2-160000	01SEP98	01OCT98	0	31AUG98A	05OCT98A	100
BT2-170000	02OCT98*	15SEP99	0	05OCT98A	15SEP99A	100
BT2-175000		15SEP99	0		15SEP99A	100
BT2-180000	16SEP99	15OCT99	0	16SEP99A	13OCT99A	100

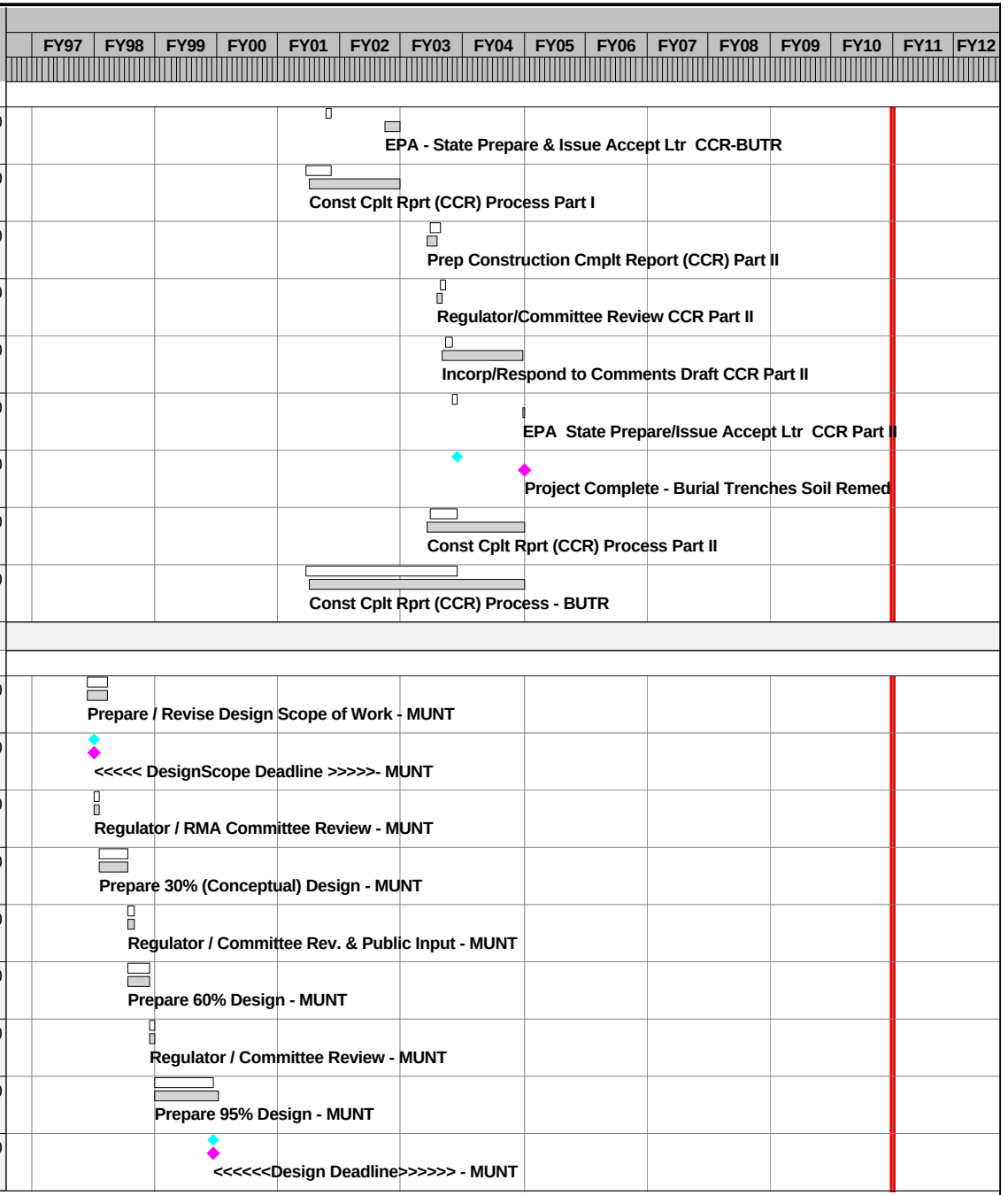


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
BT2-190000	18OCT99	20DEC99	0*	14OCT99A	13DEC99A	100
BT2-INF	22AUG97A	20DEC99	0*	22AUG97A	13DEC99A	100
Procurement						
BT3-109000	11JAN00	26JAN00	0	30DEC99A	21JAN00A	100
BT3-110000	27JAN00	01MAR00	0	22JAN00A	28FEB00A	100
Remediation Activities						
BT4-120000	01MAR00	28APR00	0*	28FEB00A	28APR00A	100
BT4-125000	01MAR00		0	28FEB00A		100
BT4-160000	01MAY00	11OCT00	0*	28APR00A	15SEP00A	100
BT4-130000	01JUN00	15SEP00	0*	01JUN00A	15SEP00A	100
BT4-200110	27JUL00	03OCT00	0*	27JUL00A	03OCT00A	100
BT4-190000	19SEP00	09OCT00	0*	01SEP00A	09OCT00A	100
BT4-240000	19SEP00	09OCT00	0*	01SEP00A	09OCT00A	100
BT4-200120	22SEP00	13OCT00	0*	11SEP00A	13OCT00A	100
BT4-210000	10OCT00	24OCT00	0	10OCT00A	24OCT00A	100
BT4-121000	29JAN01*	02FEB01	0*	22JAN01A	08FEB01A	100
BT4-131000	05FEB01	23FEB01	0*	12FEB01A	14MAR01A	100
BT4-161000	05FEB01	23FEB01	0*	12FEB01A	14MAR01A	100
BT4-191000	26FEB01	01MAR01	0*	14MAR01A	28MAR01A	100
BT4-250000	26FEB01	28FEB01	0*	14MAR01A	22MAR01A	100
BT4-200310	06MAR01	07MAR01	0*	26MAR01A	27MAR01A	100

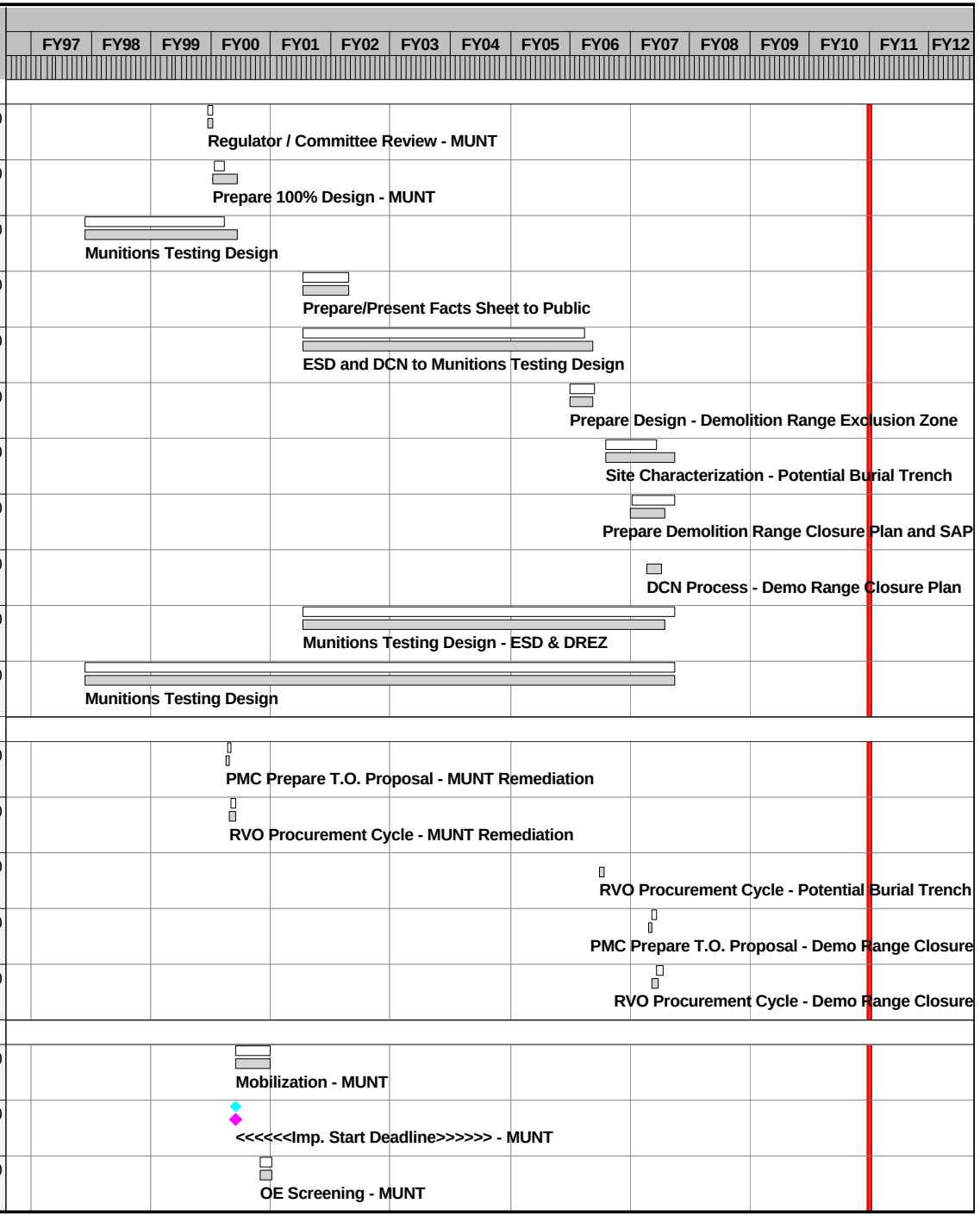
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
BT4-200320	08MAR01	12MAR01	0*	28MAR01A	30MAR01A	100
BT4-210200	07MAR01	12MAR01	0*	26MAR01A	30MAR01A	100
BT4-122000	21AUG01*	22AUG01	0*	21AUG01A	22AUG01A	100
BT4-130100	23AUG01	24AUG01	0*	23AUG01A	24AUG01A	100
BT4-160100	23AUG01	24AUG01	0*	23AUG01A	24AUG01A	100
BT4-210100	27AUG01	29AUG01	0*	27AUG01A	29AUG01A	100
BT4-122100	27AUG02*	24SEP02	0*	27AUG02A	30SEP02A	100
BT4-130200	25SEP02	30JAN03	0*	28AUG02A	30DEC02A	100
BT4-160200	25SEP02	04MAR03	0*	25SEP02A	21FEB03A	100
BT4-170100	07NOV02	07MAR03	0*	04NOV02A	21FEB03A	100
BT4-210210	15JAN03	28MAR03	0*	27NOV02A	06MAR03A	100
BT4-200210	24JAN03	11MAR03	0*	06DEC02A	12FEB03A	100
BT4-200220	30JAN03	13MAR03	0*	11DEC02A	14FEB03A	100
BT4-215000		28MAR03	0		06MAR03A	100
BT4-230000	01MAR00	28MAR03	0*	28FEB00A	06MAR03A	100
BT4-INF	01MAR00	28MAR03	0*	28FEB00A	06MAR03A	100
Construction Completion Report						
BT6-220100	13MAR01	11MAY01	0	02APR01A	25APR02A	100
BT6-220110	12MAY01	12JUN01	0	26APR02A	28MAY02A	100
BT6-220120	13JUN01	13JUL01	0	29MAY02A	27JUN02A	100



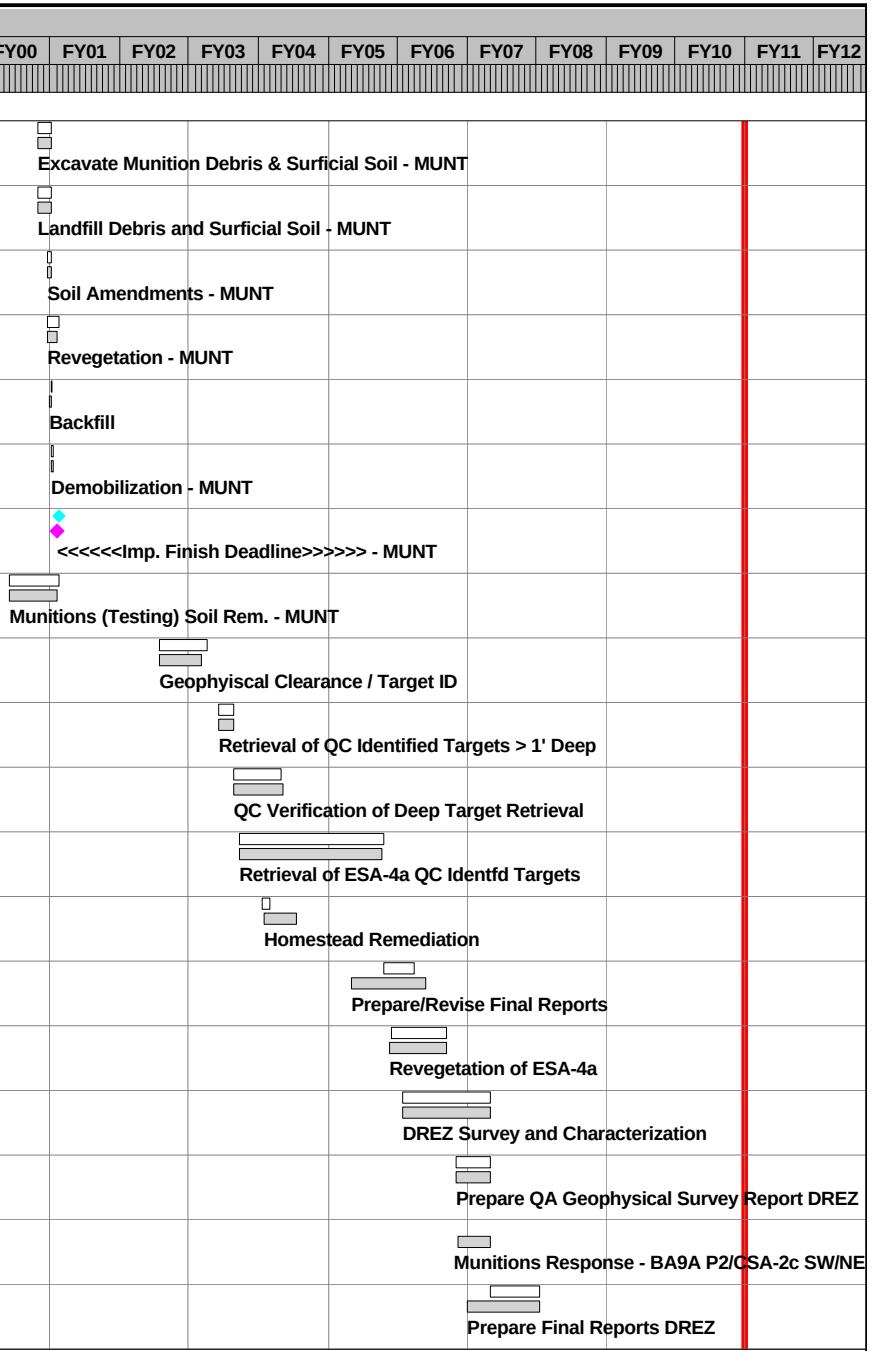
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
BT6-220130	14JUL01	12AUG01	0	28JUN02A	25SEP02A	100
BT6-INF1	13MAR01	12AUG01	0*	02APR01A	25SEP02A	100
BT6-220000	29MAR03	28MAY03	0	07MAR03A	01MAY03A	100
BT6-220010	29MAY03	27JUN03	0	01MAY03A	02JUN03A	100
BT6-220020	28JUN03	28JUL03	0	03JUN03A	28SEP04A	100
BT6-220030	29JUL03	27AUG03	0	29SEP04A	30SEP04A	100
BT6-220040		27AUG03	0		30SEP04A	100
BT6-INF2	29MAR03	27AUG03	0*	07MAR03A	30SEP04A	100
BT6-INF	13MAR01	27AUG03	0*	02APR01A	30SEP04A	100
Munitions (Testing) Soil Remediation						
Remedial Design						
MT2-120000	22AUG97A	22DEC97	0	22AUG97A	22DEC97A	100
MT2-122000		01OCT97*	0		01OCT97A	100
MT2-125000	02OCT97	05NOV97	0	02OCT97A	05NOV97A	100
MT2-130000	06NOV97	15APR98	0	06NOV97A	15APR98A	100
MT2-140000	16APR98	29MAY98	0	16APR98A	29MAY98A	100
MT2-150000	16APR98	31AUG98	0	24APR98A	28AUG98A	100
MT2-160000	01SEP98	01OCT98	0	31AUG98A	25SEP98A	100
MT2-170000	02OCT98*	15SEP99	0*	28SEP98A	13OCT99A	100
MT2-175000		15SEP99	0		15SEP99A	100



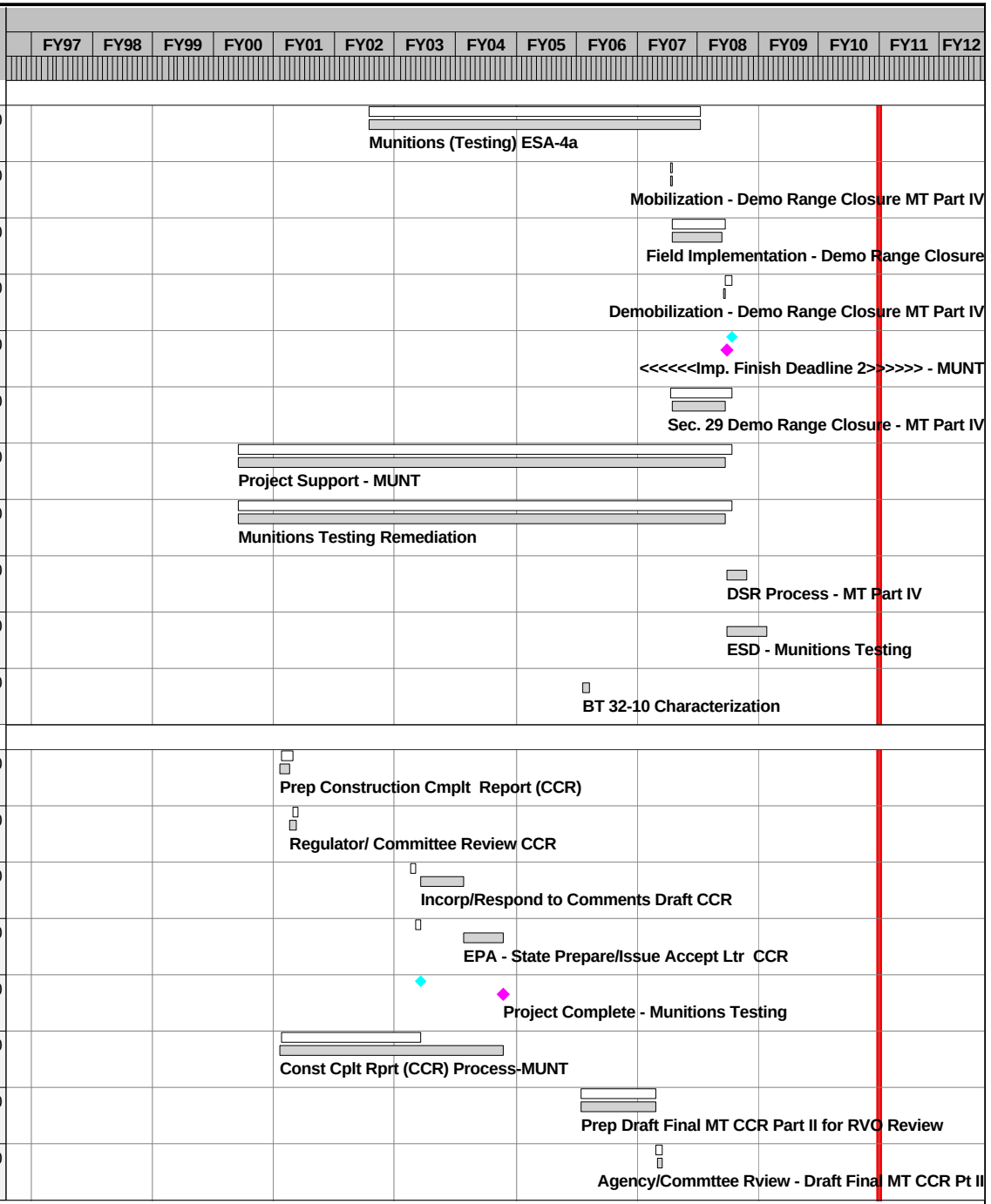
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
MT2-180000	16SEP99	15OCT99	0	16SEP99A	13OCT99A	100
MT2-190000	18OCT99	20DEC99	0*	14OCT99A	08MAR00A	100
MT2-INF1	22AUG97A	20DEC99	0*	22AUG97A	08MAR00A	100
MT2-195000	16APR01*	15JAN02	0*	16APR01A	15JAN02A	100
MT2-200000	16APR01	29DEC05	0*	16APR01A	15FEB06A	100
MT2-500000	30SEP05*	24FEB06	0*	30SEP05A	15FEB06A	100
MT2-190300	08MAY06*	12MAR07	0*	08MAY06A	03JUL07A	100
MT2-500090	16OCT06*	05JUL07	0*	02OCT06A	30APR07A	100
MT2-500220			0	15JAN07A	17APR07A	100
MT2-INF2	16APR01	05JUL07	0*	16APR01A	30APR07A	100
MT2-INF	22AUG97A	05JUL07	0*	22AUG97A	03JUL07A	100
Procurement						
MT3-109000	11JAN00	26JAN00	0	30DEC99A	21JAN00A	100
MT3-110000	27JAN00	01MAR00	0	22JAN00A	01MAR00A	100
MT3-190270			0*	01APR06A	25APR06A	100
MT3-500100	12FEB07	16MAR07	0	19JAN07A	16FEB07A	100
MT3-500110	19MAR07	22APR07	0	17FEB07A	21MAR07A	100
Remediation Activities						
MT4-120000	01MAR00	22SEP00	0*	01MAR00A	22SEP00A	100
MT4-125000	01MAR00		0	01MAR00A		100
MT4-140100	24JUL00	06OCT00	0*	24JUL00A	06OCT00A	100



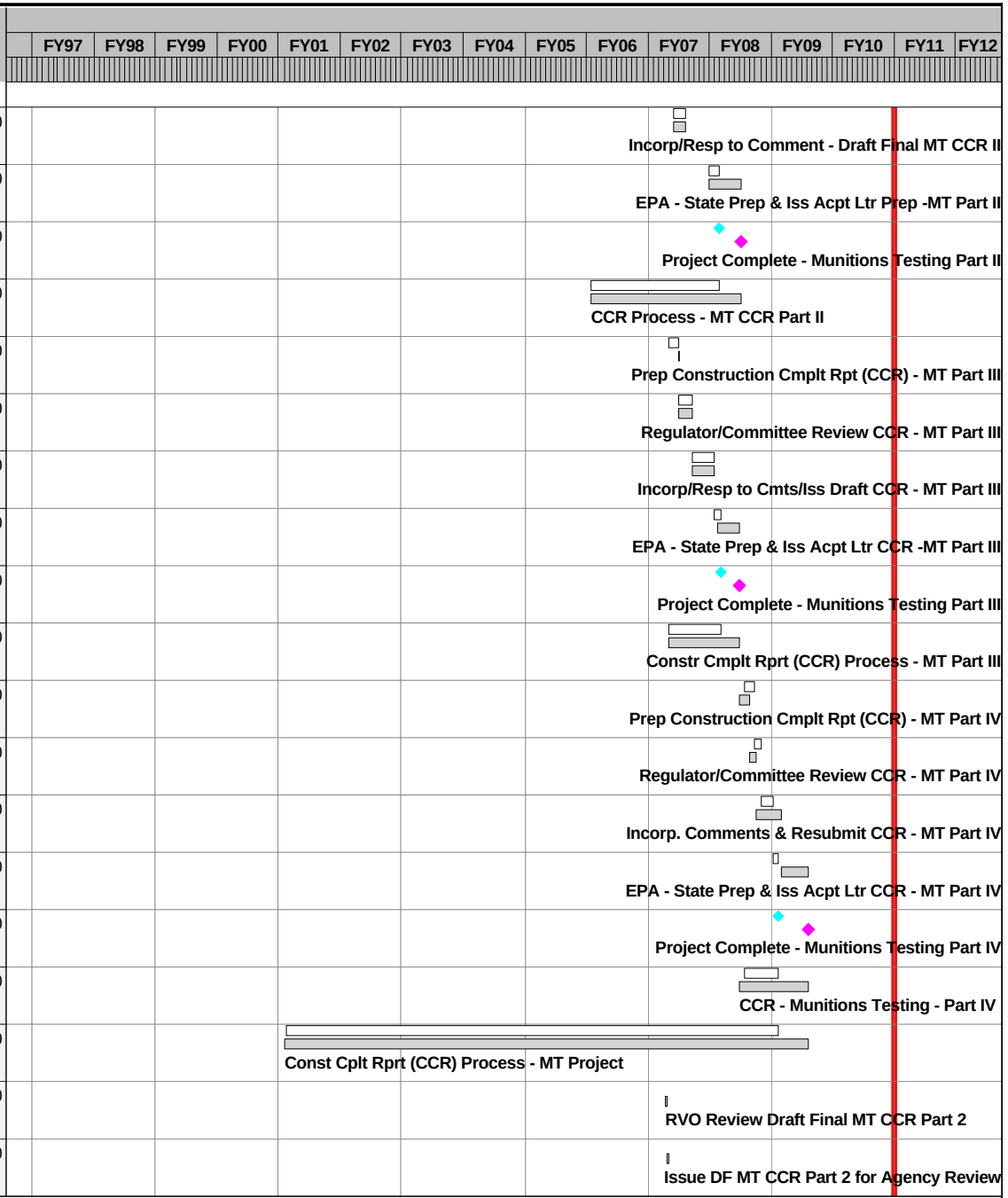
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
MT4-150000	24JUL00	04OCT00	0*	24JUL00A	04OCT00A	100
MT4-160000	24JUL00	04OCT00	0*	24JUL00A	04OCT00A	100
MT4-170110	12SEP00	09OCT00	0*	12SEP00A	09OCT00A	100
MT4-170120	19SEP00	17NOV00	0*	19SEP00A	08NOV00A	100
MT4-190000	02OCT00	04OCT00	0*	01OCT00A	04OCT00A	100
MT4-180000	09OCT00	20OCT00	0*	09OCT00A	20OCT00A	100
MT4-185000		17NOV00	0		08NOV00A	100
MT4-INF1	01MAR00	17NOV00	0*	01MAR00A	08NOV00A	100
MT4-195500	01MAY02*	31DEC02	0*	01MAY02A	06DEC02A	100
MT4-195550	06MAR03	20MAY03	0*	06MAR03A	20MAY03A	100
MT4-195555	21MAY03	26JAN04	0*	21MAY03A	04FEB04A	100
MT4-195560	27JUN03	22JUL05	0*	27JUN03A	12JUL05A	100
MT4-195590	20OCT03	04DEC03	0*	27OCT03A	19APR04A	100
MT4-195580	25JUL05	29DEC05	0*	07FEB05A	22FEB06A	100
MT4-195600	30AUG05	15JUN06	0*	17AUG05A	15JUN06A	100
MT4-300000	02NOV05	06FEB07	0*	02NOV05A	06FEB07A	100
MT4-196000	10AUG06	05FEB07	0*	10AUG06A	05FEB07A	100
MT4-400010			0*	14AUG06A	05FEB07A	100
MT4-196010	06FEB07	16OCT07	0*	04OCT06A	16OCT07A	100



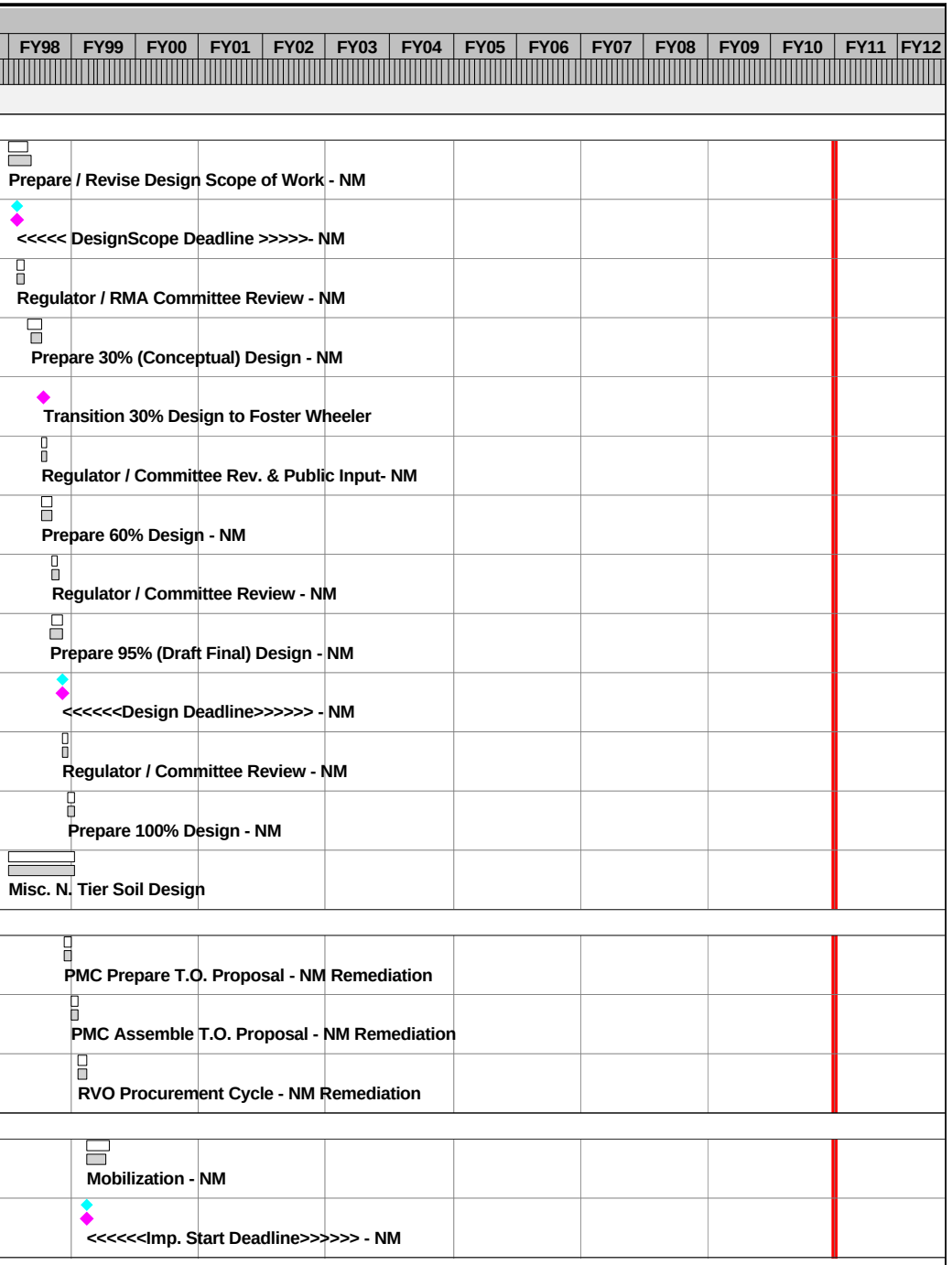
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
MT4-INF2	01MAY02	16OCT07	0*	01MAY02A	16OCT07A	100
MT4-500100	23APR07*	30APR07	0	23APR07A	30APR07A	100
MT4-500120	01MAY07	14MAR08	0*	01MAY07A	29FEB08A	100
MT4-500130	17MAR08	30APR08	0	10MAR08A	14MAR08A	100
MT4-185001		30APR08	0		25MAR08A	100
MT4-INF3	23APR07	30APR08	0*	01MAY07A	14MAR08A	100
MT4-200000	01MAR00	30APR08	0*	01MAR00A	14MAR08A	100
MT4-INF	01MAR00	30APR08	0*	01MAR00A	14MAR08A	100
MT4-500270			0*	26MAR08A	29JUL08A	100
MT4-500280			0*	26MAR08A	18NOV08A	100
MT4-300500			0*	14NOV05A	16DEC05A	100
Construction Completion Report						
MT6-190000	18NOV00	21JAN01	0	09NOV00A	08JAN01A	100
MT6-190010	22JAN01	20FEB01	0	08JAN01A	09FEB01A	100
MT6-190020	02JAN03	31JAN03	0	03MAR03A	20NOV03A	100
MT6-190030	01FEB03	02MAR03	0	21NOV03A	15JUL04A	100
MT6-190040		02MAR03	0		15JUL04A	100
MT6-INF1	18NOV00	02MAR03	0*	09NOV00A	15JUL04A	100
MT6-190200	01NOV05	23JAN07	0	01NOV05A	23JAN07A	100
MT6-190210	24JAN07	07MAR07	0	01FEB07A	07MAR07A	100



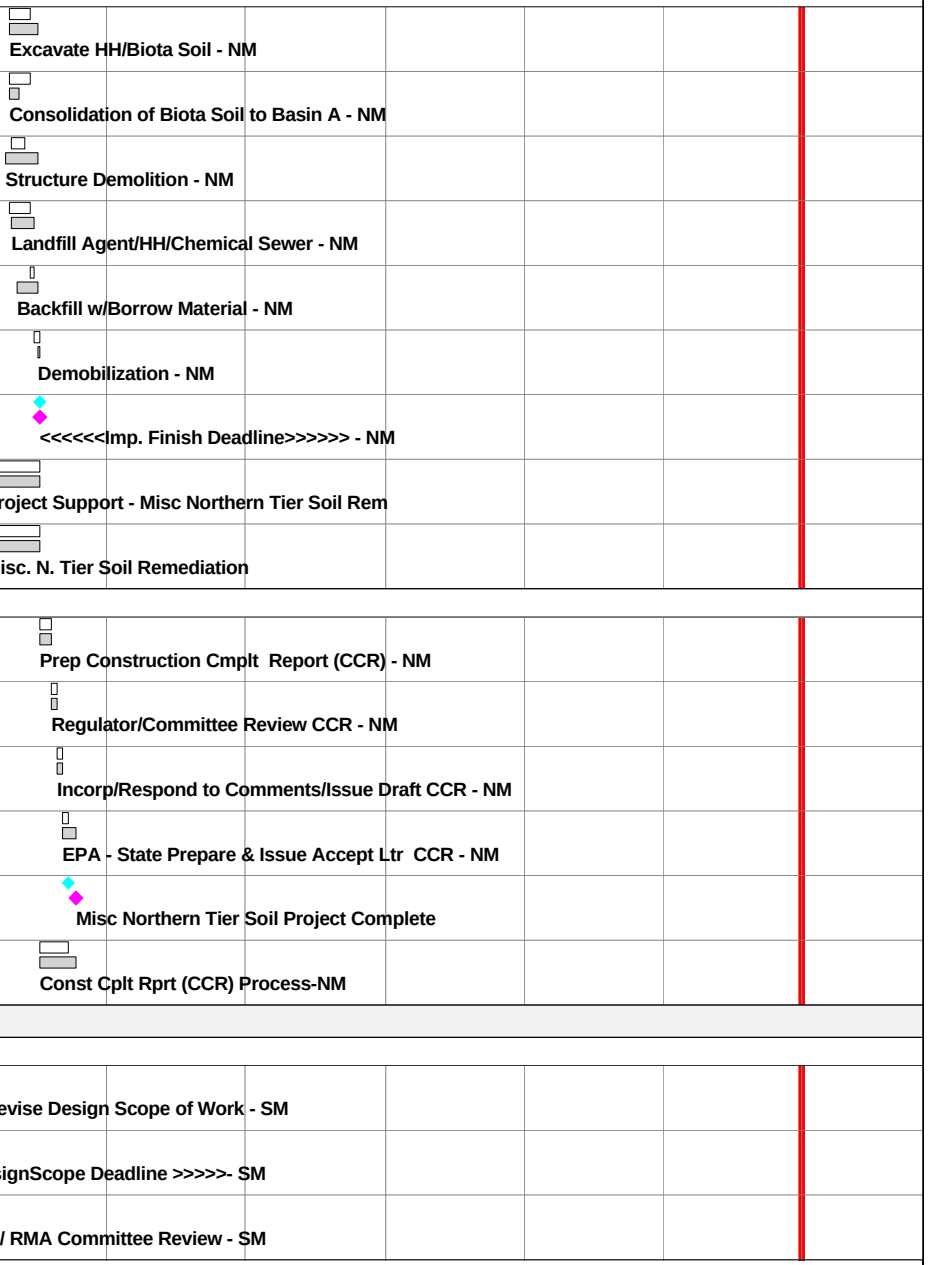
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
MT6-190220	08MAR07	11MAY07	0	08MAR07A	11MAY07A	100
MT6-190230	28SEP07*	24NOV07	0	28SEP07A	08APR08A	100
MT6-190240		24NOV07	0		08APR08A	100
MT6-INF2	01NOV05	24NOV07	0*	01NOV05A	08APR08A	100
MT6-190300	06FEB07	06APR07	0	30MAR07A	05APR07A	100
MT6-190310	07APR07	25JUN07	0	06APR07A	25JUN07A	100
MT6-190320	26JUN07	01NOV07	0	26JUN07A	01NOV07A	100
MT6-190330	02NOV07	04DEC07	0	16NOV07A	26MAR08A	100
MT6-190340		04DEC07	0		26MAR08A	100
MT6-INF3	06FEB07	04DEC07	0*	07FEB07A	26MAR08A	100
MT6-500110	01MAY08	30JUN08	0*	26MAR08A	27MAY08A	100
MT6-500120	01JUL08	31JUL08	0*	30MAY08A	10JUL08A	100
MT6-500130	01AUG08	10OCT08	0*	11JUL08A	05DEC08A	100
MT6-500140	11OCT08	09NOV08	0*	08DEC08A	14MAY09A	100
MT6-500150		09NOV08	0		14MAY09A	100
MT6-INF4	01MAY08	09NOV08	0*	26MAR08A	14MAY09A	100
MT6-INF	18NOV00	09NOV08	0*	09NOV00A	14MAY09A	100
MT6-190250			0	17JAN07A	23JAN07A	100
MT6-190260			0	26JAN07A	31JAN07A	100



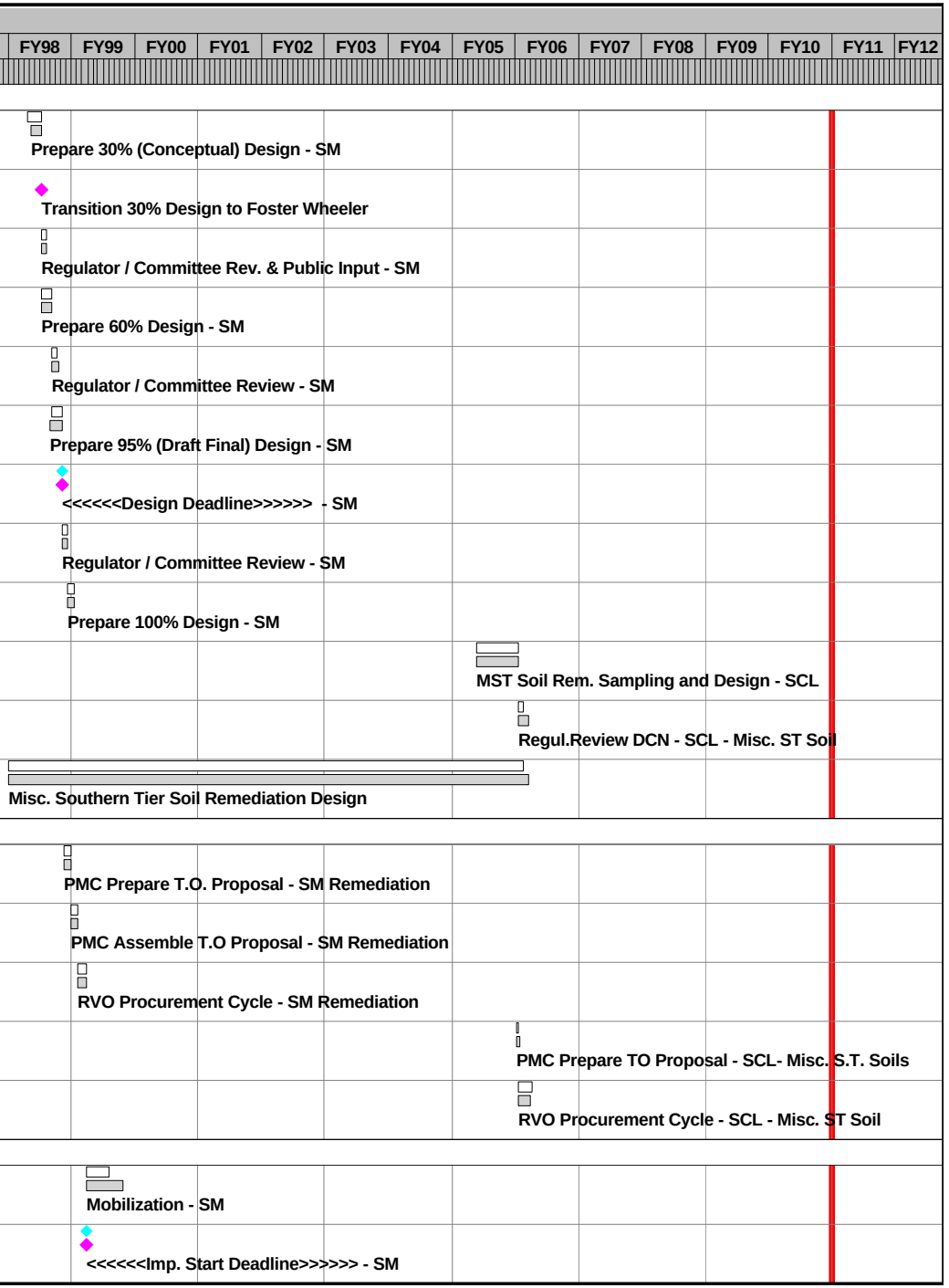
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Miscellaneous Northern Tier Soil Remediation						
Remedial Design						
NM2-120000	29SEP97*	19JAN98	0	29SEP97A	09FEB98A	100
NM2-122000		24NOV97*	0		24NOV97A	100
NM2-125000	25NOV97	29DEC97	0	25NOV97A	29DEC97A	100
NM2-130000	20JAN98	06APR98	0	10FEB98A	06APR98A	100
NM2-131000			0		22APR98A	100
NM2-140000	07APR98	06MAY98	0	07APR98A	08MAY98A	100
NM2-150000	07APR98	09JUN98	0	07APR98A	08JUN98A	100
NM2-160000	10JUN98	10JUL98	0	08JUN98A	16JUL98A	100
NM2-170000	10JUN98	04AUG98	0	04JUN98A	03AUG98A	100
NM2-175000		04AUG98*	0		03AUG98A	100
NM2-180000	05AUG98	03SEP98	0	04AUG98A	04SEP98A	100
NM2-190000	04SEP98	14OCT98	0	08SEP98A	13OCT98A	100
NM2-INF	29SEP97	14OCT98	0*	29SEP97A	13OCT98A	100
Procurement						
NM3-109000	17AUG98	22SEP98	0	17AUG98A	22SEP98A	100
NM3-109010	23SEP98	04NOV98	0	23SEP98A	04NOV98A	100
NM3-110000	05NOV98	22DEC98	0	04NOV98A	22DEC98A	100
Remediation Activities						
NM4-120000	22DEC98	04MAY99	0*	22DEC98A	16APR99A	100
NM4-125000	22DEC98		0	22DEC98A		100



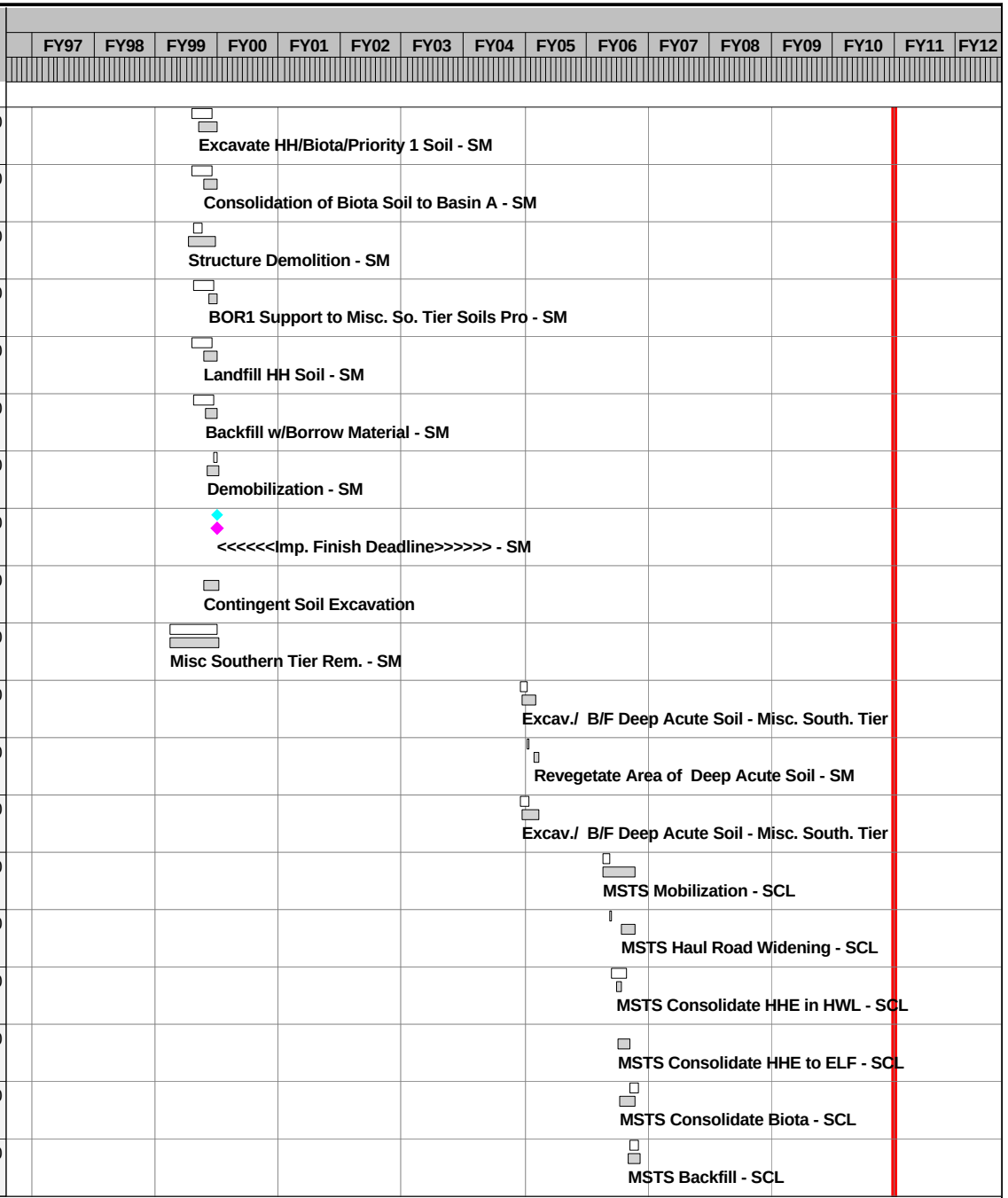
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
NM4-130000	05MAY99	26AUG99	0*	04MAY99A	01OCT99A	100
NM4-135000	05MAY99	26AUG99	0*	04MAY99A	25JUN99A	100
NM4-135001	12MAY99	19JUL99	0*	20APR99A	28SEP99A	100
NM4-137500	05MAY99	26AUG99	0*	11MAY99A	10SEP99A	100
NM4-157500	27AUG99	10SEP99	0*	11JUN99A	01OCT99A	100
NM4-240000	13SEP99	07OCT99	0*	05OCT99A	07OCT99A	100
NM4-245000		07OCT99	0		07OCT99A	100
NM4-260000	22DEC98	07OCT99	0*	22DEC98A	07OCT99A	100
NM4-INF	22DEC98	07OCT99	0*	22DEC98A	07OCT99A	100
Construction Completion Report						
NM6-250000	08OCT99	08DEC99	0	08OCT99A	07DEC99A	100
NM6-250010	09DEC99	10JAN00	0	08DEC99A	10JAN00A	100
NM6-250020	11JAN00	09FEB00	0	11JAN00A	13FEB00A	100
NM6-250030	10FEB00	10MAR00	0	14FEB00A	20APR00A	100
NM6-250040		10MAR00	0		20APR00A	100
NM6-INF	08OCT99	10MAR00	0*	08OCT99A	20APR00A	100
Miscellaneous. Southern Tier Soil Remediation						
Remedial Design						
SM2-120000	29SEP97*	19JAN98	0	29SEP97A	09FEB98A	100
SM2-122000		24NOV97*	0		24NOV97A	100
SM2-125000	25NOV97	29DEC97	0	25NOV97A	29DEC97A	100



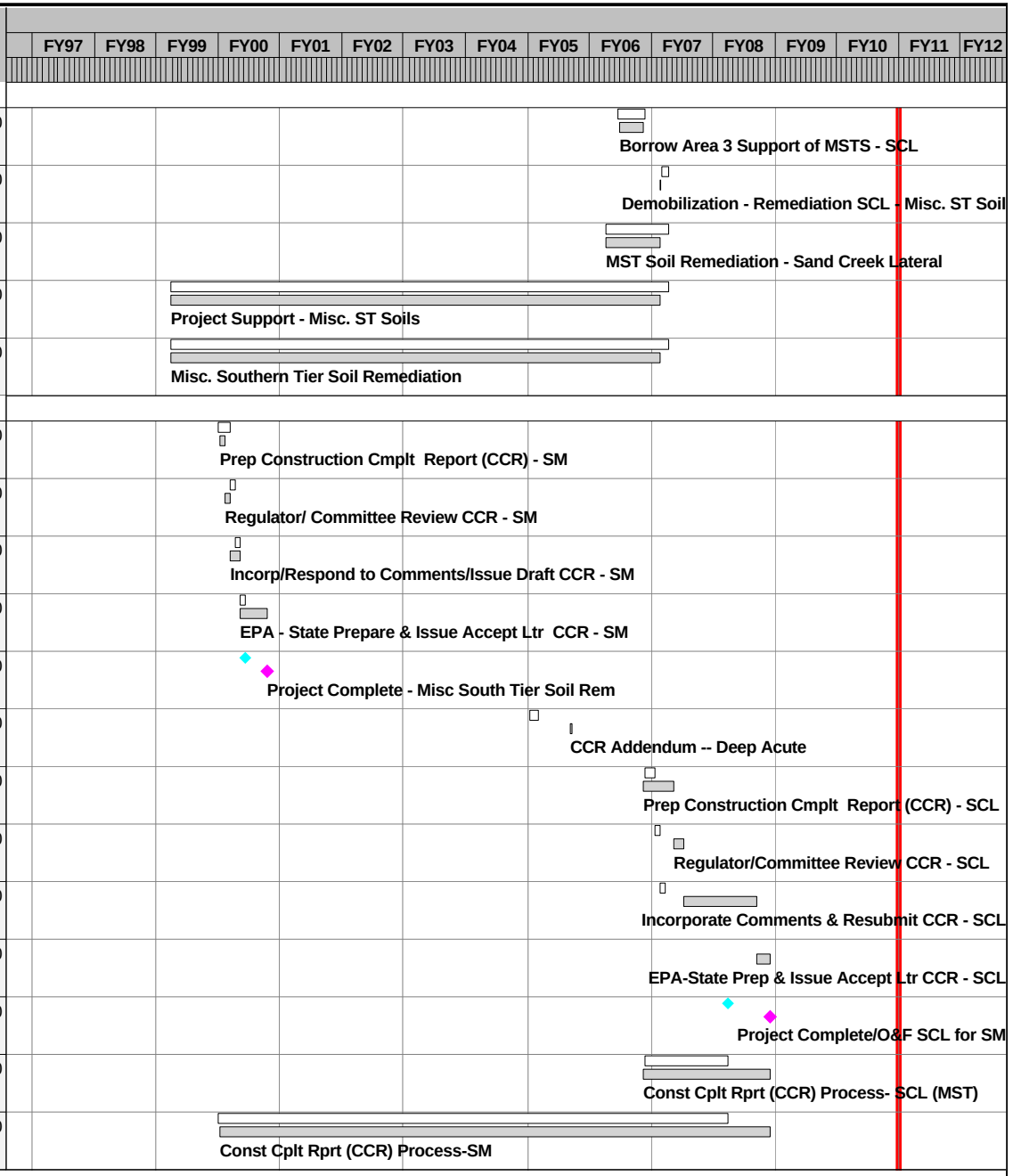
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SM2-130000	20JAN98	06APR98	0	10FEB98A	06APR98A	100
SM2-131000			0		06APR98A	100
SM2-140000	07APR98	06MAY98	0	07APR98A	08MAY98A	100
SM2-150000	07APR98	09JUN98	0	07APR98A	08JUN98A	100
SM2-160000	10JUN98	10JUL98	0	09JUN98A	16JUL98A	100
SM2-170000	10JUN98	04AUG98	0	03JUN98A	03AUG98A	100
SM2-175000		04AUG98	0		03AUG98A	100
SM2-180000	05AUG98	03SEP98	0	04AUG98A	04SEP98A	100
SM2-190000	04SEP98	14OCT98	0	08SEP98A	13OCT98A	100
SM2-185000	22FEB05*	21OCT05	0*	22FEB05A	19OCT05A	100
SM2-190100	24OCT05	18NOV05	0*	20OCT05A	22DEC05A	100
SM2-INF	29SEP97	18NOV05	0*	29SEP97A	22DEC05A	100
Procurement						
SM3-109000	17AUG98	22SEP98	0	17AUG98A	23SEP98A	100
SM3-109010	23SEP98	04NOV98	0	24SEP98A	04NOV98A	100
SM3-110000	05NOV98	22DEC98	0	04NOV98A	22DEC98A	100
SM3-301000	10OCT05	21OCT05	0	10OCT05A	25OCT05A	100
SM3-315000	24OCT05	10JAN06	0*	25OCT05A	27DEC05A	100
Remediation Activities						
SM4-120000	22DEC98	04MAY99	0*	22DEC98A	22JUL99A	100
SM4-125000	22DEC98		0	22DEC98A		100



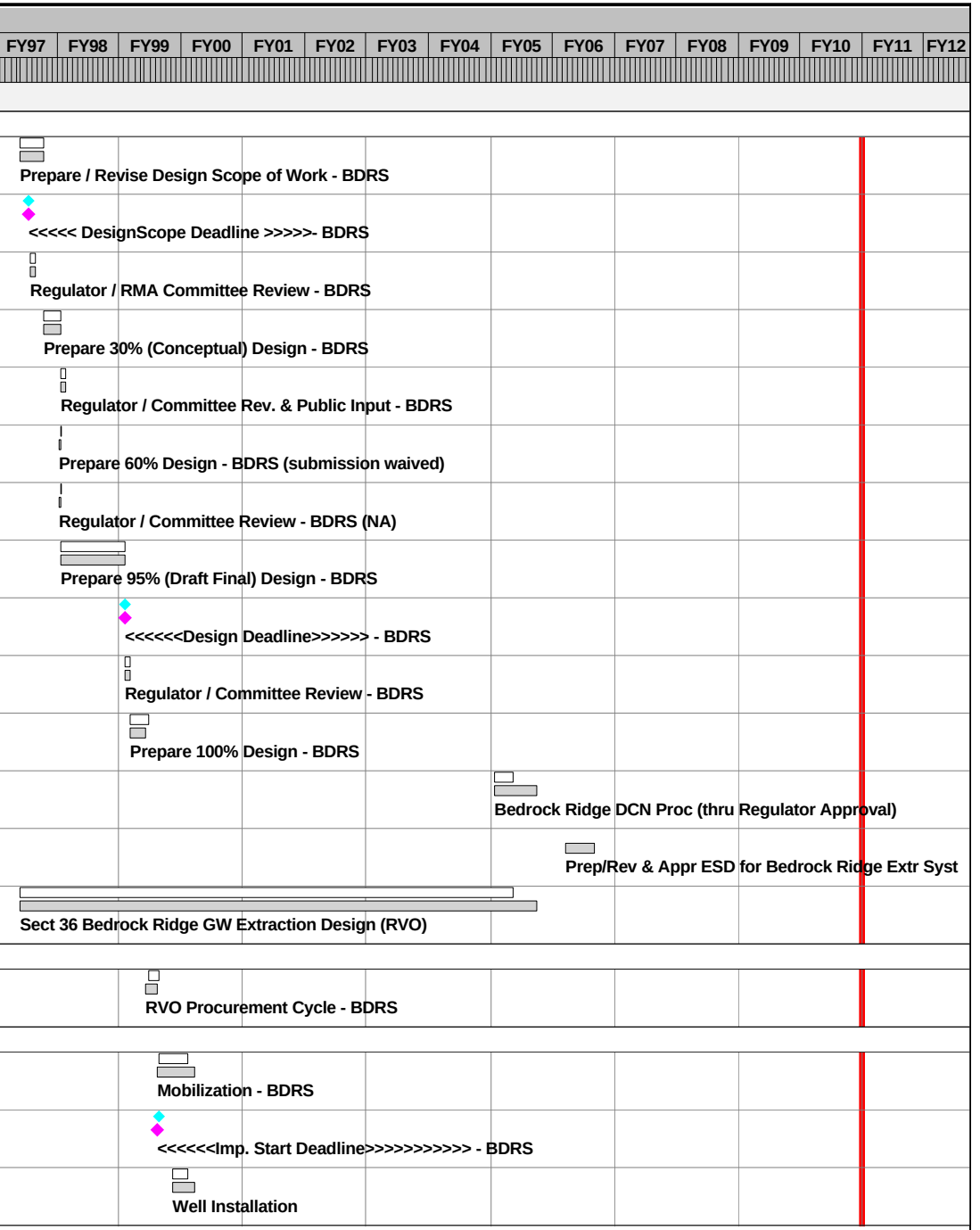
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SM4-130000	04MAY99	31AUG99	0*	14JUN99A	30SEP99A	100
SM4-140000	04MAY99	31AUG99	0*	14JUL99A	30SEP99A	100
SM4-140001	18MAY99	06JUL99	0*	12APR99A	17SEP99A	100
SM4-140100	18MAY99	15SEP99	0*	12AUG99A	05OCT99A	100
SM4-150000	04MAY99	31AUG99	0*	19JUL99A	30SEP99A	100
SM4-160000	18MAY99	15SEP99	0*	23JUL99A	05OCT99A	100
SM4-180000	16SEP99	06OCT99	0*	04AUG99A	07OCT99A	100
SM4-185000		06OCT99	0		30SEP99A	100
SM4-210000			0*	15JUL99A	07OCT99A	100
SM4-INF1	22DEC98	06OCT99	0*	22DEC98A	07OCT99A	100
SM4-131000	09SEP04*	14OCT04	0*	13SEP04A	03DEC04A	100
SM4-130980	15OCT04	21OCT04	0*	29NOV04A	21DEC04A	100
SM4-INF2	09SEP04	21OCT04	0*	13SEP04A	21DEC04A	100
SM4-326000	10JAN06*	13FEB06	0*	06JAN06A	21JUL06A	100
SM4-430300	14FEB06	22FEB06	0*	27APR06A	12JUL06A	100
SM4-305200	23FEB06	26MAY06	0*	29MAR06A	26APR06A	100
SM4-422000			0*	12APR06A	15JUN06A	100
SM4-421000	20JUN06	04AUG06	0*	18APR06A	21JUL06A	100
SM4-306000	20JUN06	10AUG06	0*	06JUN06A	18AUG06A	100



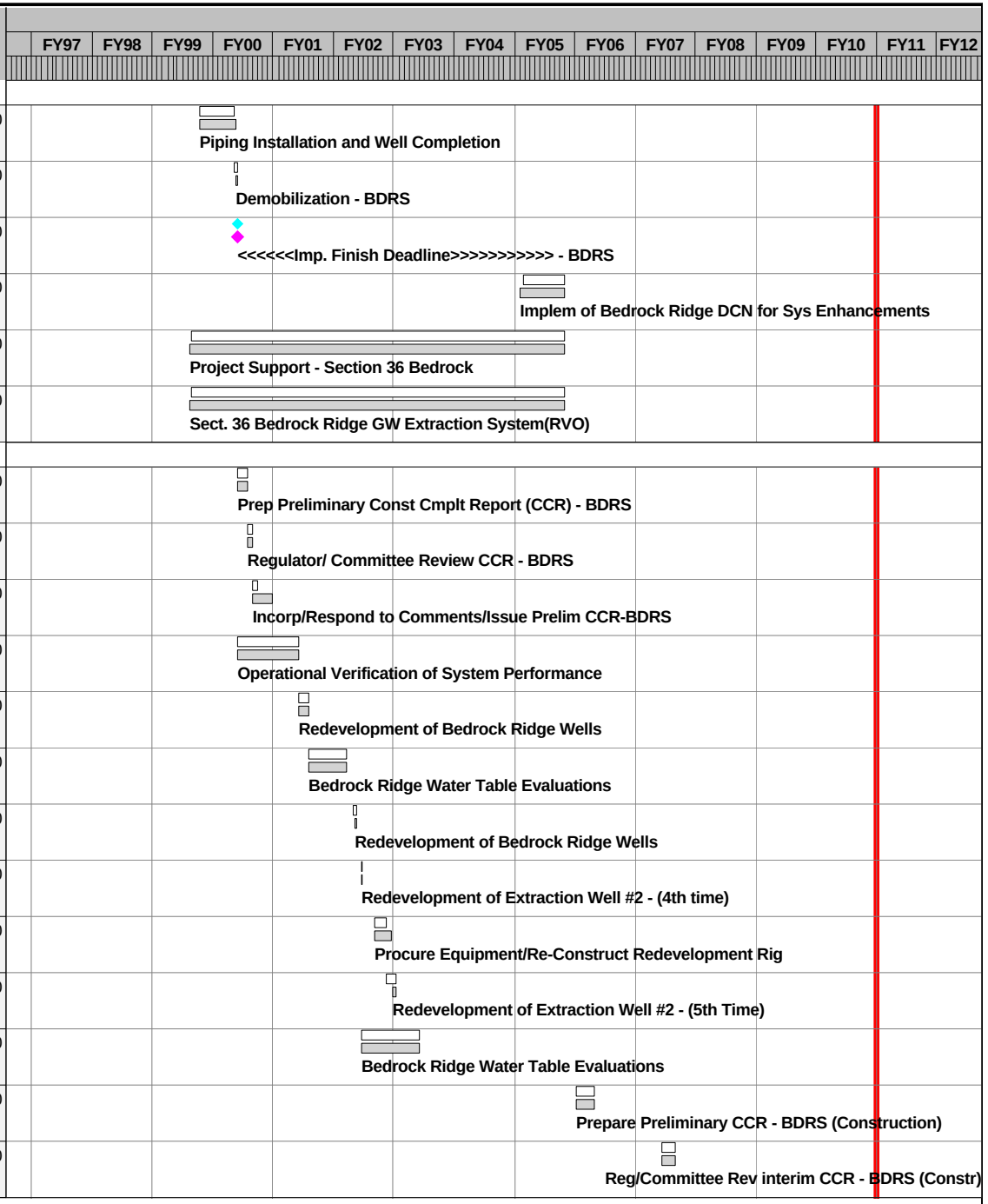
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SM4-500000	20MAR06	22AUG06	0*	29MAR06A	18AUG06A	100
SM4-169000	08DEC06	11JAN07	0*	21NOV06A	22NOV06A	100
SM4-INF3	10JAN06	11JAN07	0*	06JAN06A	22NOV06A	100
SM4-200000	22DEC98	11JAN07	0*	22DEC98A	22NOV06A	100
SM4-INF	22DEC98	11JAN07	0*	22DEC98A	22NOV06A	100
Construction Completion Report						
SM6-190000	07OCT99	07DEC99	0	08OCT99A	12NOV99A	100
SM6-190010	08DEC99	09JAN00	0	12NOV99A	14DEC99A	100
SM6-190020	10JAN00	08FEB00	0	15DEC99A	13FEB00A	100
SM6-190030	09FEB00	09MAR00	0	14FEB00A	14JUL00A	100
SM6-190040		09MAR00	0		14JUL00A	100
SM6-130500	15OCT04	29NOV04	0	13JUN05A	22JUN05A	100
SM6-100000	23AUG06	22OCT06	0	21AUG06A	15FEB07A	100
SM6-100010	23OCT06	21NOV06	0	16FEB07A	09APR07A	100
SM6-100020	22NOV06	23DEC06	0*	10APR07A	19JUN08A	100
SM6-210031			0*	19JUN08A	02SEP08A	100
SM6-100040		28DEC07	0		02SEP08A	100
SM6-INF1	23AUG06	28DEC07	0*	21AUG06A	02SEP08A	100
SM6-INF	07OCT99	28DEC07	0*	08OCT99A	02SEP08A	100



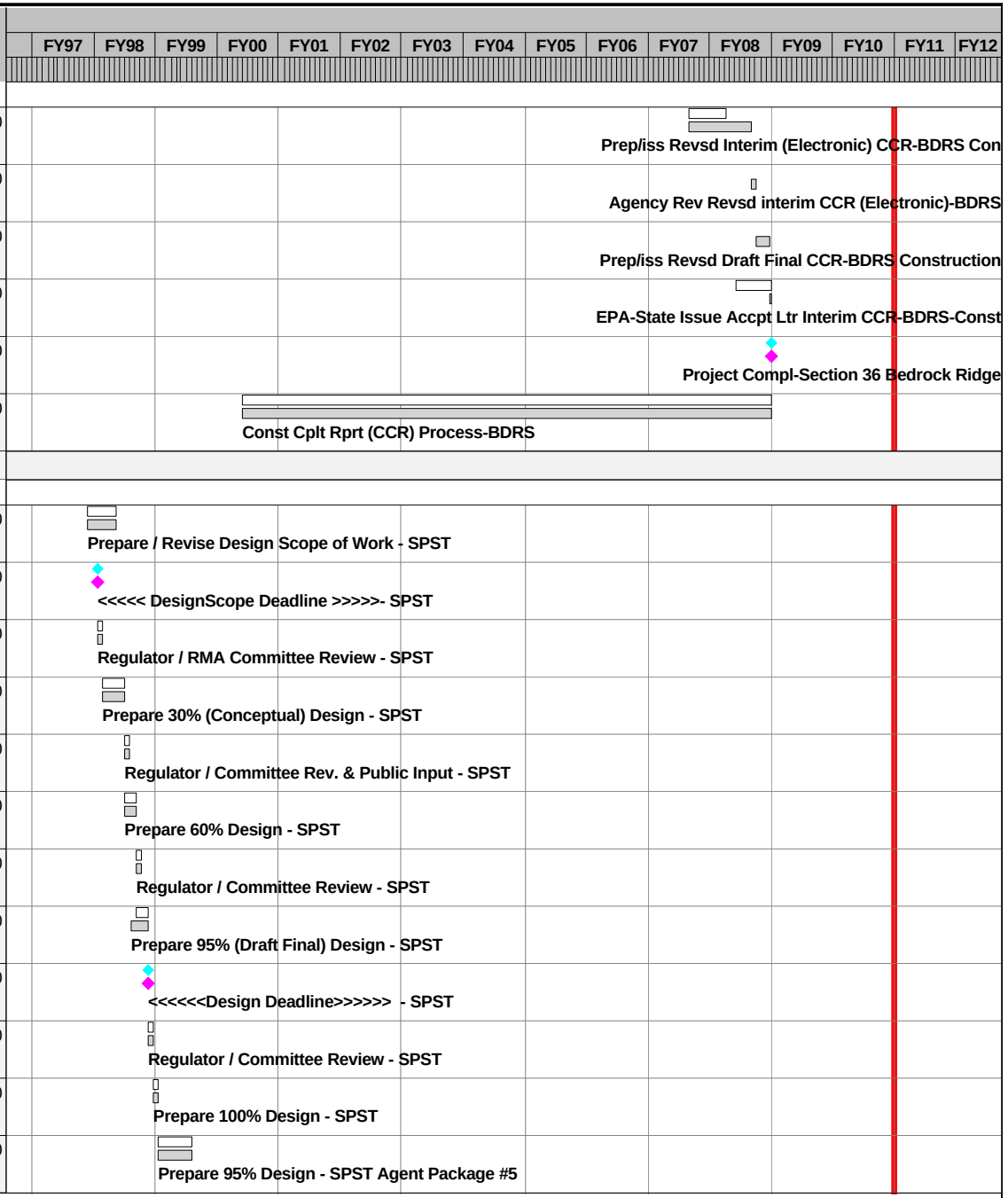
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Bedrock Ridge GW Plume Extr System						
Remedial Design						
BD2-120000	24FEB97A	15JUL97A	0	24FEB97A	15JUL97A	100
BD2-122000		18APR97A	0		18APR97A	100
BD2-125000	21APR97A	21MAY97A	0	21APR97A	21MAY97A	100
BD2-130000	16JUL97A	17OCT97	0	16JUL97A	17OCT97A	100
BD2-140000	18OCT97	17NOV97	0	18OCT97A	17NOV97A	100
BD2-150000	20OCT97	17OCT97	0	17OCT97A	17OCT97A	100
BD2-160000	18OCT97	17OCT97	0	17OCT97A	17OCT97A	100
BD2-170000	20OCT97	02NOV98	0	20OCT97A	02NOV98A	100
BD2-175000		02NOV98	0		02NOV98A	100
BD2-180000	03NOV98	05DEC98	0	03NOV98A	04DEC98A	100
BD2-190000	07DEC98	22MAR99	0	07DEC98A	10MAR99A	100
BD2-190050	26OCT04*	15FEB05	0*	26OCT04A	29JUN05A	100
BD2-191000			0*	22DEC05A	08JUN06A	100
BD2-INF	24FEB97A	15FEB05	0*	24FEB97A	29JUN05A	100
Procurement						
BD3-110000	23MAR99	21MAY99	0	11MAR99A	19MAY99A	100
Remediation Activities						
BD4-120000	21MAY99	12NOV99	0*	19MAY99A	17DEC99A	100
BD4-125000	21MAY99		0	19MAY99A		100
BD4-125010	13AUG99	12NOV99	0*	13AUG99A	17DEC99A	100



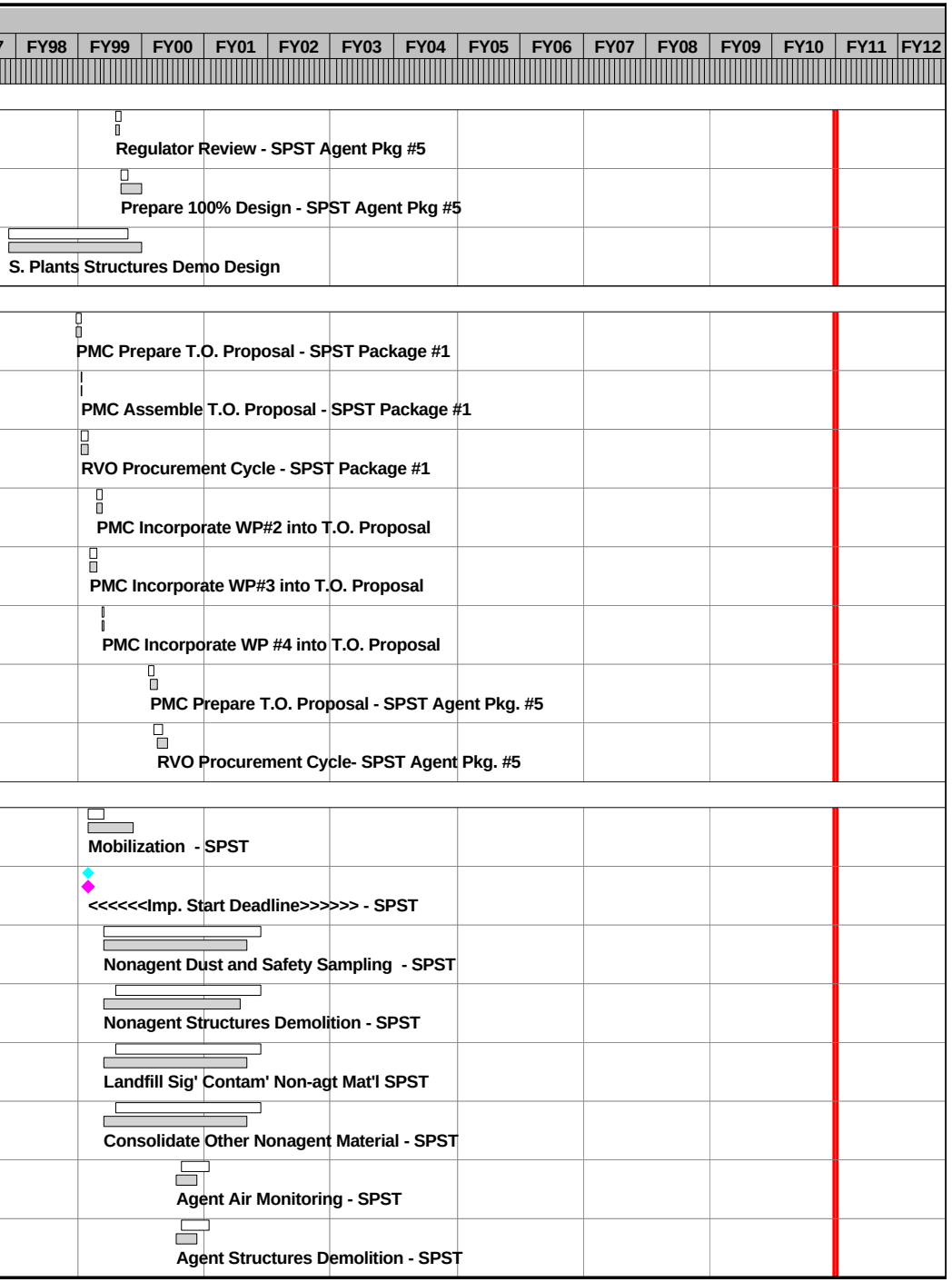
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
BD4-150000	19JUL99	09FEB00	0*	19JUL99A	22FEB00A	100
BD4-250000	10FEB00	25FEB00	0*	23FEB00A	25FEB00A	100
BD4-255000		25FEB00	0		25FEB00A	100
BD4-400000	23NOV04	05AUG05	0*	08NOV04A	05AUG05A	100
BD4-270000	21MAY99	05AUG05	0*	19MAY99A	05AUG05A	100
BD4-INF	21MAY99	05AUG05	0*	19MAY99A	05AUG05A	100
Construction Completion Report						
BD6-260000	26FEB00	25APR00	0	26FEB00A	28APR00A	100
BD6-260010	26APR00	25MAY00	0	29APR00A	30MAY00A	100
BD6-260020	26MAY00	25JUN00	0	31MAY00A	28SEP00A	100
BD6-260025	03MAR00	02MAR01	0	03MAR00A	02MAR01A	100
BD6-260026	05MAR01	01MAY01	0	05MAR01A	01MAY01A	100
BD6-260027	02MAY01	20DEC01	0	02MAY01A	20DEC01A	100
BD6-260028	01FEB02*	19FEB02	0	04FEB02A	19FEB02A	100
BD6-260029	18MAR02*	21MAR02	0	18MAR02A	21MAR02A	100
BD6-260030	04JUN02*	16AUG02	0	04JUN02A	18SEP02A	100
BD6-260035	19AUG02	11OCT02	0	24SEP02A	11OCT02A	100
BD6-260040	22MAR02	28FEB03	0	22MAR02A	28FEB03A	100
BD6-260110	10OCT05*	31JAN06	0	10OCT05A	31JAN06A	100
BD6-260120	14MAR07*	31MAY07	0	14MAR07A	31MAY07A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
BD6-260122	01JUN07	04JAN08	0	01JUN07A	05JUN08A	100
BD6-260124			0	06JUN08A	07JUL08A	100
BD6-260126			0	08JUL08A	23SEP08A	100
BD6-260140	07MAR08	30SEP08	0	24SEP08A	30SEP08A	100
BD6-260150		30SEP08	0		30SEP08A	100
BD6-INF	26FEB00	30SEP08	0*	26FEB00A	30SEP08A	100
South Plants Structure Demolition and Removal						
Remedial Design						
SS2-120000	28AUG97A	13FEB98	0	28AUG97A	12FEB98A	100
SS2-122000		20OCT97*	0		20OCT97A	100
SS2-125000	21OCT97	20NOV97	0	21OCT97A	20NOV97A	100
SS2-130000	21NOV97	30MAR98	0	21NOV97A	27MAR98A	100
SS2-140000	31MAR98	29APR98	0	28MAR98A	01MAY98A	100
SS2-150000	31MAR98	09JUN98	0	30MAR98A	09JUN98A	100
SS2-160000	10JUN98	10JUL98	0	10JUN98A	10JUL98A	100
SS2-170000	10JUN98	17AUG98	0	13MAY98A	14AUG98A	100
SS2-175000		17AUG98	0		14AUG98A	100
SS2-180000	18AUG98	17SEP98	0	14AUG98A	17SEP98A	100
SS2-190000	18SEP98	20OCT98	0	18SEP98A	19OCT98A	100
SS2-196001	21OCT98	30APR99	0	20OCT98A	30APR99A	100

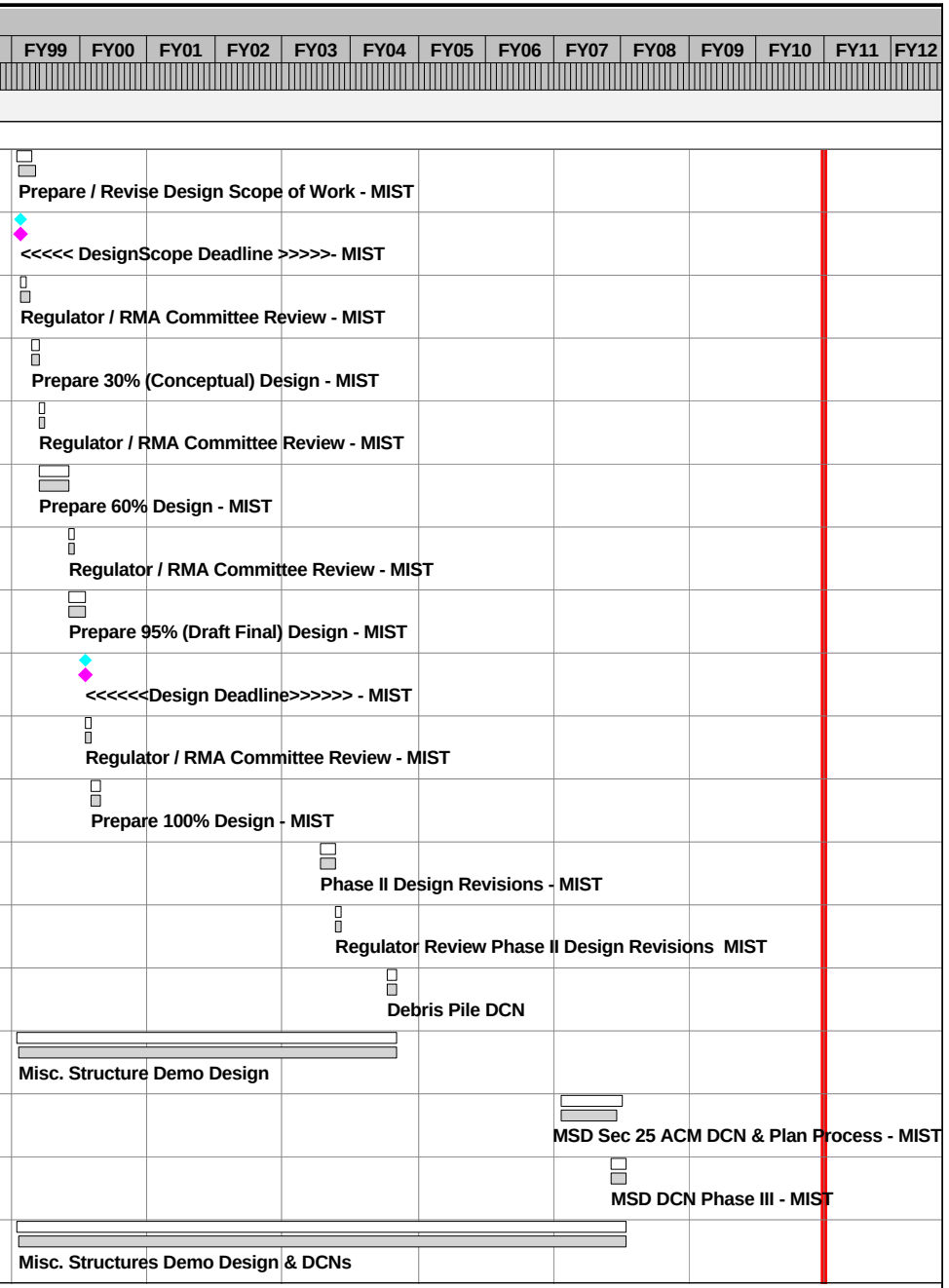


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SS2-196032	01MAY99	01JUN99	0	01MAY99A	28MAY99A	100
SS2-196033	02JUN99	13JUL99	0	01JUN99A	04OCT99A	100
SS2-INF	28AUG97A	13JUL99	0*	28AUG97A	04OCT99A	100
Procurement						
SS3-090000	18SEP98	13OCT98	0	18SEP98A	13OCT98A	100
SS3-090010	14OCT98	19OCT98	0	14OCT98A	19OCT98A	100
SS3-100000	21OCT98	25NOV98	0	20OCT98A	22NOV98A	100
SS32100010	18JAN99*	12FEB99	0	18JAN99A	12FEB99A	100
SS33100010	07DEC98*	19JAN99	0	07DEC98A	19JAN99A	100
SS34100010	17FEB99*	25FEB99	0	17FEB99A	25FEB99A	100
SS35100010	08NOV99*	07DEC99	0	24NOV99A	29DEC99A	100
SS35100020	08DEC99	26JAN00	0	29DEC99A	24FEB00A	100
Remediation Activities						
SS4-105000	25NOV98	26FEB99	0	22NOV98A	16AUG99A	100
SS4-106000	25NOV98		0	22NOV98A		100
SS4-110000	01MAR99	20AUG01	0	01MAR99A	30MAY01A	100
SS4-115000	03MAY99	20AUG01	0	01MAR99A	23APR01A	100
SS4-120000	03MAY99	20AUG01	0	01MAR99A	30MAY01A	100
SS4-125000	03MAY99	20AUG01	0	01MAR99A	30MAY01A	100
SS4-130000	15MAY00	30OCT00	0*	24APR00A	17AUG00A	100
SS4-135000	15MAY00	30OCT00	0*	24APR00A	17AUG00A	100

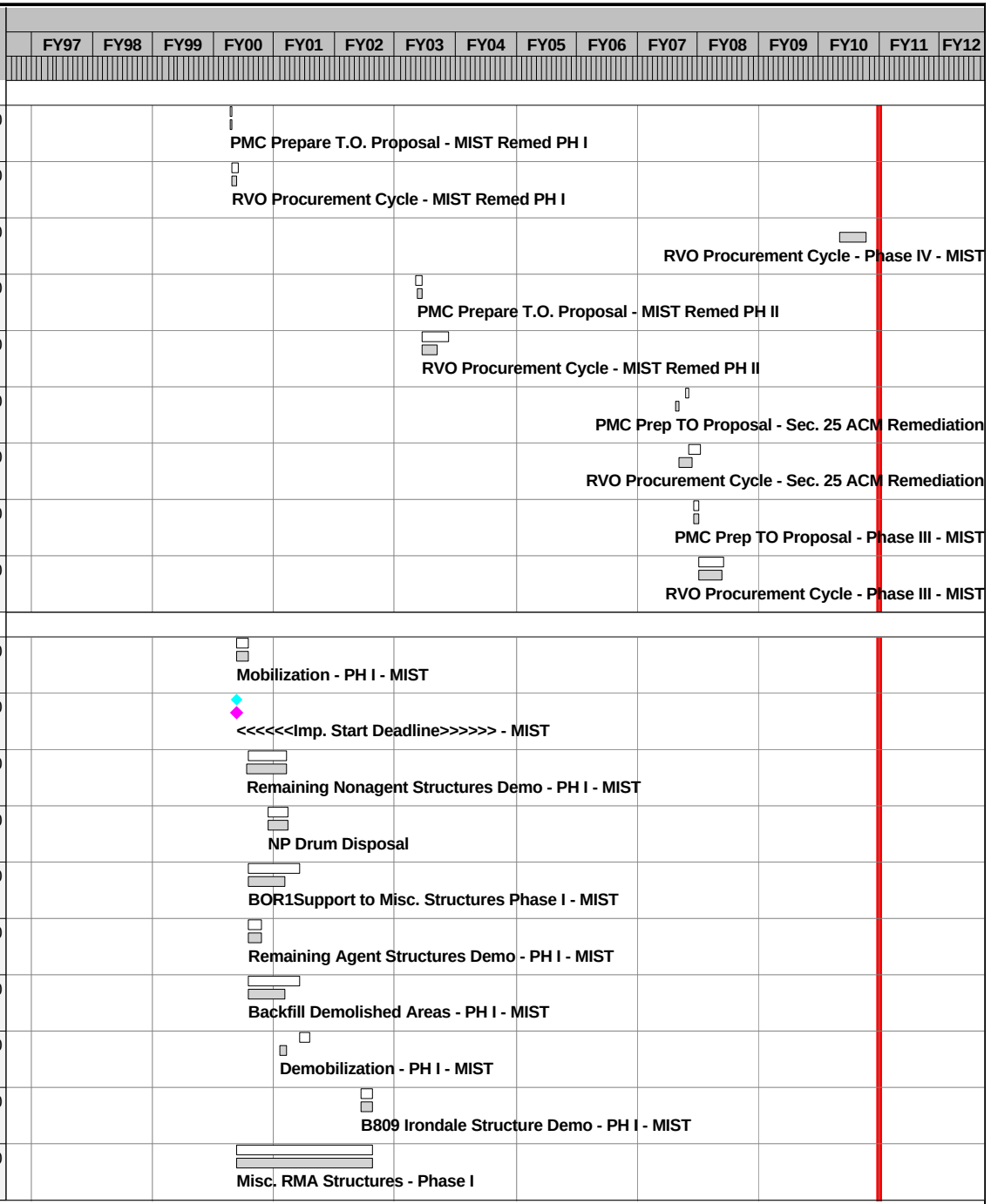


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SS4-140000	15MAY00	30OCT00	0	17AUG00A	17AUG00A	100
SS4-145000	15MAY00	30OCT00	0*	24APR00A	17AUG00A	100
SS4-160000	21AUG01	11OCT01	0	30APR01A	30MAY01A	100
SS4-161000		11OCT01	0		30MAY01A	100
SS4-170000	25NOV98	11OCT01	0*	22NOV98A	30MAY01A	100
SS4-INF	25NOV98	11OCT01	0*	22NOV98A	30MAY01A	100
Construction Completion Report						
SS6-165000	01MAY00	30JUN00	0	01MAY00A	12JUL00A	100
SS6-165010	01JUL00	31JUL00	0	12JUL00A	17AUG00A	100
SS6-165020	01AUG00	30AUG00	0	18AUG00A	08SEP00A	100
SS6-165030	31AUG00	30SEP00	0	11SEP00A	29SEP00A	100
SS6-165040		30SEP00	0		29SEP00A	100
SS6-INF1	01MAY00	30SEP00	0*	01MAY00A	29SEP00A	100
SS6-165001	12OCT01	12DEC01	0	31MAY01A	18DEC01A	100
SS6-165011	13DEC01	14JAN02	0	20DEC01A	25JAN02A	100
SS6-165021	15JAN02	13FEB02	0	26JAN02A	18APR02A	100
SS6-165031	14FEB02	15MAR02	0*	19APR02A	02JUL02A	100
SS6-165041		15MAR02	0		02JUL02A	100
SS6-INF2	12OCT01	15MAR02	0*	31MAY01A	02JUL02A	100
SS6-INF	01MAY00	15MAR02	0*	01MAY00A	02JUL02A	100

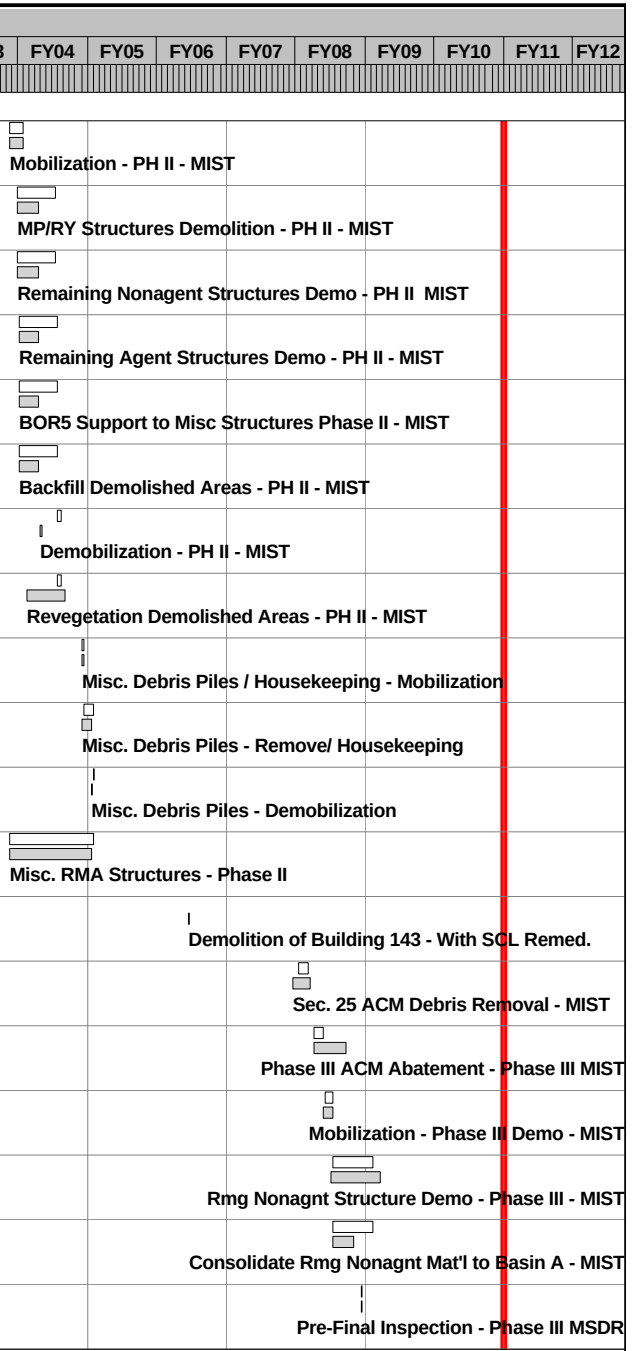
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Miscellaneous RMA Structure Demolition & Removal						
Remedial Design						
MS2-120000	26OCT98*	14JAN99	0	02NOV98A	03FEB99A	100
MS2-122000		13NOV98*	0		13NOV98A	100
MS2-125000	14NOV98	16DEC98	0	13NOV98A	08JAN99A	100
MS2-130000	15JAN99	22FEB99	0	11JAN99A	22FEB99A	100
MS2-140000	23FEB99	25MAR99	0	23FEB99A	25MAR99A	100
MS2-150000	23FEB99	02AUG99	0	23FEB99A	02AUG99A	100
MS2-160000	03AUG99	02SEP99	0	03AUG99A	03SEP99A	100
MS2-170000	03AUG99	02NOV99	0	03AUG99A	02NOV99A	100
MS2-175000		02NOV99	0		02NOV99A	100
MS2-180000	03NOV99	04DEC99	0	03NOV99A	03DEC99A	100
MS2-190000	06DEC99	24JAN00	0	06DEC99A	24JAN00A	100
MS2-190600	29APR03*	15JUL03	0*	29APR03A	14JUL03A	100
MS2-190700	16JUL03	13AUG03	0*	14JUL03A	14AUG03A	100
MS2-192500	19APR04*	04JUN04	0*	19APR04A	04JUN04A	100
MS2-INF1	26OCT98	04JUN04	0*	02NOV98A	04JUN04A	100
MS2-INF2	15NOV06	05OCT07	0*	15NOV06A	06SEP07A	100
MS2-161600	08AUG07*	01NOV07	0*	08AUG07A	01NOV07A	100
MS2-INF	26OCT98	01NOV07	0*	02NOV98A	01NOV07A	100



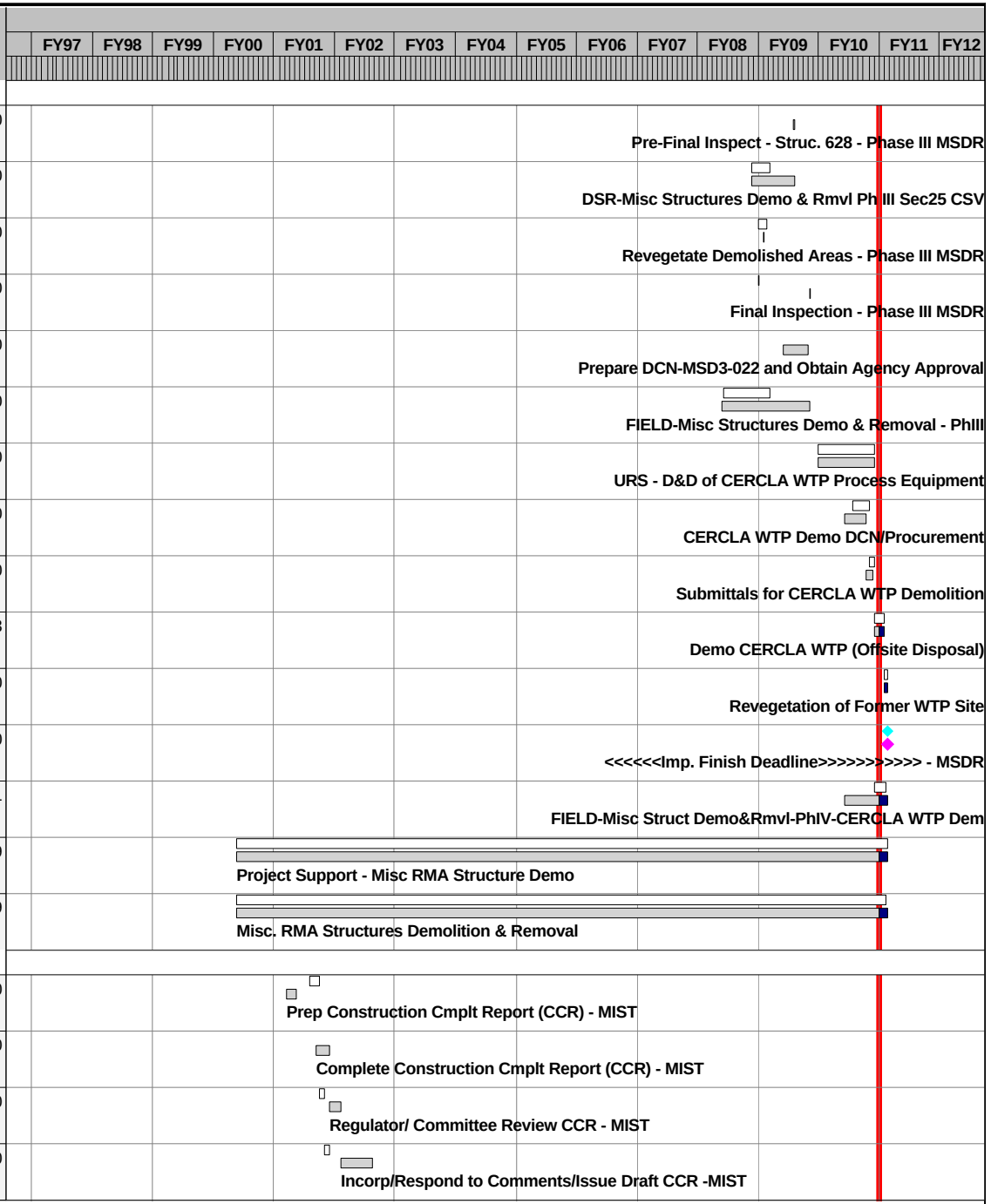
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
MS3-090000	07JAN00	21JAN00	0	07JAN00A	21JAN00A	100
MS3-100000	25JAN00	24FEB00	0	24JAN00A	23FEB00A	100
MS3-100700			0*	03FEB10A	12JUL10A	100
MS3-090100	31JAN03	17MAR03	0*	17FEB03A	11MAR03A	100
MS3-090400	18MAR03	18AUG03	0*	11MAR03A	09JUN03A	100
MS3-161500	25JUL07	15AUG07	0	22MAY07A	13JUN07A	100
MS3-161620	16AUG07	22OCT07	0*	14JUN07A	27AUG07A	100
MS3-090500	07SEP07*	05OCT07	0*	07SEP07A	05OCT07A	100
MS3-090700	06OCT07	05MAR08	0*	08OCT07A	28FEB08A	100
Remediation Activities						
MS4-105000	24FEB00	24APR00	0	24FEB00A	24APR00A	100
MS4-106000	24FEB00		0	24FEB00A		100
MS4-135000	25APR00	15DEC00	0*	24APR00A	15DEC00A	100
MS4-140000	28AUG00*	27DEC00	0*	28AUG00A	21DEC00A	100
MS4-150000	01MAY00	05MAR01	0*	01MAY00A	04DEC00A	100
MS4-155000	25APR00	14JUL00	0*	26APR00A	14JUL00A	100
MS4-170000	01MAY00	05MAR01	0	01MAY00A	04DEC00A	100
MS4-180000	06MAR01	02MAY01	0	06NOV00A	19DEC00A	100
MS4-135550	06MAR02*	23MAY02	0*	06MAR02A	23MAY02A	100
MS4-INF1	24FEB00	23MAY02	0*	24FEB00A	23MAY02A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
MS4-107000	18AUG03*	31OCT03	0*	18AUG03A	28OCT03A	100
MS4-116000	29SEP03	13APR04	0*	29SEP03A	21JAN04A	100
MS4-136000	29SEP03	13APR04	0*	29SEP03A	21JAN04A	100
MS4-156000	09OCT03	27APR04	0*	16OCT03A	23JAN04A	100
MS4-170100	09OCT03	27APR04	0*	16OCT03A	23JAN04A	100
MS4-171000	09OCT03	27APR04	0*	16OCT03A	23JAN04A	100
MS4-182000	28APR04	17MAY04	0*	30JAN04A	03FEB04A	100
MS4-171500	28APR04	17MAY04	0*	25NOV03A	04JUN04A	100
MS4-204000	03SEP04*	10SEP04	0*	03SEP04A	10SEP04A	100
MS4-136510	13SEP04	04NOV04	0*	03SEP04A	29OCT04A	100
MS4-130555	03NOV04	04NOV04	0*	28OCT04A	29OCT04A	100
MS4-INF2	18AUG03	04NOV04	0*	18AUG03A	29OCT04A	100
MS4-314000			0*	18MAR06A	18MAR06A	100
MS4-145100	23OCT07*	11DEC07	0*	21SEP07A	18DEC07A	100
MS4-100312	07JAN08*	29FEB08	0*	08JAN08A	26JUN08A	100
MS4-108000	06MAR08	16APR08	0*	29FEB08A	14APR08A	100
MS4-137000	17APR08	14NOV08	0*	07APR08A	22DEC08A	100
MS4-145000	17APR08	14NOV08	0*	17APR08A	31JUL08A	100
MS4-340024	18SEP08	18SEP08	0	18SEP08A	18SEP08A	100

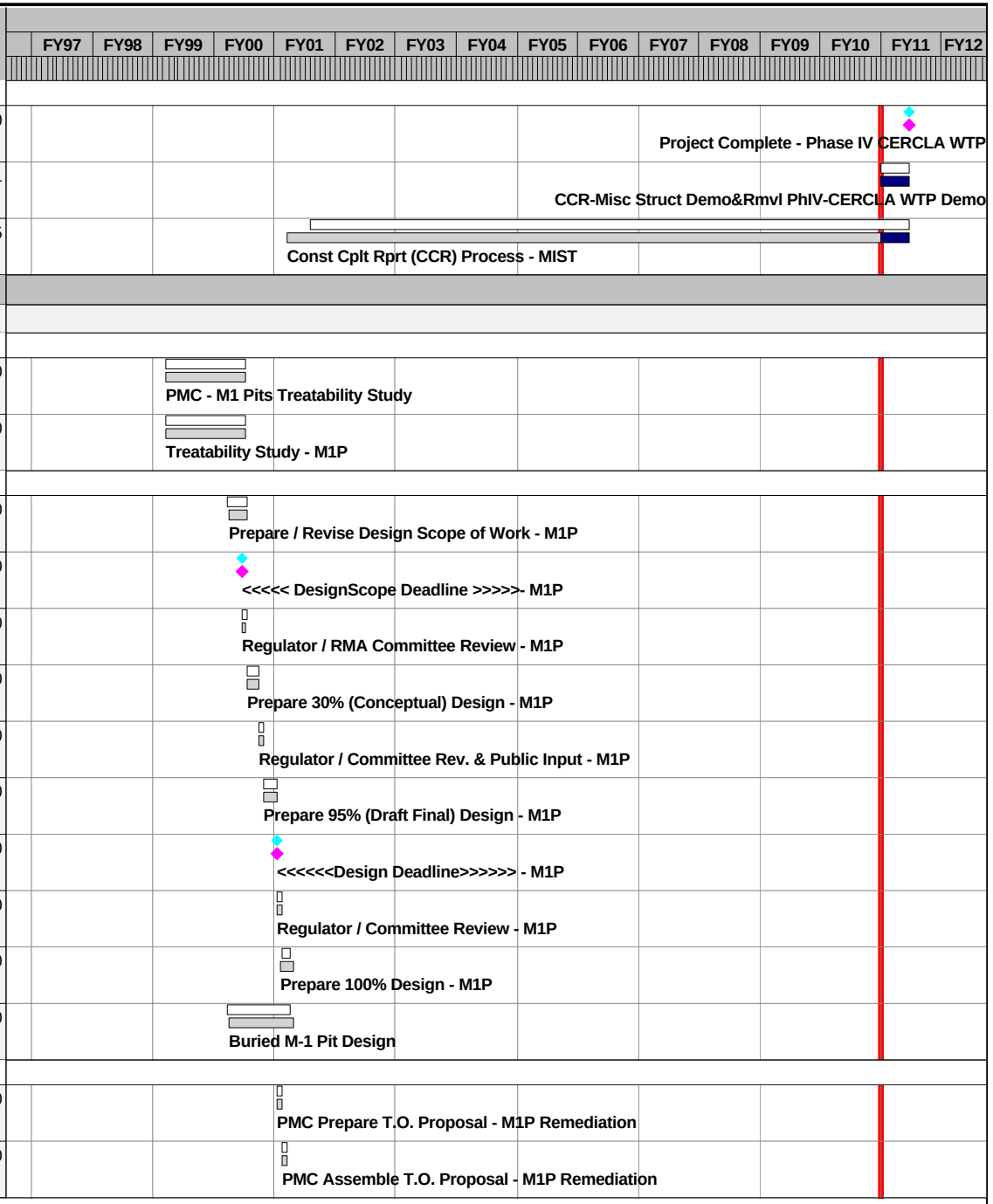


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
MS4-340026			0	07MAY09A	07MAY09A	100
MS4-350090	25AUG08*	08DEC08	0*	25AUG08A	07MAY09A	100
MS4-172500	02OCT08	26NOV08	0	30OCT08A	06NOV08A	100
MS4-340025	03OCT08	03OCT08	0	13AUG09A	13AUG09A	100
MS4-340030			0	02MAR09A	29JUL09A	100
MS4-INF3	06MAR08	08DEC08	0*	29FEB08A	13AUG09A	100
MS4-117200	28SEP09*	31AUG10	0*	28SEP09A	31AUG10A	100
MS4-117150	29APR10*	09AUG10	0	09MAR10A	12JUL10A	100
MS4-117300	10AUG10	01SEP10	0	15JUL10A	20AUG10A	100
MS4-117100	01SEP10	31OCT10	28	01SEP10A	29OCT10	53
MS4-117400	01NOV10	19NOV10	21	30OCT10	19NOV10	0
MS4-183500		19NOV10	0		19NOV10	0
MS4-INF4	01SEP10	12NOV10	35*	09MAR10A	19NOV10	81
MS4-200000	24FEB00	19NOV10	35*	24FEB00A	19NOV10	99
MS4-INF	24FEB00	12NOV10	35*	24FEB00A	19NOV10	99
Construction Completion Report						
MS6-185001	03MAY01	02JUL01	0	18DEC00A	16FEB01A	100
MS6-185051			0	18JUN01A	04SEP01A	100
MS6-185011	03JUL01	02AUG01	0	05SEP01A	14NOV01A	100
MS6-185021	03AUG01	01SEP01	0	15NOV01A	23MAY02A	100

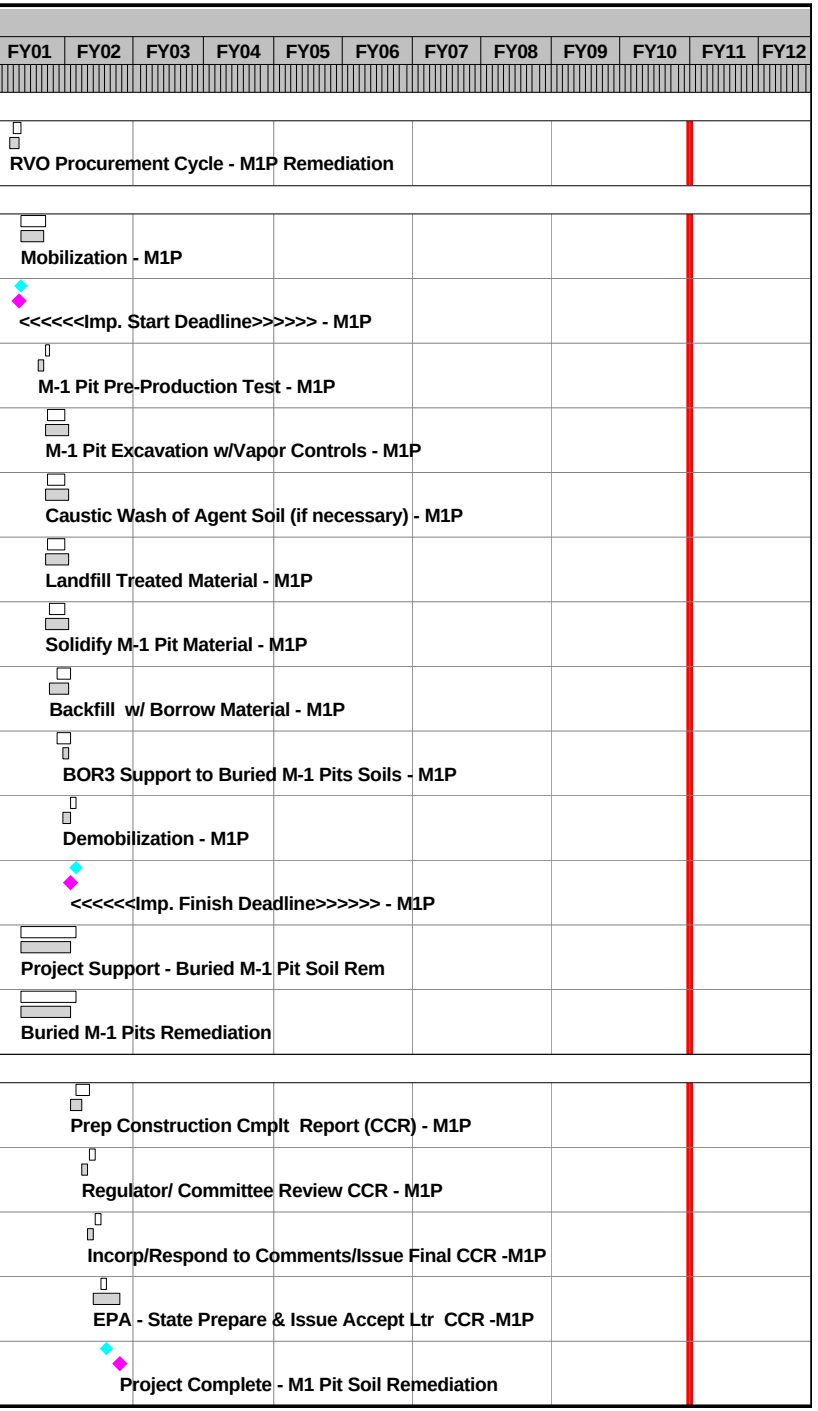


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
MS6-185031	02SEP01	02OCT01	0	24MAY02A	30SEP02A	100
MS6-185041		02OCT01	0		30SEP02A	100
MS6-INF1	03MAY01	02OCT01	0*	18DEC00A	30SEP02A	100
MS6-185002	05NOV04	10JAN05	0*	01FEB05A	20APR05A	100
MS6-185012	11JAN05	09FEB05	0*	21APR05A	19MAY05A	100
MS6-185022	10FEB05	11MAR05	0	20MAY05A	21JUN05A	100
MS6-185032	12MAR05	11APR05	0	21JUN05A	30MAR06A	100
MS6-185042		11APR05	0		30MAR06A	100
MS6-INF2	05NOV04	11APR05	0*	01FEB05A	30MAR06A	100
MS6-185003	04OCT08	04DEC08	0*	01AUG08A	21OCT08A	100
MS6-185013	05DEC08	05JAN09	0	21OCT08A	20NOV08A	100
MS6-185023	06JAN09	02APR09	0*	21NOV08A	05NOV09A	100
MS6-185033	03APR09	02MAY09	0	06NOV09A	08DEC09A	100
MS6-185043		02MAY09	0		08DEC09A	100
MS6-INF3	04OCT08	02MAY09	0*	01AUG08A	08DEC09A	100
MS6-117110	01OCT10	01DEC10	59	01OCT10A	01DEC10	2
MS6-117120	02DEC10	04JAN11	30	02DEC10	04JAN11	0
MS6-117130	05JAN11	11MAR11	66*	05JAN11	11MAR11	0
MS6-117140	12MAR11	25MAR11	14	12MAR11	25MAR11	0

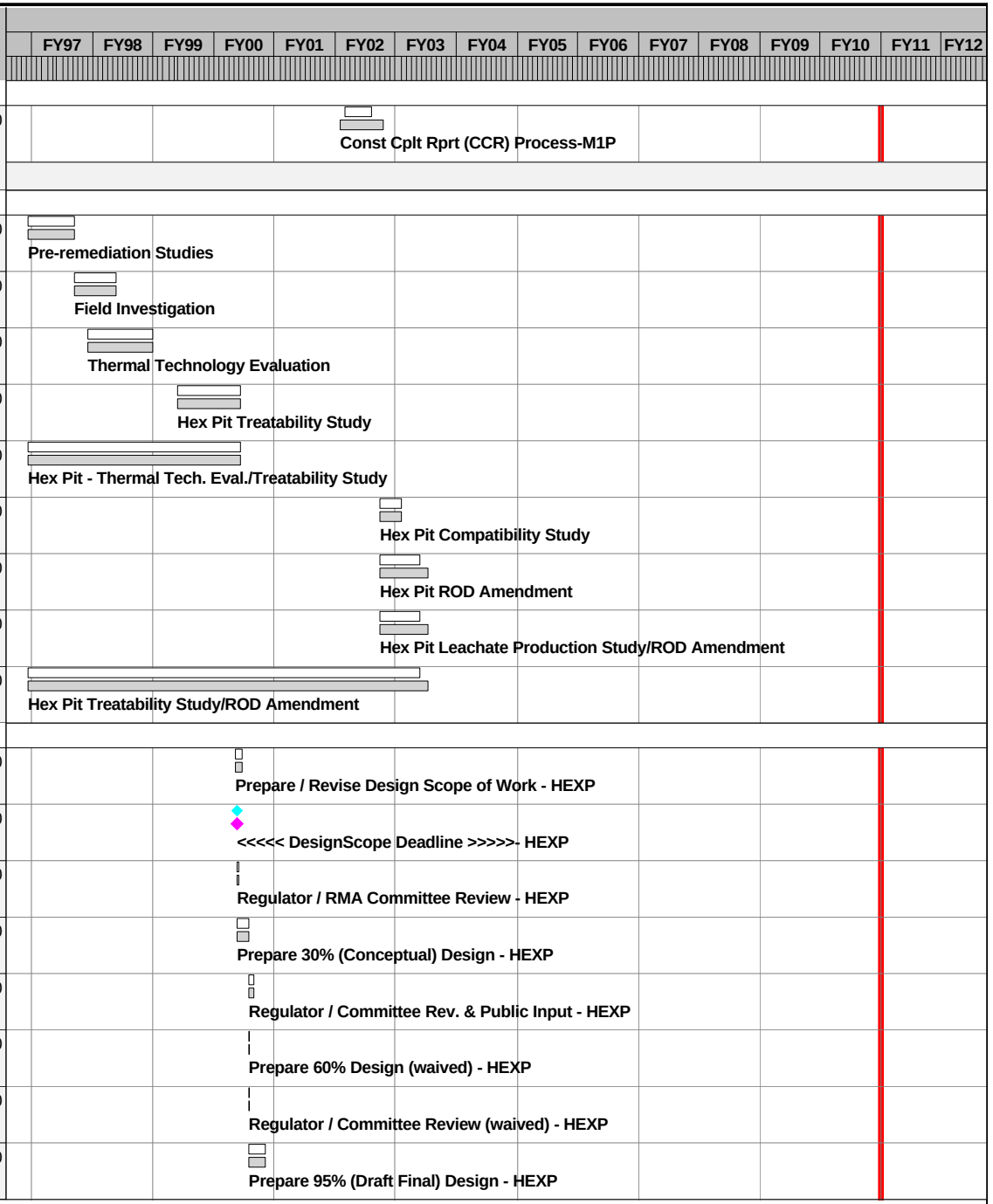
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
MS6-177145		25MAR11	0		25MAR11	0
MS6-INF5	01OCT10	25MAR11	169*	01OCT10A	25MAR11	1
MS6-INF	03MAY01	25MAR11	169*	18DEC00A	25MAR11	95
Phase II - South Plants Area						
Buried M-1 Pits Soil Remediation						
Predesign Activities						
M11-100000	16DEC98*	12APR00	0*	16DEC98A	12APR00A	100
M11-INF	16DEC98	12APR00	0*	16DEC98A	12APR00A	100
Remedial Design						
M12-120000	21DEC99*	14APR00	0*	03JAN00A	14APR00A	100
M12-122000		17MAR00	0		17MAR00A	100
M12-125000	18MAR00	16APR00	0	17MAR00A	10APR00A	100
M12-130000	17APR00	28JUN00	0	18APR00A	28JUN00A	100
M12-140000	29JUN00	28JUL00	0	29JUN00A	28JUL00A	100
M12-170000	31JUL00	18OCT00	0	28JUL00A	18OCT00A	100
M12-175000		18OCT00	0		18OCT00A	100
M12-180000	19OCT00	17NOV00	0	18OCT00A	17NOV00A	100
M12-190000	20NOV00	05JAN01	0	01NOV00A	25JAN01A	100
M12-INF	21DEC99	05JAN01	0*	03JAN00A	25JAN01A	100
Procurement						
M13-109000	18OCT00	17NOV00	0	18OCT00A	17NOV00A	100
M13-109010	20NOV00	13DEC00	0	20NOV00A	13DEC00A	100



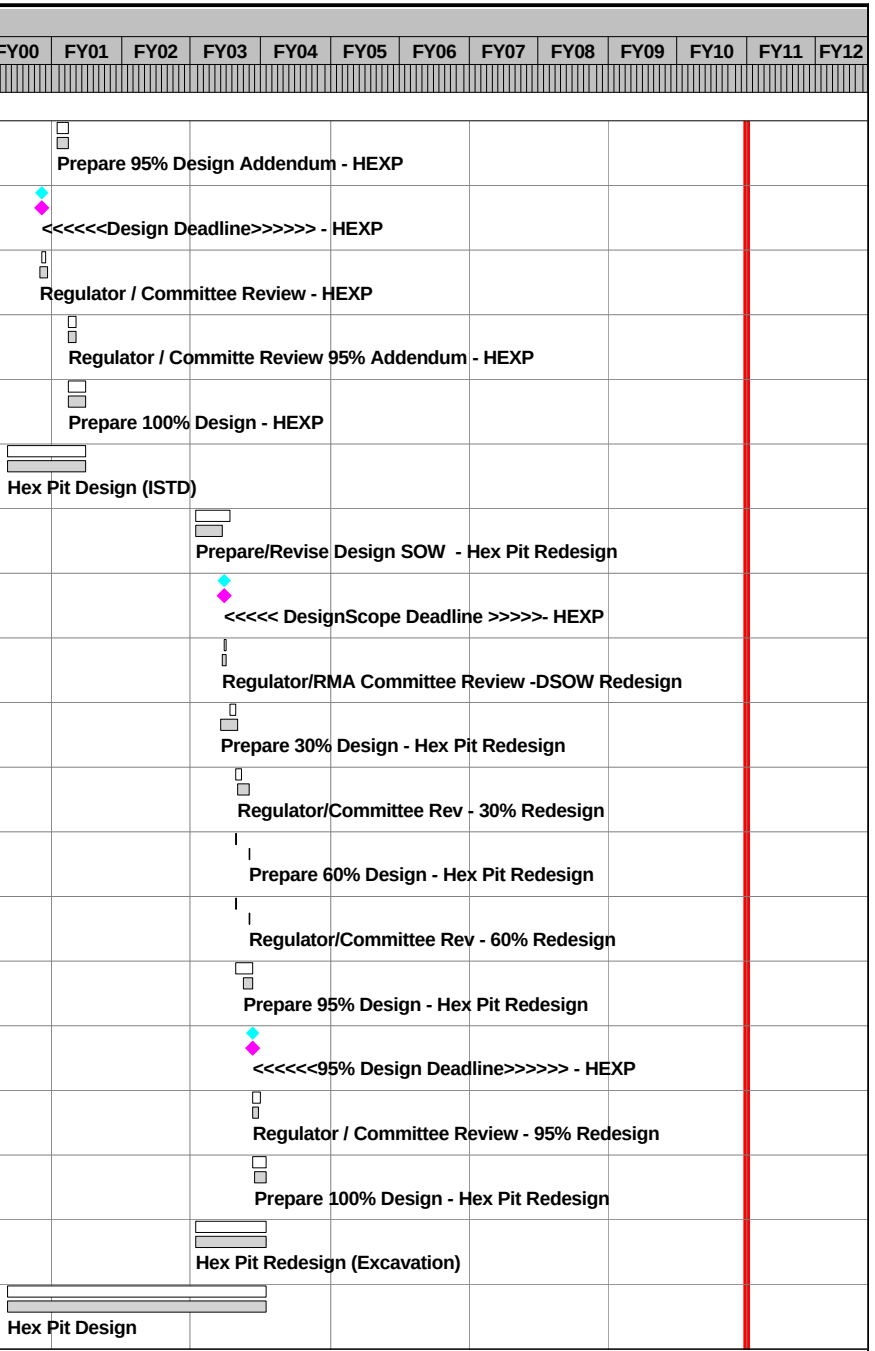
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
M13-110000	06JAN01	09FEB01	0	14DEC00A	01FEB01A	100
Remediation Activities						
M14-120000	09FEB01	18JUN01	0*	09FEB01A	15JUN01A	100
M14-125000	09FEB01		0	01FEB01A		100
M14-145000	19JUN01	17JUL01	0*	17MAY01A	15JUN01A	100
M14-140000	03JUL01	28SEP01	0*	19JUN01A	16OCT01A	100
M14-150000	03JUL01	28SEP01	0*	19JUN01A	16OCT01A	100
M14-170000	03JUL01	01OCT01	0*	19JUN01A	16OCT01A	100
M14-160000	18JUL01	01OCT01	0*	19JUN01A	16OCT01A	100
M14-180000	21AUG01	26OCT01	0*	11JUL01A	24OCT01A	100
M14-140100	21AUG01	26OCT01	0*	26SEP01A	25OCT01A	100
M14-200000	29OCT01	04DEC01	0*	21SEP01A	01NOV01A	100
M14-205000		04DEC01	0		01NOV01A	100
M14-220000	09FEB01	04DEC01	0*	09FEB01A	01NOV01A	100
M14-INF	09FEB01	04DEC01	0*	09FEB01A	01NOV01A	100
Construction Completion Report						
M16-210000	05DEC01	05FEB02	0	02NOV01A	31DEC01A	100
M16-210010	06FEB02	07MAR02	0	02JAN02A	01FEB02A	100
M16-210020	08MAR02	06APR02	0	01FEB02A	01MAR02A	100
M16-210030	07APR02	06MAY02	0	04MAR02A	18JUL02A	100
M16-210040		06MAY02	0		18JUL02A	100



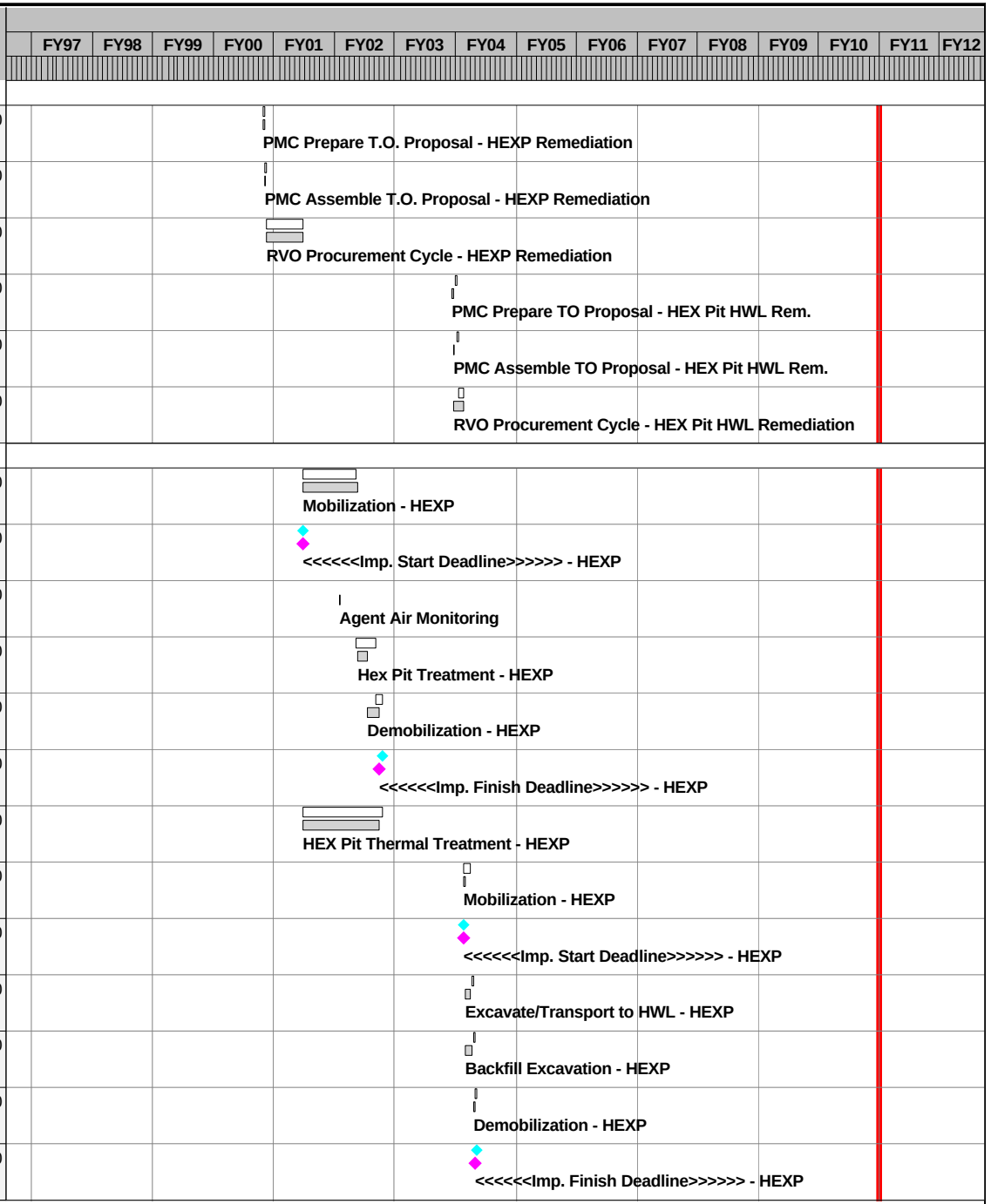
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
M16-INF	05DEC01	06MAY02	0*	02NOV01A	18JUL02A	100
Hex Pit Soil Remediation						
Predesign Activities						
HX1-110000	09SEP96A	13JUN97A	0	09SEP96A	13JUN97A	100
HX1-120000	16JUN97A	16FEB98	0	16JUN97A	16FEB98A	100
HX1-125000	02SEP97A	30SEP98	0	02SEP97A	30SEP98A	100
HX1-130000	01MAR99*	06MAR00	0*	01MAR99A	06MAR00A	100
HX1-INF1	09SEP96A	06MAR00	0*	09SEP96A	06MAR00A	100
HX1-150000	24JUN02*	06NOV02	0*	24JUN02A	06NOV02A	100
HX1-140000	24JUN02*	25FEB03	0*	24JUN02A	17APR03A	100
HX1-INF2	24JUN02	25FEB03	0*	24JUN02A	17APR03A	100
HX1-INF	09SEP96A	25FEB03	0*	09SEP96A	17APR03A	100
Remedial Design						
HX2-120000	09FEB00	15MAR00	0	08FEB00A	22MAR00A	100
HX2-122000		16FEB00	0		16FEB00A	100
HX2-125000	17FEB00	01MAR00	0	16FEB00A	01MAR00A	100
HX2-130000	22FEB00	25APR00	0*	22FEB00A	25APR00A	100
HX2-140000	26APR00	25MAY00	0	26APR00A	25MAY00A	100
HX2-150000	26APR00	25APR00	0	26APR00A	25APR00A	100
HX2-160000	26APR00	25APR00	0	26APR00A	25APR00A	100
HX2-170000	26APR00	02AUG00	0	26APR00A	02AUG00A	100



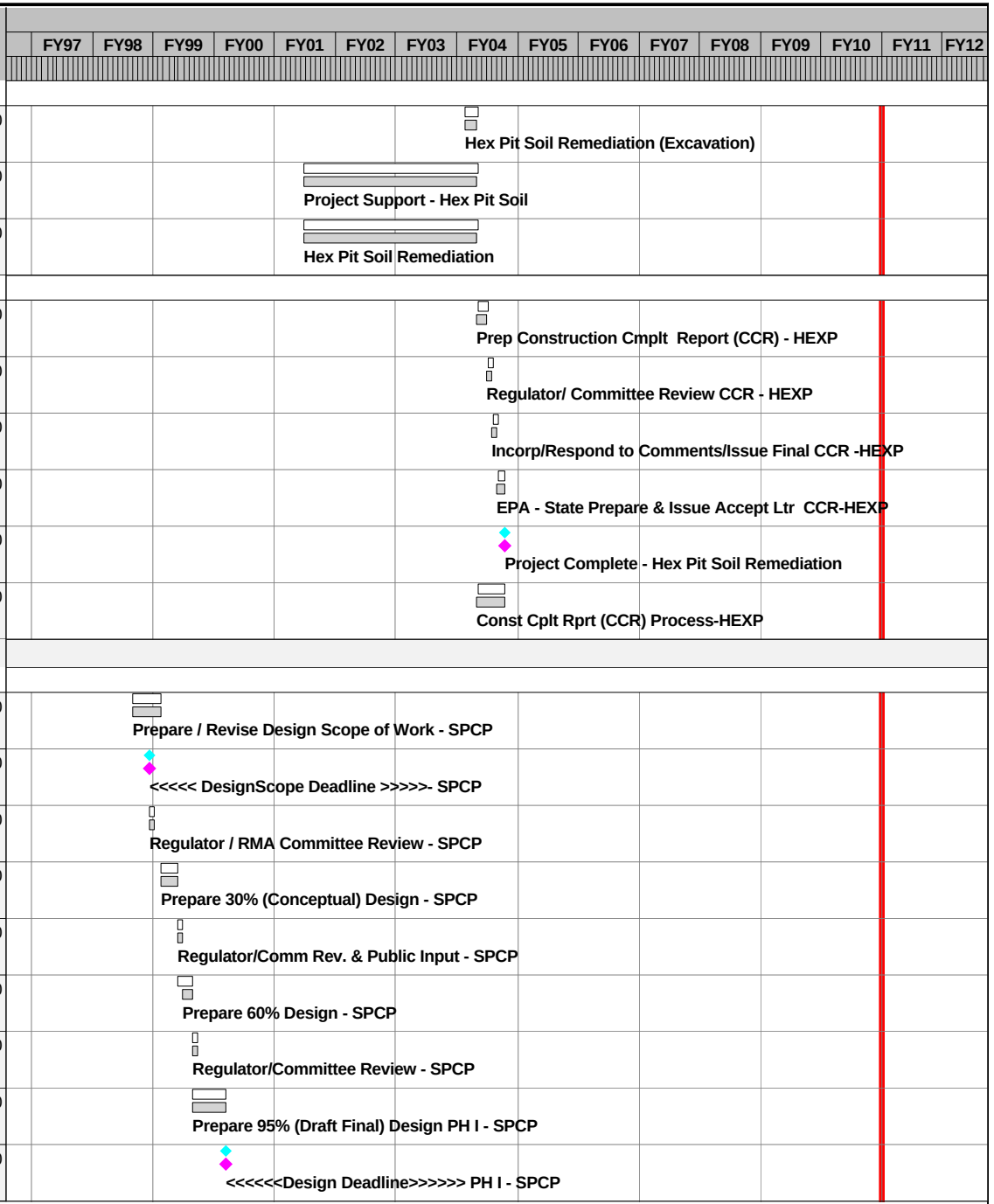
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
HX2-170500	27OCT00	28DEC00	0*	27OCT00A	28DEC00A	100
HX2-175000		02AUG00	0		02AUG00A	100
HX2-180000	03AUG00	31AUG00	0	02AUG00A	07SEP00A	100
HX2-180500	29DEC00	29JAN01	0	29DEC00A	29JAN01A	100
HX2-190000	29DEC00	20MAR01	0*	29DEC00A	20MAR01A	100
HX2-INF1	09FEB00	20MAR01	0*	08FEB00A	20MAR01A	100
HX2-120500	24OCT02*	22APR03	0*	24OCT02A	18MAR03A	100
HX2-122200		21MAR03	0		21MAR03A	100
HX2-120520	22MAR03	04APR03	0*	18MAR03A	04APR03A	100
HX2-130500	23APR03	23MAY03	0*	04MAR03A	02JUN03A	100
HX2-140500	27MAY03*	25JUN03	0*	03JUN03A	29JUL03A	100
HX2-150500	27MAY03	23MAY03	0*	29JUL03A	29JUL03A	100
HX2-160500	23MAY03	22MAY03	0*	29JUL03A	29JUL03A	100
HX2-170510	27MAY03	26AUG03	0*	01JUL03A	26AUG03A	100
HX2-175200		26AUG03	0		26AUG03A	100
HX2-180520	27AUG03	26SEP03	0*	26AUG03A	25SEP03A	100
HX2-190500	27AUG03	30OCT03	0*	02SEP03A	30OCT03A	100
HX2-INF2	24OCT02	30OCT03	0*	24OCT02A	30OCT03A	100
HX2-INF	09FEB00	30OCT03	0*	08FEB00A	30OCT03A	100



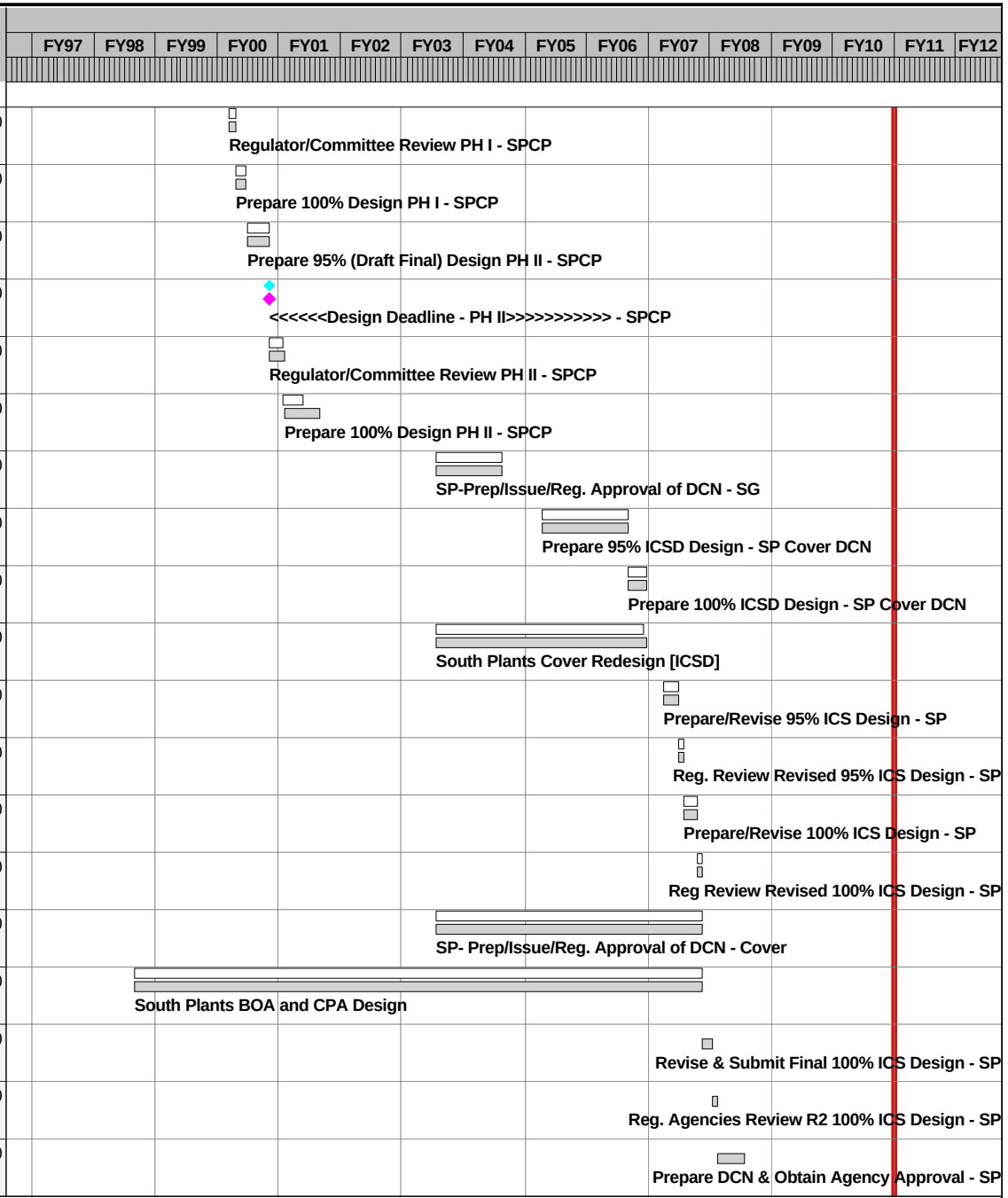
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
HX3-109000	25JUL00	07AUG00	0	25JUL00A	04AUG00A	100
HX3-109010	08AUG00	14AUG00	0	07AUG00A	11AUG00A	100
HX3-110000	15AUG00	21MAR01	0	14AUG00A	21MAR01A	100
HX3-109001	01OCT03	14OCT03	0	15SEP03A	24SEP03A	100
HX3-109011	15OCT03	21OCT03	0	25SEP03A	25SEP03A	100
HX3-110001	22OCT03	20NOV03	0	25SEP03A	19NOV03A	100
Remediation Activities						
HX4-120000	21MAR01	11FEB02	0*	22MAR01A	14FEB02A	100
HX4-125000	21MAR01		0	21MAR01A		100
HX4-130000			0*	31OCT01A	31OCT01A	100
HX4-140000	12FEB02	04JUN02	0*	15FEB02A	17APR02A	100
HX4-180000	05JUN02	15JUL02	0*	18APR02A	27JUN02A	100
HX4-185000		15JUL02	0		27JUN02A	100
HX4-INF1	21MAR01	15JUL02	0*	22MAR01A	27JUN02A	100
HX4-120200	20NOV03	02JAN04	0*	20NOV03A	01DEC03A	100
HX4-125200	20NOV03		0	19NOV03A		100
HX4-140200	05JAN04	16JAN04	0*	01DEC03A	31DEC03A	100
HX4-140300	19JAN04	30JAN04	0*	01DEC03A	08JAN04A	100
HX4-180200	02FEB04	09FEB04	0*	22JAN04A	28JAN04A	100
HX4-185200		09FEB04	0		28JAN04A	100



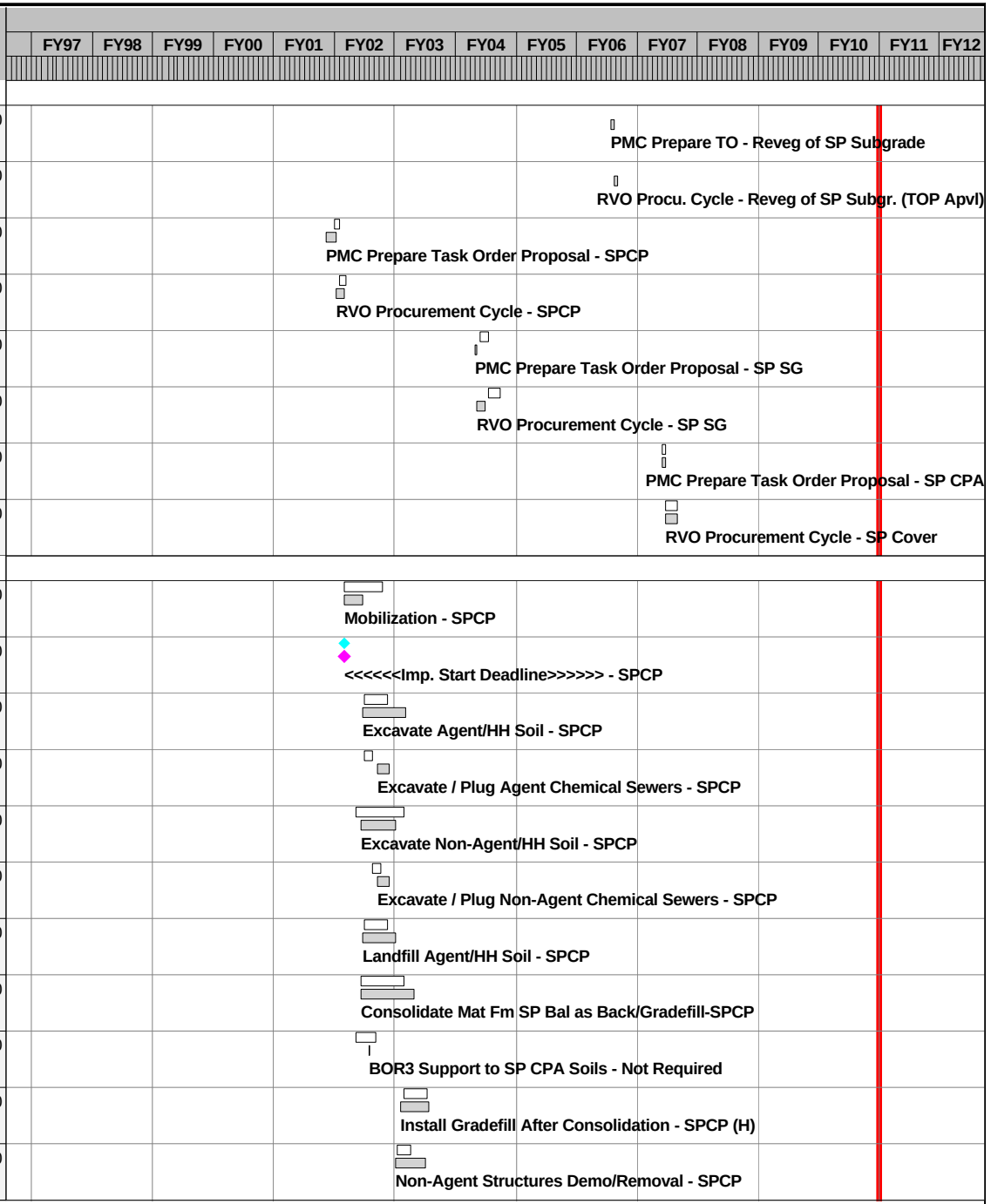
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
HX4-INF2	20NOV03	09FEB04	0*	20NOV03A	28JAN04A	100
HX4-200000	21MAR01	09FEB04	0*	22MAR01A	28JAN04A	100
HX4-INF	21MAR01	09FEB04	0*	22MAR01A	28JAN04A	100
Construction Completion Report						
HX6-191000	10FEB04	09APR04	0	28JAN04A	29MAR04A	100
HX6-191100	10APR04	09MAY04	0	30MAR04A	30APR04A	100
HX6-191110	10MAY04	09JUN04	0	30APR04A	28MAY04A	100
HX6-191120	10JUN04	12JUL04	0	29MAY04A	21JUL04A	100
HX6-191130		12JUL04	0		21JUL04A	100
HX6-INF	10FEB04	12JUL04	0*	28JAN04A	21JUL04A	100
SP BOA & CPA Soil Remediation - PH II						
Remedial Design						
SC2-120000	01JUN98*	16NOV98	0	01JUN98A	16NOV98A	100
SC2-122000		04SEP98*	0		04SEP98A	100
SC2-125000	05SEP98	08OCT98	0	05SEP98A	08OCT98A	100
SC2-130000	17NOV98	22FEB99	0	17NOV98A	22FEB99A	100
SC2-140000	23FEB99	24MAR99	0	23FEB99A	23MAR99A	100
SC2-150000	23FEB99	26MAY99	0	23MAR99A	26MAY99A	100
SC2-160000	27MAY99	26JUN99	0	26MAY99A	25JUN99A	100
SC2-170000	27MAY99	15DEC99	0*	26MAY99A	15DEC99A	100
SC2-175000		15DEC99	0		15DEC99A	100



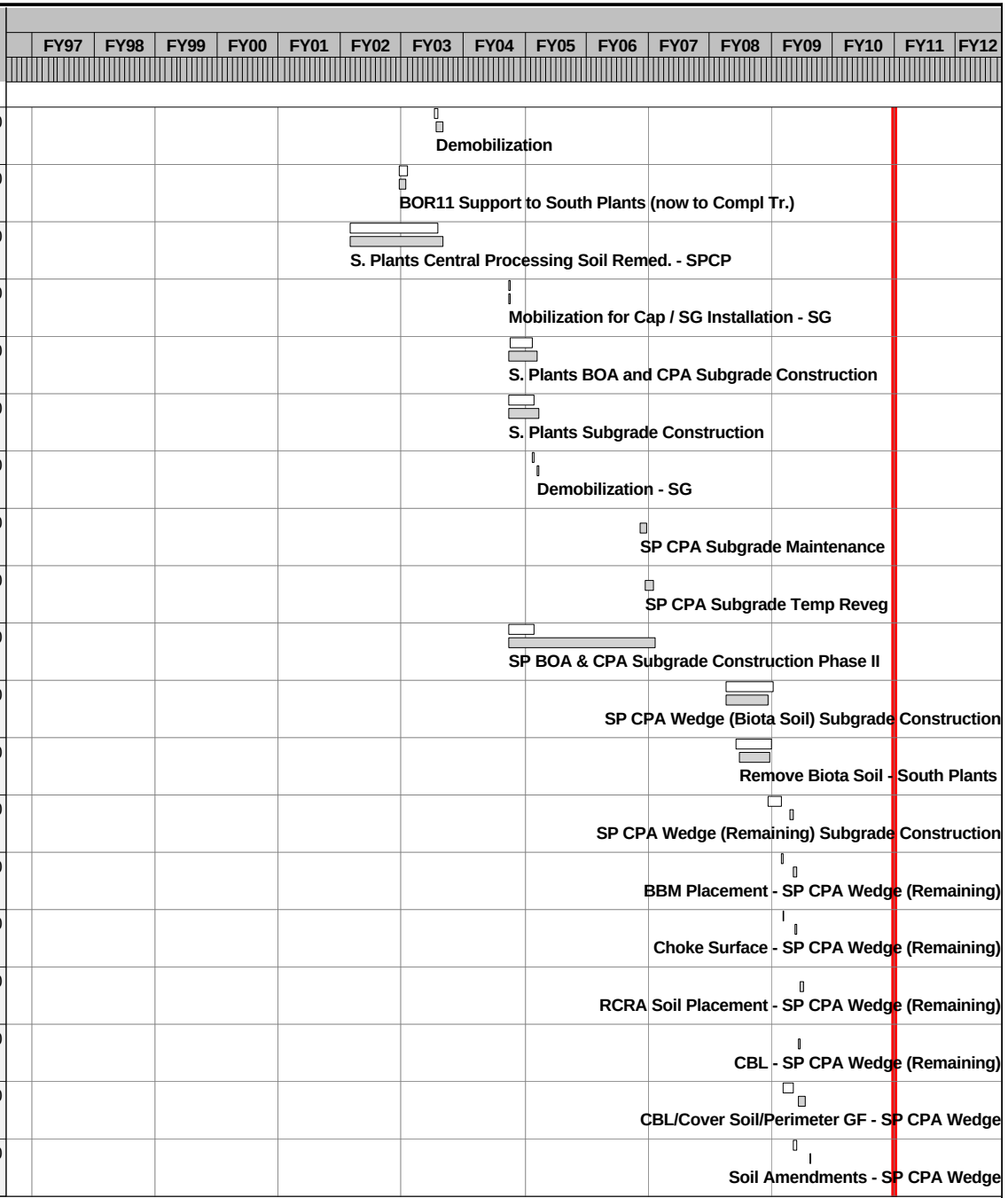
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SC2-180000	16DEC99	17JAN00	0	15DEC99A	16JAN00A	100
SC2-190000	18JAN00	24MAR00	0	17JAN00A	24MAR00A	100
SC2-170001	27MAR00	07AUG00	0*	27MAR00A	07AUG00A	100
SC2-175001		07AUG00	0		07AUG00A	100
SC2-180001	08AUG00	21OCT00	0	08AUG00A	02NOV00A	100
SC2-190101	23OCT00	27FEB01	0*	03NOV00A	05JUN01A	100
SC2-121000	28APR03	13MAY04	0*	28APR03A	13MAY04A	100
SC2-123000	13JAN05*	08JUN06	0*	13JAN05A	08JUN06A	100
SC2-124000	09JUN06	29SEP06	0*	09JUN06A	29SEP06A	100
SC2-110000	28APR03*	31AUG06	0*	28APR03A	29SEP06A	100
SC2-174100	02JAN07*	03APR07	0	02JAN07A	03APR07A	100
SC2-174105	04APR07	03MAY07	0	04APR07A	03MAY07A	100
SC2-174110	04MAY07	23JUL07	0	30APR07A	23JUL07A	100
SC2-174112	24JUL07	23AUG07	0	25JUL07A	23AUG07A	100
SC2-121001	28APR03	23AUG07	0*	28APR03A	23AUG07A	100
SC2-INF	01JUN98	23AUG07	0*	01JUN98A	23AUG07A	100
SC2-174113			0	24AUG07A	23OCT07A	100
SC2-174114			0	24OCT07A	20NOV07A	100
SC2-174120			0	21NOV07A	22APR08A	100



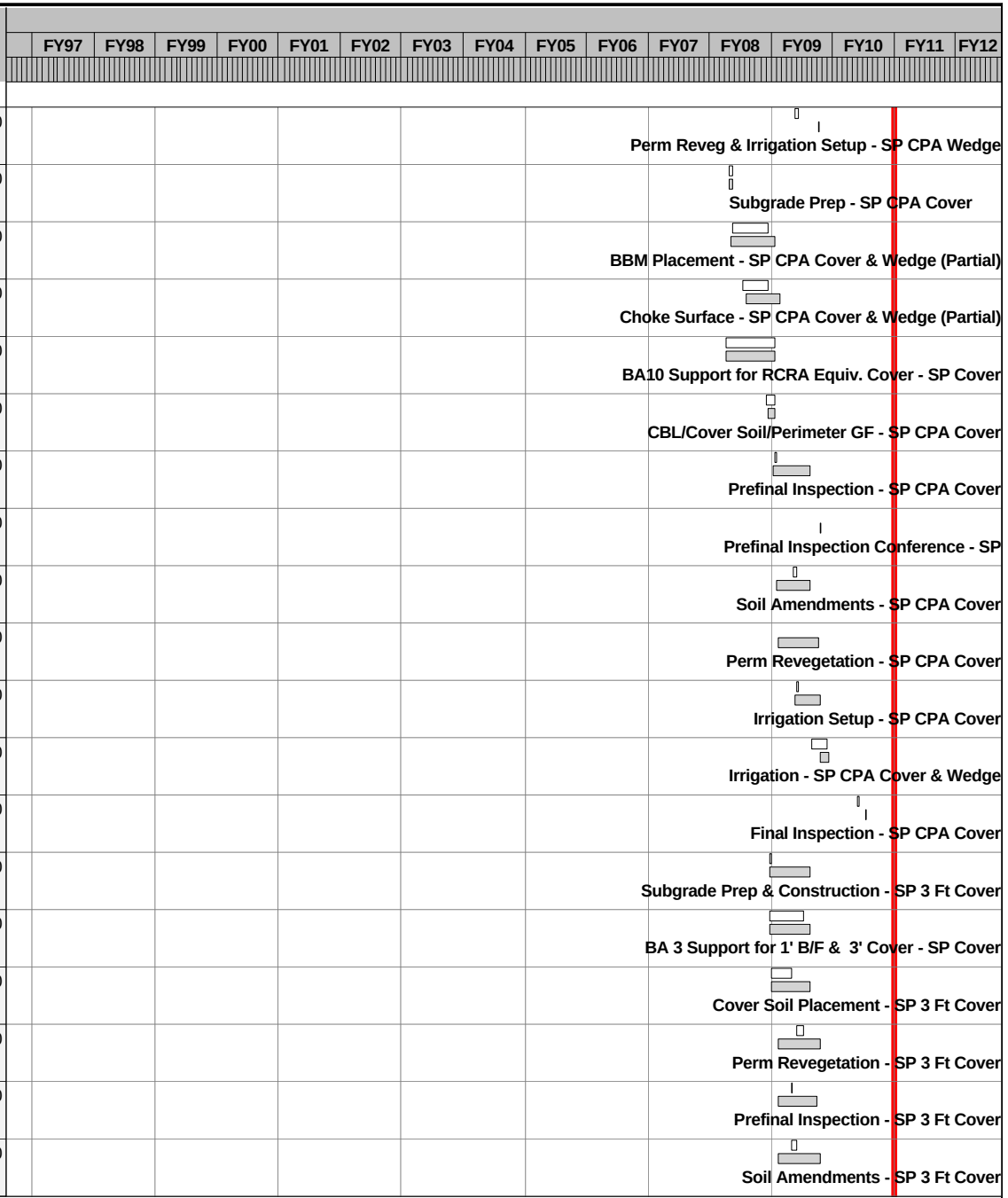
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
SC3-000001			0	24APR06A	16MAY06A	100
SC3-000002			0	16MAY06A	05JUN06A	100
SC3-109000	02OCT01	29OCT01	0	16AUG01A	15OCT01A	100
SC3-110000	30OCT01	05DEC01	0*	15OCT01A	03DEC01A	100
SC3-109001	27FEB04	15APR04	0	26JAN04A	03FEB04A	100
SC3-110001	16APR04	28JUN04	0	04FEB04A	26MAR04A	100
SC3-109002	05MAR07*	23MAR07	0	05MAR07A	23MAR07A	100
SC3-110002	26MAR07	04JUN07	0*	26MAR07A	04JUN07A	100
Remediation Activities						
SC4-120000	05DEC01	17JUL02	0*	03DEC01A	18MAR02A	100
SC4-125000	05DEC01*		0	03DEC01A		100
SC4-140000	01APR02	12AUG02	0*	21MAR02A	06DEC02A	100
SC4-148000	01APR02	15MAY02	0*	19JUN02A	30AUG02A	100
SC4-155000	08FEB02	20NOV02	0*	14MAR02A	01OCT02A	100
SC4-158000	16MAY02	12JUL02	0*	19JUN02A	30AUG02A	100
SC4-160000	01APR02	12AUG02	0*	21MAR02A	01OCT02A	100
SC4-170000	14MAR02	21NOV02	0*	14MAR02A	22JAN03A	100
SC4-170100	08FEB02	11JUN02	0	01MAY02A	01MAY02A	100
SC4-200000	22NOV02	09APR03	0*	06NOV02A	28APR03A	100
SC4-230000	14OCT02	08JAN03	0*	03OCT02A	07APR03A	100



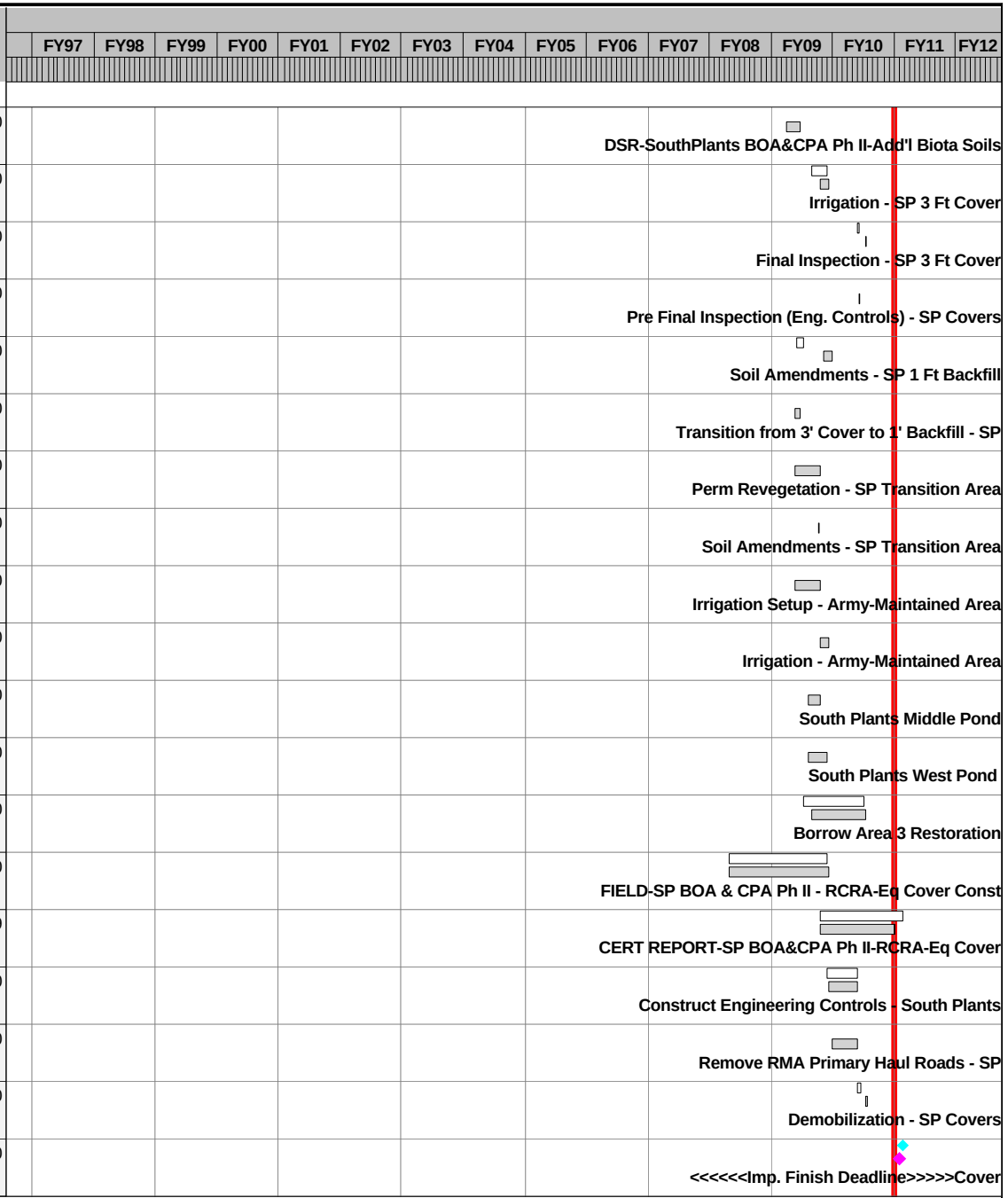
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SC4-270000	10APR03	30APR03	0*	28APR03A	02JUN03A	100
SC4-100000	13SEP02	01NOV02	0*	13SEP02A	21OCT02A	100
SC4-INF1	05DEC01	30APR03	0*	03DEC01A	02JUN03A	100
SC4-120100	28JUN04*	07JUL04	0*	28JUN04A	07JUL04A	100
SC4-170050	08JUL04	10NOV04	0*	30JUN04A	10DEC04A	100
SC4-175000	28JUN04	22NOV04	0*	28JUN04A	27DEC04A	100
SC4-260000	11NOV04	22NOV04	0*	10DEC04A	27DEC04A	100
SC4-420900			0*	14AUG06A	20SEP06A	100
SC4-421000			0*	19SEP06A	31OCT06A	100
SC4-INF2	28JUN04	22NOV04	0*	28JUN04A	14NOV06A	100
SC4-300000	07JAN08*	10OCT08	0	07JAN08A	18SEP08A	100
SC4-266005	12MAR08	03OCT08	0	26MAR08A	19SEP08A	100
SC4-300010	17SEP08	02DEC08	0	21JAN09A	09FEB09A	100
SC4-300020	03DEC08	09DEC08	0	16FEB09A	27FEB09A	100
SC4-300030	10DEC08	16DEC08	0	18FEB09A	06MAR09A	100
SC4-300040			0	19MAR09A	09APR09A	100
SC4-300050			0	09MAR09A	24MAR09A	100
SC4-240010	17DEC08	12FEB09	0	12MAR09A	22APR09A	100
SC4-240120	13FEB09	27FEB09	0	19MAY09A	26MAY09A	100



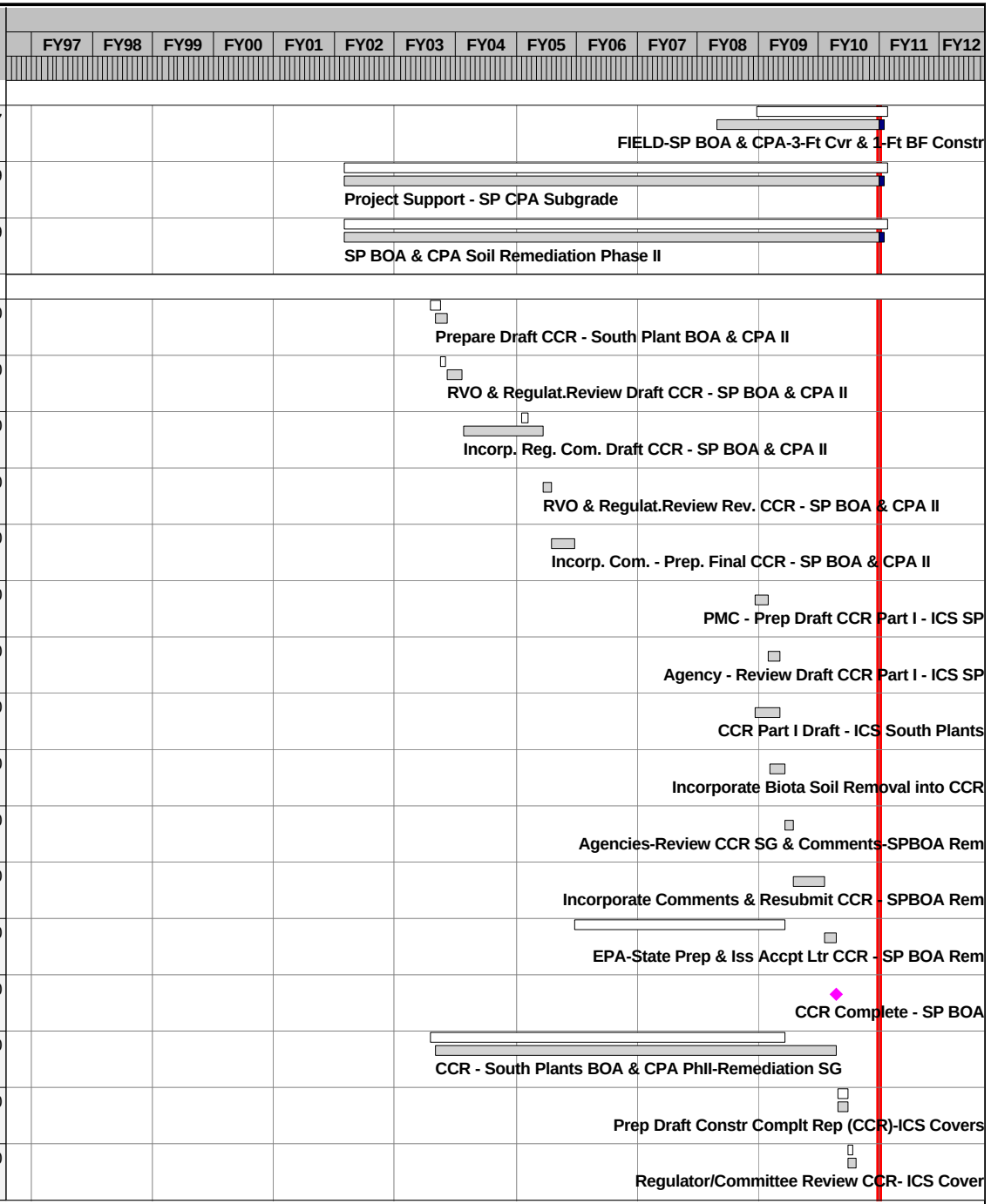
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SC4-240130	26FEB09	11MAR09	0	07JUL09A	15JUL09A	100
SC4-120101	31JAN08	15FEB08	0	31JAN08A	15FEB08A	100
SC4-180000	18FEB08	16SEP08	0	11FEB08A	22OCT08A	100
SC4-202030	21APR08	16SEP08	0	07MAY08A	24NOV08A	100
SC4-243000	07JAN08	28OCT08	0*	07JAN08A	24OCT08A	100
SC4-240000	04SEP08	28OCT08	0	10SEP08A	24OCT08A	100
SC4-201098	29OCT08	29OCT08	0	16OCT08A	21MAY09A	100
SC4-201200			0	23JUL09A	23JUL09A	100
SC4-250110	16FEB09	02MAR09	0	03NOV08A	26MAY09A	100
SC4-251010			0	10NOV08A	15JUL09A	100
SC4-250000	03MAR09	17MAR09	0	24FEB09A	24JUL09A	100
SC4-626000	01JUN09	31AUG09	0	25JUL09A	12SEP09A	100
SC4-201099	03MAR10	03MAR10	0	21APR10A	21APR10A	100
SC4-241000	22SEP08	01OCT08	0	22SEP08A	18MAY09A	100
SC4-244000	22SEP08	09APR09	0*	22SEP08A	19MAY09A	100
SC4-246000	02OCT08	29JAN09	0	07OCT08A	19MAY09A	100
SC4-251000	02MAR09	10APR09	0	10NOV08A	25JUL09A	100
SC4-201061	30JAN09	30JAN09	0	13NOV08A	02JUL09A	100
SC4-250120	30JAN09	27FEB09	0	17NOV08A	25JUL09A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SC4-266025			0*	29DEC08A	26MAR09A	100
SC4-201093	01JUN09	31AUG09	0	25JUL09A	12SEP09A	100
SC4-201191	03MAR10	03MAR10	0	21APR10A	21APR10A	100
SC4-626120			0	04MAR10A	04MAR10A	100
SC4-201094	27FEB09	09APR09	0	08AUG09A	30SEP09A	100
SC4-201100			0	20FEB09A	27MAR09A	100
SC4-201110			0	20FEB09A	25JUL09A	100
SC4-201120			0	11JUL09A	15JUL09A	100
SC4-201130			0	24FEB09A	24JUL09A	100
SC4-201140			0	25JUL09A	12SEP09A	100
SC4-201300			0*	13MAY09A	17JUL09A	100
SC4-201400			0*	16MAY09A	28AUG09A	100
SC4-201095	10APR09	07APR10	0	01JUN09A	21APR10A	100
SC4-INF3	31JAN08	31AUG09	0*	31JAN08A	12SEP09A	100
SC4-270200	23JUL09	19NOV10	5*	23JUL09A	06OCT10	99
SC4-218900	01SEP09	02MAR10	0	14SEP09A	02MAR10A	100
SC4-626110			0	01OCT09A	02MAR10A	100
SC4-260001	03MAR10	16MAR10	0*	21APR10A	30APR10A	100
SC4-265000		19NOV10	0		29OCT10	0



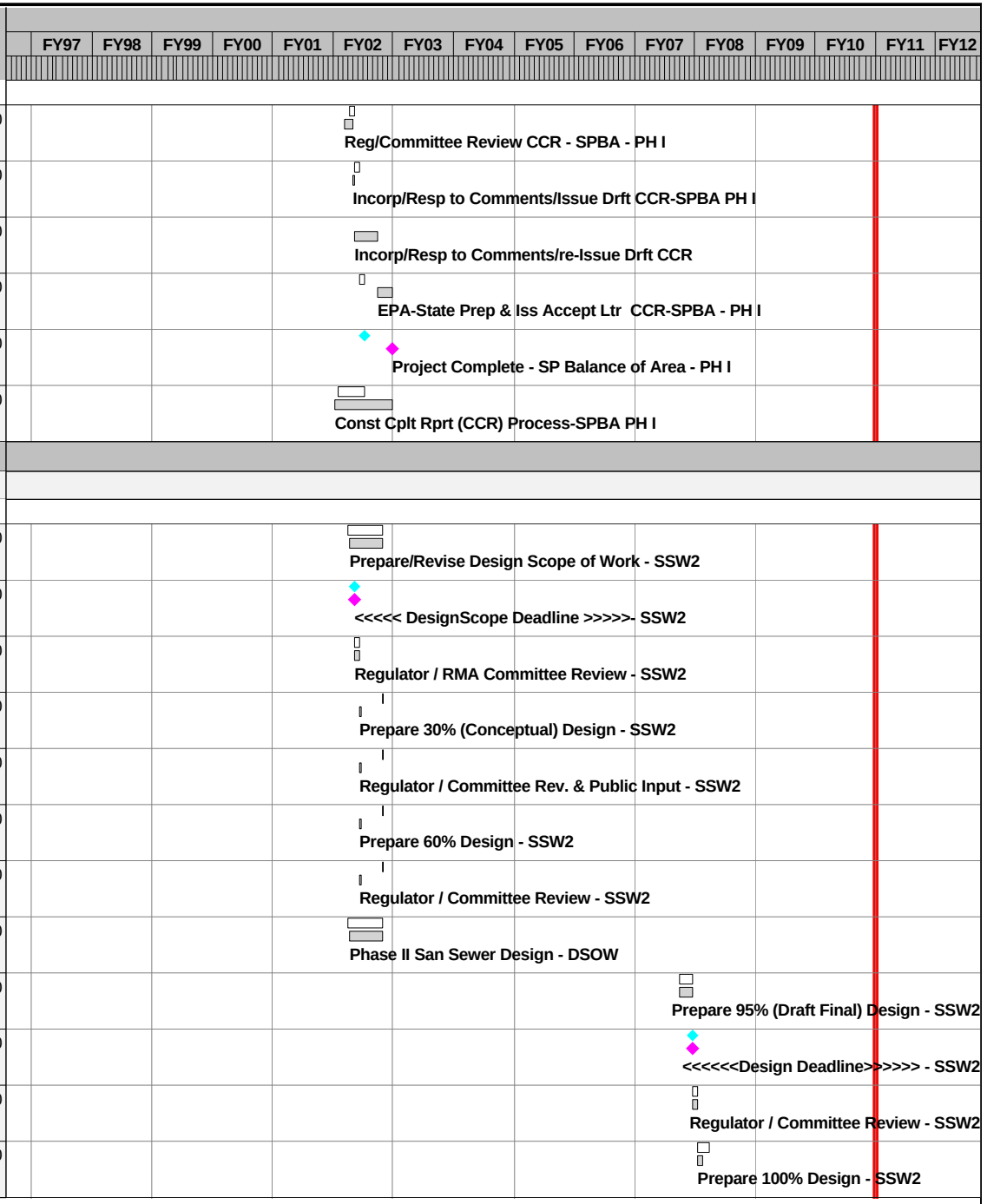
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SC4-INF4	22SEP08	19NOV10	20*	31JAN08A	29OCT10	97
SC4-280001	05DEC01	19NOV10	20*	03DEC01A	29OCT10	99
SC4-INF	05DEC01	19NOV10	20*	03DEC01A	29OCT10	99
Construction Completion Report						
SC6-260000	01MAY03	30JUN03	0*	05JUN03A	14AUG03A	100
SC6-260010	01JUL03	31JUL03	0*	15AUG03A	14NOV03A	100
SC6-260020	08NOV04	09DEC04	0*	17NOV03A	17MAR05A	100
SC6-260011			0*	18MAR05A	06MAY05A	100
SC6-260021			0*	06MAY05A	22SEP05A	100
SC6-269950			0	15SEP08A	02DEC08A	100
SC6-269960			0	02DEC08A	12FEB09A	100
SC6-INF0			0*	15SEP08A	12FEB09A	100
SC6-260031			0	17DEC08A	10MAR09A	100
SC6-260032			0	10MAR09A	04MAY09A	100
SC6-260026			0*	05MAY09A	04NOV09A	100
SC6-260030	23SEP05*	09MAR09	0	06NOV09A	19JAN10A	100
SC6-260040			0		19JAN10A	100
SC6-INF1	01MAY03	09MAR09	0*	05JUN03A	19JAN10A	100
SC6-270000	01FEB10	01APR10	0	01FEB10A	01APR10A	100
SC6-270010	02APR10	01MAY10	0	02APR10A	13MAY10A	100



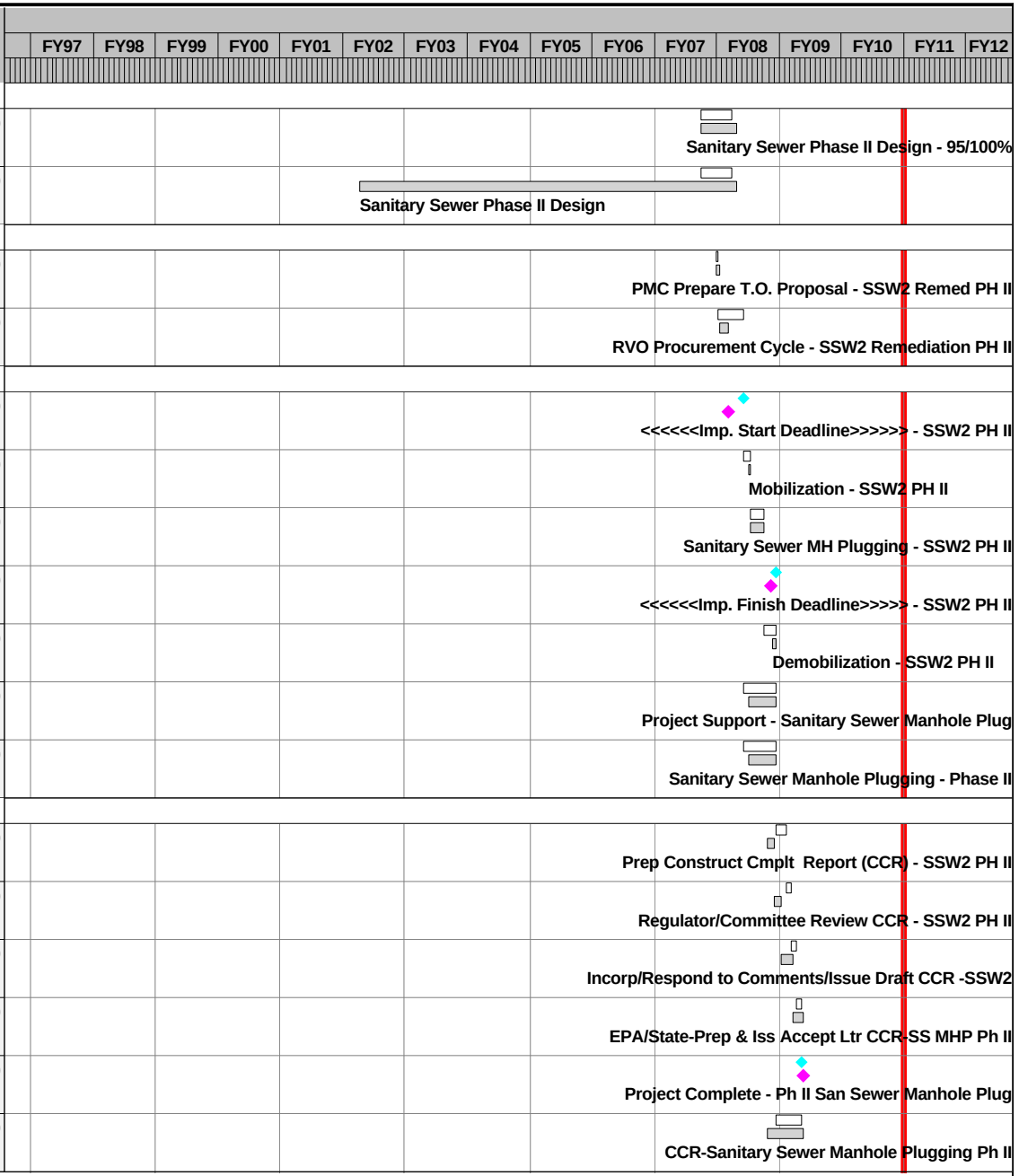
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
SC6-270020	02MAY10	12JUL10	0*	14MAY10A	08SEP10A	100
SC6-270030	13JUL10	26JUL10	6	09SEP10A	07OCT10	78
SC6-270040		26JUL10	0		07OCT10	0
SC6-INF2	01FEB10	26JUL10	6*	15SEP08A	07OCT10	99
SC6-INF	01MAY03	26JUL10	6*	05JUN03A	07OCT10	100
Short-Term Monitoring/Maintenance/Operations						
SC7-660000	01FEB10	30SEP11	35*	05OCT09A	19NOV10	88
SC7-100000	01FEB10	30SEP11	35*	08SEP09A	19NOV10	89
SP BOA & CPA Soil Remedation - PH I						
Remedial Design						
SR2-120000	01JUN98*	16NOV98	0	01JUN98A	16NOV98A	100
SR2-122000		04SEP98*	0		04SEP98A	100
SR2-125000	05SEP98	08OCT98	0	05SEP98A	08OCT98A	100
SR2-130000	17NOV98	22FEB99	0	17NOV98A	22FEB99A	100
SR2-140000	23FEB99	24MAR99	0	23FEB99A	23MAR99A	100
SR2-150000	23FEB99	26MAY99	0	23MAR99A	26MAY99A	100
SR2-160000	27MAY99	26JUN99	0	26MAY99A	25JUN99A	100
SR2-170000	27MAY99	15DEC99	0*	26MAY99A	15DEC99A	100
SR2-175000		15DEC99	0		15DEC99A	100
SR2-180000	16DEC99	17JAN00	0	15DEC99A	16JAN00A	100
SR2-190000	18JAN00	24MAR00	0*	17JAN00A	24MAR00A	100

Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SR2-INF	01JUN98	24MAR00	0*	01JUN98A	24MAR00A	100
Procurement						
SR3-109000	14DEC99*	12JAN00	0	14DEC99A	12JAN00A	100
SR3-110000	13JAN00	28FEB00	0	13JAN00A	28FEB00A	100
Remediation Activities						
SR4-120000	28FEB00	07JUL00	0*	28FEB00A	07JUL00A	100
SR4-125000	28FEB00		0	28FEB00A		100
SR4-153000	23JUN00	28SEP01	0*	23JUN00A	28SEP01A	100
SR4-155000	23JUN00	28SEP01	0*	23JUN00A	28SEP01A	100
SR4-158000	23JUN00	28SEP01	0*	23JUN00A	28SEP01A	100
SR4-160000	08JUN00	31AUG00	0	08JUN00A	31AUG00A	100
SR4-190000	08JUN00	31OCT01	0*	23JUN00A	12OCT01A	100
SR4-200000	08AUG00	31OCT01	0*	08AUG00A	28SEP01A	100
SR4-180000	01SEP00	01SEP00	0	31AUG00A	31AUG00A	100
SR4-240000	26OCT01	31OCT01	0	03OCT01A	12OCT01A	100
SR4-245000		31OCT01	0		12OCT01A	100
SR4-230100			0	14NOV01A	13DEC01A	100
SR4-260000	28FEB00	31OCT01	0	28FEB00A	13DEC01A	100
SR4-INF	28FEB00	31OCT01	0*	28FEB00A	13DEC01A	100
Construction Completion Report						
SR6-250000	01NOV01	04JAN02	0	15OCT01A	11DEC01A	100

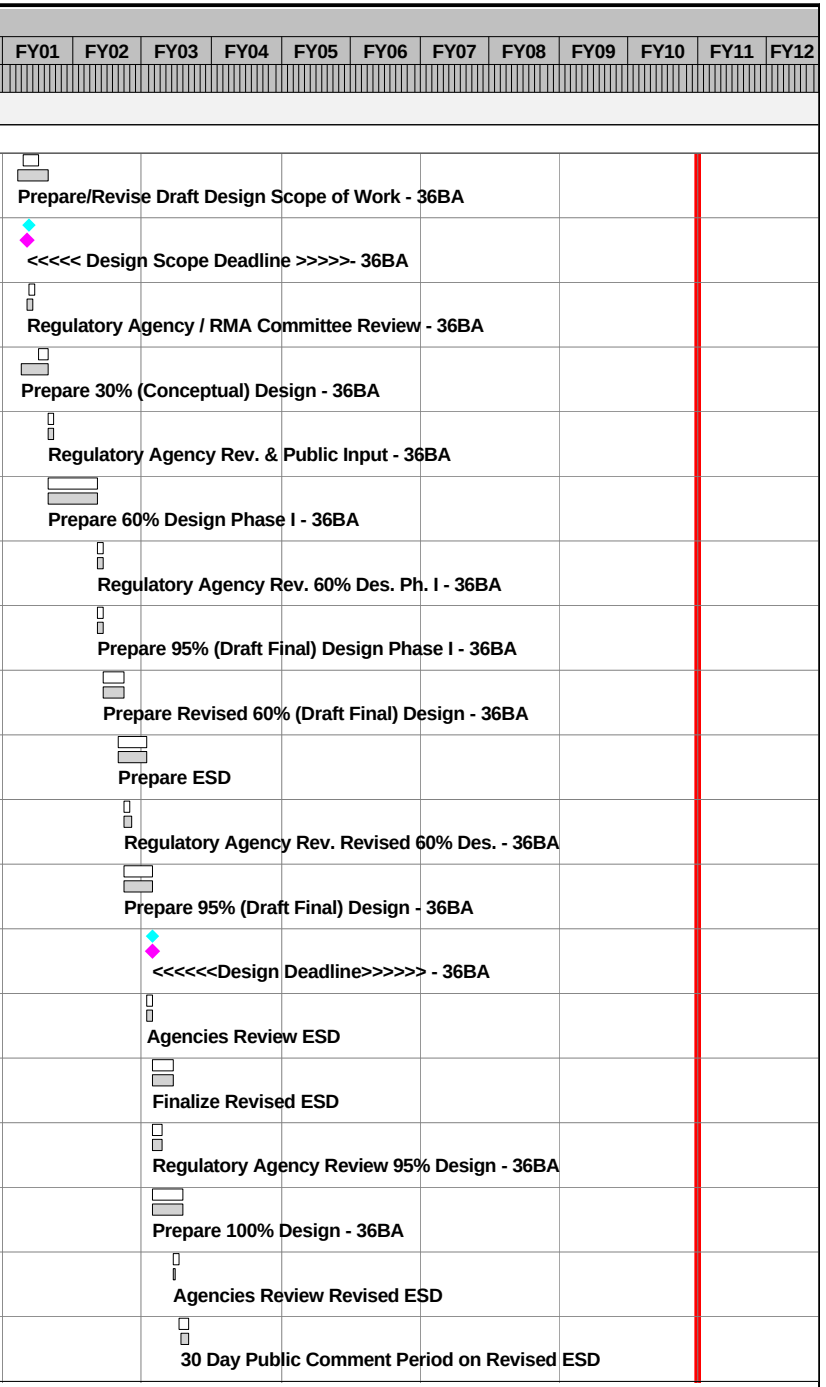
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
SR6-250010	05JAN02	03FEB02	0	12DEC01A	25JAN02A	100
SR6-250020	04FEB02	05MAR02	0	26JAN02A	08FEB02A	100
SR6-250024			0*	08FEB02A	02JUL02A	100
SR6-250030	06MAR02	04APR02	0	03JUL02A	24SEP02A	100
SR6-250040		04APR02	0		24SEP02A	100
SR6-INF	01NOV01	04APR02	0*	15OCT01A	24SEP02A	100
Phase III - Sections 35 & 36 Sites & North Plant						
Sanitary Sewer Manhole Plugging - Phase II						
Remedial Design						
S22-120000	03JAN02*	25JUL02	0*	14JAN02A	25JUL02A	100
S22-122000		12FEB02	0		12FEB02A	100
S22-125000	13FEB02	14MAR02	0	13FEB02A	14MAR02A	100
S22-130000	26JUL02	25JUL02	0	15MAR02A	15MAR02A	100
S22-140000	26JUL02	25JUL02	0	15MAR02A	15MAR02A	100
S22-150000	26JUL02	25JUL02	0	15MAR02A	15MAR02A	100
S22-160000	26JUL02	25JUL02	0	15MAR02A	15MAR02A	100
S22-INF1	03JAN02	25JUL02	0*	14JAN02A	25JUL02A	100
S22-170000	02JUL07*	19SEP07	0*	02JUL07A	18SEP07A	100
S22-175000		19SEP07	0		18SEP07A	100
S22-180000	20SEP07	22OCT07	0	20SEP07A	22OCT07A	100
S22-190000	23OCT07	26DEC07	0*	23OCT07A	20NOV07A	100



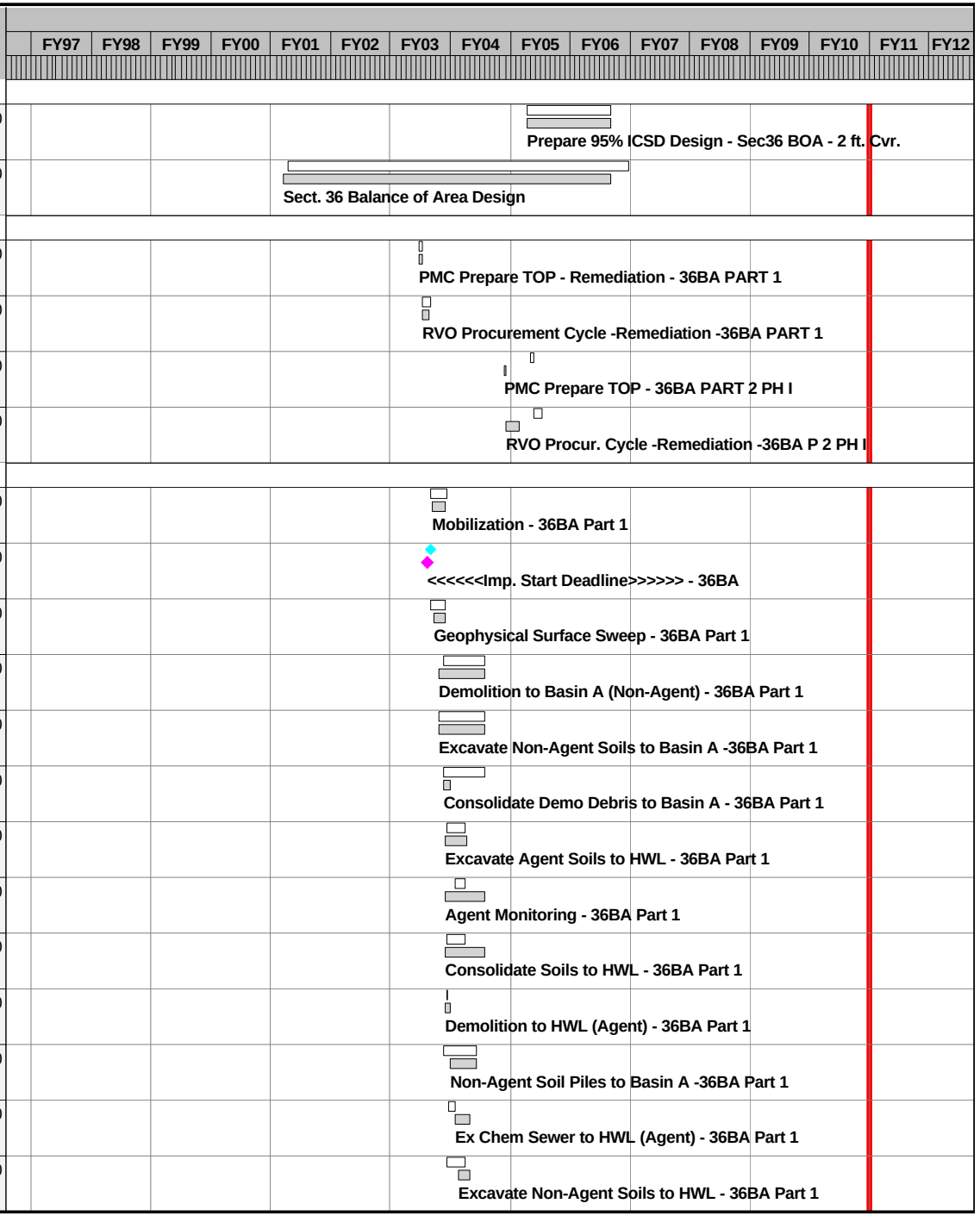
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
S22-INF2	02JUL07	26DEC07	0*	02JUL07A	24JAN08A	100
S22-INF	02JUL07	26DEC07	0*	14JAN02A	24JAN08A	100
Procurement						
S23-109000	27SEP07	11OCT07	0*	27SEP07A	22OCT07A	100
S23-110000	12OCT07	06MAR08	0*	23OCT07A	13DEC07A	100
Remediation Activities						
S24-125000	06MAR08		0	13DEC07A		100
S24-120000	06MAR08	15APR08	0	03APR08A	17APR08A	100
S24-130000	16APR08	03JUL08	0	18APR08A	10JUL08A	100
S24-145100		12SEP08	0		12AUG08A	100
S24-140000	07JUL08	12SEP08	0	21AUG08A	10SEP08A	100
S24-160000	06MAR08	12SEP08	0*	03APR08A	10SEP08A	100
S24-INF	06MAR08	12SEP08	0*	03APR08A	10SEP08A	100
Construction Completion Report						
S26-150000	13SEP08	11NOV08	0*	26JUL08A	04SEP08A	100
S26-150010	12NOV08	13DEC08	0	05SEP08A	13OCT08A	100
S26-150020	14DEC08	14JAN09	0*	14OCT08A	22DEC08A	100
S26-150030	15JAN09	13FEB09	0	23DEC08A	17FEB09A	100
S26-150040		13FEB09	0		17FEB09A	100
S26-INF	13SEP08	13FEB09	0*	26JUL08A	17FEB09A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Section 36 Balance of Areas Soil Rem						
Remedial Design						
T62-120000	16JAN01*	02APR01	0	19DEC00A	22MAY01A	100
T62-122000		12FEB01	0		06FEB01A	100
T62-125000	13FEB01	14MAR01	0	06FEB01A	07MAR01A	100
T62-130000	03APR01	22MAY01	0	02JAN01A	22MAY01A	100
T62-140000	23MAY01	22JUN01	0	23MAY01A	22JUN01A	100
T62-150000	23MAY01	07FEB02	0*	23MAY01A	07FEB02A	100
T62-160000	08FEB02	09MAR02	0*	07FEB02A	13MAR02A	100
T62-170000	08FEB02	13MAR02	0*	08FEB02A	13MAR02A	100
T62-155000	13MAR02*	24JUN02	0*	13MAR02A	24JUN02A	100
T62-195030	03JUN02	22OCT02	0*	03JUN02A	22OCT02A	100
T62-165000	25JUN02	25JUL02	0*	25JUN02A	08AUG02A	100
T62-171000	25JUN02	26NOV02	0*	25JUN02A	26NOV02A	100
T62-175000		26NOV02	0		26NOV02A	100
T62-195034	23OCT02	21NOV02	0*	22OCT02A	21NOV02A	100
T62-195035	22NOV02	13MAR03	0*	22NOV02A	13MAR03A	100
T62-180000	27NOV02	15JAN03	0*	26NOV02A	15JAN03A	100
T62-190000	27NOV02	29APR03	0*	27NOV02A	29APR03A	100
T62-195080	14MAR03	17APR03	0*	14MAR03A	24MAR03A	100
T62-195083	18APR03	29MAY03	0*	29APR03A	29MAY03A	100

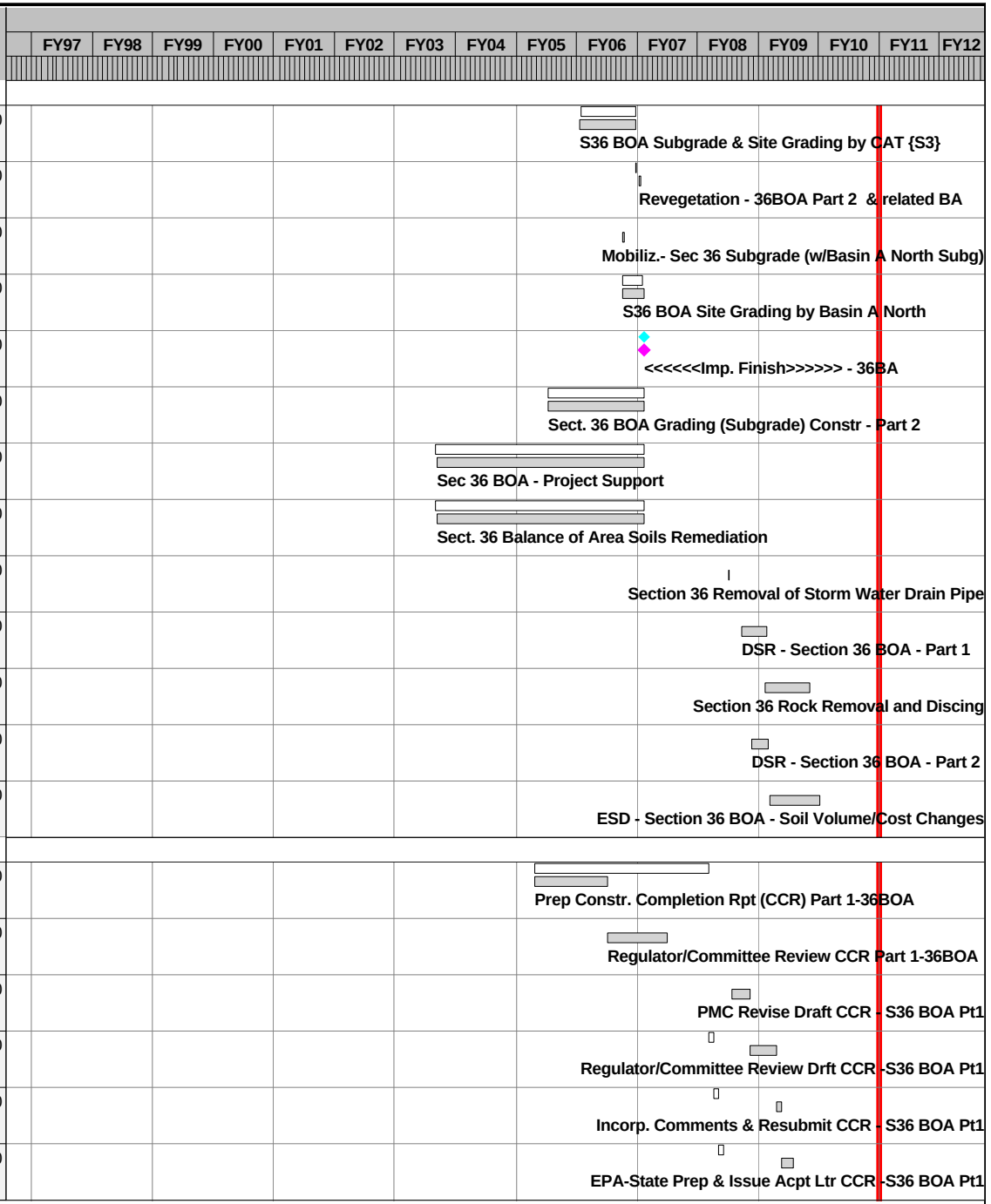


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
T62-122010	13JAN05*	08JUN06	0*	13JAN05A	08JUN06A	100
T62-INF	16JAN01	29SEP06	0*	19DEC00A	08JUN06A	100
Procurement						
T63-109000	24MAR03	16APR03	0*	24MAR03A	16APR03A	100
T63-110000	17APR03	30MAY03	0*	17APR03A	19MAY03A	100
T63-111000	02FEB05	26FEB05	0*	23AUG04A	03SEP04A	100
T63-112000	27FEB05	12APR05	0*	03SEP04A	19NOV04A	100
Remediation Activities						
T64-120000	30MAY03	15SEP03	0*	16JUN03A	29AUG03A	100
T64-125000	30MAY03		0	19MAY03A		100
T64-120020	30MAY03	29AUG03	0*	23JUN03A	29AUG03A	100
T64-154010	21AUG03	27APR04	0*	21JUL03A	27APR04A	100
T64-165010	21JUL03	27APR04	0*	21JUL03A	27APR04A	100
T64-170000	21AUG03	27APR04	0*	21AUG03A	03OCT03A	100
T64-160000	08SEP03	26DEC03	0*	28AUG03A	05JAN04A	100
T64-185000	31OCT03	26DEC03	0*	28AUG03A	27APR04A	100
T64-190000	08SEP03	26DEC03	0*	28AUG03A	29APR04A	100
T64-154000	08SEP03	12SEP03	0*	04SEP03A	30SEP03A	100
T64-165020	21AUG03	10MAR04	0*	03OCT03A	10MAR04A	100
T64-155000	18SEP03	30OCT03	0*	03NOV03A	28JAN04A	100
T64-165000	08SEP03	26DEC03	0*	21NOV03A	26JAN04A	100



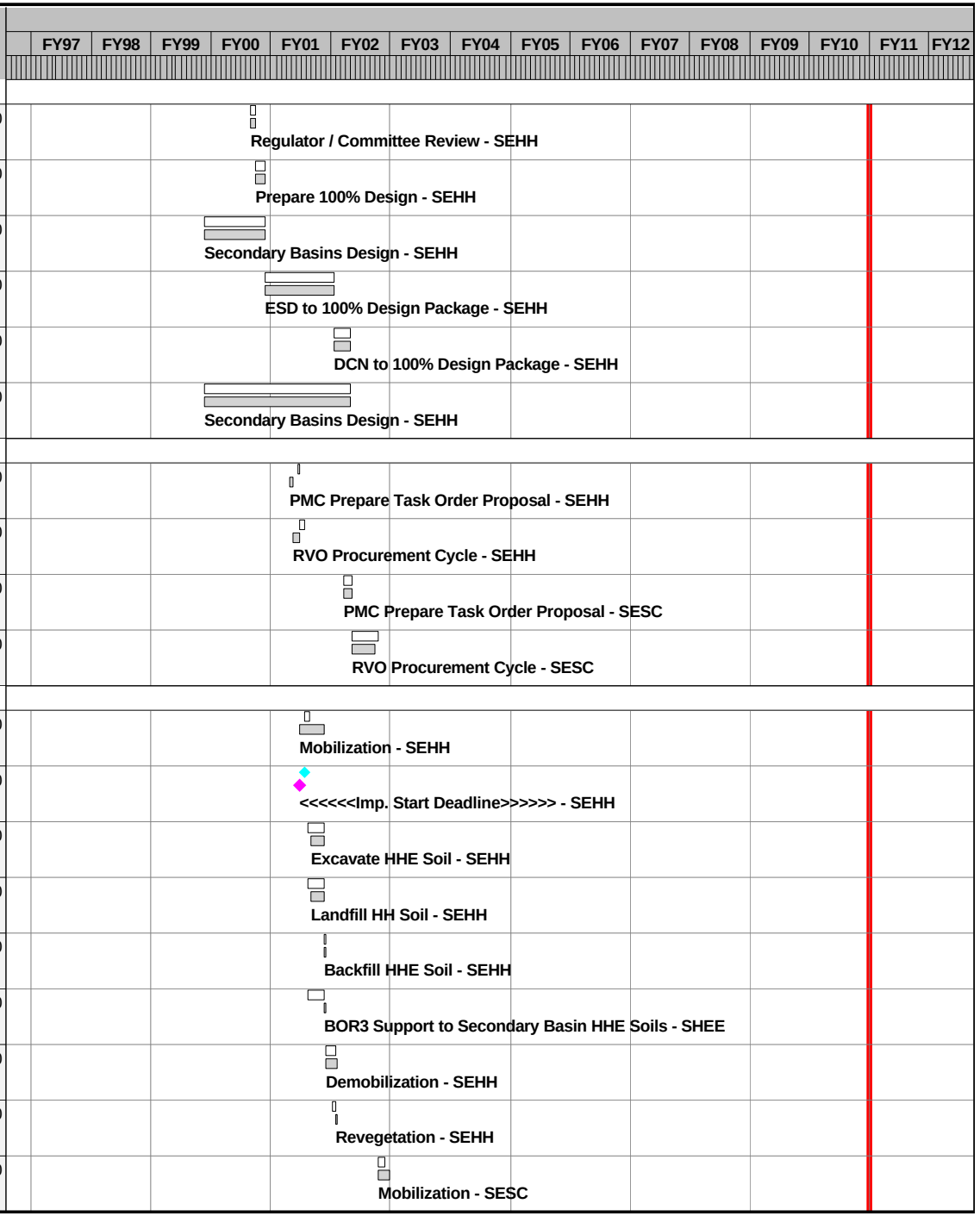
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
T64-175000			0*	01DEC03A	07APR04A	100
T64-155010	31OCT03	30DEC03	0*	30DEC03A	05JAN04A	100
T64-166100			0*	06FEB04A	29APR04A	100
T64-220000	06DEC04	18JAN05	0*	30JAN04A	21MAY04A	100
T64-165300	29DEC03	18JAN05	0*	29JAN04A	17NOV04A	100
T64-120101			0*	23AUG04A	10SEP04A	100
T64-141101			0*	12OCT04A	19NOV04A	100
T64-320000	11NOV04	27DEC04	0*	24NOV04A	12JAN05A	100
T64-290211			0*	13JAN05A	14JAN05A	100
T64-176000			0*	26APR04A	15MAR05A	100
T64-321000			0*	21MAR05A	06APR05A	100
T64-322000			0*	21MAR05A	06APR05A	100
T64-323000			0*	21MAR05A	06APR05A	100
T64-INF1	30MAY03	18JAN05	0*	16JUN03A	06APR05A	100
T64-121000	12APR05*	13MAY05	0*	12APR05A	13MAY05A	100
T64-310000	16MAY05	03OCT05	0*	26MAY05A	28OCT05A	100
T64-220500	14OCT05	04NOV05	0*	19SEP05A	23NOV05A	100
T64-314000	16JAN06*	14FEB06	0*	20FEB06A	09MAR06A	100
T64-315000	01NOV05	27SEP06	0*	29NOV05A	28SEP06A	100

Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
T64-313000	01NOV05	27SEP06	0*	25OCT05A	20SEP06A	100
T64-213000	28SEP06	27SEP06	0*	16OCT06A	20OCT06A	100
T64-252000			0	03JUL06A	17JUL06A	100
T64-312000	05JUL06*	31OCT06	0*	05JUL06A	14NOV06A	100
T64-225000		14NOV06	0		14NOV06A	100
T64-INF2	12APR05	14NOV06	0*	12APR05A	14NOV06A	100
T64-340000	30MAY03	14NOV06	0*	16JUN03A	14NOV06A	100
T64-INF	30MAY03	14NOV06	0*	16JUN03A	14NOV06A	100
T64-230245			0	08APR08A	11APR08A	100
T64-230260			0*	01JUL08A	20NOV08A	100
T640230250			0	17NOV08A	13AUG09A	100
T64-330260			0*	22AUG08A	04DEC08A	100
T64-330300			0*	16DEC08A	08OCT09A	100
Construction Completion Report						
T66-230100	19JAN05	05DEC07	0	25JAN05A	06APR06A	100
T66-230101			0	07APR06A	30MAR07A	100
T66-230102			0	01MAY08A	19AUG08A	100
T66-230110	06DEC07	07JAN08	0*	20AUG08A	20JAN09A	100
T66-230120	08JAN08	06FEB08	0*	21JAN09A	19FEB09A	100
T66-230130	07FEB08	07MAR08	0*	20FEB09A	05MAY09A	100

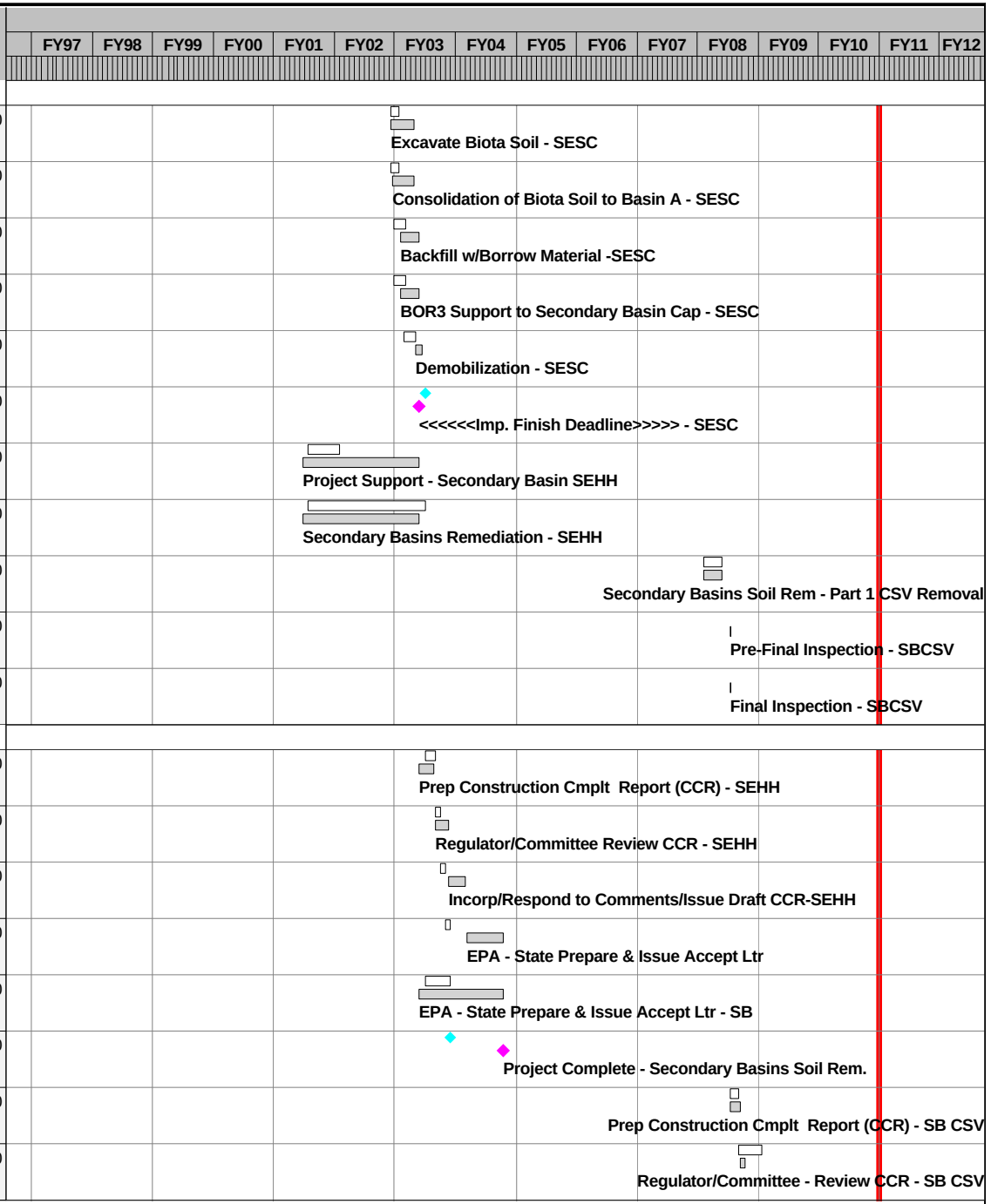


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
T66-230140		07MAR08	0		05MAY09A	100
T66-INF1	19JAN05	07MAR08	0*	25JAN05A	05MAY09A	100
T66-230000	15NOV06	14NOV06	0	01MAY08A	16JUN09A	100
T66-230010	15NOV06	14NOV06	0	19JUN09A	24JUL09A	100
T66-230020	15NOV06	14NOV06	0*	27JUL09A	19NOV09A	100
T66-230030	15NOV06	14NOV06	0*	24NOV09A	22FEB10A	100
T66-230040		14NOV06	0		22FEB10A	100
T66-INF2	15NOV06	14NOV06	0*	01MAY08A	22FEB10A	100
T66-INF	19JAN05	07MAR08	0*	25JAN05A	22FEB10A	100
Secondary Basins Soil Remediation						
Remedial Design						
SB2-120100	23AUG99*	10DEC99	0	23AUG99A	10DEC99A	100
SB2-122100		17SEP99	0		17SEP99A	100
SB2-121100	18SEP99	17OCT99	0	18SEP99A	17OCT99A	100
SB2-130100	18OCT99	10DEC99	0	18OCT99A	10DEC99A	100
SB2-140100	11DEC99	09JAN00	0	11DEC99A	09JAN00A	100
SB2-150100	10JAN00	10MAR00	0	10JAN00A	10MAR00A	100
SB2-160100	11MAR00	09APR00	0	11MAR00A	09APR00A	100
SB2-170100	10APR00	26MAY00	0	10APR00A	26MAY00A	100
SB2-175100		26MAY00	0		26MAY00A	100

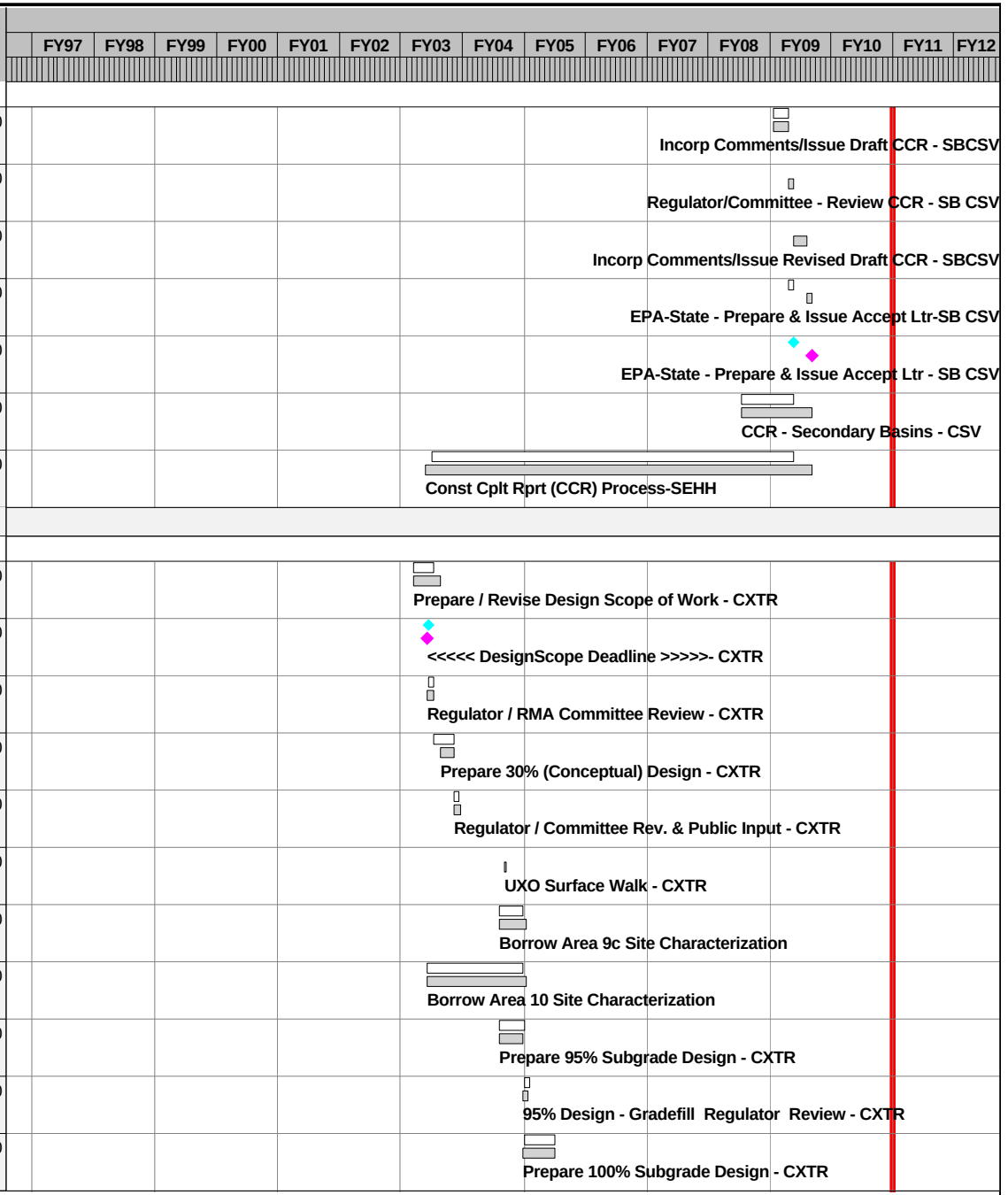
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
SB2-180100	27MAY00	25JUN00	0	27MAY00A	25JUN00A	100
SB2-190100	26JUN00	25AUG00	0	26JUN00A	25AUG00A	100
SB2-INF1	23AUG99	25AUG00	0*	23AUG99A	25AUG00A	100
SB2-200100	28AUG00	16OCT01	0*	28AUG00A	16OCT01A	100
SB2-200200	17OCT01	31JAN02	0*	17OCT01A	31JAN02A	100
SB2-INF	23AUG99	31JAN02	0*	23AUG99A	31JAN02A	100
Procurement						
SB3-109100	12MAR01	23MAR01	0	22JAN01A	13FEB01A	100
SB3-110100	24MAR01	27APR01	0	13FEB01A	21MAR01A	100
SB3-109200	18DEC01*	07FEB02	0	18DEC01A	07FEB02A	100
SB3-110200	08FEB02	15JUL02	0	08FEB02A	28JUN02A	100
Remediation Activities						
SB4-120100	27APR01	24MAY01	0*	21MAR01A	21AUG01A	100
SB4-125100	27APR01		0	21MAR01A		100
SB4-130100	15MAY01	24AUG01	0*	08JUN01A	24AUG01A	100
SB4-140000	15MAY01	24AUG01	0*	08JUN01A	24AUG01A	100
SB4-130150	20AUG01	31AUG01	0*	20AUG01A	31AUG01A	100
SB4-178500	15MAY01	24AUG01	0*	20AUG01A	31AUG01A	100
SB4-170100	04SEP01	26OCT01	0*	04SEP01A	09NOV01A	100
SB4-176100	15OCT01	26OCT01	0*	29OCT01A	09NOV01A	100
SB4-120200	15JUL02	30AUG02	0*	15JUL02A	27SEP02A	100



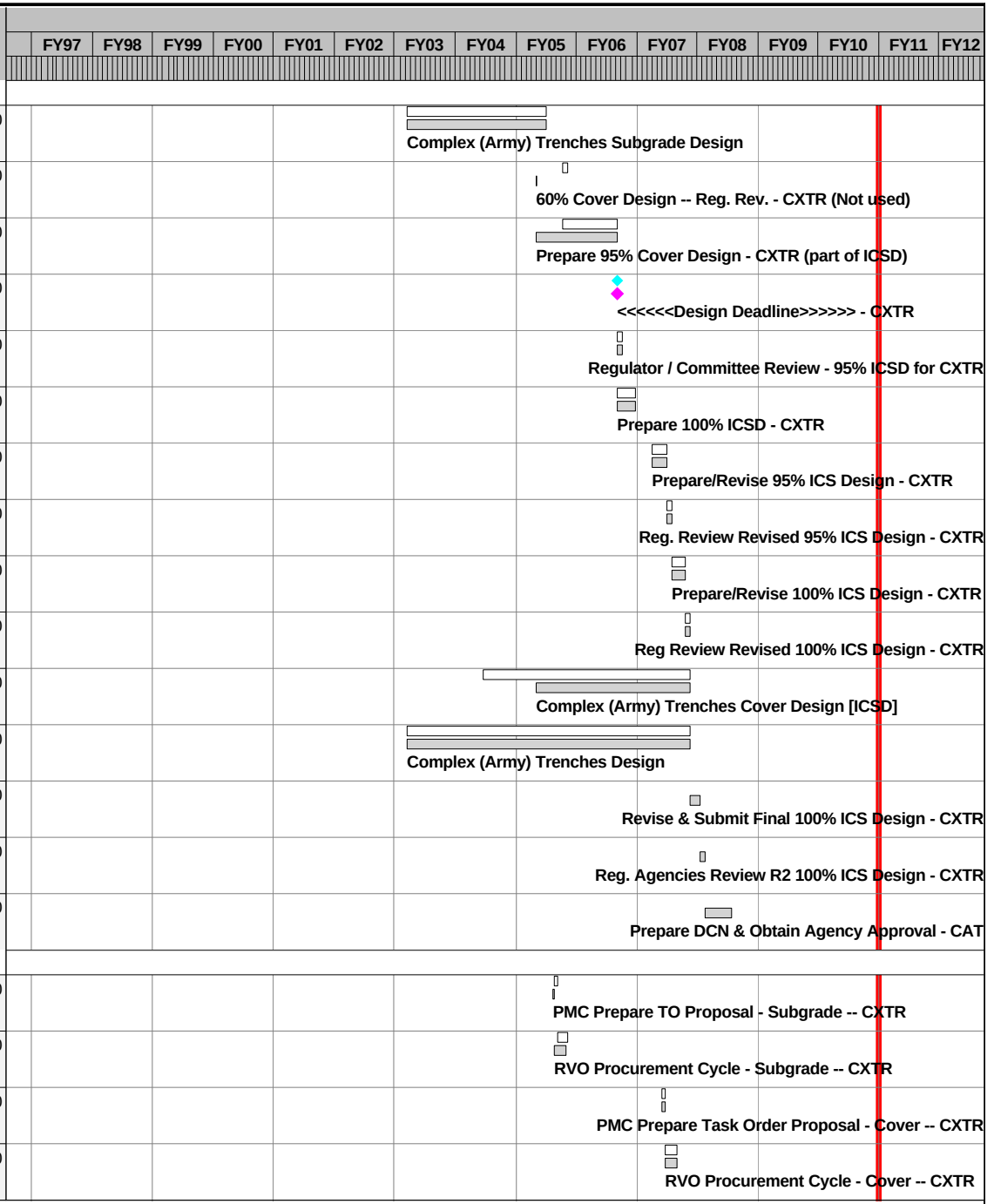
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
SB4-130200	03SEP02	29OCT02	0*	04SEP02A	21JAN03A	100
SB4-140100	03SEP02	29OCT02	0*	16SEP02A	21JAN03A	100
SB4-150200	30SEP02	09DEC02	0*	07NOV02A	18FEB03A	100
SB4-178000	30SEP02	09DEC02	0*	07NOV02A	18FEB03A	100
SB4-170200	26NOV02	04FEB03	0*	30JAN03A	14MAR03A	100
SB4-175200		31MAR03	0		26FEB03A	100
SB4-190100	27APR01	26OCT01	0*	21MAR01A	26FEB03A	100
SB4-INF	27APR01	31MAR03	0*	21MAR01A	26FEB03A	100
SB4-175300	05NOV07*	28FEB08	0*	05NOV07A	28FEB08A	100
SB4-175400			0	16APR08A	16APR08A	100
SB4-175500			0	16APR08A	16APR08A	100
Construction Completion Report						
SB6-180100	01APR03	31MAY03	0	27FEB03A	28MAY03A	100
SB6-180110	01JUN03	30JUN03	0	06JUN03A	18AUG03A	100
SB6-180120	01JUL03	31JUL03	0	19AUG03A	02DEC03A	100
SB6-180130	01AUG03	30AUG03	0	08DEC03A	15JUL04A	100
SB6-INF1	01APR03	30AUG03	0*	27FEB03A	15JUL04A	100
SB6-180140		30AUG03	0		15JUL04A	100
SB6-190100	17APR08	10JUN08	0	17APR08A	17JUN08A	100
SB6-190110	11JUN08	26OCT08	0	18JUN08A	17JUL08A	100



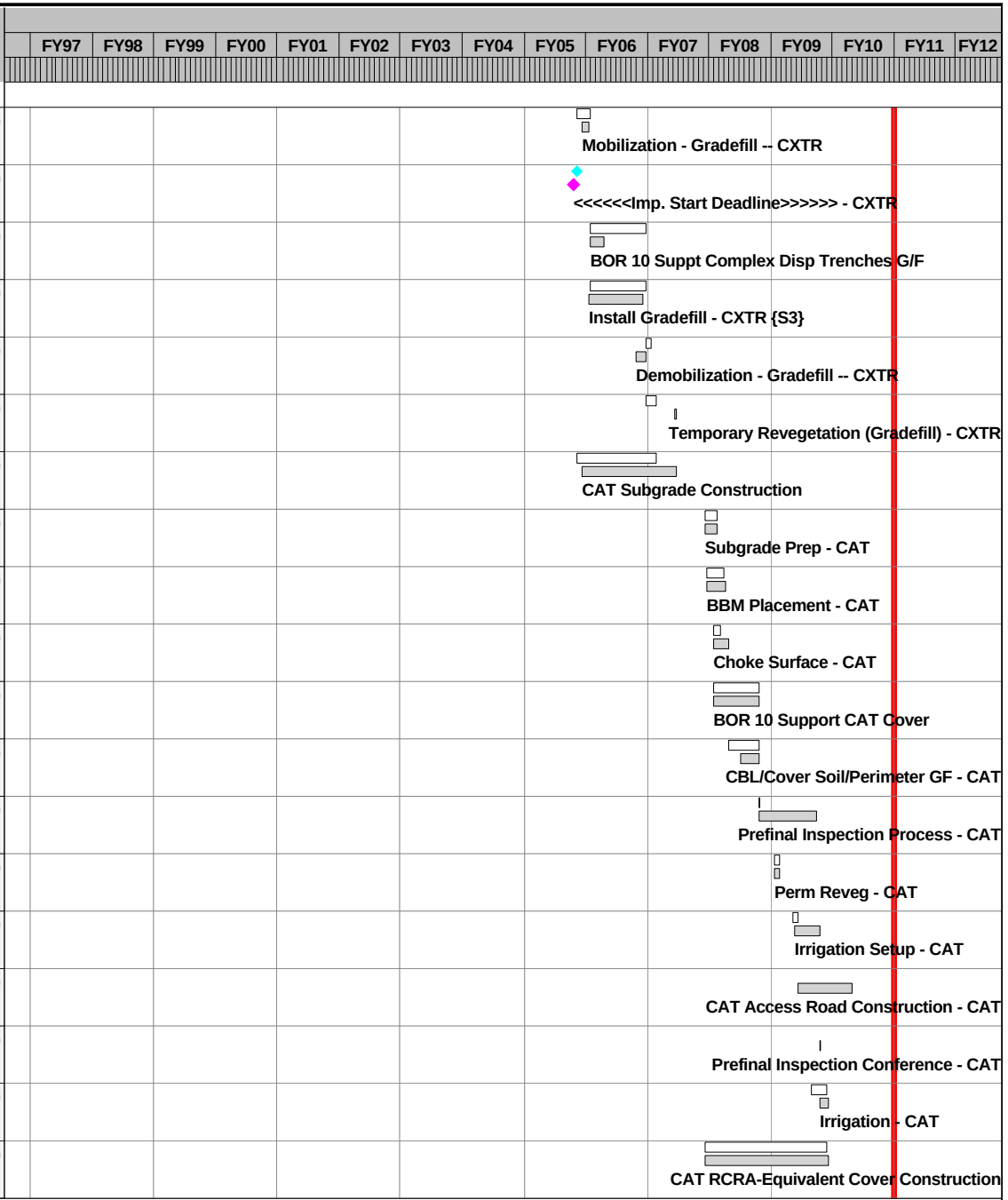
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
SB6-190120	27OCT08	25JAN09	0*	23OCT08A	20JAN09A	100
SB6-190115			0	22JAN09A	25FEB09A	100
SB6-190125			0*	26FEB09A	07MAY09A	100
SB6-190130	26JAN09	24FEB09	0	08MAY09A	15JUN09A	100
SB6-190140		24FEB09	0		15JUN09A	100
SB6-INF2	17APR08	24FEB09	0*	17APR08A	15JUN09A	100
SB6-INF	01APR03	24FEB09	0*	27FEB03A	15JUN09A	100
Complex(Army)Disposal Trenches Remediation-Cover						
Remedial Design						
CT2-120000	17DEC02*	18APR03	0	17DEC02A	22MAY03A	100
CT2-122000		10MAR03	0		06MAR03A	100
CT2-125000	11MAR03	09APR03	0	07MAR03A	18APR03A	100
CT2-130000	10APR03	12AUG03	0	23MAY03A	12AUG03A	100
CT2-140000	13AUG03	12SEP03	0	13AUG03A	19SEP03A	100
CT2-151100			0	07JUN04A	18JUN04A	100
CT2-130009	11MAY04*	27SEP04	0*	11MAY04A	15OCT04A	100
CT2-130010	04MAR03	24SEP04	0*	03MAR03A	15OCT04A	100
CT2-151000	07MAY04	01OCT04	0	07MAY04A	28SEP04A	100
CT2-161000	04OCT04	03NOV04	0*	30SEP04A	29OCT04A	100
CT2-191000	04OCT04	29MAR05	0*	30SEP04A	29MAR05A	100



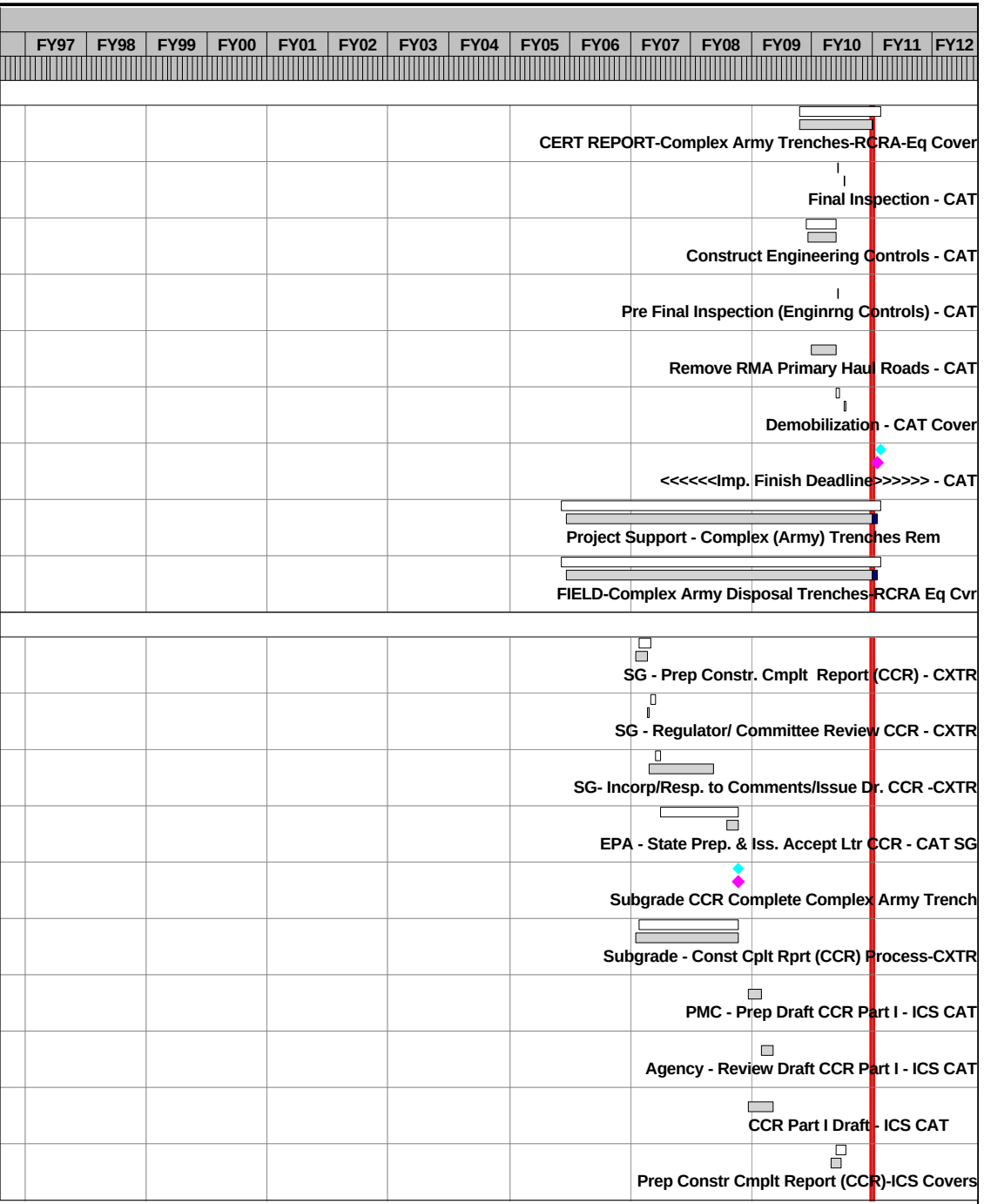
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
CT2-INF1	17DEC02	29MAR05	0*	17DEC02A	29MAR05A	100
CT2-160000	13JUL05	11AUG05	0	31JAN05A	31JAN05A	100
CT2-170000	13JUL05	08JUN06	0*	31JAN05A	08JUN06A	100
CT2-175000		08JUN06	0		08JUN06A	100
CT2-180000	09JUN06	09JUL06	0	09JUN06A	10JUL06A	100
CT2-190000	09JUN06	29SEP06	0*	09JUN06A	29SEP06A	100
CT2-174100	02JAN07*	03APR07	0	02JAN07A	03APR07A	100
CT2-174105	04APR07	03MAY07	0	04APR07A	03MAY07A	100
CT2-174110	04MAY07	23JUL07	0	30APR07A	23JUL07A	100
CT2-195000	24JUL07	23AUG07	0	25JUL07A	23AUG07A	100
CT2-INF2	15MAR04	23AUG07	0*	31JAN05A	23AUG07A	100
CT2-INF	17DEC02	23AUG07	0*	17DEC02A	23AUG07A	100
CT2-195001			0	24AUG07A	23OCT07A	100
CT2-195114			0	24OCT07A	20NOV07A	100
CT2-195120			0	21NOV07A	22APR08A	100
Procurement						
CT3-109000	19MAY05	09JUN05	0	12MAY05A	27MAY05A	100
CT3-110000	10JUN05	15AUG05	0	27MAY05A	27JUL05A	100
CT3-109200	05MAR07*	23MAR07	0	05MAR07A	23MAR07A	100
CT3-110200	24MAR07	04JUN07	0*	26MAR07A	04JUN07A	100



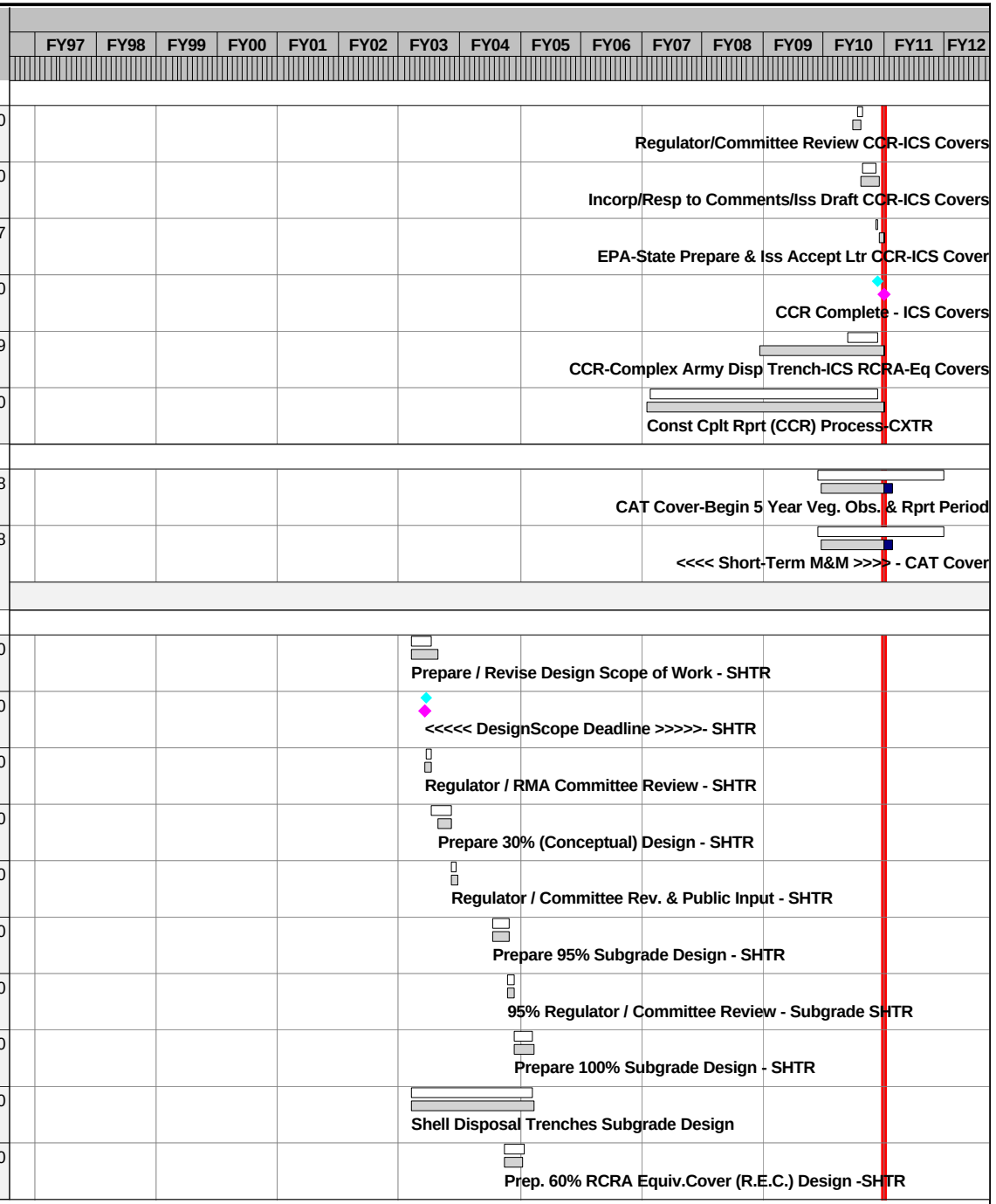
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
CT4-120000	15AUG05	31OCT05	0*	07SEP05A	24OCT05A	100
CT4-125000	15AUG05*		0	27JUL05A		100
CT4-179520	01NOV05	27SEP06	0*	02NOV05A	16JAN06A	100
CT4-160000	01NOV05	27SEP06	0*	24OCT05A	31AUG06A	100
CT4-169000	28SEP06	25OCT06	0*	31JUL06A	29SEP06A	100
CT4-160500	28SEP06	28NOV06	0*	16MAR07A	21MAR07A	100
CT4-INF1	15AUG05	28NOV06	0*	07SEP05A	21MAR07A	100
CT4-170100	13SEP07*	16NOV07	0	13SEP07A	16NOV07A	100
CT4-171000	19SEP07	26DEC07	0	19SEP07A	04JAN08A	100
CT4-171010	29OCT07	11DEC07	0	29OCT07A	24JAN08A	100
CT4-179440	29OCT07	22JUL08	0*	29OCT07A	22JUL08A	100
CT4-170001	29JAN08	22JUL08	0	07APR08A	22JUL08A	100
CT4-182001	22JUL08	22JUL08	0	22JUL08A	02JUL09A	100
CT4-182003	20OCT08	26NOV08	0	21OCT08A	25NOV08A	100
CT4-182004	13FEB09*	13MAR09	0	24FEB09A	24JUL09A	100
CT4-182010			0	17MAR09A	29JAN10A	100
CT4-182011			0	23JUL09A	23JUL09A	100
CT4-186001	01JUN09	31AUG09	0	25JUL09A	12SEP09A	100
CT4-INF2	13SEP07	31AUG09	0*	13SEP07A	12SEP09A	100



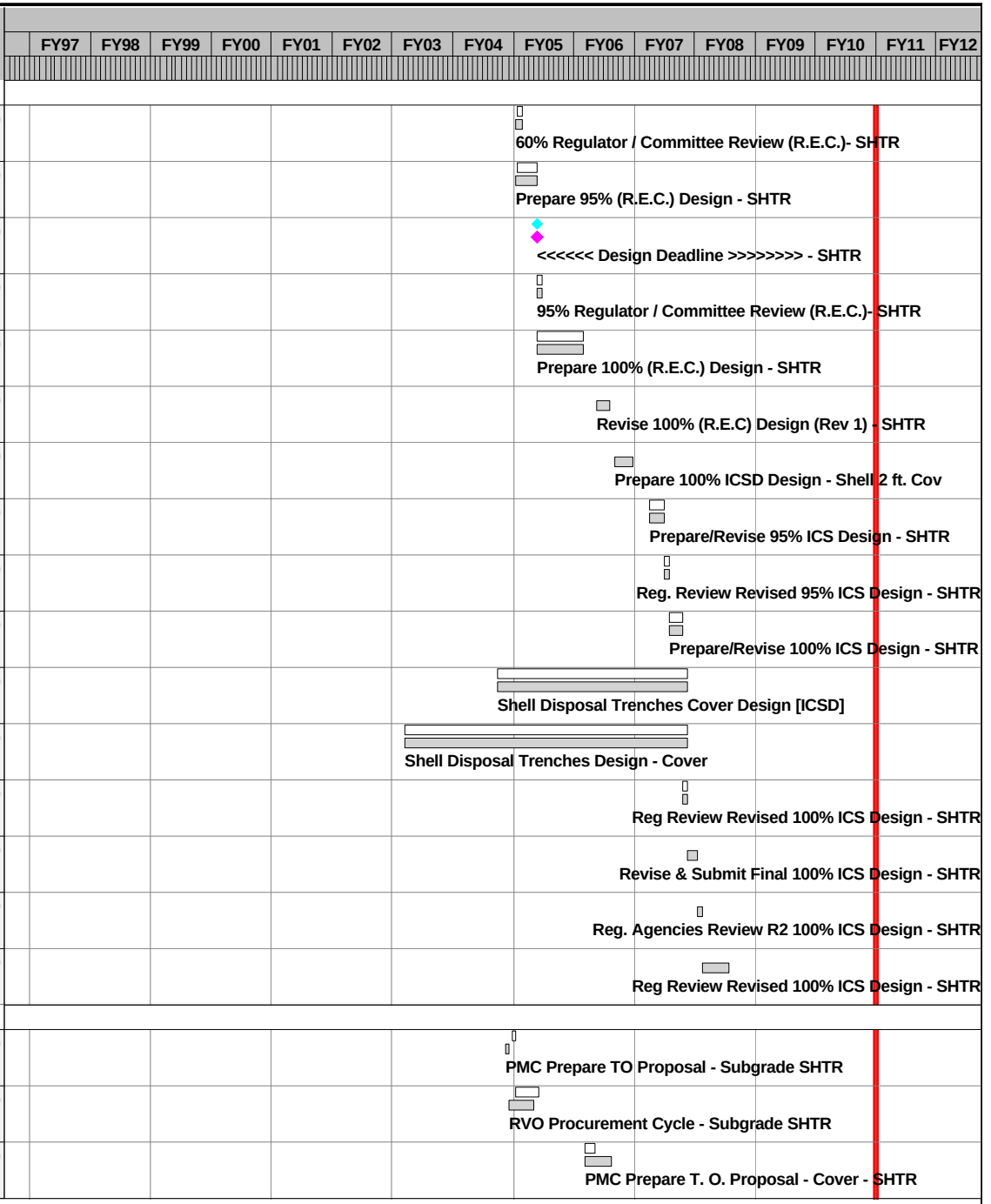
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
CT4-200200	23JUL09	19NOV10	5*	23JUL09A	06OCT10	99
CT4-180001	10MAR10	10MAR10	0	21APR10A	21APR10A	100
CT4-187000	01SEP09	02MAR10	0	14SEP09A	02MAR10A	100
CT4-187010			0	04MAR10A	04MAR10A	100
CT4-186110			0	01OCT09A	02MAR10A	100
CT4-190000	03MAR10	16MAR10	0*	21APR10A	30APR10A	100
CT4-195000		19NOV10	0		29OCT10	0
CT4-210000	15AUG05	19NOV10	20*	07SEP05A	29OCT10	99
CT4-INF	15AUG05	19NOV10	20*	07SEP05A	29OCT10	99
Construction Completion Report						
CT6-210000	29NOV06	29JAN07	0	06NOV06A	09JAN07A	100
CT6-210010	30JAN07	28FEB07	0	10JAN07A	24JAN07A	100
CT6-210020	01MAR07	30MAR07	0	25JAN07A	21FEB08A	100
CT6-210030	31MAR07	17JUL08	0	08MAY08A	17JUL08A	100
CT6-210040		17JUL08	0		17JUL08A	100
CT6-INF1	29NOV06	17JUL08	0*	06NOV06A	17JUL08A	100
CT6-199950			0	15SEP08A	02DEC08A	100
CT6-199960			0	02DEC08A	12FEB09A	100
CT6-INF0			0*	15SEP08A	12FEB09A	100
CT6-200000	02MAR10	30APR10	0*	01FEB10A	01APR10A	100



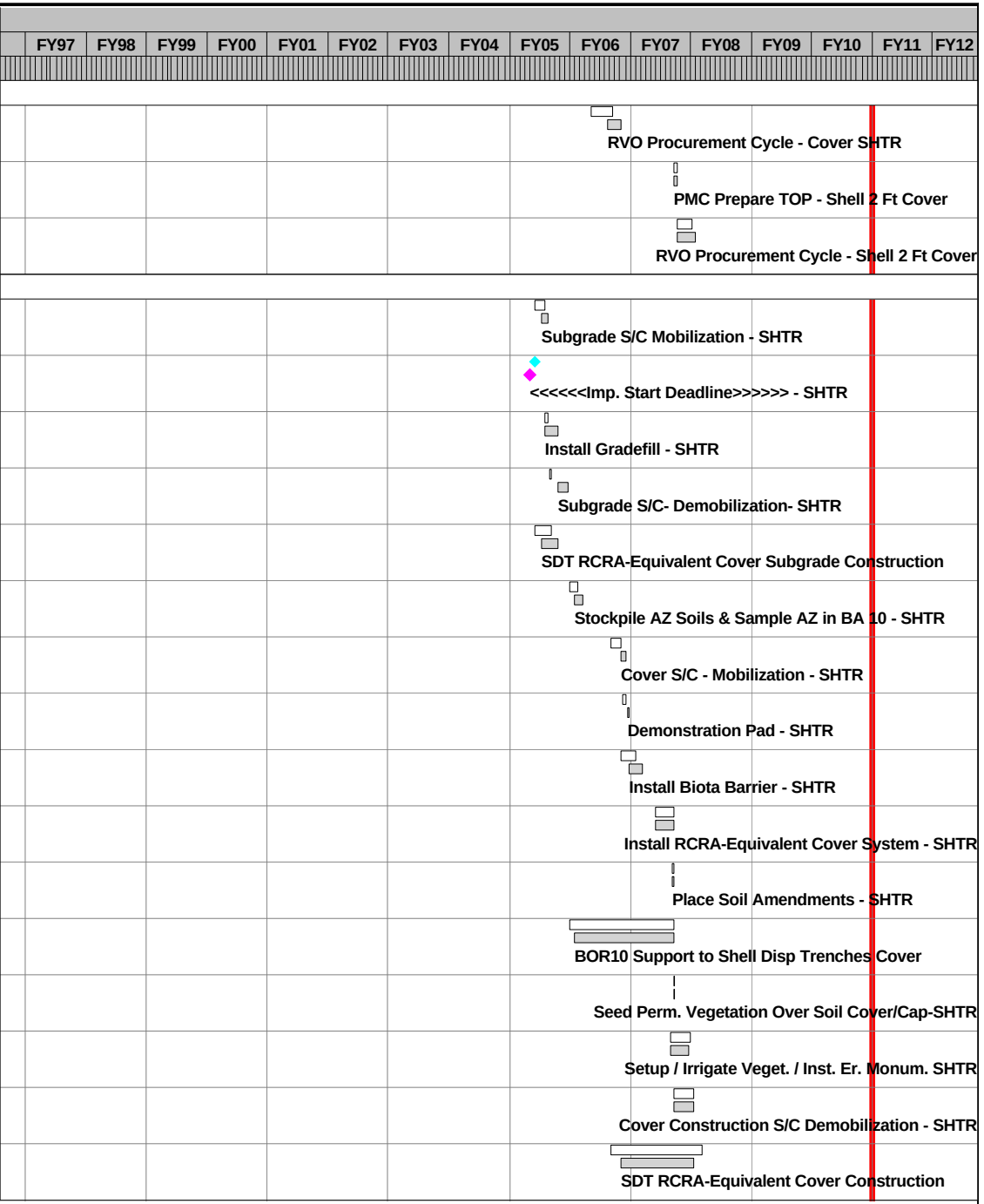
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
CT6-200010	01MAY10	30MAY10	0*	02APR10A	13MAY10A	100
CT6-200020	01JUN10	10AUG10	0*	14MAY10A	08SEP10A	100
CT6-200030	11AUG10	24AUG10	6	09SEP10A	07OCT10	57
CT6-200040		24AUG10	0		07OCT10	0
CT6-INF2	02MAR10	24AUG10	6*	15SEP08A	07OCT10	99
CT6-INF	29NOV06	24AUG10	6*	06NOV06A	07OCT10	100
Short-Term Monitoring/Maintenance/Operations						
CT7-600000	01SEP09	30SEP11	35*	21SEP09A	19NOV10	88
CT7-100000	01SEP09	30SEP11	35*	21SEP09A	19NOV10	88
Shell Disposal Trenches Remediation - Cover						
Remedial Design						
ST2-120000	17DEC02*	18APR03	0	17DEC02A	22MAY03A	100
ST2-122000		10MAR03	0		06MAR03A	100
ST2-125000	11MAR03	09APR03	0	07MAR03A	18APR03A	100
ST2-130000	10APR03	12AUG03	0	23MAY03A	12AUG03A	100
ST2-140000	13AUG03	12SEP03	0	12AUG03A	19SEP03A	100
ST2-171000	15APR04*	22JUL04	0*	15APR04A	22JUL04A	100
ST2-181000	22JUL04	23AUG04	0	22JUL04A	23AUG04A	100
ST2-191000	24AUG04	16DEC04	0*	24AUG04A	23DEC04A	100
ST2-INF1	17DEC02	16DEC04	0*	17DEC02A	23DEC04A	100
ST2-150000	29JUN04	22OCT04	0*	29JUN04A	19OCT04A	100



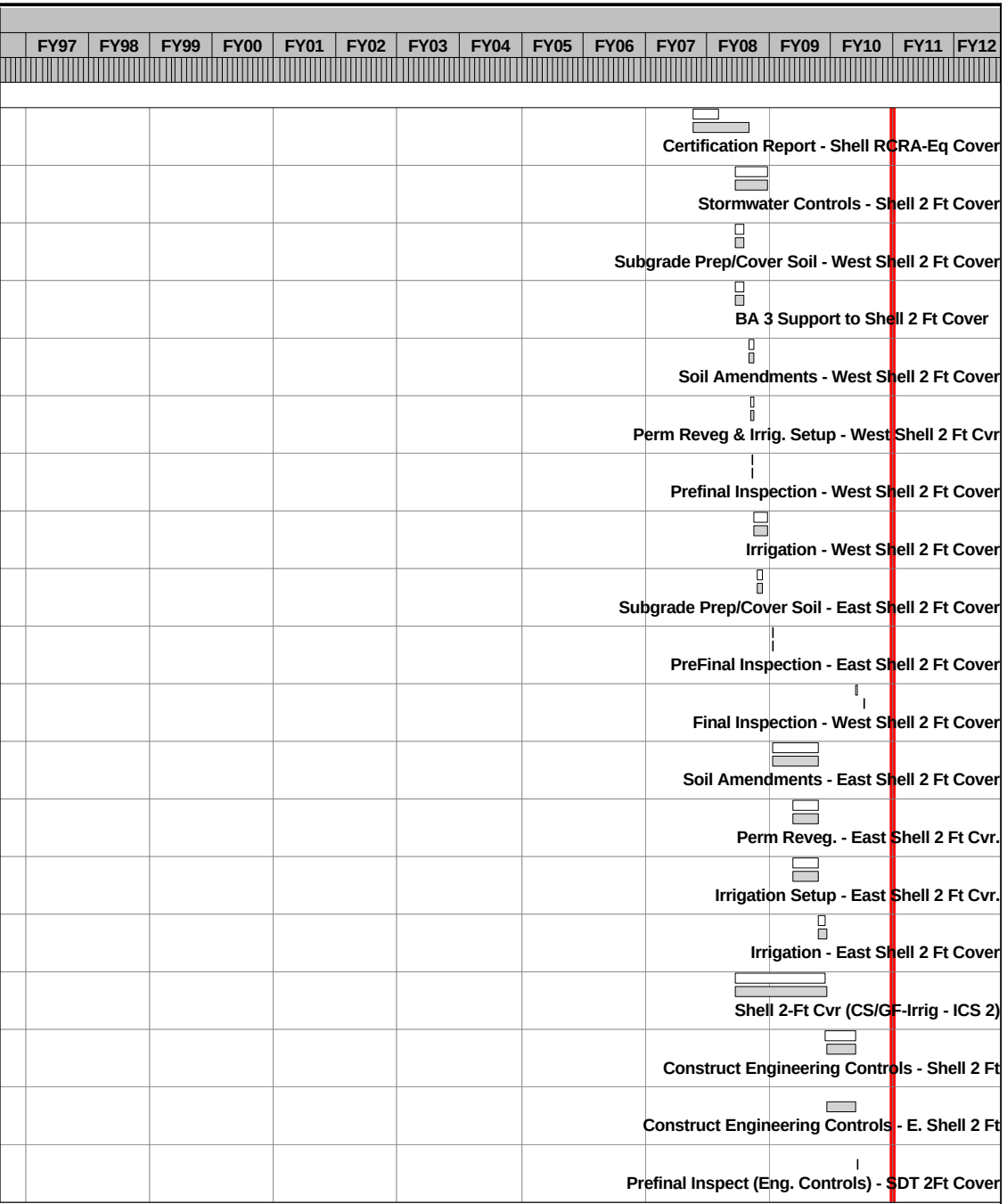
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
ST2-160000	23OCT04	22NOV04	0*	19OCT04A	22NOV04A	100
ST2-170000	25OCT04	24FEB05	0*	19OCT04A	24FEB05A	100
ST2-175000		24FEB05	0		24FEB05A	100
ST2-180000	25FEB05	26MAR05	0*	25FEB05A	28MAR05A	100
ST2-190000	25FEB05	01DEC05	0*	25FEB05A	01DEC05A	100
ST2-195000			0*	13FEB06A	04MAY06A	100
ST2-123050			0	09JUN06A	29SEP06A	100
ST2-174100	02JAN07*	03APR07	0	02JAN07A	03APR07A	100
ST2-174105	04APR07	03MAY07	0	04APR07A	03MAY07A	100
ST2-174110	04MAY07	23JUL07	0	30APR07A	23JUL07A	100
ST2-INF2	29JUN04	23AUG07	0*	29JUN04A	23AUG07A	100
ST2-INF	17DEC02	23AUG07	0*	17DEC02A	23AUG07A	100
ST2-174112	24JUL07	23AUG07	0	25JUL07A	23AUG07A	100
ST2-174001			0	24AUG07A	23OCT07A	100
ST2-174114			0	24OCT07A	20NOV07A	100
ST2-174120			0	21NOV07A	22APR08A	100
Procurement						
ST3-109100	29SEP04	19OCT04	0	16AUG04A	03SEP04A	100
ST3-110100	19OCT04	01MAR05	0*	03SEP04A	04FEB05A	100
ST3-109000	05DEC05	03FEB06	0	05DEC05A	16MAY06A	100



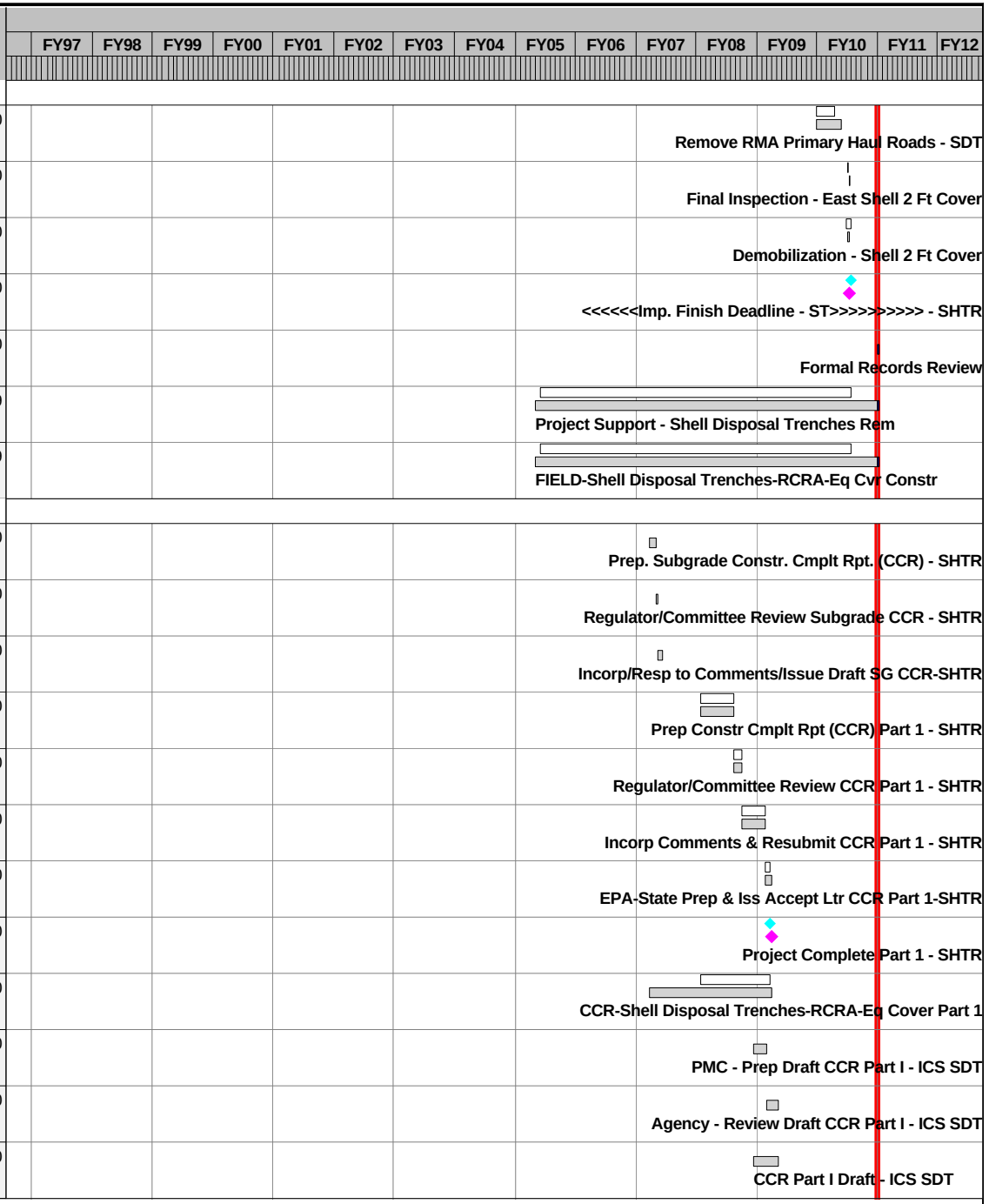
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
ST3-110000	06FEB06	12JUN06	0*	16MAY06A	08AUG06A	100
ST3-111050	25JUN07*	13JUL07	0	25JUN07A	13JUL07A	100
ST3-111100	16JUL07	08OCT07	0*	16JUL07A	25OCT07A	100
Remediation Activities						
ST4-120100	01MAR05	28APR05	0*	12APR05A	24MAY05A	100
ST4-125000	01MAR05*		0	04FEB05A		100
ST4-130000	29APR05	27MAY05	0*	02MAY05A	26JUL05A	100
ST4-120110	31MAY05	13JUN05	0	27JUL05A	23SEP05A	100
ST4-INF1	01MAR05	13JUN05	0*	12APR05A	26JUL05A	100
ST4-440000	05OCT05*	22NOV05	0*	02NOV05A	16DEC05A	100
ST4-120000	12JUN06*	04AUG06	0*	09AUG06A	06SEP06A	100
ST4-142200	14AUG06	01SEP06	0*	11SEP06A	20SEP06A	100
ST4-142000	07AUG06	30OCT06	0	26SEP06A	11DEC06A	100
ST4-140000	05MAR07*	18JUN07	0*	05MAR07A	18JUN07A	100
ST4-190110	13JUN07	19JUN07	0*	13JUN07A	19JUN07A	100
ST4-179900	05OCT05	19JUN07	0*	02NOV05A	19JUN07A	100
ST4-190000	20JUN07	23JUN07	0*	20JUN07A	23JUN07A	100
ST4-190120	04JUN07	03OCT07	0*	04JUN07A	15SEP07A	100
ST4-200000	18JUN07	16OCT07	0*	18JUN07A	16OCT07A	100
ST4-INF2	12JUN06	12DEC07	0*	09AUG06A	16OCT07A	100



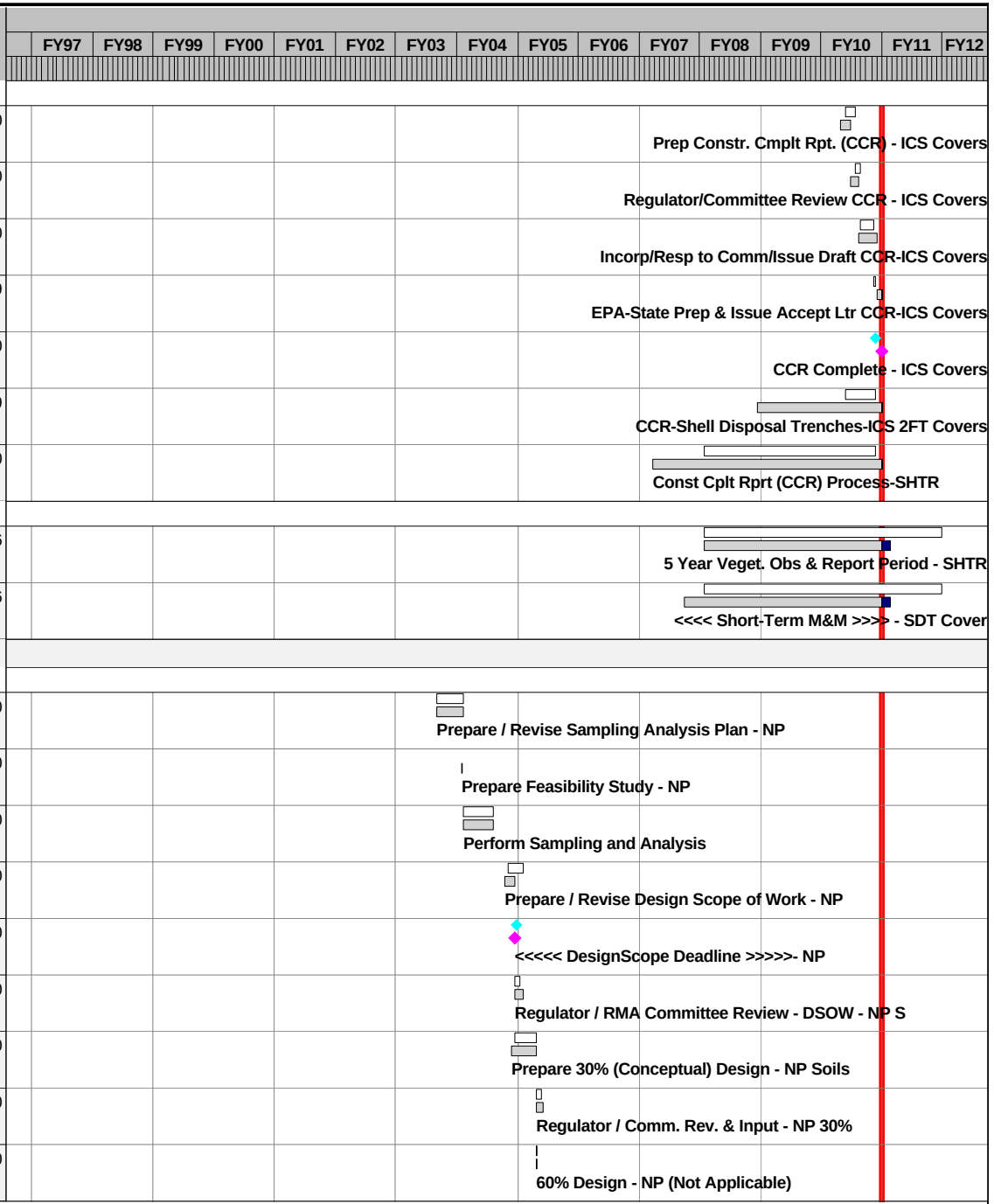
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
ST4-210200	16JUL07	12DEC07	0*	16JUL07A	04JUN08A	100
ST4-311STM	18MAR08	26SEP08	0*	18MAR08A	26SEP08A	100
ST4-311000	18MAR08*	09MAY08	0	18MAR08A	09MAY08A	100
ST4-179920	18MAR08	09MAY08	0*	18MAR08A	09MAY08A	100
ST4-311005	03JUN08	03JUL08	0	03JUN08A	03JUL08A	100
ST4-311500	13JUN08	03JUL08	0	13JUN08A	03JUL08A	100
ST4-311004	26JUN08	26JUN08	0	26JUN08A	26JUN08A	100
ST4-311501	05JUL08	26SEP08	0	07JUL08A	26SEP08A	100
ST4-311001	28JUL08*	20AUG08	0	28JUL08A	20AUG08A	100
ST4-311008	24OCT08	24OCT08	0	24OCT08A	24OCT08A	100
ST4-311502	03MAR10	03MAR10	0	21APR10A	21APR10A	100
ST4-311011	27OCT08	24JUL09	0	27OCT08A	25JUL09A	100
ST4-311021	20FEB09	24JUL09	0	20FEB09A	25JUL09A	100
ST4-311022	26FEB09	24JUL09	0	24FEB09A	24JUL09A	100
ST4-311031	25JUL09	31AUG09	0	25JUL09A	12SEP09A	100
ST4-INF3	18MAR08	31AUG09	0*	18MAR08A	12SEP09A	100
ST4-189000	01SEP09	02MAR10	0	14SEP09A	02MAR10A	100
ST4-311061			0	14SEP09A	02MAR10A	100
ST4-311071			0	04MAR10A	04MAR10A	100



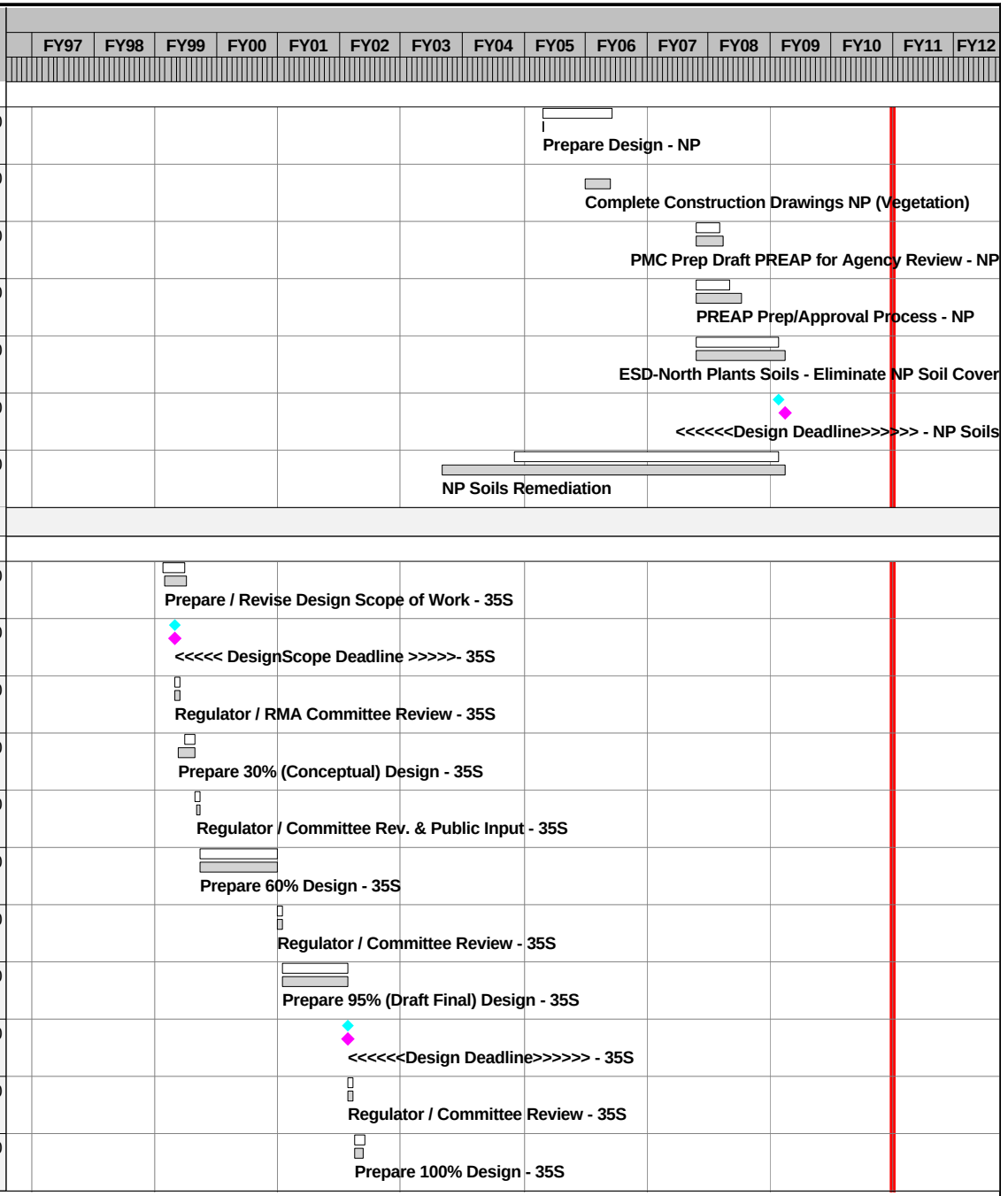
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
ST4-311110	01OCT09	20JAN10	0	01OCT09A	02MAR10A	100
ST4-311051	08APR10	08APR10	0	21APR10A	21APR10A	100
ST4-311600	29MAR10	30APR10	0	12APR10A	21APR10A	100
ST4-205000		30APR10	0		21APR10A	100
ST4-311070			10	04OCT10	15OCT10	0
ST4-220000	01MAR05	30APR10	10*	04FEB05A	15OCT10	99
ST4-INF	01MAR05	30APR10	10*	04FEB05A	15OCT10	99
Construction Completion Report						
ST6-210050			0	21DEC06A	01FEB07A	100
ST6-210060			0	02FEB07A	09FEB07A	100
ST6-210070			0	12FEB07A	15MAR07A	100
ST6-210000	29OCT07*	15MAY08	0*	29OCT07A	15MAY08A	100
ST6-210010	16MAY08	01JUL08	0*	16MAY08A	01JUL08A	100
ST6-210020	02JUL08	20NOV08	0*	02JUL08A	25NOV08A	100
ST6-210030	21NOV08	22DEC08	0*	26NOV08A	05JAN09A	100
ST6-210040		22DEC08	0		05JAN09A	100
ST6-INF1	29OCT07	22DEC08	0*	21DEC06A	05JAN09A	100
ST6-209950			0	15SEP08A	02DEC08A	100
ST6-209960			0	02DEC08A	12FEB09A	100
ST6-INF0			0*	15SEP08A	12FEB09A	100



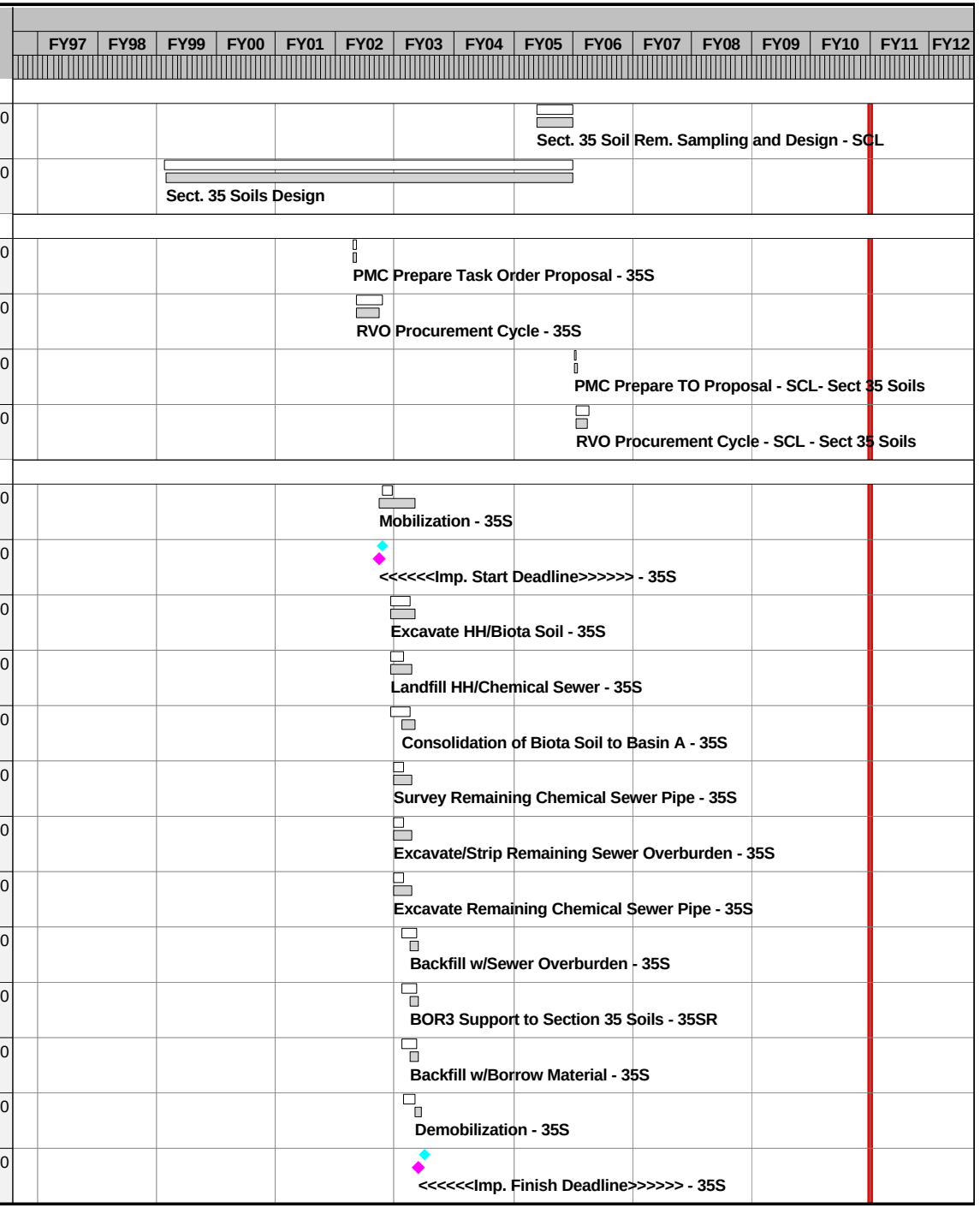
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
ST6-210001	02MAR10	30APR10	0*	01FEB10A	01APR10A	100
ST6-210011	01MAY10	30MAY10	0*	02APR10A	13MAY10A	100
ST6-210021	01JUN10	10AUG10	0*	14MAY10A	08SEP10A	100
ST6-210031	11AUG10	24AUG10	6*	09SEP10A	07OCT10	79
ST6-210032		24AUG10	0		07OCT10	0
ST6-INF2	02MAR10	24AUG10	6*	15SEP08A	07OCT10	99
ST6-INF	29OCT07	24AUG10	6*	21DEC06A	07OCT10	100
Short-Term Monitoring/Maintenance/Operations						
ST7-600000	29OCT07	30SEP11	35*	29OCT07A	19NOV10	96
ST7-100000	29OCT07	30SEP11	35*	02JUL07A	19NOV10	96
North Plants Soil Remediation						
Remedial Design						
NP2-110000	05JUN03*	07NOV03	0*	05JUN03A	07NOV03A	100
NP2-125500			0	03NOV03A	03NOV03A	100
NP2-110500	10NOV03	07MAY04	0*	10NOV03A	07MAY04A	100
NP2-120000	11AUG04	01NOV04	0*	19JUL04A	14SEP04A	100
NP2-122000		20SEP04	0		14SEP04A	100
NP2-125000	20SEP04	19OCT04	0*	14SEP04A	02NOV04A	100
NP2-130000	20SEP04	26JAN05	0*	30AUG04A	25JAN05A	100
NP2-140000	26JAN05	24FEB05	0*	25JAN05A	04MAR05A	100
NP2-150000	27JAN05	26JAN05	0	25JAN05A	25JAN05A	100



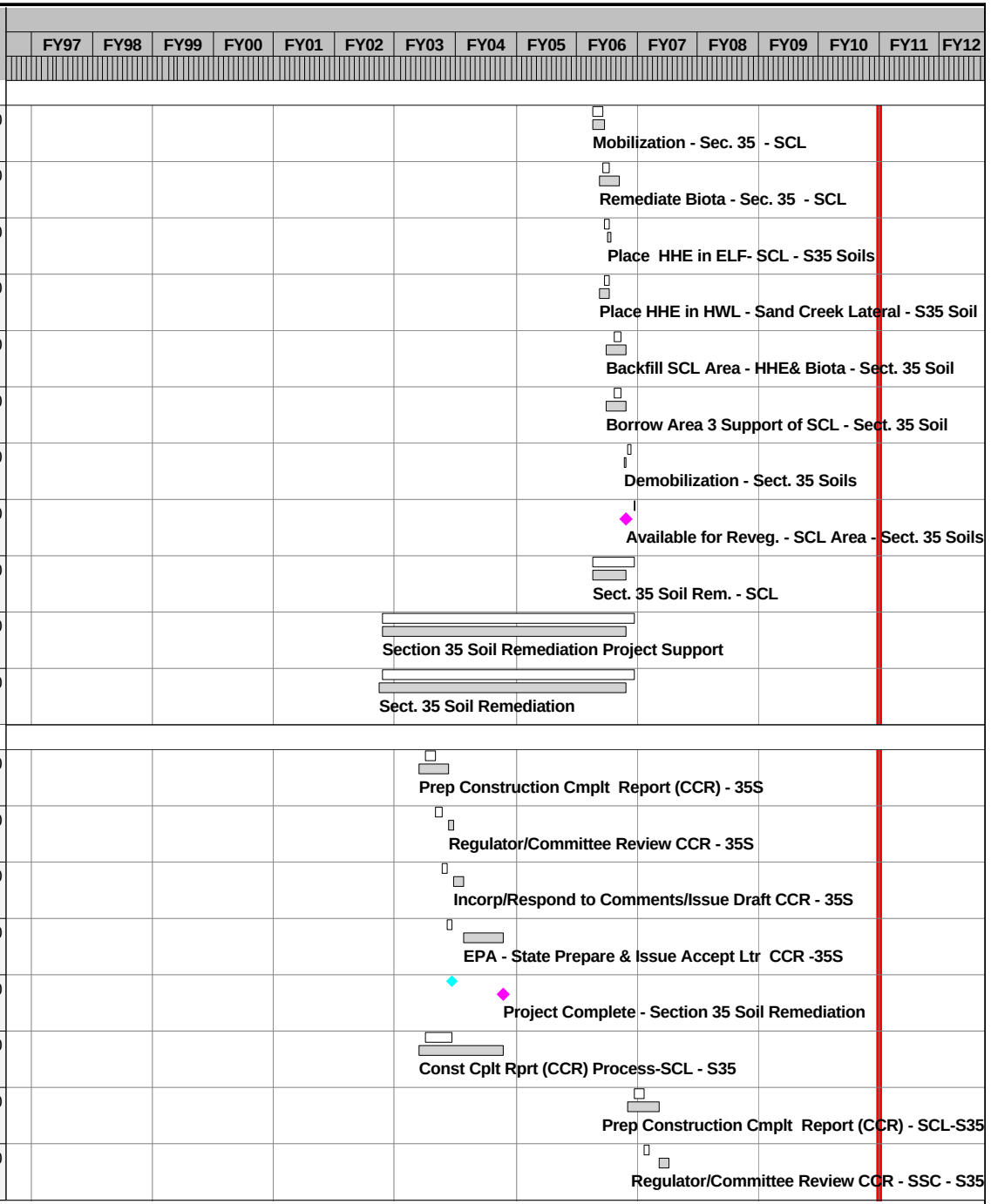
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
NP2-170000	26JAN05	09MAR06	0*	25JAN05A	25JAN05A	100
NP2-171000			0	03OCT05A	22FEB06A	100
NP2-180130	23JUL07*	12DEC07	0*	23JUL07A	28DEC07A	100
NP2-170100	23JUL07	08FEB08	0*	23JUL07A	16APR08A	100
NP2-510550	23JUL07*	26NOV08	0*	23JUL07A	06JAN09A	100
NP2-175000		26NOV08	0		06JAN09A	100
NP2-INF	11AUG04	26NOV08	0*	05JUN03A	06JAN09A	100
Section 35 Soil Remediation						
Remedial Design						
T52-120000	16NOV98*	26MAR99	0	01DEC98A	05APR99A	100
T52-122000		20JAN99	0		20JAN99A	100
T52-125000	21JAN99	19FEB99	0	21JAN99A	19FEB99A	100
T52-130000	29MAR99	28MAY99	0	19FEB99A	28MAY99A	100
T52-140000	29MAY99	28JUN99	0	01JUN99A	26JUN99A	100
T52-150000	29JUN99	29SEP00	0	28JUN99A	29SEP00A	100
T52-160000	30SEP00	29OCT00	0	30SEP00A	29OCT00A	100
T52-170000	30OCT00	20NOV01	0	30OCT00A	20NOV01A	100
T52-175000		20NOV01	0		20NOV01A	100
T52-180000	21NOV01	22DEC01	0	21NOV01A	21DEC01A	100
T52-190000	26DEC01	01MAR02	0	26DEC01A	15FEB02A	100



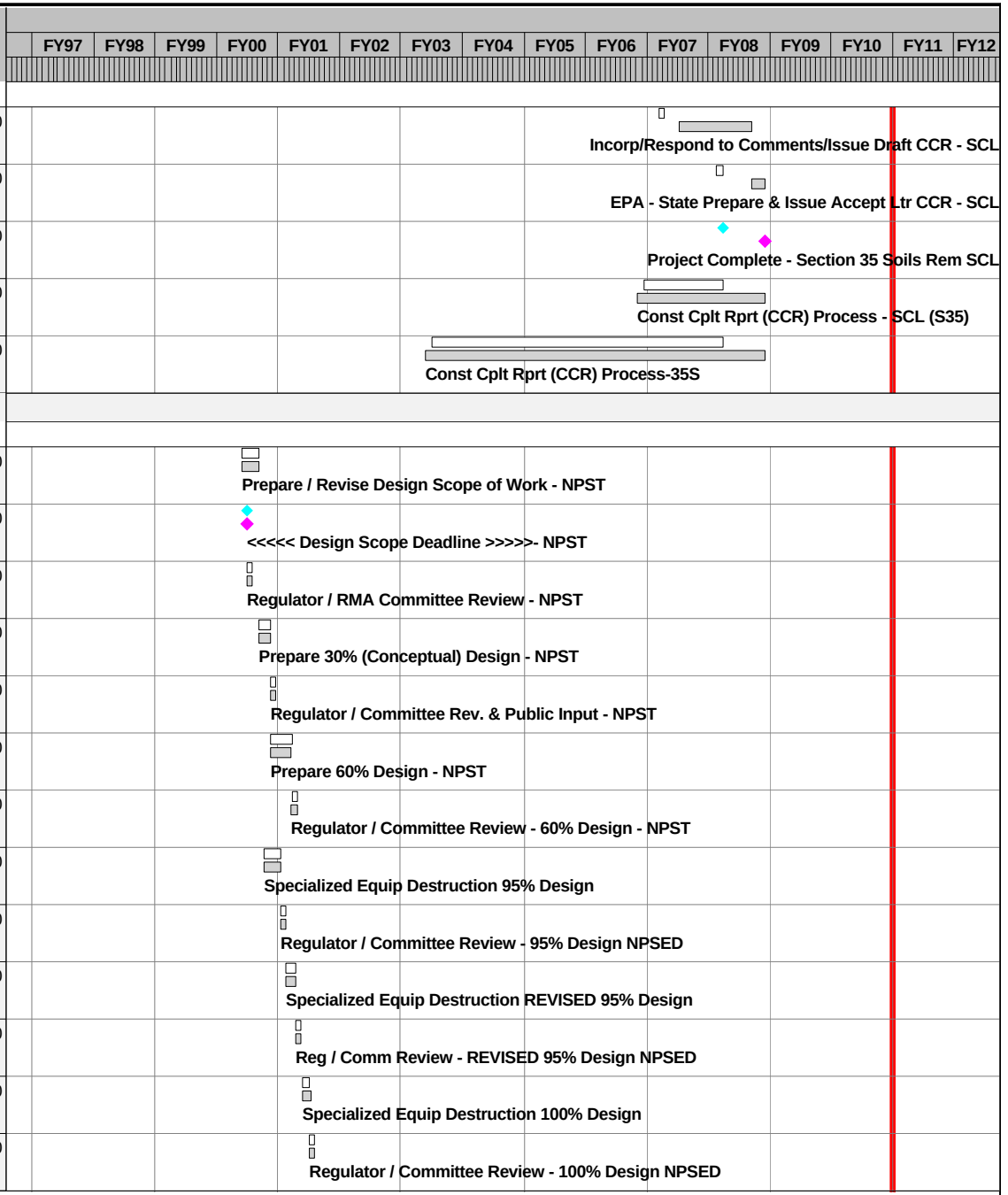
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
T52-185000	22FEB05*	27SEP05	0*	22FEB05A	27SEP05A	100
T52-INF	16NOV98	27SEP05	0*	01DEC98A	27SEP05A	100
Procurement						
T53-109000	21JAN02	06FEB02	0	21JAN02A	06FEB02A	100
T53-110000	07FEB02	15JUL02	0	07FEB02A	28JUN02A	100
T53-301000	10OCT05	21OCT05	0*	10OCT05A	25OCT05A	100
T53-315000	24OCT05	10JAN06	0*	25OCT05A	27DEC05A	100
Remediation Activities						
T54-120000	15JUL02	16SEP02	0*	28JUN02A	31JAN03A	100
T54-125000	15JUL02*		0	28JUN02A		100
T54-160000	10SEP02	07JAN03	0*	10SEP02A	03FEB03A	100
T54-190000	10SEP02	20NOV02	0*	10SEP02A	17JAN03A	100
T54-170000	10SEP02	07JAN03	0*	15NOV02A	03FEB03A	100
T54-153000	23SEP02	20NOV02	0*	24SEP02A	13JAN03A	100
T54-155000	23SEP02	20NOV02	0*	24SEP02A	13JAN03A	100
T54-158000	23SEP02	20NOV02	0*	24SEP02A	13JAN03A	100
T54-202000	12NOV02	10FEB03	0*	09JAN03A	21FEB03A	100
T54-177000	12NOV02	10FEB03	0*	09JAN03A	21FEB03A	100
T54-200000	12NOV02	10FEB03	0*	09JAN03A	21FEB03A	100
T54-240000	26NOV02	04FEB03	0*	30JAN03A	14MAR03A	100
T54-245000		07APR03	0		26FEB03A	100



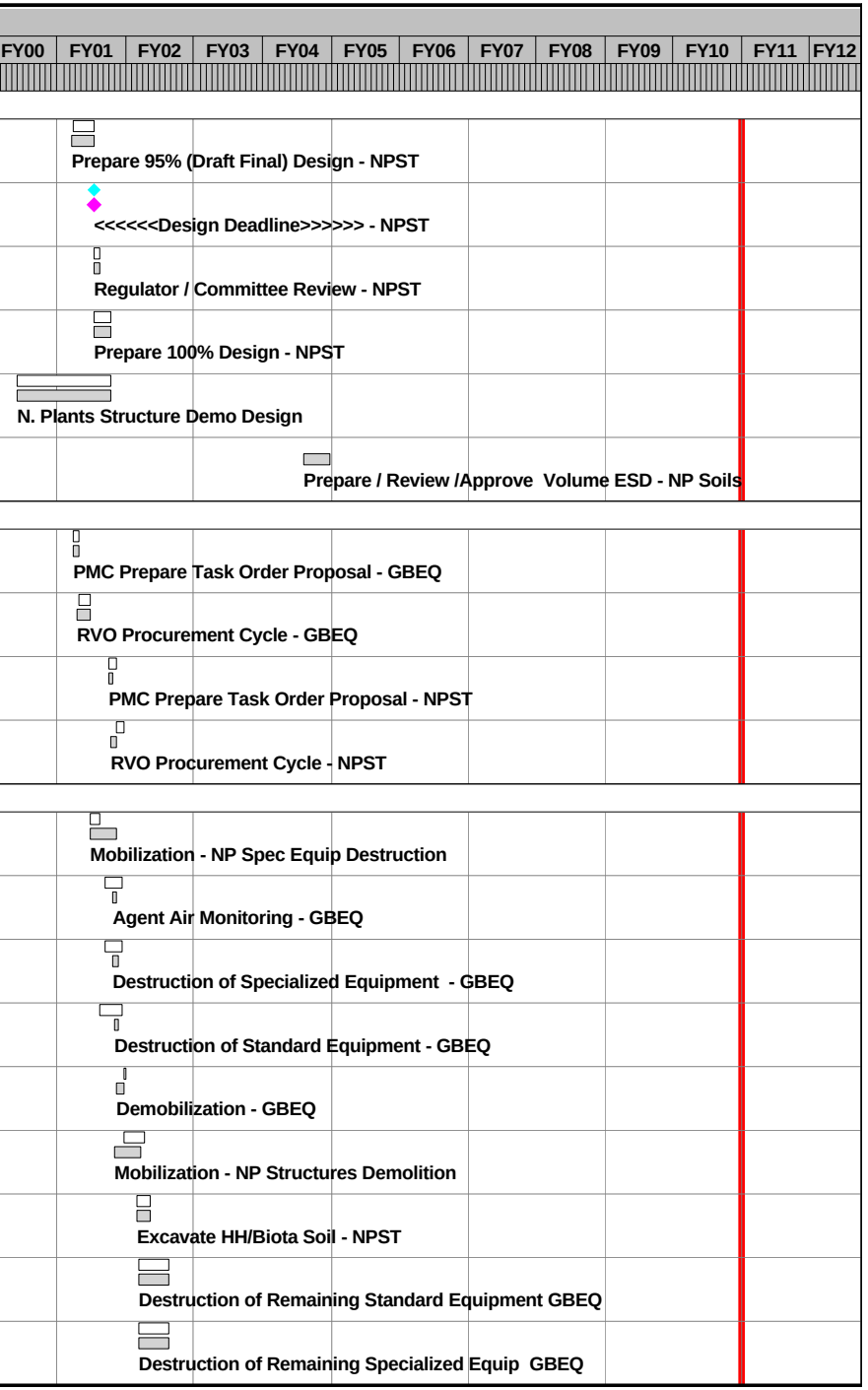
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
T54-326000	10JAN06*	08MAR06	0*	06JAN06A	14MAR06A	100
T54-420210	09MAR06	21APR06	0*	20FEB06A	20JUN06A	100
T54-305100	20MAR06	21APR06	0*	10APR06A	26APR06A	100
T54-305200	20MAR06	21APR06	0*	21FEB06A	21APR06A	100
T54-306000	15MAY06	26JUN06	0*	27MAR06A	28JUL06A	100
T54-307000	15MAY06	26JUN06	0*	27MAR06A	28JUL06A	100
T54-500000	11AUG06	24AUG06	0*	20JUL06A	28JUL06A	100
T54-360500	15SEP06	15SEP06	0		28JUL06A	100
T54-INF3	10JAN06	15SEP06	0*	06JAN06A	28JUL06A	100
T54-260000	15JUL02	15SEP06	0*	15JUL02A	28JUL06A	100
T54-INF	15JUL02	15SEP06	0*	28JUN02A	28JUL06A	100
Construction Completion Report						
T56-250000	08APR03	07JUN03	0	27FEB03A	21AUG03A	100
T56-250010	08JUN03	08JUL03	0	21AUG03A	18SEP03A	100
T56-250020	09JUL03	07AUG03	0	19SEP03A	15NOV03A	100
T56-250030	08AUG03	07SEP03	0	16NOV03A	15JUL04A	100
T56-250040		07SEP03	0		15JUL04A	100
T56-INF1	08APR03	07SEP03	0*	27FEB03A	15JUL04A	100
T56-100000	16SEP06	14NOV06	0	07AUG06A	15FEB07A	100
T56-100010	15NOV06	16DEC06	0	16FEB07A	09APR07A	100



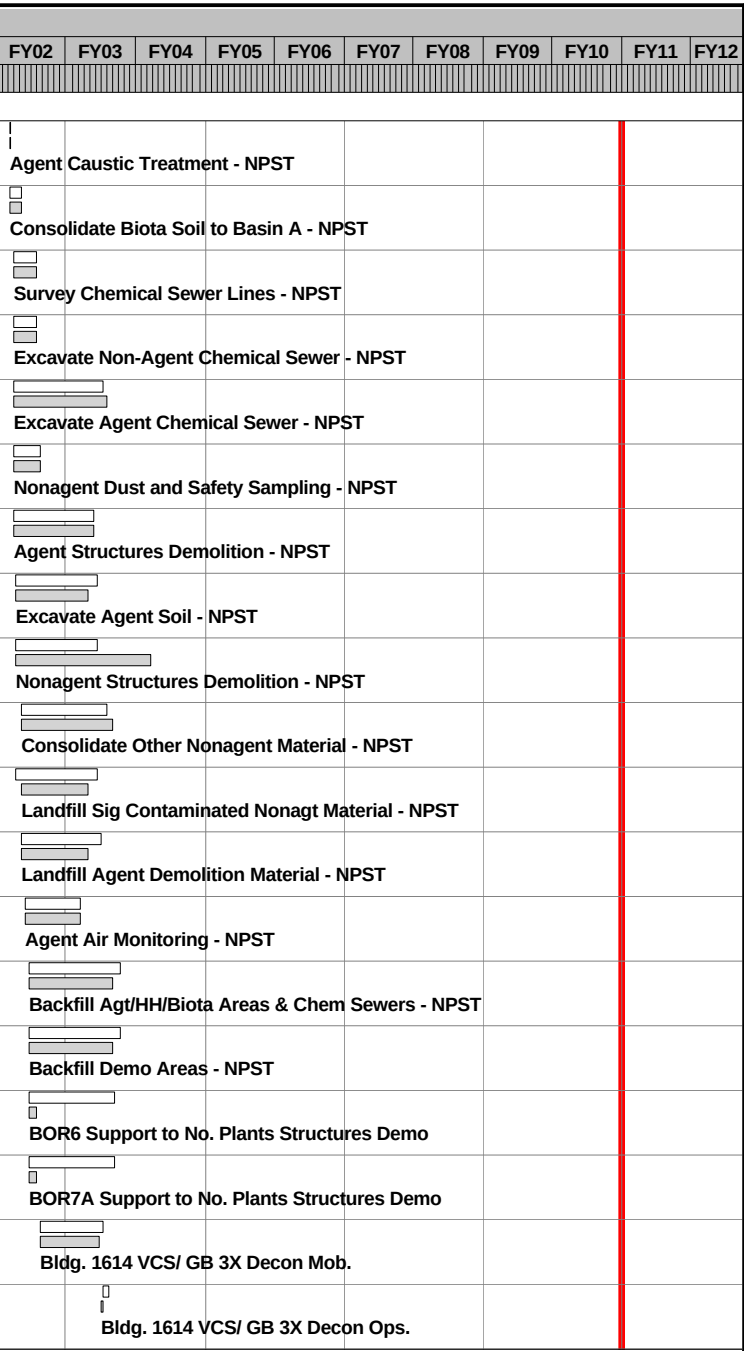
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
T56-100020	17DEC06	17JAN07	0*	10APR07A	17JUN08A	100
T56-100030	24NOV07*	27DEC07	0	19JUN08A	02SEP08A	100
T56-100040		27DEC07	0		02SEP08A	100
T56-INF2	16SEP06	27DEC07	0*	07AUG06A	02SEP08A	100
T56-INF	08APR03	27DEC07	0*	27FEB03A	02SEP08A	100
North Plants Structure Demolition and Removal						
Remedial Design						
NS2-120000	28FEB00*	09JUN00	0*	28FEB00A	09JUN00A	100
NS2-122000		31MAR00	0		31MAR00A	100
NS2-125000	31MAR00	29APR00	0	31MAR00A	29APR00A	100
NS2-130000	12JUN00	18AUG00	0*	12JUN00A	18AUG00A	100
NS2-140000	19AUG00	18SEP00	0*	19AUG00A	18SEP00A	100
NS2-150000	21AUG00	28DEC00	0*	21AUG00A	19DEC00A	100
NS2-160000	29DEC00	28JAN01	0*	20DEC00A	23JAN01A	100
NS2-150001	10JUL00*	20OCT00	0*	10JUL00A	20OCT00A	100
NS2-160100	21OCT00	19NOV00	0*	21OCT00A	19NOV00A	100
NS2-150003	20NOV00	18JAN01	0*	20NOV00A	18JAN01A	100
NS2-160101	19JAN01	17FEB01	0*	19JAN01A	17FEB01A	100
NS2-150002	19FEB01	30MAR01	0*	19FEB01A	12APR01A	100
NS2-160200	31MAR01	29APR01	0	31MAR01A	29APR01A	100



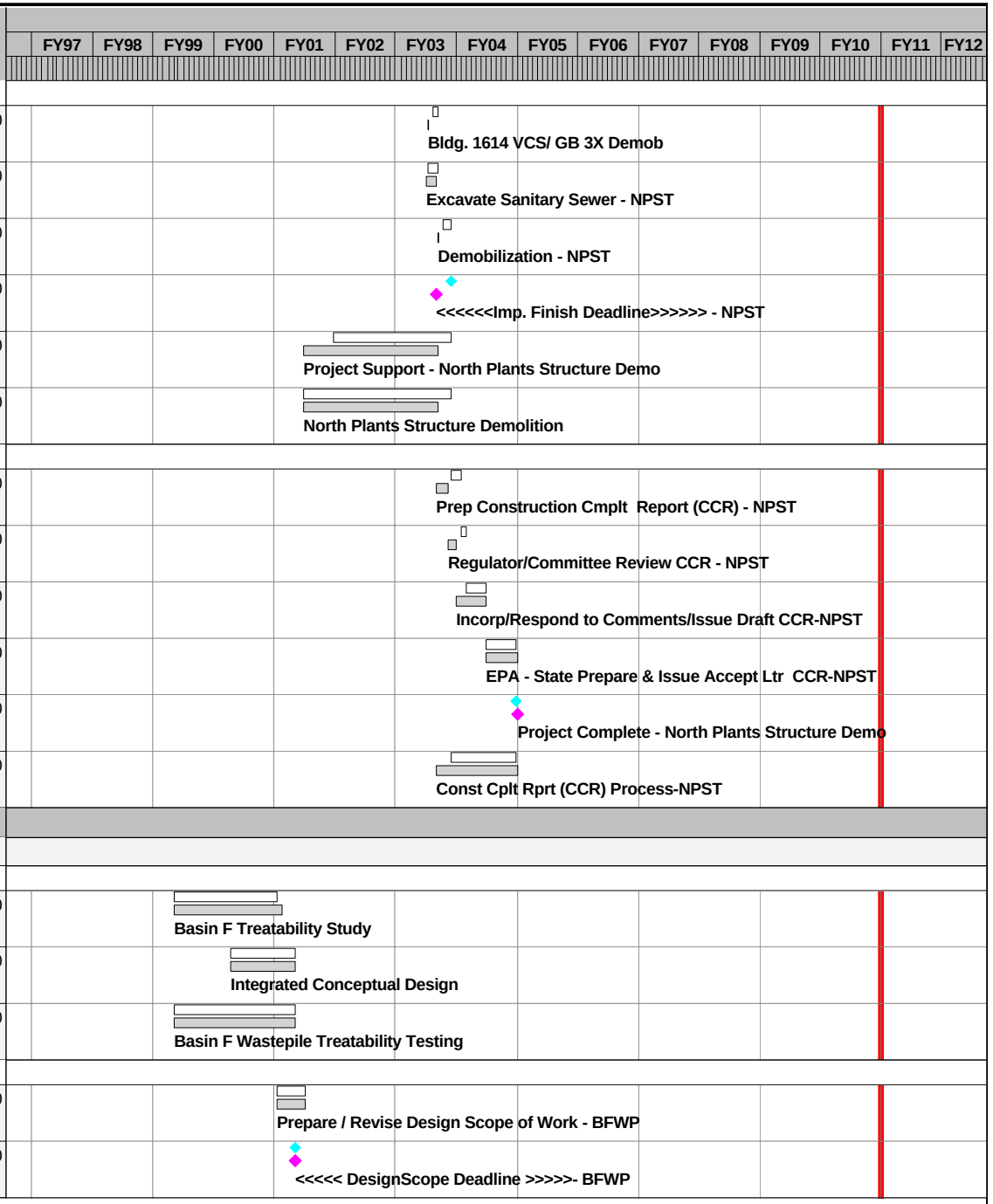
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
NS2-170000	29DEC00	18APR01	0*	20DEC00A	18APR01A	100
NS2-175000		18APR01	0		18APR01A	100
NS2-180000	19APR01	18MAY01	0*	19APR01A	18MAY01A	100
NS2-190000	19APR01	13JUL01	0*	19APR01A	13JUL01A	100
NS2-INF	28FEB00	13JUL01	0*	28FEB00A	13JUL01A	100
NS2-110550			0*	10MAY04A	28SEP04A	100
Procurement						
NS3-090010	28DEC00	19JAN01	0*	28DEC00A	19JAN01A	100
NS3-100010	22JAN01	21MAR01	0*	19JAN01A	21MAR01A	100
NS3-090000	06JUL01	10AUG01	0*	29JUN01A	18JUL01A	100
NS3-100000	11AUG01	18SEP01	0*	18JUL01A	07AUG01A	100
Remediation Activities						
NS4-105200	21MAR01	16MAY01	0*	21MAR01A	10AUG01A	100
NS4-130100	15JUN01	14SEP01	0	23JUL01A	10AUG01A	100
NS4-135100	15JUN01	14SEP01	0*	23JUL01A	17AUG01A	100
NS4-116000	15MAY01	14SEP01	0*	30JUL01A	17AUG01A	100
NS4-160100	17SEP01	28SEP01	0*	10AUG01A	20SEP01A	100
NS4-105000	18SEP01	07JAN02	0	07AUG01A	21DEC01A	100
NS4-144100	27NOV01	05FEB02	0*	27NOV01A	05FEB02A	100
NS4-116200	12DEC01	14MAY02	0*	12DEC01A	14MAY02A	100
NS4-135200	12DEC01	14MAY02	0*	12DEC01A	14MAY02A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
NS4-140000	13DEC01	13DEC01	0	13DEC01A	13DEC01A	100
NS4-146000	13DEC01	05FEB02	0*	13DEC01A	05FEB02A	100
NS4-132000	31DEC01	29APR02	0*	31DEC01A	29APR02A	100
NS4-142100	31DEC01	29APR02	0*	31DEC01A	29APR02A	100
NS4-142000	31DEC01	16APR03	0*	31DEC01A	02MAY03A	100
NS4-110000	03JAN02	15MAY02	0*	03JAN02A	15MAY02A	100
NS4-135000	03JAN02	21FEB03	0*	03JAN02A	19FEB03A	100
NS4-144000	09JAN02	13MAR03	0*	09JAN02A	23JAN03A	100
NS4-115000	14JAN02	18MAR03	0*	14JAN02A	19DEC03A	100
NS4-125000	06FEB02	08MAY03	0*	06FEB02A	29MAY03A	100
NS4-120000	14JAN02	18MAR03	0*	08FEB02A	28JAN03A	100
NS4-145000	08FEB02	31MAR03	0*	08FEB02A	28JAN03A	100
NS4-130000	01MAR02	12DEC02	0*	01MAR02A	12DEC02A	100
NS4-150000	18MAR02	17JUL03	0*	18MAR02A	30MAY03A	100
NS4-155000	18MAR02	17JUL03	0*	18MAR02A	30MAY03A	100
NS4-178000	18MAR02	13JUN03	0*	18MAR02A	29APR02A	100
NS4-178500	18MAR02	13JUN03	0*	18MAR02A	29APR02A	100
NS4-105100	20MAY02*	15APR03	0*	20MAY02A	27MAR03A	100
NS4-105300	16APR03	13MAY03	0*	31MAR03A	16APR03A	100

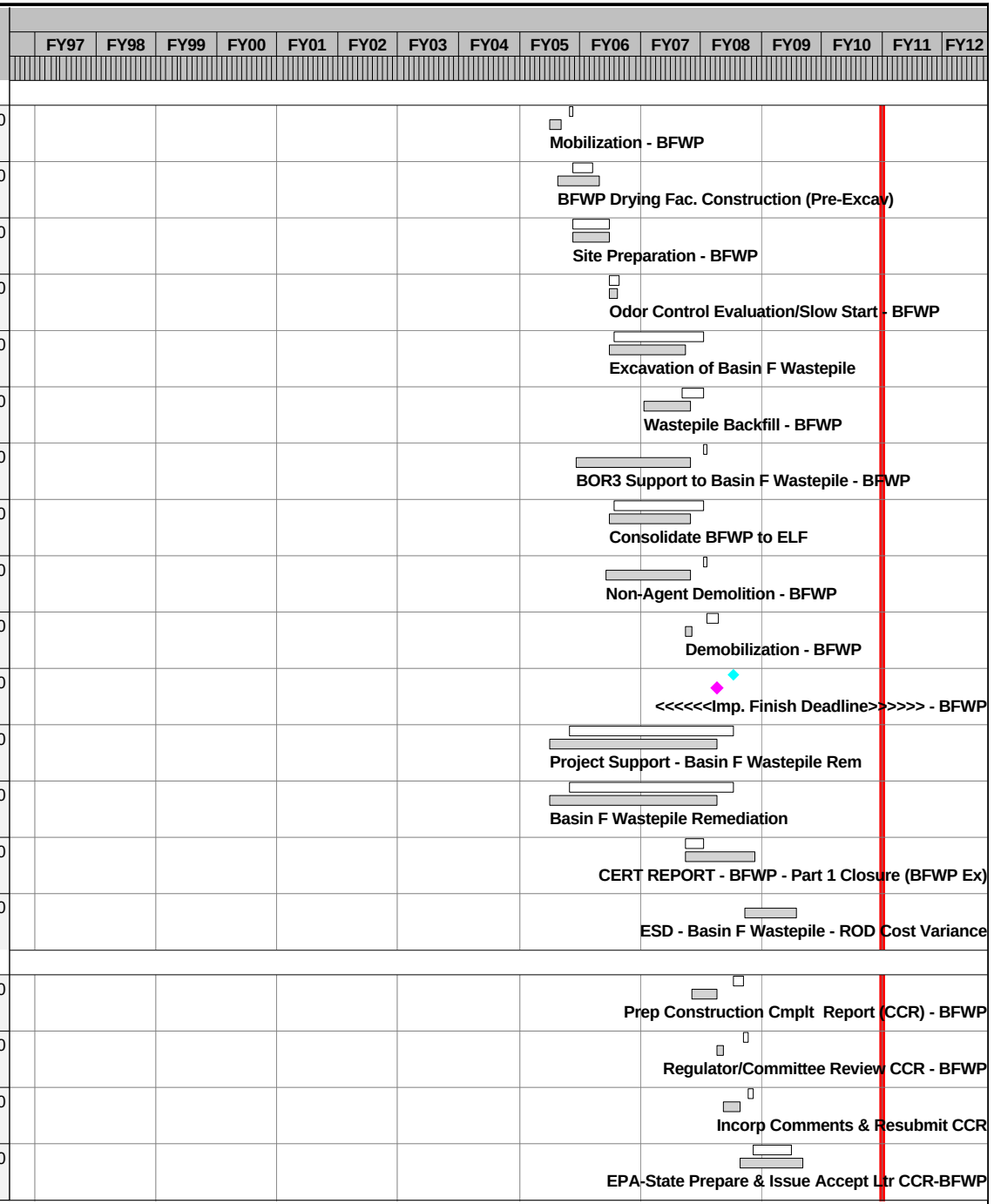


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
NS4-105400	14MAY03	11JUN03	0*	11APR03A	18APR03A	100
NS4-142200	11APR03	13JUN03	0*	02APR03A	29MAY03A	100
NS4-160000	18JUL03	29AUG03	0*	09JUN03A	11JUN03A	100
NS4-161000		29AUG03	0		04JUN03A	100
NS4-170000	18SEP01	29AUG03	0*	21MAR01A	11JUN03A	100
NS4-INF	21MAR01	29AUG03	0*	21MAR01A	11JUN03A	100
Construction Completion Report						
NS6-165000	30AUG03	29OCT03	0	05JUN03A	12AUG03A	100
NS6-165010	30OCT03	30NOV03	0	08AUG03A	05OCT03A	100
NS6-165020	01DEC03	30MAR04	0	06OCT03A	30MAR04A	100
NS6-165030	30MAR04	28SEP04	0*	30MAR04A	30SEP04A	100
NS6-165040		28SEP04	0		30SEP04A	100
NS6-INF	30AUG03	28SEP04	0*	05JUN03A	30SEP04A	100
Phase IV - Basin F/Lime Basins						
Basin F Wastepile Remediation						
Predesign Activities						
WP1-110000	08FEB99*	13OCT00	0*	08FEB99A	14NOV00A	100
WP1-115000	07JAN00*	31JAN01	0*	07JAN00A	31JAN01A	100
WP1-INF	08FEB99	31JAN01	0*	08FEB99A	31JAN01A	100
Remedial Design						
WP2-120000	16OCT00	05APR01	0	16OCT00A	05APR01A	100
WP2-122000		31JAN01	0		31JAN01A	100



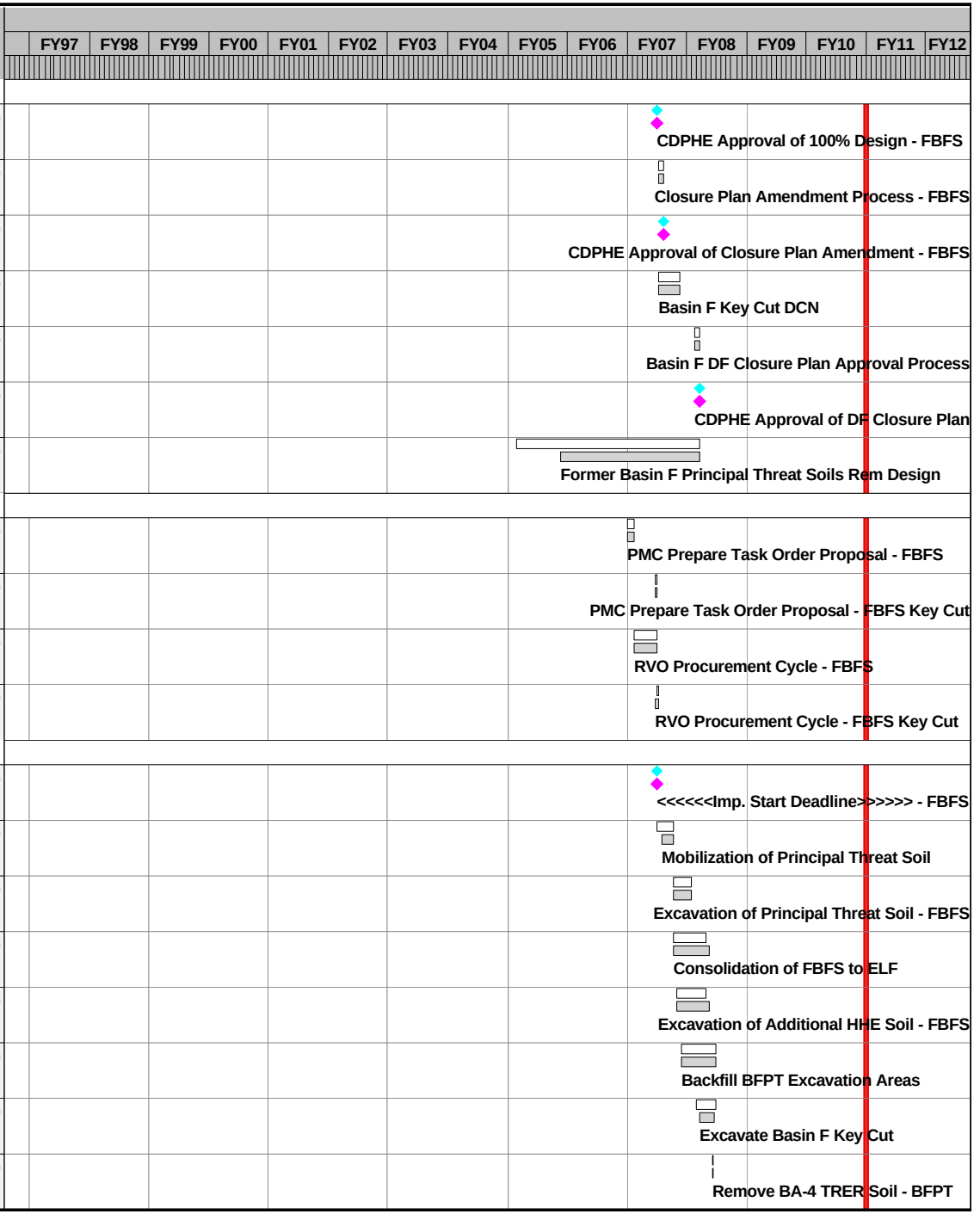
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
WP2-125000	01FEB01	03MAR01	0	31JAN01A	01MAR01A	100
WP2-130000	05MAR01	23MAY01	0	02MAR01A	23MAY01A	100
WP2-140000	23MAY01	22JUN01	0	23MAY01A	22JUN01A	100
WP2-145000	23MAY01	03AUG01	0	23MAY01A	03AUG01A	100
WP2-150000	22JUN01	24JAN02	0	22JUN01A	24JAN02A	100
WP2-160000	25JAN02	24FEB02	0	24JAN02A	22FEB02A	100
WP2-170000	25FEB02	01JUL02	0	25FEB02A	01JUL02A	100
WP2-175000		01JUL02	0		01JUL02A	100
WP2-180000	02JUL02	01AUG02	0	01JUL02A	01AUG02A	100
WP2-184000		01AUG02	0		24JUL02A	100
WP2-185000	01AUG02	01SEP02	0	24JUL02A	23AUG02A	100
WP2-190000	01AUG02	25NOV02	0	01AUG02A	07NOV02A	100
WP2-200000	26NOV02	30DEC02	0	08NOV02A	17DEC02A	100
WP2-210000		30DEC02	0		17DEC02A	100
WP2-INF	16OCT00	30DEC02	0*	16OCT00A	17DEC02A	100
WP2-250000			0*	07DEC04A	02JUN05A	100
Procurement						
WP3-109200	30DEC04	03FEB05	0*	14OCT04A	16NOV04A	100
WP3-110200	04FEB05	05AUG05	0*	16NOV04A	30MAR05A	100
Remediation Activities						
WP4-125000	05AUG05		0	30MAR05A		100

Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
WP4-120000	05AUG05*	25AUG05	0*	30MAR05A	15JUN05A	100
WP4-129500	26AUG05	22DEC05	0*	24MAY05A	30JAN06A	100
WP4-129000	26AUG05	31MAR06	0*	22AUG05A	31MAR06A	100
WP4-162000	03APR06	31MAY06	0*	03APR06A	17MAY06A	100
WP4-130000	01MAY06	15OCT07	0*	03APR06A	29JUN07A	100
WP4-140000	12JUN07	18OCT07	0*	25OCT06A	02AUG07A	100
WP4-130100	16OCT07	12NOV07	0*	14SEP05A	02AUG07A	100
WP4-134000	01MAY06	15OCT07	0*	03APR06A	27JUL07A	100
WP4-135000	19OCT07	12NOV07	0*	10MAR06A	27JUL07A	100
WP4-150000	13NOV07	14JAN08	0*	02JUL07A	10AUG07A	100
WP4-155000		15APR08	0		10JAN08A	100
WP4-170000	05AUG05	15APR08	0*	30MAR05A	10JAN08A	100
WP4-INF	05AUG05	15APR08	0*	30MAR05A	10JAN08A	100
WP4-220020	02JUL07*	17OCT07	0*	02JUL07A	21AUG08A	100
WP4-030060			0*	30JUN08A	30APR09A	100
Construction Completion Report						
WP6-160000	16APR08	15JUN08	0*	07AUG07A	07JAN08A	100
WP6-160010	16JUN08	16JUL08	0*	07JAN08A	15FEB08A	100
WP6-160020	17JUL08	15AUG08	0*	15FEB08A	22MAY08A	100
WP6-160030	16AUG08	06APR09	0	23MAY08A	15JUN09A	100

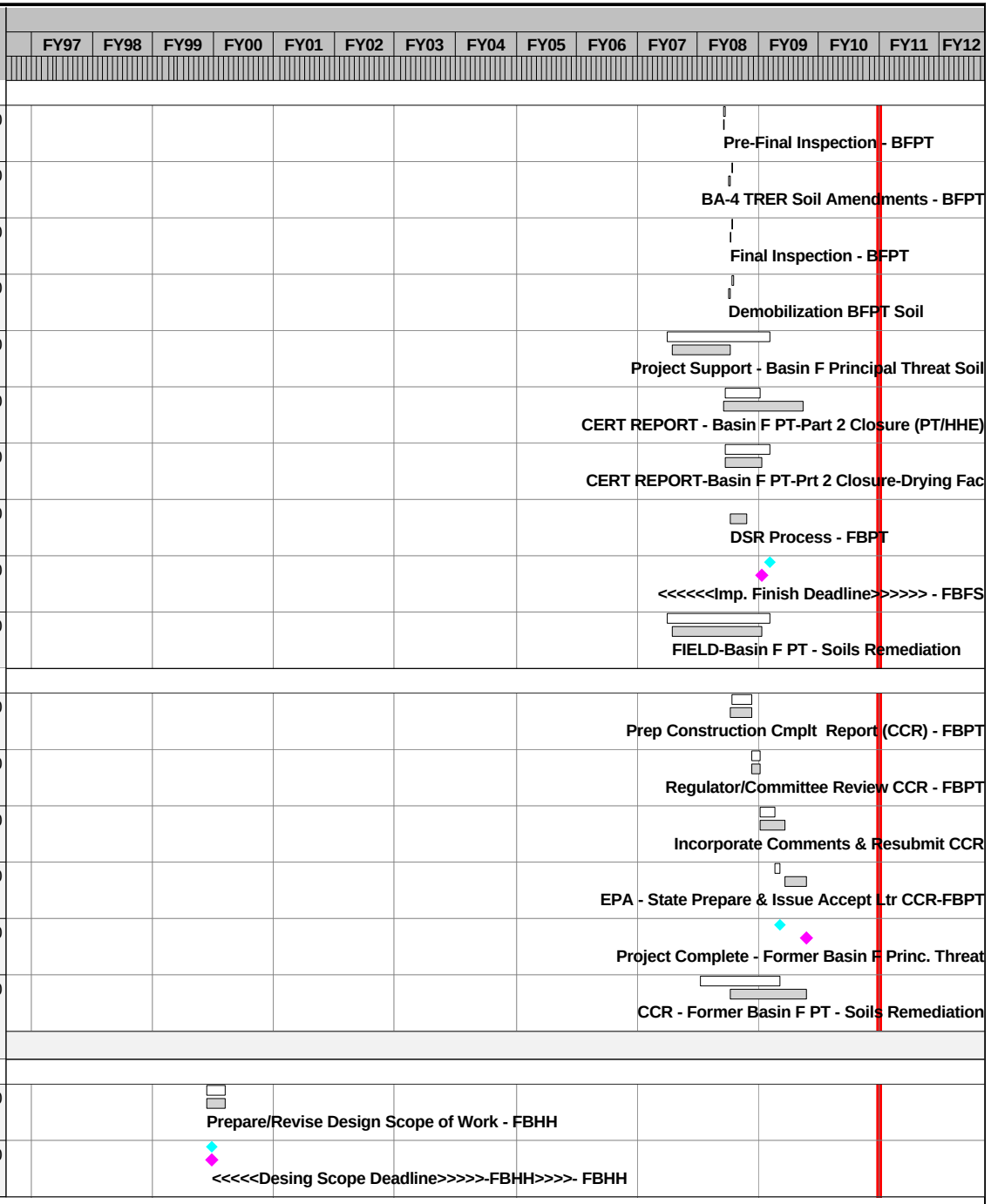


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
WP6-160040		06APR09	0		15JUN09A	100
WP6-INF	16APR08	06APR09	0*	07AUG07A	15JUN09A	100
Former Basin F Principal Threat Soil Remediation						
Predesign Activities						
FS1-100000	02APR01*	06APR05	0*	02APR01A	06APR05A	100
FS1-INF	02APR01	06APR05	0*	02APR01A	06APR05A	100
Remedial Design						
FS2-120010	19AUG05*	16DEC05	0*	19AUG05A	05JAN06A	100
FS2-122010		01NOV05	0		01NOV05A	100
FS2-125010	01NOV05	02DEC05	0*	01NOV05A	02DEC05A	100
FS2-130010	01NOV05	27JAN06	0*	05DEC05A	28FEB06A	100
FS2-140010	28JAN06	26FEB06	0*	28FEB06A	30MAR06A	100
FS2-150010	27FEB06	22MAY06	0*	31MAR06A	26JUN06A	100
FS2-160010	23MAY06	22JUN06	0*	27JUN06A	27JUL06A	100
FS2-170010	23JUN06	30NOV06	0*	28JUL06A	14NOV06A	100
FS2-175010		30NOV06	0		14NOV06A	100
FS2-180010	01DEC06	31DEC06	0*	15NOV06A	16DEC06A	100
FS2-175020	14SEP06*	10SEP07	0*	14SEP06A	30AUG07A	100
FS2-185010	18JAN07	16FEB07	0	14DEC06A	31JAN07A	100
FS2-190010	02JAN07	26FEB07	0*	18DEC06A	13FEB07A	100
FS2-200000	27FEB07	29MAR07	0*	14FEB07A	16MAR07A	100

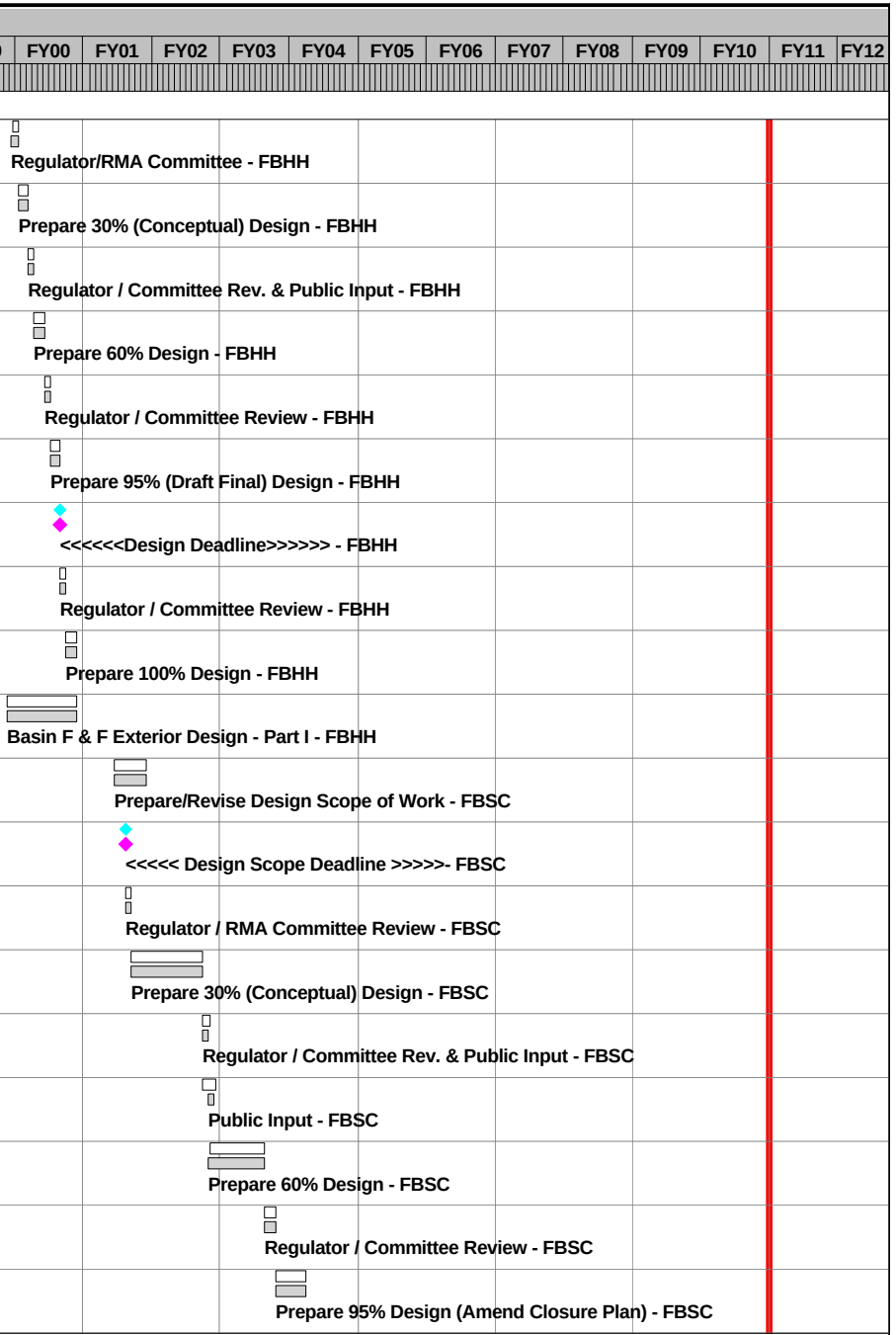
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
FS2-210000		29MAR07	0		29MAR07A	100
FS2-220000	09APR07*	09MAY07	0	09APR07A	09MAY07A	100
FS2-230000		09MAY07	0		09MAY07A	100
FS2-060090	09APR07	17AUG07	0*	09APR07A	17AUG07A	100
FS2-250000	24NOV07*	20DEC07	0	24NOV07A	20DEC07A	100
FS2-250500		20DEC07	0		20DEC07A	100
FS2-INF	23NOV04	20DEC07	0*	19AUG05A	20DEC07A	100
Procurement						
FS3-109010	02OCT06*	14NOV06	0	02OCT06A	14NOV06A	100
FS3-109020	26MAR07*	29MAR07	0	26MAR07A	29MAR07A	100
FS3-110010	15NOV06	02APR07	0*	14NOV06A	02APR07A	100
FS3-110020	30MAR07	09APR07	0*	29MAR07A	09APR07A	100
Remediation Activities						
FS4-125010	03APR07		0	03APR07A		100
FS4-120010	03APR07	13JUL07	0	01MAY07A	13JUL07A	100
FS4-130010	11JUL07	01NOV07	0*	11JUL07A	01NOV07A	100
FS4-130020	16JUL07	23JAN08	0*	16JUL07A	20FEB08A	100
FS4-130030	01AUG07	23JAN08	0*	01AUG07A	20FEB08A	100
FS4-130040	27AUG07	31MAR08	0	27AUG07A	27MAR08A	100
FS4-230235	04DEC07	31MAR08	0	17DEC07A	21MAR08A	100
FS4-230236	05MAR08	11MAR08	0	04MAR08A	10MAR08A	100



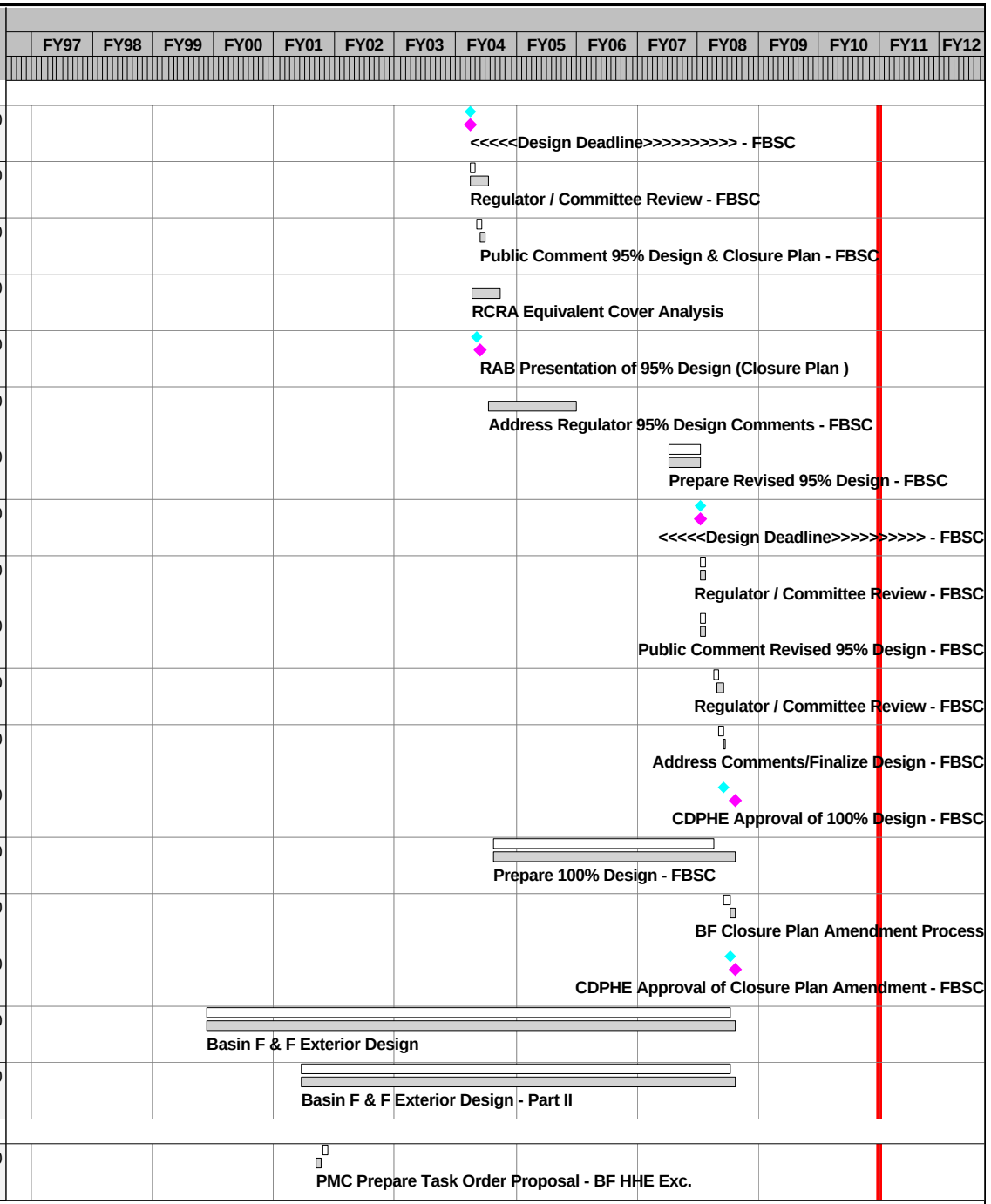
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
FS4-230238	13MAR08	13MAR08	0	12MAR08A	12MAR08A	100
FS4-230237	29APR08*	29APR08	0	04APR08A	14APR08A	100
FS4-230239	30APR08	30APR08	0	16APR08A	16APR08A	100
FS4-220010	30APR08	05MAY08	0	04APR08A	16APR08A	100
FS4-240010	03APR07	09DEC08	0*	01MAY07A	16APR08A	100
FS4-220030	17MAR08	17OCT08	0*	13MAR08A	01JUL09A	100
FS4-220020	17MAR08	09DEC08	0*	17MAR08A	24OCT08A	100
FS4-040020			0*	17APR08A	29JUL08A	100
FS4-225010		09DEC08	0		24OCT08A	100
FS4-INF	03APR07	09DEC08	0*	01MAY07A	24OCT08A	100
Construction Completion Report						
FS6-230100	01MAY08	28AUG08	0	17APR08A	28AUG08A	100
FS6-230110	29AUG08	13OCT08	0	29AUG08A	13OCT08A	100
FS6-230120	14OCT08	12JAN09	0*	14OCT08A	12MAR09A	100
FS6-230130	13JAN09	11FEB09	0	13MAR09A	16JUL09A	100
FS6-230140		11FEB09	0		16JUL09A	100
FS6-INF	16OCT07	11FEB09	0*	17APR08A	16JUL09A	100
Basin F and Basin F Exterior Remediation						
Remedial Design						
FC2-120100	23AUG99*	10DEC99	0	23AUG99A	10DEC99A	100
FC2-122100		17SEP99	0		17SEP99A	100



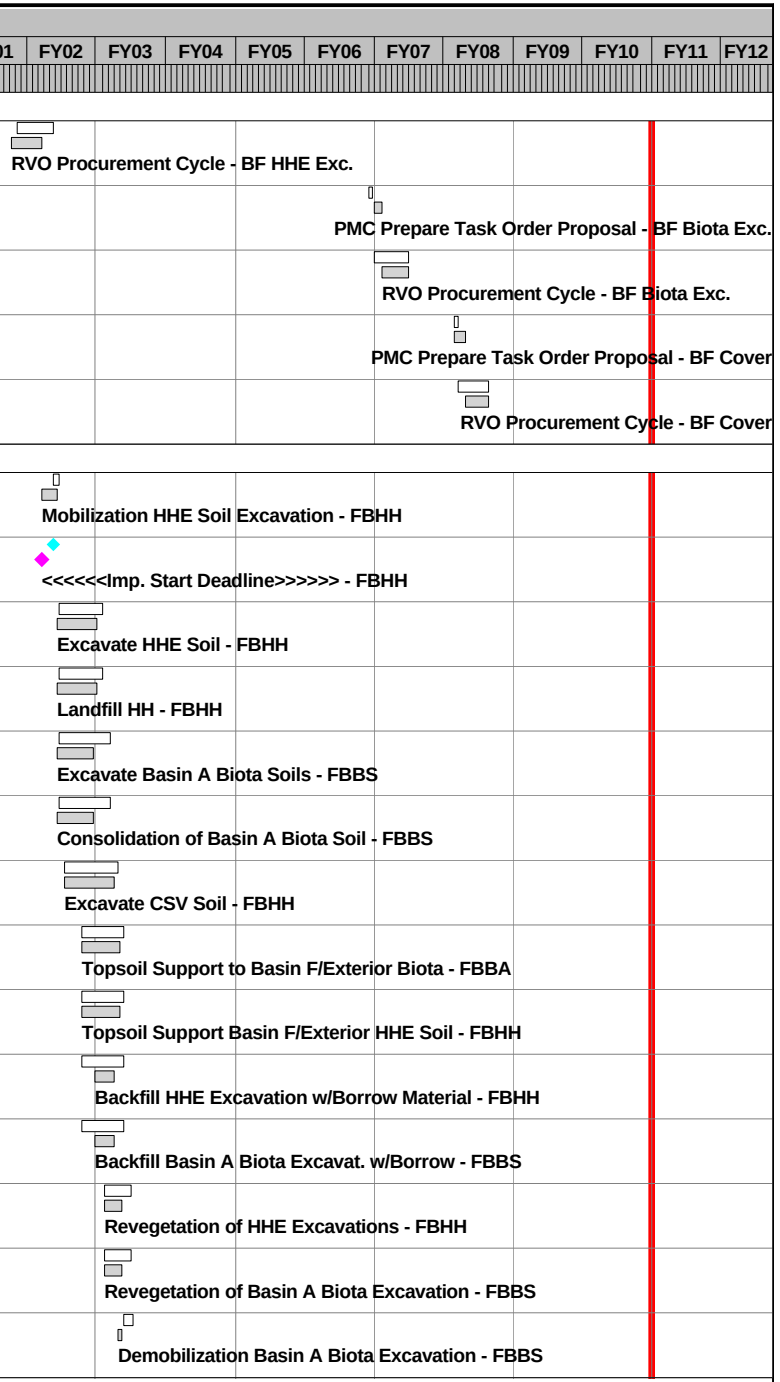
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
FC2-121100	18SEP99	17OCT99	0	17SEP99A	17OCT99A	100
FC2-130100	18OCT99	10DEC99	0	18OCT99A	10DEC99A	100
FC2-140100	11DEC99	09JAN00	0	11DEC99A	09JAN00A	100
FC2-150100	10JAN00	10MAR00	0	10JAN00A	10MAR00A	100
FC2-160100	11MAR00	09APR00	0	11MAR00A	09APR00A	100
FC2-170100	10APR00	26MAY00	0	10APR00A	26MAY00A	100
FC2-175100		26MAY00	0		26MAY00A	100
FC2-180100	27MAY00	26JUN00	0	27MAY00A	26JUN00A	100
FC2-190100	27JUN00	28AUG00	0	27JUN00A	28AUG00A	100
FC2-INF1	23AUG99	28AUG00	0*	23AUG99A	28AUG00A	100
FC2-120200	16MAR01*	28AUG01	0	16MAR01A	28AUG01A	100
FC2-122200		15MAY01	0		15MAY01A	100
FC2-125200	16MAY01	15JUN01	0	16MAY01A	15JUN01A	100
FC2-130200	18JUN01	02JUL02	0	18JUN01A	01JUL02A	100
FC2-140200	03JUL02	02AUG02	0	02JUL02A	30JUL02A	100
FC2-140250	03JUL02	09SEP02	0	25JUL02A	23AUG02A	100
FC2-150200	05AUG02	22MAY03	0	31JUL02A	22MAY03A	100
FC2-160200	23MAY03	25JUL03	0	23MAY03A	25JUL03A	100
FC2-170200	25JUL03	30DEC03	0	28JUL03A	30DEC03A	100



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
FC2-175200		30DEC03	0		30DEC03A	100
FC2-180200	31DEC03	31JAN04	0	31DEC03A	14APR04A	100
FC2-185200	04FEB04	06MAR04	0	01MAR04A	30MAR04A	100
FC2-186220			0*	12JAN04A	25JUN04A	100
FC2-180240		03FEB04	0		26FEB04A	100
FC2-180250			0	15APR04A	30SEP05A	100
FC2-200300	13APR07*	19OCT07	0*	13APR07A	18OCT07A	100
FC2-175300		19OCT07	0		18OCT07A	100
FC2-200400	20OCT07	19NOV07	0*	19OCT07A	19NOV07A	100
FC2-200800	20OCT07	19NOV07	0	19OCT07A	19NOV07A	100
FC2-200200	12JAN08	10FEB08	0*	01FEB08A	03MAR08A	100
FC2-200700	11FEB08	07MAR08	0*	04MAR08A	20MAR08A	100
FC2-210200		07MAR08	0		14MAY08A	100
FC2-190200	17MAY04	11JAN08	0*	17MAY04A	14MAY08A	100
FC2-210400	08MAR08	18APR08	0*	14APR08A	14MAY08A	100
FC2-210300		18APR08	0		14MAY08A	100
FC2-INF	23AUG99	18APR08	0*	23AUG99A	14MAY08A	100
FC2-INF2	16MAR01	18APR08	0*	16MAR01A	14MAY08A	100
Procurement						
FC3-109100	23JUL01	17AUG01	0	14JUN01A	12JUL01A	100

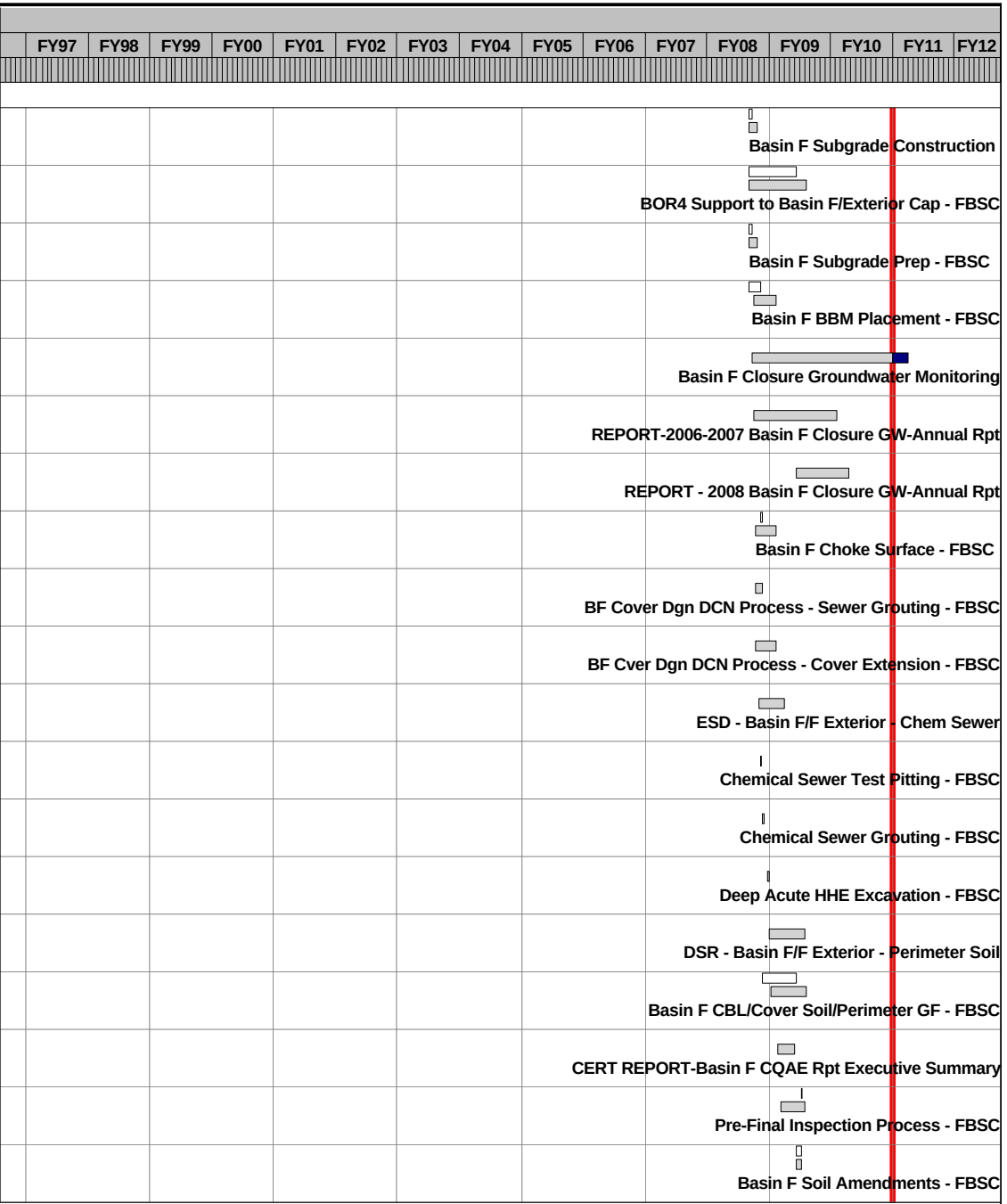


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
FC3-110100	17AUG01	19FEB02	0	12JUL01A	20DEC01A	100
FC3-102250	01SEP06	29SEP06	0	02OCT06A	14NOV06A	100
FC3-110250	02OCT06*	02APR07	0	14NOV06A	02APR07A	100
FC3-109300	27NOV07*	19DEC07	0	27NOV07A	30JAN08A	100
FC3-110300	20DEC07	27MAY08	0*	31JAN08A	27MAY08A	100
Remediation Activities						
FC4-120100	19FEB02*	19MAR02	0*	20DEC01A	08MAR02A	100
FC4-125100	19FEB02		0	20DEC01A		100
FC4-141100	20MAR02	31OCT02	0*	06MAR02A	08OCT02A	100
FC4-137100	20MAR02	31OCT02	0*	06MAR02A	08OCT02A	100
FC4-230215	22MAR02	18DEC02	0*	08MAR02A	13SEP02A	100
FC4-130211	22MAR02	18DEC02	0*	08MAR02A	13SEP02A	100
FC4-141200	17APR02	23JAN03	0*	17APR02A	08JAN03A	100
FC4-176000	16JUL02	27FEB03	0*	16JUL02A	29JAN03A	100
FC4-176500	16JUL02	27FEB03	0*	16JUL02A	29JAN03A	100
FC4-240100	16JUL02	27FEB03	0*	27SEP02A	30DEC02A	100
FC4-240210	16JUL02	27FEB03	0*	27SEP02A	30DEC02A	100
FC4-250100	19NOV02	08APR03	0*	18NOV02A	14FEB03A	100
FC4-250210	19NOV02	08APR03	0*	18NOV02A	14FEB03A	100
FC4-290210	28FEB03	11APR03	0*	27JAN03A	14FEB03A	100

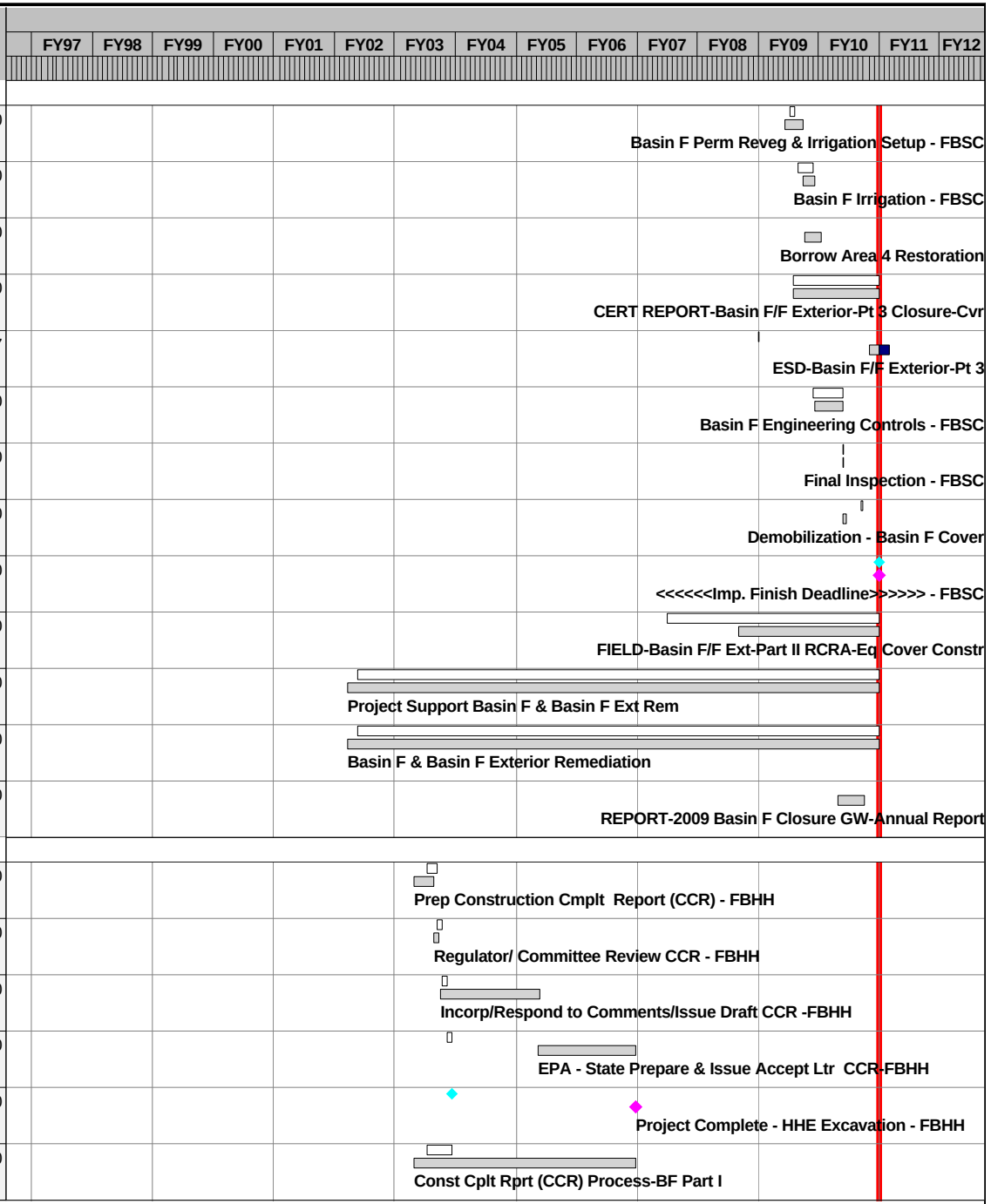


Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
FC4-291200		11APR03	0		24JAN03A	100
FC4-120101			0*	24AUG04A	17SEP04A	100
FC4-137101			0*	13SEP04A	23SEP04A	100
FC4-141101			0*	13SEP04A	23SEP04A	100
FC4-240101			0*	13SEP04A	23SEP04A	100
FC4-250101			0*	13DEC04A	17DEC04A	100
FC4-290211			0*	07JAN05A	07JAN05A	100
FC4-310099			0*	24AUG04A	07JAN05A	100
FC4-250220			0	14DEC04A	16DEC04A	100
FC4-290220			0	10JAN05A	11JAN05A	100
FC4-INF1			0*	20DEC01A	07JAN05A	100
FC4-125300	03APR07		0	03APR07A		100
FC4-230225	19OCT07*	15FEB08	0	25OCT07A	15FEB08A	100
FC4-130221	19OCT07	15FEB08	0*	25OCT07A	15FEB08A	100
FC4-230238			0	12MAR08A	12MAR08A	100
FC4-230226			0	01APR08A	14APR08A	100
FC4-230239			0	16APR08A	16APR08A	100
FC4-040020			0*	26APR08A	05AUG08A	100
FC4-120300	28MAY08	03JUN08	0	28MAY08A	28JUL08A	100

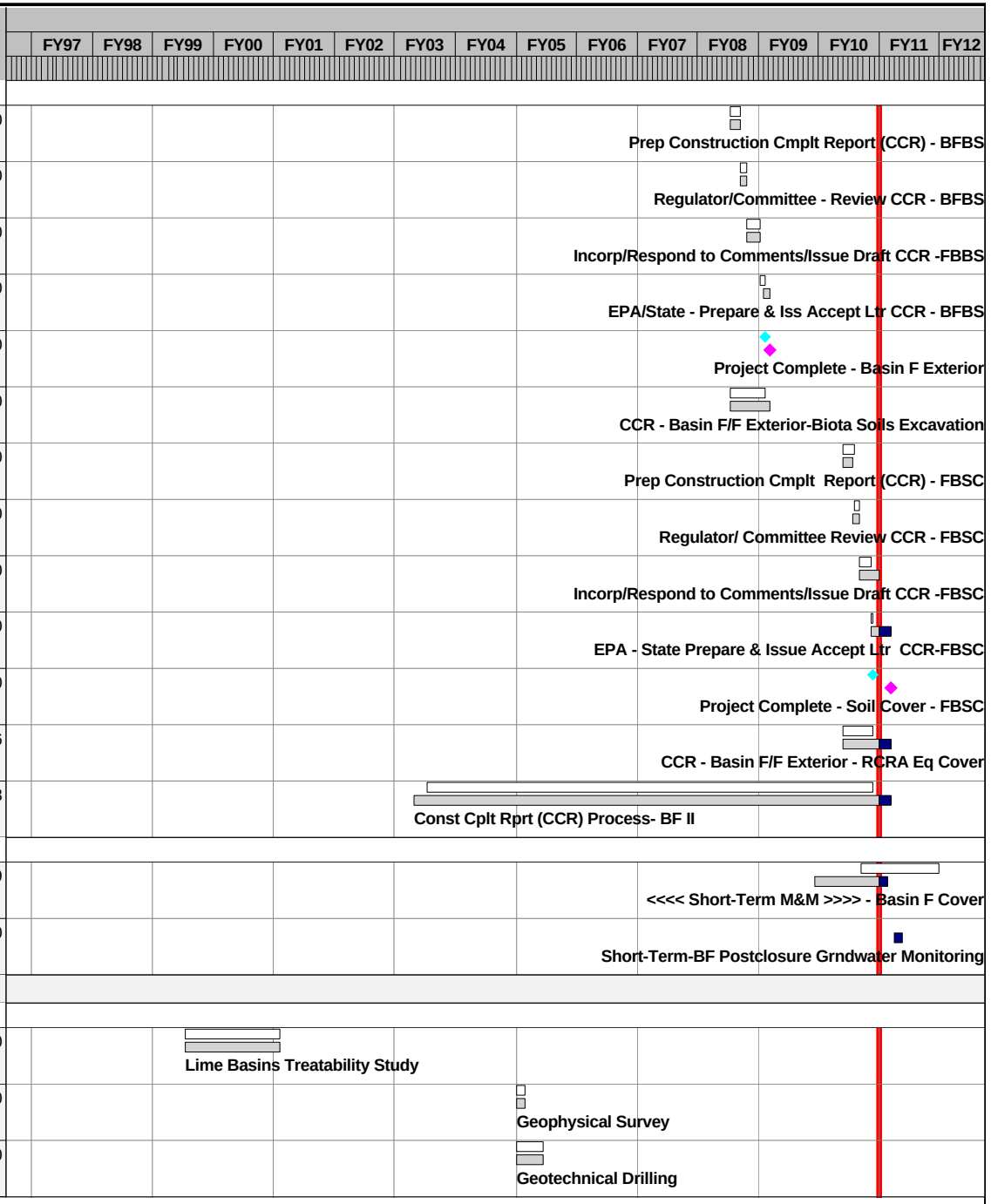
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
FC4-260300	04JUN08	24JUN08	0	04JUN08A	25JUL08A	100
FC4-179000	04JUN08	17MAR09	0*	04JUN08A	07MAY09A	100
FC4-120400	04JUN08	24JUN08	0	04JUN08A	25JUL08A	100
FC4-270500	10JUN08	14AUG08	0	02JUL08A	14NOV08A	100
FC4-180010			62*	30JUN08A	04JAN11	90
FC4-180030			0*	07JUL08A	09NOV09A	100
FC4-180040			0*	09MAR09A	12JAN10A	100
FC4-270510	15AUG08	26AUG08	0	16JUL08A	14NOV08A	100
FC4-040010			0	21JUL08A	27AUG08A	100
FC4-040015			0	21JUL08A	10NOV08A	100
FC4-040018			0	01AUG08A	31DEC08A	100
FC4-040016			0	15AUG08A	15AUG08A	100
FC4-280410			0	29AUG08A	02SEP08A	100
FC4-280510			0	23SEP08A	04OCT08A	100
FC4-350090			0*	06OCT08A	30APR09A	100
FC4-270400	27AUG08	17MAR09	0	13OCT08A	07MAY09A	100
FC4-400020			0*	24NOV08A	26FEB09A	100
FC4-280210	15APR09	15APR09	0	12DEC08A	04MAY09A	100
FC4-280200	18MAR09	14APR09	0	12MAR09A	11APR09A	100



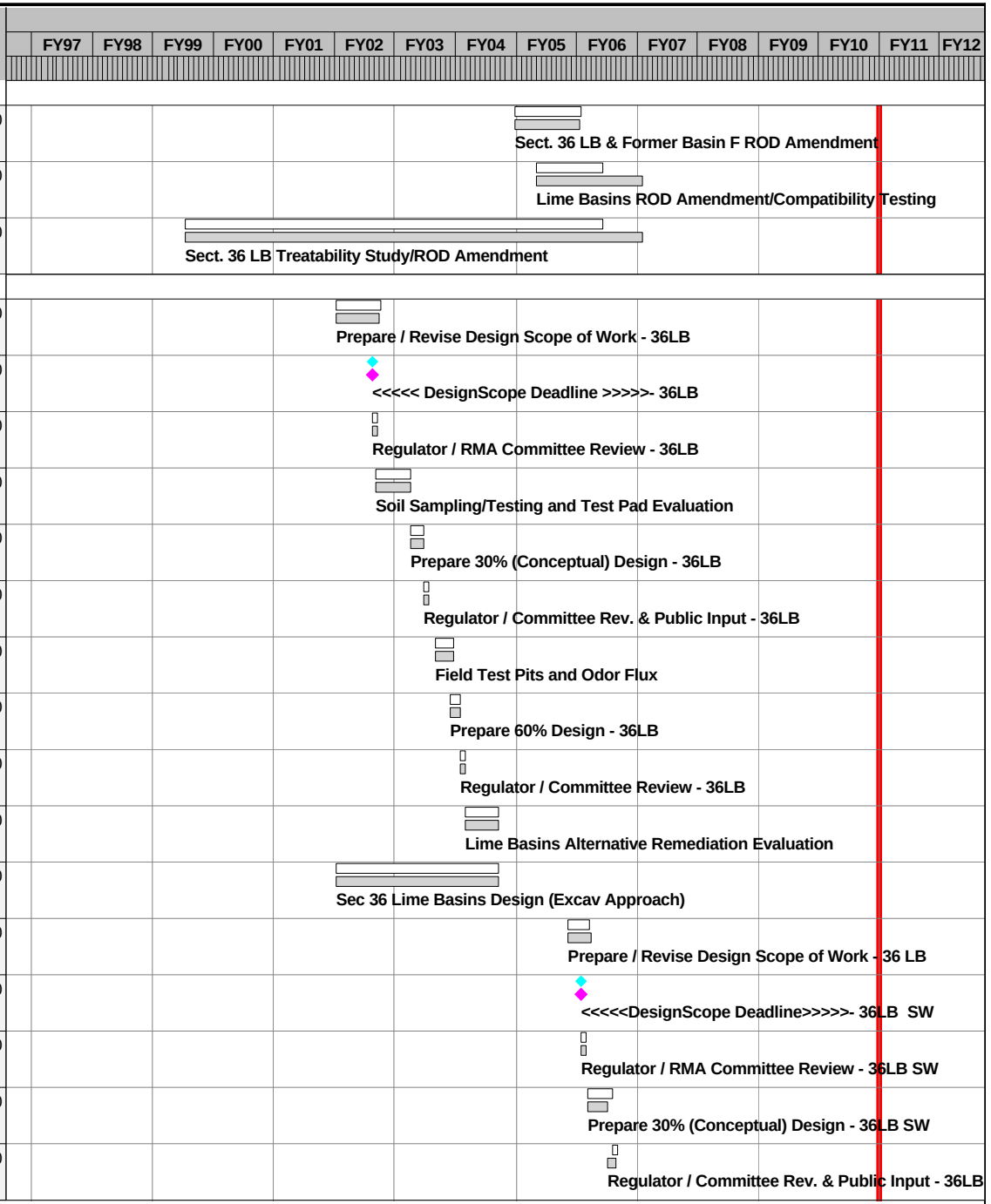
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
FC4-280400	15APR09	11MAY09	0	09MAR09A	26JUN09A	100
FC4-290000	01JUN09	31AUG09	0	27JUN09A	04SEP09A	100
FC4-211115			0	13JUL09A	15OCT09A	100
FC4-400000	04MAY09	30SEP10	0*	04MAY09A	29SEP10A	100
FC4-500000	01OCT08*	30SEP08	61*	09AUG10A	03DEC10	47
FC4-280500	01SEP09	01MAR10	0	08SEP09A	01MAR10A	100
FC4-280420	02MAR10	02MAR10	0	02MAR10A	02MAR10A	100
FC4-290400	14JUN10	25JUN10	0	02MAR10A	19MAR10A	100
FC4-291400		30SEP10	0		29SEP10A	100
FC4-INF2	03APR07	30SEP10	0*	04JUN08A	29SEP10A	100
FC4-310100	19FEB02	30SEP10	0*	20DEC01A	29SEP10A	100
FC4-INF	19FEB02	30SEP10	0*	20DEC01A	29SEP10A	100
FC4-180050			0	25JAN10A	01JUL10A	100
Construction Completion Report						
FC6-300100	12APR03	11JUN03	0	25JAN03A	27MAY03A	100
FC6-300110	12JUN03	12JUL03	0	27MAY03A	27JUN03A	100
FC6-300120	13JUL03	11AUG03	0*	30JUN03A	17FEB05A	100
FC6-300130	12AUG03	11SEP03	0	17FEB05A	21SEP06A	100
FC6-300140		11SEP03	0		21SEP06A	100
FC6-INF1	12APR03	11SEP03	0*	25JAN03A	21SEP06A	100



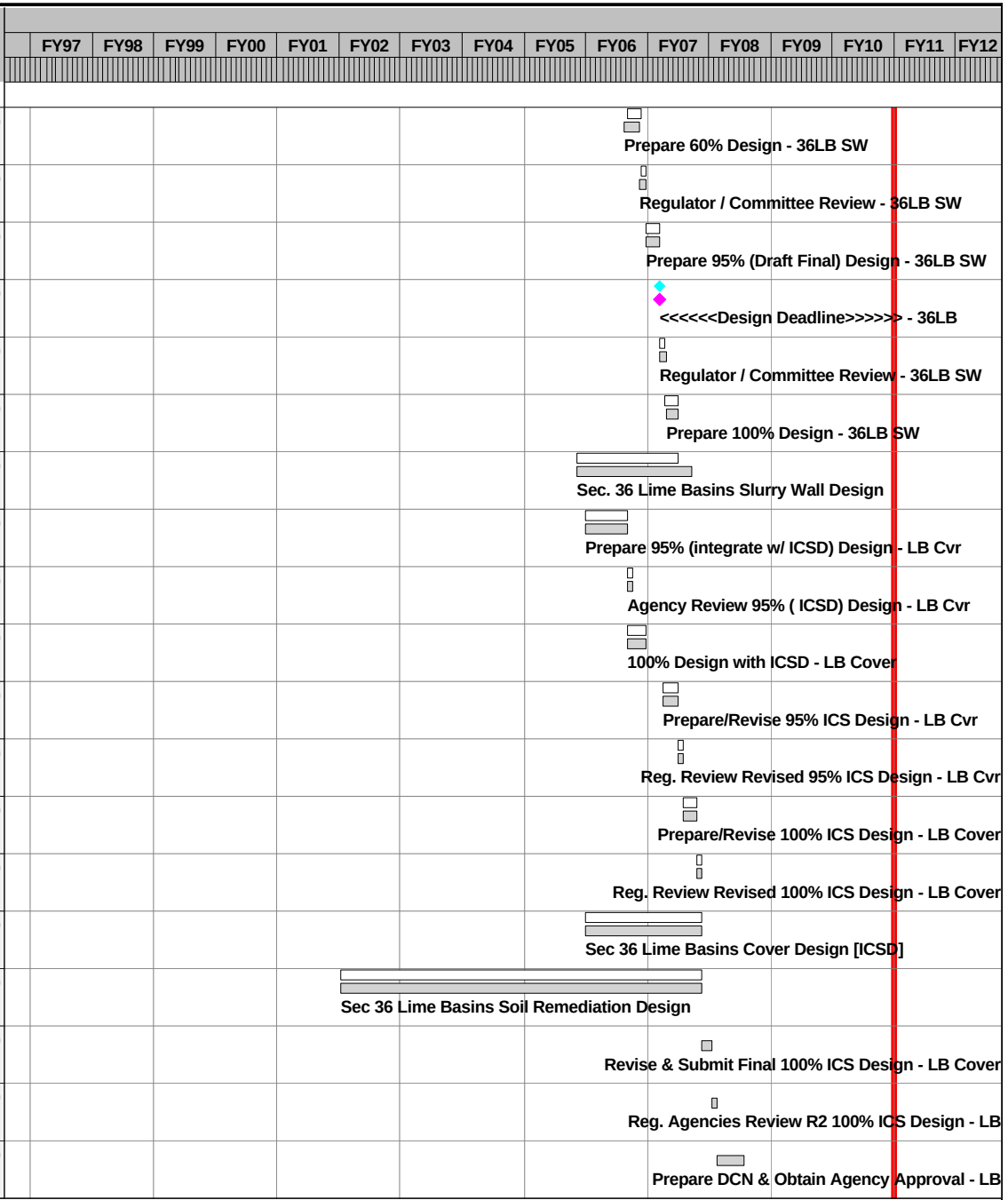
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
FC6-230100	17APR08	16JUN08	0	17APR08A	17JUN08A	100
FC6-230110	17JUN08	24JUL08	0	18JUN08A	24JUL08A	100
FC6-230120	25JUL08	17OCT08	0*	25JUL08A	13OCT08A	100
FC6-230130	18OCT08	16NOV08	0	31OCT08A	09DEC08A	100
FC6-230140		16NOV08	0		09DEC08A	100
FC6-INF0	17APR08	16NOV08	0*	17APR08A	09DEC08A	100
FC6-300200	03MAR10	03MAY10	0	03MAR10A	28APR10A	100
FC6-300210	04MAY10	03JUN10	0	29APR10A	09JUN10A	100
FC6-300220	04JUN10	10AUG10	0*	10JUN10A		100
FC6-300230	11AUG10	24AUG10	14	20AUG10A	10DEC10	0
FC6-300240		24AUG10	0		10DEC10	0
FC6-INF2	03MAR10	24AUG10	68*	03MAR10A	10DEC10	76
FC6-INF	12APR03	24AUG10	68*	25JAN03A	10DEC10	98
Short-Term Monitoring/Maintenance/Operations						
FC7-100000	14JUN10	30SEP11	35*	08SEP09A	19NOV10	89
FC7-190010			36*	05JAN11	23FEB11	0
Section 36 Lime Basins Soil Remediation						
Predesign Activities						
LB1-110000	12APR99*	02NOV00	0*	12APR99A	02NOV00A	100
LB1-010032	04OCT04*	24NOV04	0*	04OCT04A	24NOV04A	100
LB1-010040	04OCT04	09MAR05	0*	04OCT04A	09MAR05A	100



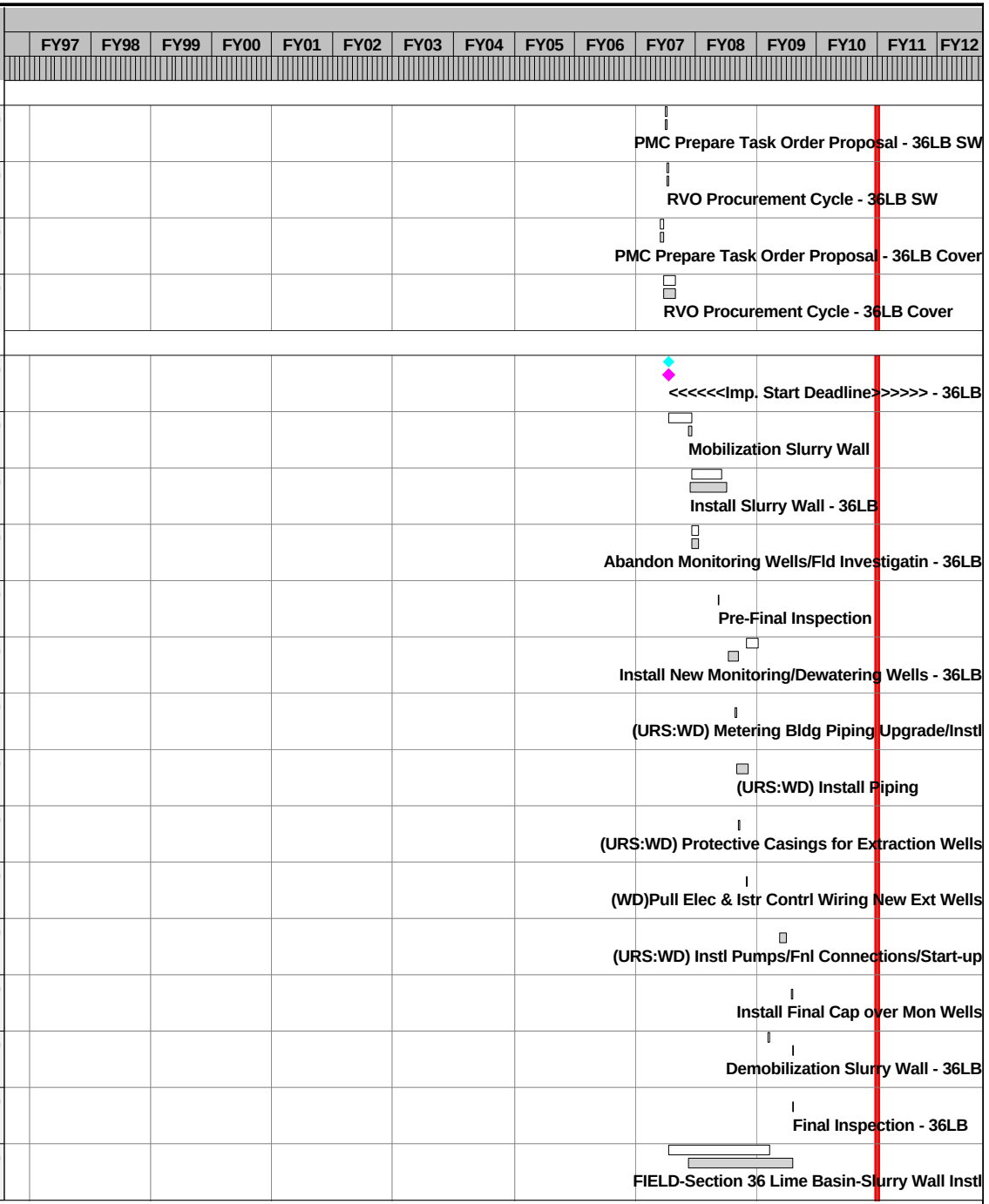
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Predesign Activities						
LB1-010018	23SEP04*	28OCT05	0*	23SEP04A	20OCT05A	100
LB1-210000	01FEB05*	06MAR06	0*	01FEB05A	07NOV06A	100
LB1-INF	12APR99	06MAR06	0*	12APR99A	07NOV06A	100
Remedial Design						
LB2-120000	08OCT01*	03JUL02	0	08OCT01A	02JUL02A	100
LB2-122000		16MAY02	0		16MAY02A	100
LB2-125000	16MAY02	17JUN02	0*	16MAY02A	17JUN02A	100
LB2-125100	05JUN02	06JAN03	0*	07JUN02A	06JAN03A	100
LB2-130000	07JAN03	25MAR03	0*	07JAN03A	26MAR03A	100
LB2-140000	26MAR03	24APR03	0*	27MAR03A	28APR03A	100
LB2-140500	06JUN03	16SEP03	0*	06JUN03A	16SEP03A	100
LB2-150000	02SEP03	30OCT03	0*	02SEP03A	04NOV03A	100
LB2-160000	31OCT03	01DEC03	0*	31OCT03A	01DEC03A	100
LB2-170500	03DEC03	16JUN04	0*	03DEC03A	16JUN04A	100
LB2-INF1	08OCT01	16JUN04	0*	08OCT01A	16JUN04A	100
LB2-220000	08AUG05*	16DEC05	0*	08AUG05A	30DEC05A	100
LB2-222000		01NOV05	0		01NOV05A	100
LB2-225000	01NOV05	02DEC05	0*	01NOV05A	02DEC05A	100
LB2-230000	05DEC05	03MAY06	0*	06DEC05A	10APR06A	100
LB2-240000	04MAY06	03JUN06	0*	11APR06A	26MAY06A	100



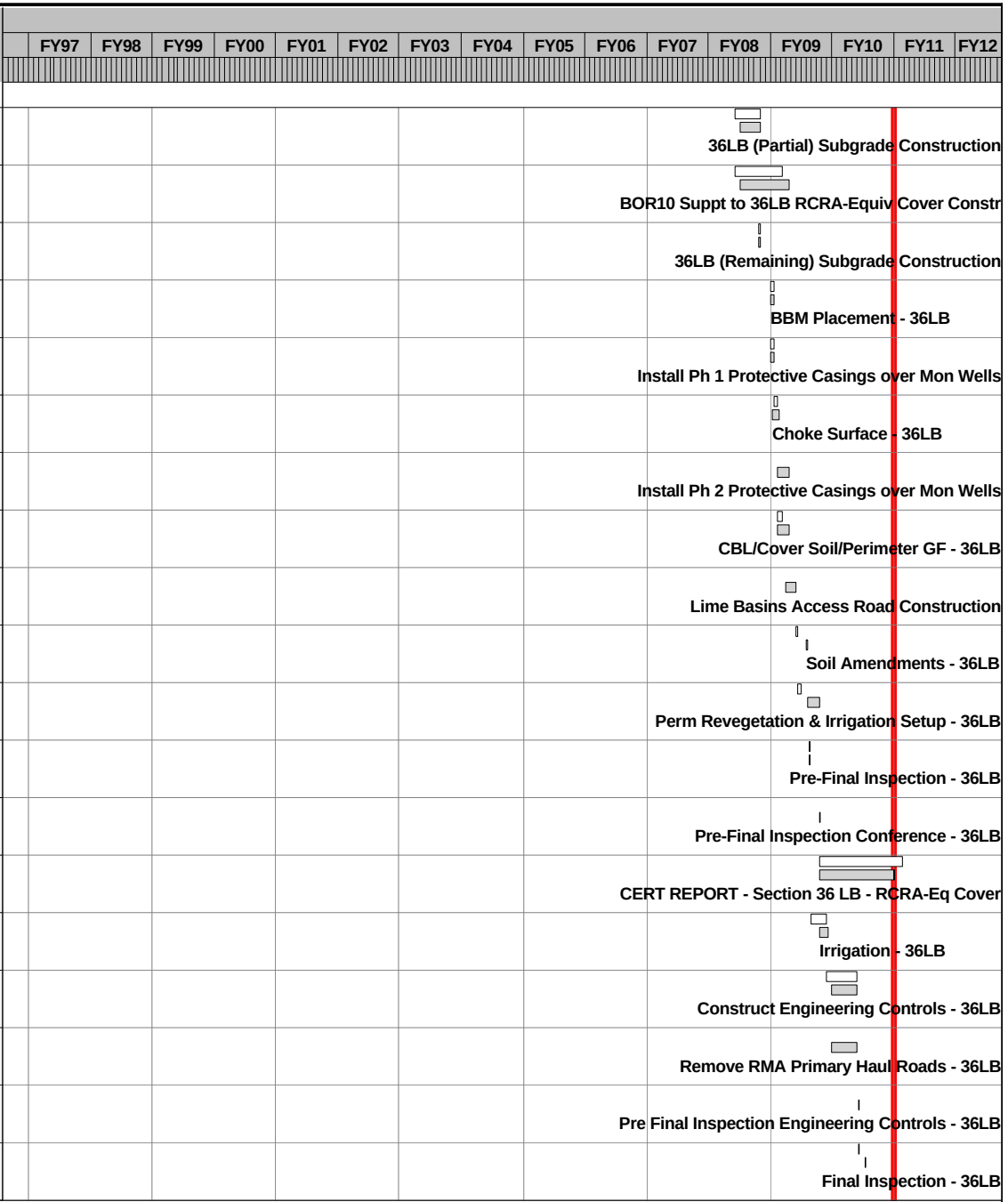
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remedial Design						
LB2-250000	05JUN06	29AUG06	0*	15MAY06A	16AUG06A	100
LB2-260000	30AUG06	29SEP06	0*	17AUG06A	20SEP06A	100
LB2-270000	21SEP06	15DEC06	0*	21SEP06A	13DEC06A	100
LB2-175010		15DEC06	0		14DEC06A	100
LB2-280000	16DEC06	16JAN07	0*	14DEC06A	24JAN07A	100
LB2-290000	17JAN07	29MAR07	0*	25JAN07A	29MAR07A	100
LB2-INF2	08AUG05	29MAR07	0*	08AUG05A	26JUN07A	100
LB2-27CVR1	27SEP05*	08JUN06	0	27SEP05A	08JUN06A	100
LB2-28CVR2	09JUN06	10JUL06	0	09JUN06A	10JUL06A	100
LB2-29CVR3	09JUN06	29SEP06	0	09JUN06A	29SEP06A	100
LB2REVCVR1	02JAN07*	03APR07	0	02JAN07A	03APR07A	100
LB2REVCVR2	04APR07	03MAY07	0	04APR07A	03MAY07A	100
LB2REVCVR3	04MAY07	23JUL07	0	30APR07A	23JUL07A	100
LB2REVCVR4	24JUL07	23AUG07	0	25JUL07A	23AUG07A	100
LB2-INF3	27SEP05	23AUG07	0*	27SEP05A	23AUG07A	100
LB2-INF	08OCT01	23AUG07	0*	08OCT01A	23AUG07A	100
LB2-195113			0	24AUG07A	23OCT07A	100
LB2-195114			0	24OCT07A	20NOV07A	100
LB2-195120			0	21NOV07A	22APR08A	100



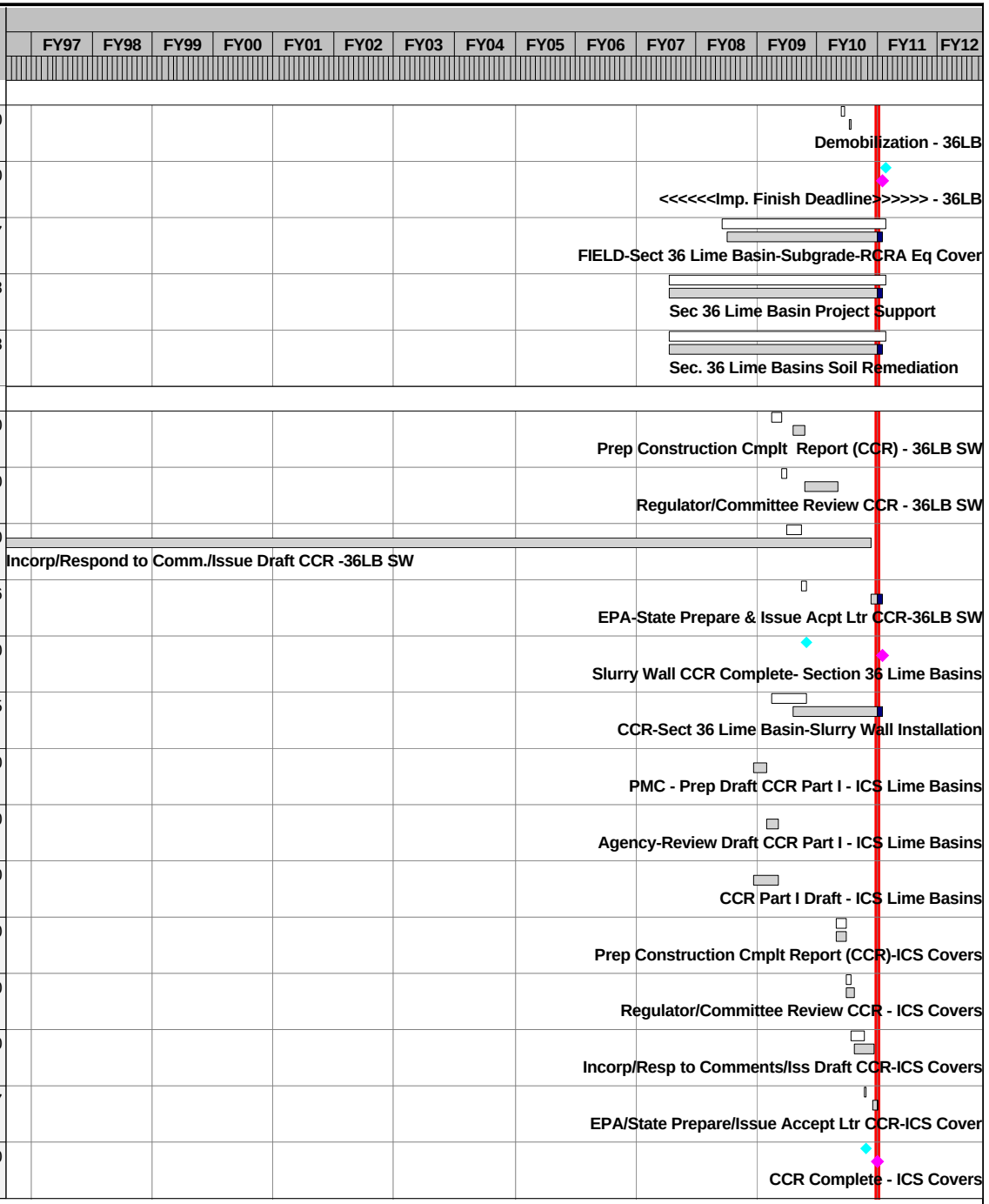
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Procurement						
LB3-109100	04APR07	17APR07	0	04APR07A	17APR07A	100
LB3-110100	17APR07	20APR07	0*	17APR07A	20APR07A	100
LB3-209100	05MAR07*	23MAR07	0	05MAR07A	23MAR07A	100
LB3-310100	26MAR07	04JUN07	0*	26MAR07A	04JUN07A	100
Remediation Activities						
LB4-125010	20APR07*		0	20APR07A		100
LB4-220000	20APR07	05SEP07	0*	17AUG07A	07SEP07A	100
LB4-244000	13SEP07	04MAR08	0*	31AUG07A	04APR08A	100
LB4-270000	11SEP07	18OCT07	0	11SEP07A	18OCT07A	100
LB4-244010			0	21FEB08A	21FEB08A	100
LB4-290000	05AUG08	15OCT08	0	21APR08A	13JUN08A	100
LB4-290020			0	28MAY08A	06JUN08A	100
LB4-290010			0	10JUN08A	11AUG08A	100
LB4-290040			0	19JUN08A	25JUN08A	100
LB4-290050			0	04AUG08A	07AUG08A	100
LB4-340010			0	23FEB09A	03APR09A	100
LB4-300030			0	06MAY09A	08MAY09A	100
LB4-260000	11DEC08	19DEC08	0	08MAY09A	08MAY09A	100
LB4-340025			0	14MAY09A	14MAY09A	100
LB4-INF1	20APR07	19DEC08	0*	20AUG07A	08MAY09A	100



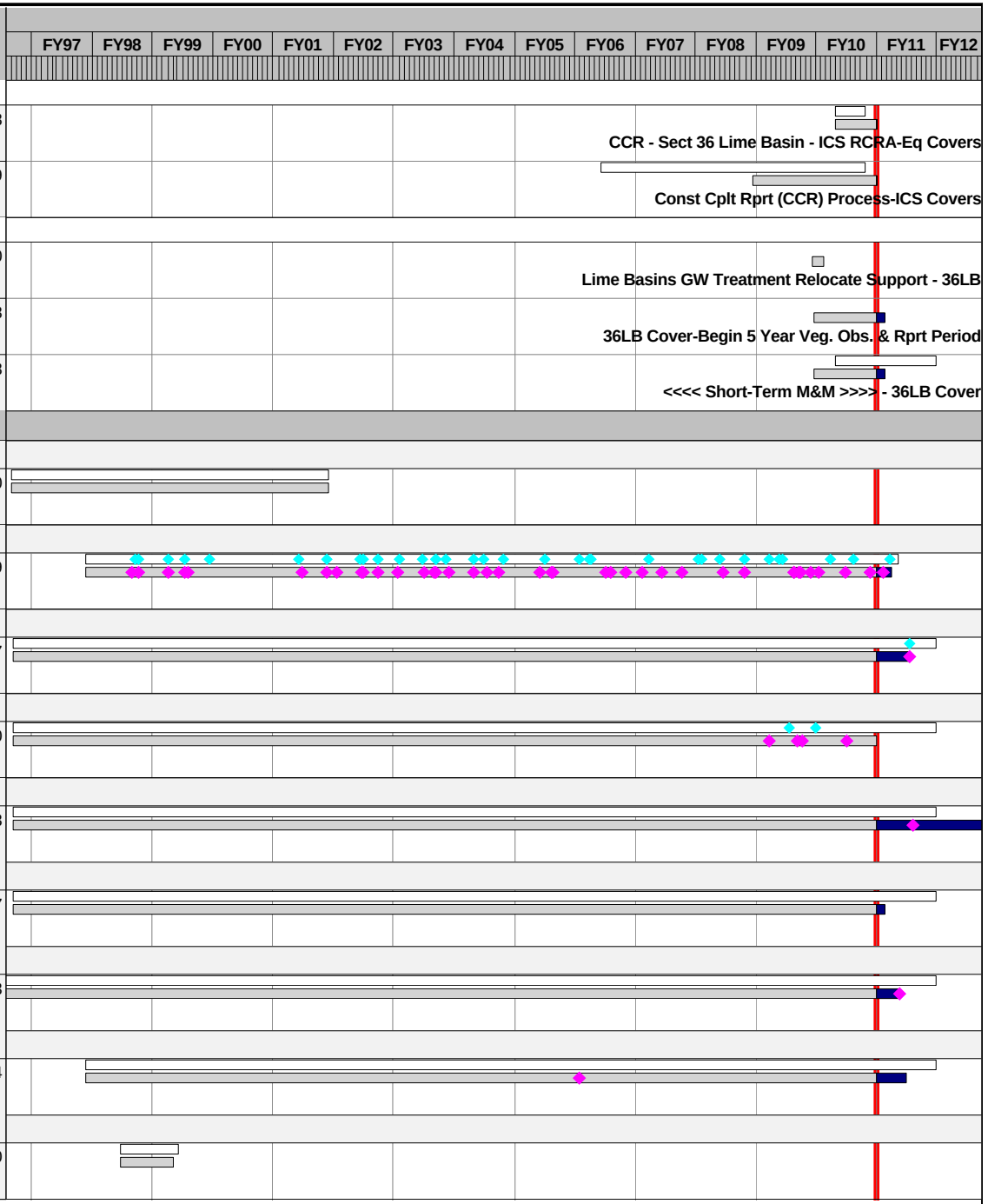
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
LB4-312000	05MAR08	01AUG08	0*	03APR08A	01AUG08A	100
LB4-312010	05MAR08	10DEC08	0*	03APR08A	23JAN09A	100
LB4-329999	30JUL08	01AUG08	0	30JUL08A	01AUG08A	100
LB4-330000	30SEP08	22OCT08	0	07OCT08A	22OCT08A	100
LB4-300000	30SEP08	22OCT08	0*	07OCT08A	22OCT08A	100
LB4-331001	23OCT08	13NOV08	0	17OCT08A	24NOV08A	100
LB4-300020			0*	17NOV08A	23JAN09A	100
LB4-340000	14NOV08	10DEC08	0	17NOV08A	23JAN09A	100
LB4-355010			0	05JAN09A	02MAR09A	100
LB4-355000	02MAR09*	16MAR09	0	05MAY09A	12MAY09A	100
LB4-365000	17MAR09	31MAR09	0	13MAY09A	22JUL09A	100
LB4-355001	21MAY09	21MAY09	0	21MAY09A	21MAY09A	100
LB4-355020			0	23JUL09A	23JUL09A	100
LB4-190200	23JUL09	19NOV10	5*	23JUL09A	06OCT10	99
LB4-366000	01JUN09	31AUG09	0	25JUL09A	12SEP09A	100
LB4-189000	01SEP09	02MAR10	0	28SEP09A	02MAR10A	100
LB4-366110			0	01OCT09A	02MAR10A	100
LB4-366120			0	04MAR10A	04MAR10A	100
LB4-365001	10MAR10	10MAR10	0	21APR10A	21APR10A	100



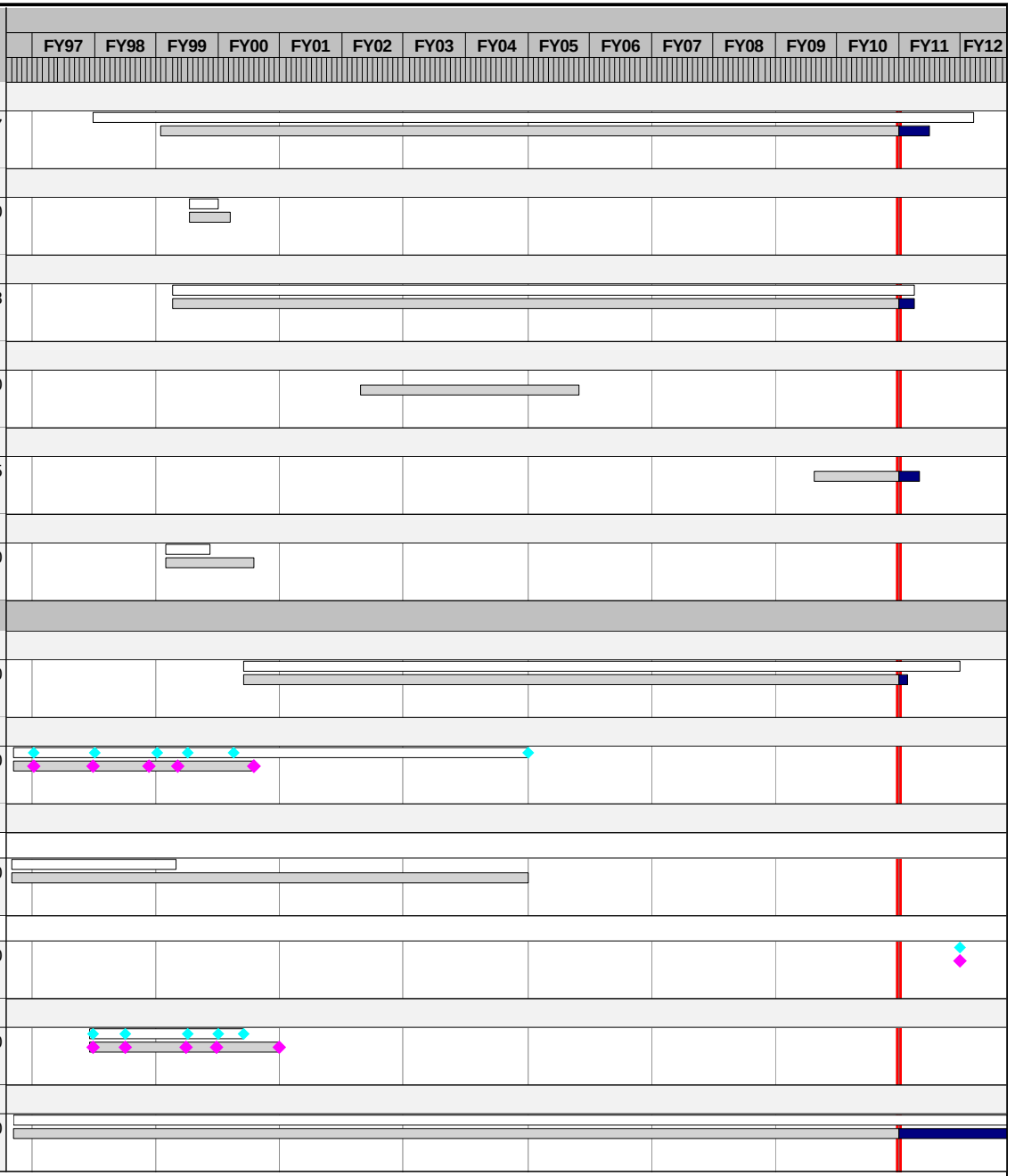
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Remediation Activities						
LB4-360000	03MAR10	16MAR10	0	21APR10A	30APR10A	100
LB4-367000		19NOV10	0		29OCT10	0
LB4-INF2	05MAR08	19NOV10	20*	03APR08A	29OCT10	97
LB4-400000	20APR07	19NOV10	20*	20APR07A	29OCT10	98
LB4-INF	20APR07	19NOV10	20*	20APR07A	29OCT10	98
Construction Completion Report						
LB6-180000	06JAN09	06MAR09	0*	15MAY09A	16JUL09A	100
LB6-180010	07MAR09	05APR09	0*	17JUL09A	05FEB10A	100
LB6-180020	06APR09	02JUL09	0*		26AUG10A	100
LB6-180030	05JUL09	03AUG09	28*	27AUG10A	29OCT10	56
LB6-180040		03AUG09	0		29OCT10	0
LB6-INF1	06JAN09	03AUG09	28*	15MAY09A	29OCT10	95
LB6-189950			0	15SEP08A	02DEC08A	100
LB6-189960			0	02DEC08A	12FEB09A	100
LB6-INF0			0*	15SEP08A	12FEB09A	100
LB6-190000	01FEB10	01APR10	0*	01FEB10A	01APR10A	100
LB6-190010	02APR10	01MAY10	0*	02APR10A	13MAY10A	100
LB6-190020	02MAY10	12JUL10	0*	14MAY10A	09SEP10A	100
LB6-190030	13JUL10	26JUL10	6	09SEP10A	07OCT10	57
LB6-190040		26JUL10	0		07OCT10	0



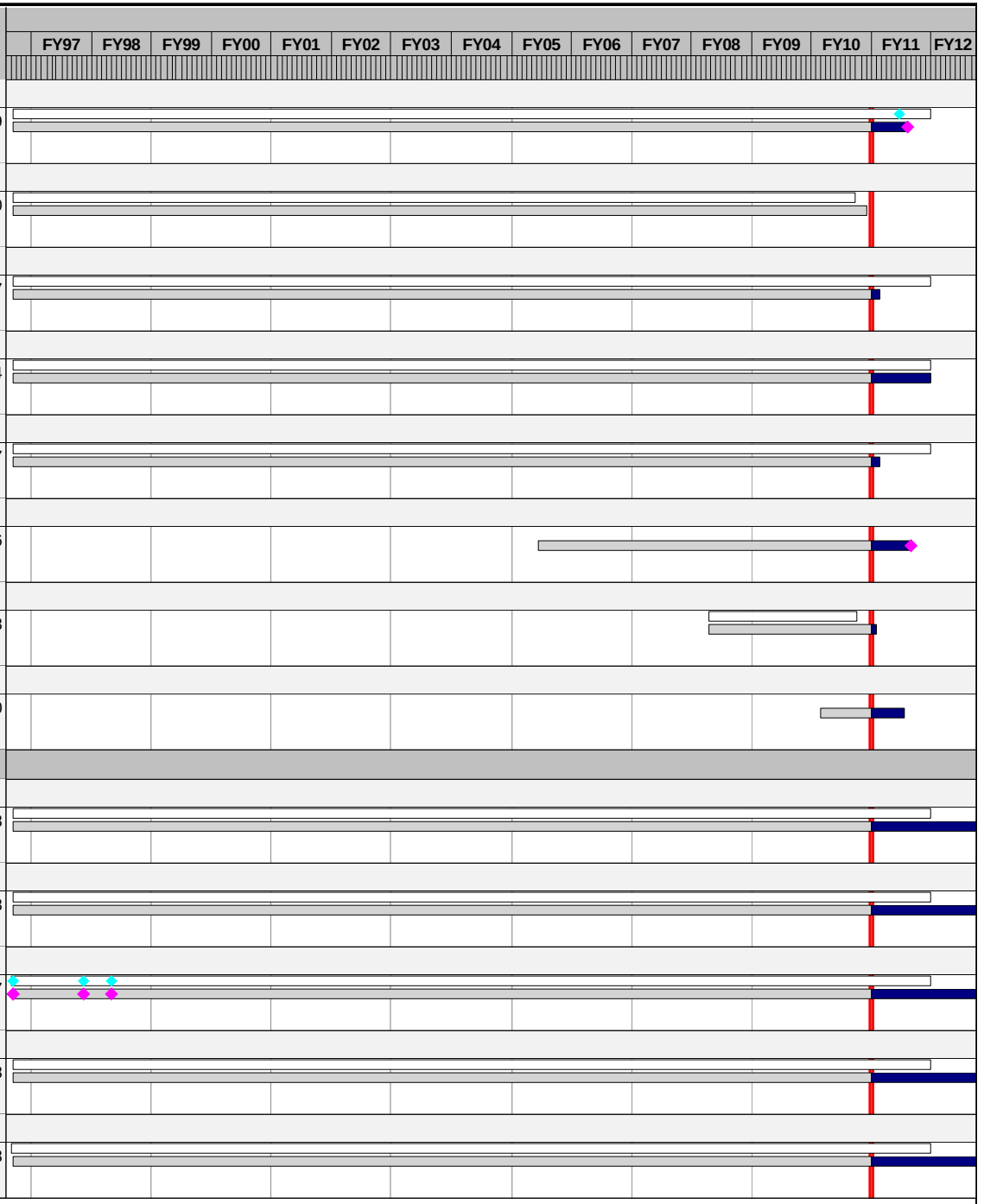
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Construction Completion Report						
LB6-INF2	01FEB10	26JUL10	6*	01FEB10A	07OCT10	98
LB6-INF	05MAR06	26JUL10	6*	15SEP08A	07OCT10	99
Short-Term Monitoring/Maintenance/Operations						
LB7-500000			0*	14SEP09A	17NOV09A	100
LB7-600000			35*	21SEP09A	19NOV10	88
LB7-100000	01FEB10	30SEP11	35*	21SEP09A	19NOV10	88
Site-Wide Programs						
+ RCRA Cap Equivalency						
	03JUN96A	04SEP01	0	03JUN96A	04SEP01A	100
+ Borrow Areas Design; Prep & Closure						
	28AUG97A	08FEB11	61	28AUG97A	30DEC10	99
+ Site-Wide Biota Monitoring - BAS						
	11JUN96A	30SEP11	139	11JUN96A	21APR11	87
+ Site-Wide Air Monitoring - APA						
	11JUN96A	30SEP11	0	11JUN96A	30SEP10A	100
+ Site-Wide Plume Management						
	11JUN96A	30SEP11	2,406	11JUN96A	31MAR20	83
+ Confined Flow System Well Monitoring						
	11JUN96A	30SEP11	35*	11JUN96A	19NOV10	17
+ Site-Wide Medical Monitoring Program						
	06DEC95A	30SEP11	94	06DEC95A	17FEB11	93
+ Site-Wide Traffic Management						
	28AUG97A	30SEP11	124	28AUG97A	31MAR11	94
+ Geophysical Investigation						
	23MAR98	04MAR99	0	23MAR98A	01FEB99A	100



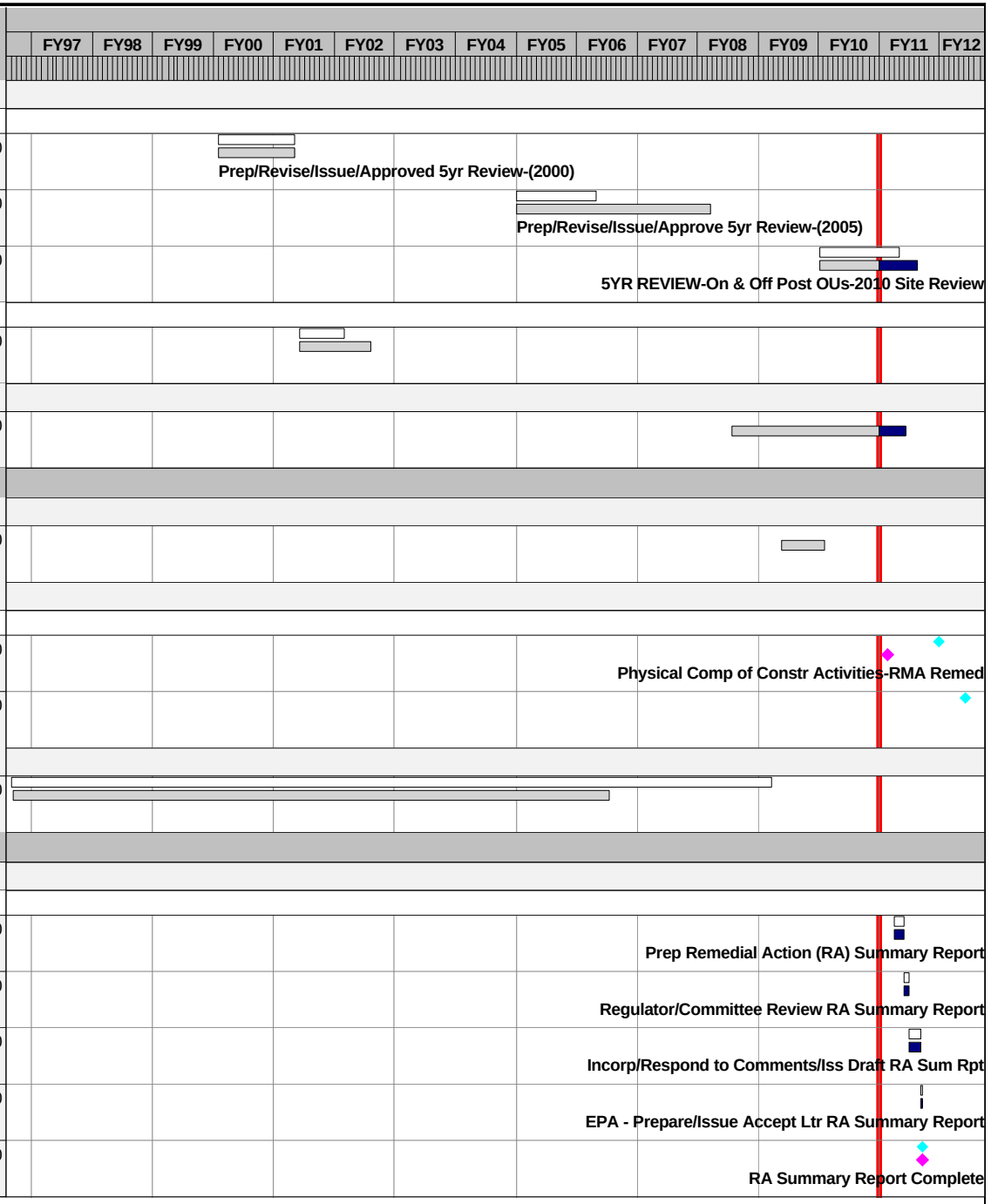
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
+ Site Wide Revegetation & Irrigation						
	26SEP97	16DEC11	124	29OCT98A	31MAR11	97
+ Lower Derby Lake Shoreline Expansion						
	15APR99	06OCT99	0	15APR99A	15DEC99A	100
+ UXO Emergency Response						
	04JAN99	30DEC10	61	01JAN99A	30DEC10	98
+ Site Wide Well Abandonment						
			0*	23JAN02A	29JUL05A	100
+ RVO Remedy Support and Operations						
			120*	26MAY09A	04FEB11	15
+ Drummed Waste Planning						
	01DEC98	16AUG99	0	01DEC98A	28APR00A	100
Water Treatment / Monitoring						
+ Bedrock Ridge GW Plume Extr System						
	03MAR00	30SEP11	35*	03MAR00A	19NOV10	0
+ So Adams Co. Water Supply/Henderson Distribution						
	10JUN96A	01OCT04	0	10JUN96A	28APR00A	100
On-Post Water Supply						
+ Predesign Activities						
	03JUN96A	29JAN99	0	03JUN96A	05OCT04A	100
+ Construction/Operations/Closure						
		30SEP11	0		30SEP11	0
+ Confined Flow System Well Closure						
	02SEP97A	04MAR00	0	02SEP97A	27SEP00A	100
+ Irondale Containment System						
	11JUN96A	01OCT14	1,519*	11JUN96A	29SEP16	80



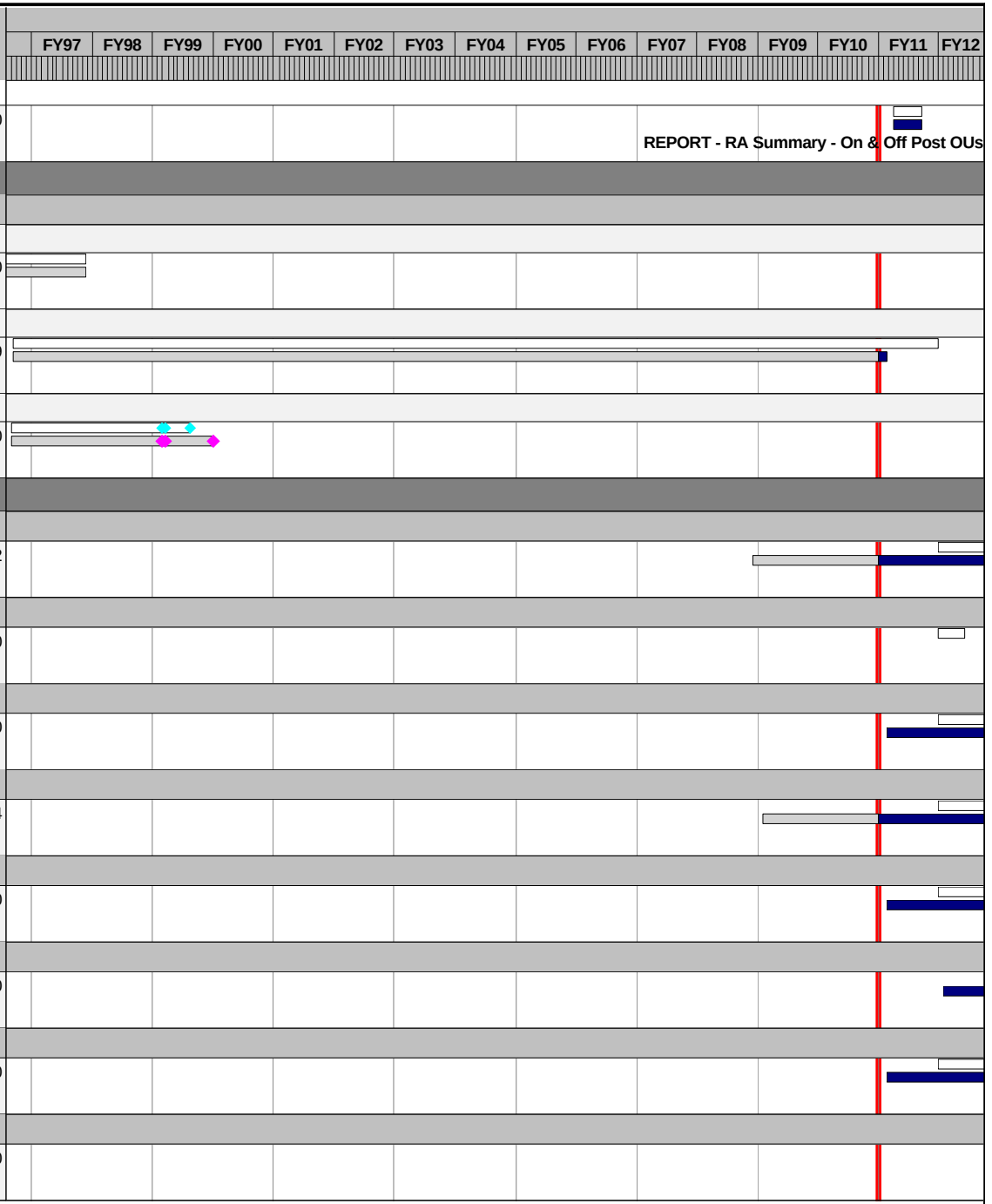
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
+ Basin A Neck System						
	11JUN96A	30SEP11	154	11JUN96A	12MAY11	89
+ CERCLA Wastewater Treatment Facility						
	11JUN96A	30JUN10	0	11JUN96A	31AUG10A	100
+ Northwest Boundary Containment Sys						
	11JUN96A	30SEP11	35*	11JUN96A	19NOV10	17
+ North Boundary Containment System						
	11JUN96A	30SEP11	252	11JUN96A	30SEP11	94
+ South Lakes Plume Management						
	11JUN96A	30SEP11	35*	11JUN96A	19NOV10	17
+ Mass Removal Syst-So Tank Farm & LB						
			166	14MAR05A	31MAY11	86
+ North Plants LNAPL Remediation						
	14JAN08	01JUL10	20*	14JAN08A	29OCT10	98
+ Lime Basins DNAPL RI/FFS						
			141*	30NOV09A	25APR11	60
Remediation Venture Office						
+ Program Management						
	10JUN96A	30SEP11	505	11JUN96A	28SEP12	88
+ RVO Remedy Support and Operations						
	10JUN96A	30SEP11	505	11JUN96A	28SEP12	88
+ Remedy Execution						
	03JUN96A	30SEP11	505	11JUN96A	28SEP12	87
+ USFWS						
	10JUN96A	30SEP11	505	11JUN96A	28SEP12	88
+ Program Controls						
	03JUN96A	30SEP11	505	11JUN96A	28SEP12	88



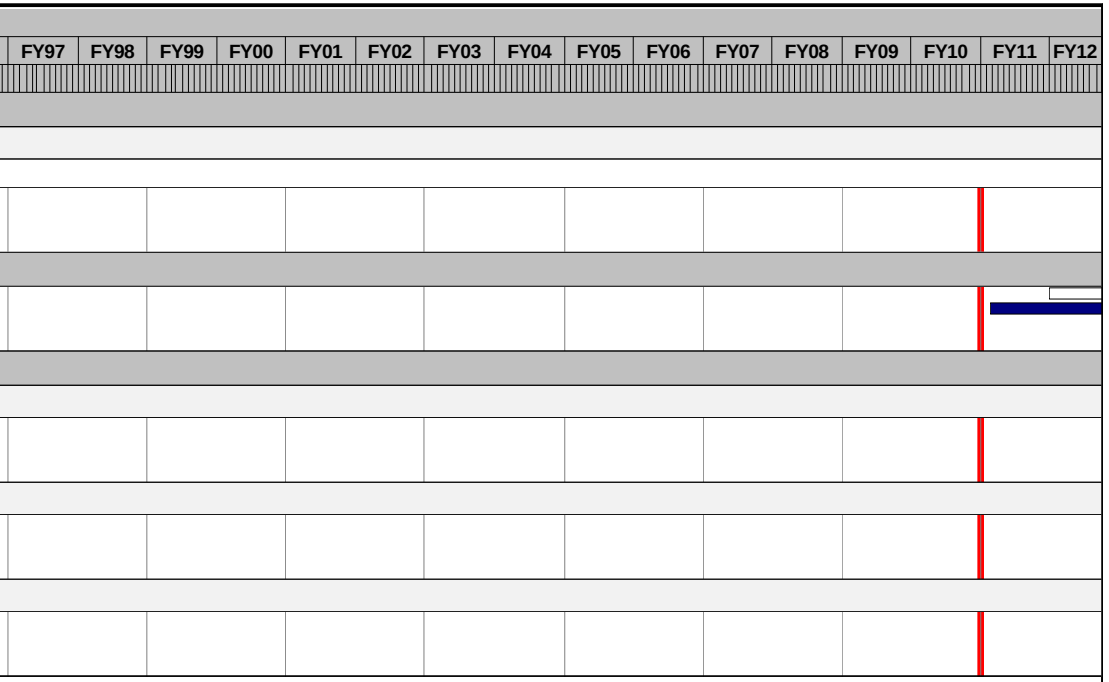
Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
5 Year Review - Report Preparation						
Report Preparation						
Y5S-100000	01NOV99*	31JAN01	0	01NOV99A	31JAN01A	100
Y5S1200160	04OCT04*	31JAN06	0*	04OCT04A	20DEC07A	100
Y5S2200270	05OCT09*	28JAN11	159*	05OCT09A	19MAY11	0
+ Corrective Actions						
	05MAR01	27NOV01	0*	05MAR01A	07MAY02A	100
+ Environmental Management System						
			154*	24APR08A	10MAR11	0
Program Management						
+ Remedy Execution						
			0*	23FEB09A	05NOV09A	100
Completion of Remedial Action						
Remediation Activities						
CR4-980000		30SEP11*	0		19NOV10	0
CR4-980001		02MAR12	0		26FEB20	0
+ Trust Fund						
	03JUN96A	26DEC08	0	11JUN96A	20APR06A	100
Closeout Reporting						
RMA Remedial Action Summary Report						
Report Preparation						
D1S-100100	04JAN11	04MAR11	60	04JAN11	04MAR11	0
D1S-100110	05MAR11	03APR11	30	05MAR11	03APR11	0
D1S-100120	04APR11	09JUN11	66	04APR11	09JUN11	0
D1S-100130	10JUN11	23JUN11	14	10JUN11	23JUN11	0
D1S-100140		23JUN11	0		23JUN11	0



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Report Preparation						
D1S-100150	04JAN11	23JUN11	170*	04JAN11	23JUN11	0
RMA Off-Post Operable Unit						
Off-Post Remedy - (Reference Only)						
+ Off-Post Surficial Soil						
	04MAR96A	26AUG97A	0	04MAR96A	26AUG97A	100
+ Off-Post Water Treatment Plant						
	11JUN96A	30SEP11	35	11JUN96A	19NOV10	99
+ Off-Post Well Closure						
	03JUN96A	19MAY99	0	03JUN96A	30SEP99A	100
RMA Post Remediation						
+ Disposal Facilities - Basin A / Landfills						
	03OCT11	28SEP40	7,672	02SEP08A	28SEP40	2
+ Early Start Projects						
	01OCT11	03MAR12	148*	28SEP19	26FEB20	0
+ Phase II - South Plants Area						
	03OCT11	28SEP40	7,637	22NOV10	28SEP40	0
+ Phase III - Sections 35 & 36 Sites & North Plant						
	03OCT11	28SEP40	7,672	03NOV08A	28SEP40	4
+ Phase IV - Basin F/Lime Basins						
	03OCT11	28SEP40	7,637	22NOV10	28SEP40	0
+ Site-Wide Programs						
			3,718	01NOV11	31MAR22	0
+ Water Treatment / Monitoring						
	03OCT11	28SEP40	7,637	22NOV10	28SEP40	0
+ Remediation Venture Office						
			1,605	01OCT14	29JAN21	0



Activity ID	Current Control Start	Current Control Finish	Rem Dur	Forecast Start	Forecast Finish	% Comp
Program Management						
Completion of Remedial Action						
Remediation Activities						
CR4-981000		05MAR41	0		05MAR41	0
+ Off-Post Remedy - (Reference Only)						
	03OCT11	28SEP40	7,637	22NOV10	28SEP40	0
Closeout Reporting						
+ Preliminary Closeout Report (PCOR) - By EPA						
	28FEB15	31AUG15	182	28FEB15	31AUG15	0
+ Final Closeout Report (FCOR)						
	06MAR41	17OCT41	225	06MAR41	17OCT41	0
+ RMA Site Deletion Process-NOID & NOD						
	18OCT41	29NOV42	405	18OCT41	29NOV42	0



5.0 Multi-Party Agreements

Rocky Mountain Arsenal (RMA)
Decision Document
DD-LTMP-15

Date Prepared: November 9, 2009	**Prepared by:** Laura Williams

Decision Subject: SAPC Resolution for Offpost Institutional Controls

Decision Team

Working Group ☐ Committee ☐ Council ☐ Steering and Policy Committee X

Decision Background (include any affected or reference documentation)

On September 9, 2009, the RMA Steering and Policy Committee (SAPC) negotiated a process for resolving the Offpost Groundwater Plumes Monitoring Network portion of the Long-Term Monitoring Plan (LTMP) which included expansion of the Offpost Institutional Control (IC) Program. This decision document formalizes the SAPC resolution process for the content to be developed in the Offpost IC Plan and allow completion of the LTMP.

Decision

The Parties agree with the following principles and guidance.

FOR THE LTMP:

- The LTMP can be completed while the Offpost IC Plan is formalized in a separate document.
- At this time, no new wells will be added to the Offpost Monitoring Network though future conditions may warrant installing new wells (for example: if wells are broken, access is denied, increased concentrations in plumes detected, etc.). Any new wells will be mutually agreed upon by the Parties, and formal revision of the LTMP.
- The LTMP will incorporate a process to evaluate and propose wells for removal from the Offpost Monitoring Network.
- Deletion is not being proposed at this time. Monitoring required to support deletion will be agreed upon by the Parties prior to proceeding with the deletion process.

FOR THE IC PLAN:

- The Parties will jointly develop an expanded Offpost IC area, with consideration of the 1994 DIMP plume footprint, 2007 Offpost plume map and the current Well Permit Notification Area.
- Tri-County Health Department (TCHD) will develop/formalize access agreements with private well-owners, as needed.
- The Parties agree to continue an Army/Shell-funded, private well monitoring program that is independently implemented by TCHD to ensure that an independent, funded program continues. The private well monitoring program will continue until the Parties agree the program is not needed.
- The Army will incorporate the private well completion information and sample results supplied by TCHD into the RMA Environmental Database.

Decision Implementation Date (Estimated)

To be implemented upon signature

Decision Approval (If organizations are different than shown, revise or indicate N/A as needed)

Army Signature — Date: 15 DEC 09	Shell Signature — Date: 12-18-09
USFWS Signature — Date: 1/25/10	EPA Signature — Date: 12-29-09
CDPHE Signature — Date: 01-11-10	TCHD Signature — Date: 01-21-10

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

December 8, 2009

Ref: 8EPR-F

Mr. Bruce Huenefeld
Rocky Mountain Arsenal
5650 Havana Street, Building 129
Commerce City, CO 80022-1748

Re: Miscellaneous Rocky Mountain Arsenal Structure Demolition and Removal Project – Phase III, Construction Completion Report, Rocky Mountain Arsenal

Dear Mr. Huenefeld:

The Environmental Protection Agency (EPA) has completed its review of the Construction Completion Report (CCR) for the Miscellaneous Rocky Mountain Arsenal Structure Demolition and Removal Project – Phase III (Project) issued November 5, 2009, by the Remediation Venture Office. The CCR, in compliance with OSWER Directive 9355.0-4B (Remedial Design/ Remedial Action Handbook), documents the remedial action activities for the Project which have been accomplished to date, including:

- Completion of all construction items defined in the Project Scope of Work and Final Design Package, as modified, including the status of revegetation efforts which is monitored as part of the annual *Vegetation Management Plan* ;
- Completion of the Project remedy in accordance with the goals established in the 1996 On-Post Record of Decision;
- Conduct of a final inspection(s) by the Colorado Department of Public Health and Environment (CDPHE) and EPA;
- CDPHE concurrence with the CCR via enclosed letter.

Accordingly, EPA approves the CCR as submitted and accepts the Miscellaneous Rocky Mountain Arsenal Structure Demolition and Removal Project – Phase III as complete.

Sincerely,

Terry L. Anderson
Director, Federal Facilities Program

Enclosure: CDPHE Concurrence Letter

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STATE OF COLORADO

Bill Ritter, Jr., Governor
Ned Calonge, M.D., Interim Executive Director

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Located in Glendale, Colorado

http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

RECEIVED
DATE 12/9/09

November 23, 2009

Ms. Carol Campbell
Assistant Regional Administrator
Office of Ecosystem Protection and Remediation
U.S. EPA Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Re: **CDPHE Concurrence with Miscellaneous RMA Structure Demolition and Removal Project – Phase III**

Dear Ms. Campbell:

CDPHE has reviewed the Rocky Mountain Arsenal's Miscellaneous RMA Structure Demolition and Removal Project – Phase III Construction Completion Report. This report was evaluated for compliance with the objectives described in the Record of Decision, as amended by the Remediation Design and Implementation Schedule. Based upon this evaluation and upon our observations while the work was being performed, I am pleased to inform you of the State's concurrence with the referenced Construction Completion Report.

Sincerely,

Gary W. Baughman
Director
Hazardous Materials and Waste Management Division

cc:
Bruce Huenefeld, RMA
Roger Shakely, Shell
Tom Jackson, USFWS
Jack Lipschultz, DOJ
Weslyn Erickson, RMA
Laura Williams, EPA
Melody Mascarenaz, TCHD
Richard Lotz, AGO
Trevor Klotz, Sentinel Consulting
RMA File #7.6-12

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM

12 January 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Extension for the following Integrated Cover System Projects

1. Currently the enforceable Implementation Finish milestone date for the following Integrated Cover System (ICS) Projects: the South Plants BOA & CPA Soil Remediation Phase II, Complex (Army) Disposal Trenches – Cover, and Section 36 Lime Basins Soil Remediation, is 15 January 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 25 March 2010. The Implementation Finish deadline is dependent on receiving the Regulatory Agencies acceptance of the ICS Construction Quality Assurance (CQA) Engineer's Certification Report. The approval process for the ICS CQA Certification Report is expected to take longer to complete than previously forecast due to the development of the Quality Assurance/Quality Control Matrix-ICS CQA Certification Report Crosswalk, which has been added to the process in response to the Regulatory Agencies' review comments received in November 2009.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
Pacific Western Technologies, Ltd, (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033
Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM

12 January 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Extension for the Basin F and Basin F Exterior Remediation – RCRA-Equivalent Cover Construction Project

1. Currently the enforceable Implementation Finish milestone date for the Basin F and Basin F Exterior Remediation – RCRA-Equivalent Cover Construction Project is 11 January 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 31 March 2010. The Implementation Finish deadline is dependent on completing final revegetation, engineering controls (which have been delayed due to weather impacts), and the Regulatory Agencies' acceptance of the Final Closure Certification Report for the Basin F/F Exterior RCRA-Equivalent Cover.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish deadline of this project.

3. The point of contact on this matter is Mr. Lou Greer at 303-853-3951.

Bruce M. Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
Pacific Western Technologies, Ltd, (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033
Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM

12 January 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Extension for the Shell Disposal Trenches Remediation Project

1. Currently the enforceable Implementation Finish milestone date for the Shell Disposal Trenches Remediation Project is 11 January 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 12 February 2010. The Implementation Finish deadline is dependent on completing engineering controls and final inspection activities, which have been delayed due to weather impacts.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
Pacific Western Technologies, Ltd, (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033
Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
Tri-County Health Department Environmental Health Division, (Ms. Melody H. Mascarenaz), 4201 East 72nd Avenue, Commerce City, Colorado 80022-1488
Rocky Mountain Arsenal, (Document Tracking Center), 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

JAN 19 2010

Ref: 8EPR-F

Mr. Bruce Huenefeld
Rocky Mountain Arsenal
5650 Havana Street, Building 129
Commerce City, CO 80022-1748

Re: South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase 2, Part 1 and Part 2 Construction Completion Report, Rocky Mountain Arsenal

Dear Mr. Huenefeld:

The Environmental Protection Agency (EPA) has completed its review of the *Construction Completion Report* (CCR) for the South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase 2, Part 1 and Part 2 (Project) as submitted on November 9, 2009, by the Remediation Venture Office. The CCR, in compliance with OSWER Directive 9355.0-4B (Remedial Design/ Remedial Action Handbook), documents the remedial action activities for the Project which have been accomplished to date, including:

- Completion of the Phase 2, Part 1 and Part 2 construction items identified in Sections 1.3 and 1.5 of the CCR as developed in the Project Scope of Work and Final Design Package, as modified, including the status of revegetation efforts outside the Army-Maintained Area that is monitored as part of the annual *Vegetation Management Plan*;
- Completion of the Project remedy in accordance with the goals established in the 1996 On-Post Record of Decision;
- Conduct of a final inspection by the Colorado Department of Public Health and Environment (CDPHE) and EPA;
- CDPHE concurrence with the CCR via enclosed letter.

Accordingly, EPA approves the CCR as submitted and accepts the South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase 2, Part 1 and Part 2 as complete. As stated within the CCR, irrigation and establishment of vegetation on the non-cover Project site areas

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within the AMA will be documented in the Integrated Cover System (ICS) CCR (currently being developed). Upon submittal and approval of the ICS CCR documenting completion of the irrigation and revegetation requirements, the non-cover areas within the AMA will be deemed to be complete.

Sincerely,

Robert L. Stites, acting

Rob Stites
Acting Director, Federal Facilities Program

Enclosure: CDPHE Concurrence Letter

cc: Ms. Susan Newton, CDPHE
Ms. Melody Mascarenaz, TCHD
Mr. James L. Green, RVO
Mr. Richard Lotz, CO-AG Office
Mr. David A. Carson, DOJ
Mr. Mark Thomson, Shell
Mr. Tom Jackson, USFWS
Mr. Jim Bush, PWT
Mr. Wes Erickson, RVO

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Bill Ritter, Jr., Governor
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8100 Lowry Blvd.
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http://www.cdphe.state.co.us

Colorado Department
of Public Health
and Environment

December 16, 2009

Ms. Carol Campbell
Assistant Regional Administrator
Office of Ecosystem Protection and Remediation
U.S. EPA Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Re: **CDPHE Concurrence with South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase 2, Part 1 and 2 Construction Completion Report.**

Dear Ms. Campbell:

CDPHE has reviewed the Rocky Mountain Arsenal's South Plants Balance of Areas and Central Processing Area Soil Remediation Project – Phase 2, Part 1 and 2 Construction Completion Report. This report was evaluated for compliance with the objectives described in the Record of Decision, as amended by the Remediation Design and Implementation Schedule. Based upon this evaluation and upon our observations while the work was being performed, I am pleased to inform you of the State's concurrence with the referenced Construction Completion Report.

Sincerely,

Gary W. Baughman
Director
Hazardous Materials and Waste Management Division

cc: Bruce Huenefeld, RMA
Roger Shakely, Shell
Tom Jackson, USFWS
Jack Lipschultz, DOJ
Weslyn Erickson, RMA
Laura Williams, EPA
Melody Mascarenaz, TCHD
Richard Lotz, AGO
Trevor Klotz, Sentinel Consulting
RMA File #7.6-16

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM

11 February 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Extension of the Shell Disposal Trenches Remediation Project

1. Currently the enforceable Implementation Finish milestone date for the Shell Disposal Trenches Remediation Project is 12 February 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 10 March 2010. The Implementation Finish Deadline is dependent on completing engineering controls and final inspection activities, which have been delayed due to weather impacts.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M Huenefeld

Encl

BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748 (wo/encl)
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129 (w/encl)
Pacific Western Technologies, Ltd, (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033 (w/encl 2 copies)
Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037 (wo/encl)
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022 (wo/encl)
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748 (wo/encl)
Tri-County Health Department Environmental Health Division, (Ms. Melody H. Mascarenaz), 4201 East 72nd Avenue, Commerce City, Colorado 80022-1488 (wo/encl)
Rocky Mountain Arsenal, (Document Tracking Center), 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748 (wo/encl)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

February 22, 2010

Ref: 8EPR-F

Mr. Bruce Huenefeld
Rocky Mountain Arsenal
5650 Havana Street, Building 129
Commerce City, CO 80022-1748

Re: Section 36 Balance of Areas Soil Remediation Project - Part 2 Construction Completion Report, Rocky Mountain Arsenal

Dear Mr. Huenefeld:

The Environmental Protection Agency (EPA) has completed its review of the *Construction Completion Report* (CCR) for the Section 36 Balance of Areas Soil Remediation Project - Part 2 (Project) as submitted on November 24, 2009, and amended via change pages received on December 24, 2009, by the Remediation Venture Office. The CCR, in compliance with OSWER Directive 9355.0-4B (Remedial Design/ Remedial Action Handbook), documents the remedial action activities for the Project which have been accomplished to date, including:

- Completion of the Part 2 construction items identified in Sections 1.4 and 1.6 of the CCR as developed in the Project Scope of Work and Final Design Package, as modified, including the status of revegetation efforts outside the Army-Maintained Area that is monitored as part of the annual *Vegetation Management Plan*;
- Completion of the Project remedy in accordance with the goals established in the 1996 On-Post Record of Decision;
- Conduct of a final inspection by the Colorado Department of Public Health and Environment (CDPHE) and EPA;
- CDPHE concurrence with the CCR via enclosed letter.

Accordingly, EPA approves the CCR as submitted and accepts the Section 36 Balance of Areas Soil Remediation Project - Part 2 as complete. Irrigation and establishment of vegetation on Project site areas within the AMA (9.6 acres of RCRA Equivalent Cover, 30.6 acres of 2-foot soil covers, and

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112.6 acres of non-cover area) are to be documented in the Integrated Cover System (ICS) CCR (currently being developed). Upon submittal and approval of the ICS CCR documenting completion of the irrigation and revegetation requirements, the Project areas within the AMA will be deemed to be complete.

Sincerely,

Robert L. Stites

Rob Stites
Acting Director, Federal Facilities Program

Enclosure: CDPHE Concurrence Letter

cc: Ms. Susan Newton, CDPHE
Ms. Melody Mascarenaz, TCHD
Mr. James L. Green, RVO
Mr. Richard Lotz, CO-AG Office
Mr. David A. Carson, DOJ
Mr. Mark Thomson, Shell
Mr. Tom Jackson, USFWS
Mr. Jim Bush, PWT
Mr. Wes Erickson, RVO

RECEIVED
2/18/10

STATE OF COLORADO

Bill Ritter, Jr., Governor
Ned Calonge, M.D., Interim Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Denver, Colorado 80246-1530
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TDD Line (303) 691-7700
Located in Glendale, Colorado

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Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

February 8, 2010

Ms. Carol Campbell
Assistant Regional Administrator
Office of Ecosystem Protection and Remediation
U.S. EPA Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Re: **CDPHE Concurrence with Section 36 Balance of Areas Part II Construction Completion Report**

Dear Ms. Campbell:

CDPHE has reviewed the Rocky Mountain Arsenal's Section 36 Balance of Areas- Part II Construction Completion Report. This report was evaluated for compliance with the objectives described in the Record of Decision, as amended by the Remediation Design and Implementation Schedule. Based upon this evaluation and upon our observations while the work was being performed, I am pleased to inform you of the State's concurrence with the referenced Construction Completion Report.

Sincerely,

Gary W. Baughman
Director
Hazardous Materials and Waste Management Division

cc: Bruce Huenefeld, RMA
Roger Shakely, Shell
Tom Jackson, USFWS
Jack Lipschultz, DOJ
Weslyn Erickson, RMA
Laura Williams, EPA
Melody Mascarenaz, TCHD
Richard Lotz, AGO
Trevor Klotz, Sentinel Consulting
RMA File #7.6-18

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET, BUILDING 129
COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

4 March 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone for the Integrated Cover System Projects

1. Currently the enforceable Implementation Finish milestone date is 25 March 2010 for the following Integrated Cover System Projects: South Plants Balance of Areas and Central Processing Area Soil Remediation Phase II, Complex (Army) Disposal Trenches – Cover, Section 36 Lime Basins Soil Remediation. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone date to 27 April 2010. The Implementation Finish Deadline is dependent on receiving the Regulatory Agencies' acceptance of the Integrated Cover System Construction Quality Assurance Engineer's Certification Report (ICS Cert Report). The approval process for the ICS Cert Report is expected to take longer to complete than previously forecast.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Richard L. Beardsley

for BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
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URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET, BUILDING 129
COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

4 March 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone for the Shell Disposal Trenches Remediation Project

1. Currently the enforceable Implementation Finish milestone date for the Shell Disposal Trenches Remediation Project is 10 March 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 6 April 2010. The Implementation Finish Deadline is dependent on completing engineering controls and final inspection activities, which have been delayed due to weather impacts.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Richard L. Beardslee

BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
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DEPARTMENT OF THE ARMY
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COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

18 March 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Extension Basin F and Basin F Exterior Remediation – RCRA-Equivalent Cover Construction Project

1. Currently the enforceable Implementation Finish milestone date for the Basin F and Basin F Exterior Remediation – RCRA-Equivalent Cover Construction Project is 31 March 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 27 May 2010. The Implementation Finish Deadline is dependent on completing final revegetation, which has continued to be delayed due to weather impacts, and the Regulatory Agencies' acceptance of the Final Certification Report for the Basin F/F Exterior RCRA-Equivalent Cover.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. Lou Greer at 303-853-3951.

Bruce M. Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
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Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748

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BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET, BUILDING 129
COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

25 March 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Signed Decision Document DD-BasinA-16

1. Enclosed for your information is a copy of the signed Decision Document DD-BasinA-16. The decision document describes how groundwater monitoring plan requirements originally contained in the Basin A Design were incorporated into the Long-Term Monitoring Plan (LTMP). It also documents changes to the monitoring plan requirements that will be implemented under the 2010 LTMP revision.

2. The points of contact on this matter are Mr. Bruce Huenefeld at 303-289-0240 or Mr. Lou Greer at 303-853-3951.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

Encl

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748 (wo/encl)
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129 (w/encl)
Pacific Western Technologies, Ltd., (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033 (w/encl 2 copies)
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URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022 (wo/encl)
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748 (wo/encl)
Tri-County Health Department Environmental Health Division, (Ms. Melody Mascarenaz), 4201 East 72nd Avenue, Commerce City, Colorado 80022-1488 (wo/encl)
Rocky Mountain Arsenal, (DAIM-ODB-RM/Document Tracking Center), 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748 (wo/encl)

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Rocky Mountain Arsenal
Decision Document
DD-BasinA-16

Date Prepared: 03/03/2010	**Prepared by**: Lou Greer

Decision Subject:
Revisions to the Basin A Consolidation and Remediation Project Groundwater Monitoring Plan Requirements incorporated into the 2010 Long-Term Monitoring Plan for Groundwater and Surface Water

Decision Team:

Working Group ☒X Committee ☐ Council ☐ Steering and Policy Committee ☐

Decision Background (include any affected or reference documentation):

References:
1 - *Basin A Consolidation and Remediation Project Final Design Package,* September 1997
2 – *Long-Term Monitoring Plan for Groundwater,* December 1999

The Basin A Consolidation and Remediation Project Final Design Package (Basin A Design) (Reference 1) addressed groundwater monitoring in Section 3.8, Groundwater Monitoring Design Analysis and in Section 4.3, Groundwater Monitoring Plan. The Design Analysis stated that the primary objective of the Basin A Groundwater Monitoring Program was the monitoring of groundwater levels, and that the Design Analysis was prepared to select groundwater monitoring wells for abandonment, retention, or replacement within the Basin A Groundwater Monitoring Program.

The Basin A Design Groundwater Monitoring Plan presented the groundwater monitoring program for the Basin A Consolidation and Remediation Project. The Groundwater Monitoring Plan stated, "The purpose of the Basin A groundwater monitoring program is to collect groundwater data to ensure that the Basin A containment remedy is consistent with the overall plan for RMA groundwater containment; verify that the RAOs are met; and measure the effects on groundwater for five year reviews. For long term operations, the ROD states ["where human health exceedances are left in place at soil sites, groundwater will be monitored, as necessary to evaluate the effectiveness of the remedy"]." The monitoring program varied according to the different construction phases of the project; therefore, it was divided into pre-construction, construction/consolidation, and post-closure (e.g., post-construction) components.

All monitoring wells within the Basin A Consolidation Area and selected wells outside the consolidation area were closed during the pre-construction phase. During construction/consolidation, which entailed placement of contaminated soil and structural debris in the consolidation area, selected perimeter wells were retained for water level monitoring only. As required in the Basin A Design Groundwater Monitoring Plan, water level monitoring of 14 UFS wells and 2 CFS wells on an annual frequency was conducted during the Basin A construction/consolidation phase. Upgradient wells identified in the Basin A-Neck System operations program provided water level monitoring (26307, 26506, 26507, 26510, 26512, 35079, 35081, 35301, 35302, 35303, 35304, 35305, 35306, 35507, 35511, 35512, 35513, 35514, 35515, 35516, 35519, 35521, 35523, 35526, 35544, and 35549) and water-quality monitoring (26307, 35301, 35302, 35303, 35304, 35305, and 35306) during the Basin A construction/consolidation phase.

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Following Basin A cover construction, the post-construction component of the Basin A Design Groundwater Monitoring Plan called for construction of 7 replacement wells within the Basin A Consolidation Area for monitoring of water levels and water quality, and retention of selected perimeter wells to monitor water levels. The replacement wells were installed in 2007/2008 by North Wind and were numbered 36627 through 36633. The plan also provided monitoring frequencies, a list of analytes, and reporting requirements. The original wells and replacement wells are listed below:

Original Well	Replacement Well
36056	36627
36081	36628
36093	36629
36108	36630
36109	36631
36177	36632
36599	36633

While construction of the replacement wells was performed as required by the Basin A Design Groundwater Monitoring Plan, the Basin A water level and water quality monitoring program was incorporated into the Long Term Monitoring Plan (LTMP) (Reference 2) for implementation Changes in the Basin A water-quality monitoring network and analyte list were made in both the 1999 LTMP and revised LTMP (2010) to make the Basin A monitoring program more consistent with the overall monitoring approach developed for RMA. For the 2010 LTMP, these changes include eliminating one of the replacement wells from the water quality network, and monitoring of indicator analytes instead of the complete Basin A Neck System CSRG analyte list. Baseline water quality data were collected from 6 of the 7 replacement wells in 2007/2008. RVO also sampled the same six replacement wells in 2009 to align the sampling frequency of these wells with the once-in-five-year sampling frequency proposed in the revised LTMP.

In an LTMP meeting on September 2, 2009, the Water Team Working Group agreed that a Decision Document was an appropriate means to document concurrence of changes to project-specific groundwater monitoring plans being implemented under the LTMP. The following decisions apply to monitoring changes for the Basin A Design Groundwater Monitoring Plan that are being implemented under the LTMP as the Basin A project transitions to the post-construction phase.

Decision:

Water Level Monitoring:
All the UFS wells in the Basin A Design water-level network were incorporated into the 2010 LTMP annual water-level tracking network, except well 36513, which was closed on November 4, 2002; and well 36540, which was closed on August 24, 2006. Both wells were closed because of interference with remedy construction/soil excavation activities. These wells were not essential to the post-construction water-level network and the remaining wells (36052, 36054, 36077, 36089, 36092, 36094, 36112, 36123, 36142, 36168. 36169, 36210, 36627, 36628, 36629, 36630, 36631, 36632, and 36633) provide adequate data points for water table mapping in the Basin A area. Thus, addition of alternate or replacement wells for the two closed wells was not necessary.

The two CFS wells in the Basin A construction/consolidation phase water-level network are wells 36170 and 36171, which are part of a well cluster. Well 36171 was incorporated into the LTMP CFS network and adjacent UFS well 36169 is retained in the LTMP for monitoring the UFS and the vertical gradient with CFS well 36171. CFS well 36170 is not included in the LTMP CFS network, because it was not constructed properly, and it does not contribute to Basin A or CFS monitoring objectives. Consequently, water level monitoring of well 36170 will be discontinued during the post-construction phase.

Water Quality Monitoring:
LTMP revisions in 2010 involve monitoring 6 of the 7 replacement wells. These wells include 36627, 36629, 36630, 36631, 36632, and 36633. Well 36628 will not be sampled because it is in a similar flow path as other wells upgradient and downgradient. A monitoring frequency of once in 5 years was specified in the Basin A Monitoring Plan and is retained in the 2010 LTMP because of the slow groundwater migration in Basin A, as documented in the Basin A Monitoring Plan and the 2010 LTMP. The indicator analyte list for these wells will include arsenic, benzene, chloroform, chloride, DBCP, DIMP, dithiane, dieldrin, and trichloroethylene in all 6 wells, plus NDMA in 4 wells (36627, 36629, 36631, and 36632). These indicator analytes are compounds of interest for Basin A, the Lime Basins, and the Basin A Neck System.

This Decision Document incorporates the original groundwater monitoring plan requirements contained in the Basin A Design to the LTMP, and documents changes to the monitoring requirements that will be implemented under the 2010 LTMP revision, anticipated to be finalized in early 2010.

Decision Implementation Date (Estimated):

Upon completion of 2010 LTMP

Decision Approval (If organizations are different than shown, revise or indicate N/A as needed):

Bruce M Hunsfield 10 Mar 2010 Army Signature Date	Mark D. Thomson 3/18/10 Shell Signature Date
3/17/10 USFWS Signature Date	Lewis A Benton 3/4/2010 EPA Signature Date
3/18/2010 CDPHE Signature Date	3/17/10 TCHD Signature Date

Distribution (Include all affected parties):

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM 1 April 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Extension for the Shell Disposal Trenches Remediation Project

1. Currently the enforceable Implementation Finish milestone date for the Shell Disposal Trenches Remediation Project is 6 April 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 30 April 2010. The Implementation Finish Deadline is dependent on completing engineering controls and final inspection activities, which have been delayed due to weather impacts.

2. There is no impact to the critical path/overall remedy schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
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Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748
Tri-County Health Department Environmental Health Division, (Ms. Melody Mascarenaz), 4201 East 72nd Avenue, Commerce City, Colorado 80022-1488
Rocky Mountain Arsenal, (DAIM-ODB-RM/Document Tracking Center), 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748

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BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
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DAIM-ODB-RM

22 April 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Extension for Integrated Cover System Projects

1. Currently the enforceable Implementation Finish milestone date April 27, 2010 for the following Integrated Cover System (ICS) Projects: South Plants Balance of Areas and Central Processing Area Soil Remediation Phase II, Complex (Army) Disposal Trenches – Cover, and Section 36 Lime Basins Soil Remediation. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to May 28, 2010. The Implementation Finish Deadline is dependent on receiving the Regulatory Agencies' acceptance of the ICS Construction Quality Assurance Engineer's Certification Report (ICS Cert Report). The approval process for the ICS Cert Report is expected to take longer to complete than previously forecast.

2. There is no impact to the critical path/overall Remedy Schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
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Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET, BUILDING 129
COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

20 May 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129.

SUBJECT: Milestone Letter for the Following Integrated Cover System Projects.

1. Currently the enforceable Implementation Finish milestone date is 28 May 2010, for the following Integrated Cover System Projects: South Plants Balance of Areas and Central Processing Area Soil Remediation Phase II, Complex (Army) Disposal Trenches – Cover, Section 36 Lime Basins Soil Remediation. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone date to 30 July 2010. The Implementation Finish deadline is dependent on receiving the Regulatory Agencies' acceptance of the Integrated Cover System Construction Quality Assurance Engineer's Certification Report (ICS Cert Report). The approval process for the ICS Cert Report is expected to take longer to complete than previously forecast.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M. Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
Pacific Western Technologies, Ltd., (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033
Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748


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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET, BUILDING 129
COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

20 May 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Letter for the Basin F and Basin F Exterior Remediation – RCRA-Equivalent Cover Construction Project

1. Currently the enforceable Implementation Finish milestone date for the Basin F and Basin F Exterior Remediation – RCRA-Equivalent Cover Construction Project is 27 May 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 31 August 2010. The Implementation Finish deadline is dependent on the Regulatory Agencies' acceptance of the Closure Certification Report for the Basin F/F Exterior RCRA-Equivalent Cover.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish deadline of this project.

3. The point of contact on this matter is Mr. Lou Greer at 303-853-3951.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
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U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748
Tri-County Health Department Environmental Health Division, (Ms. Melody Mascarenaz), 4201 East 72nd Avenue, Commerce City, Colorado 80022-1488
Rocky Mountain Arsenal, (DAIM-ODB-RM/Document Tracking Center), 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748

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REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

July 21, 2010

Ref: 8EPR-F

Mr. Bruce Huenefeld
Rocky Mountain Arsenal
5650 Havana Street, Building 129
Commerce City, CO 80022-1748

Re: Hazardous Waste Landfill Final Cap Construction Project Construction Completion Report, Rocky Mountain Arsenal (RMA)

Dear Mr. Huenefeld:

The Environmental Protection Agency (EPA) has completed its review of the Construction Completion Report (CCR) for the Hazardous Waste Landfill (HWL) Final Cap Construction Project (Project) as revised on September 23, 2008, by the Remediation Venture Office. The CCR, in compliance with OSWER Directive 9355.0-4B (Remedial Design/ Remedial Action Handbook), documents the remedial action activities for the Project which have been accomplished to date, including:

- Completion of all construction items defined in the Project Scope of Work and Final Design Package, as modified;
- Completion of the Project in accordance with the goals established in the 1996 On-Post Record of Decision (ROD);
- Conduct of a final inspection by the Colorado Department of Public Health and Environment (CDPHE) and EPA;
- Completion of a Post-Closure Plan approved by CDPHE on July 2, 2009, that defines the post-closure care requirements as defined in 6 CCR 1007-3 and incorporates the CERCLA long-term operation and maintenance requirements; and
- CDPHE concurrence with the CCR via enclosed letter.

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The HWL Cap Construction is the fourth and final phase of work for the HWL remedy component of the RMA Site. In conjunction with the previously completed documents listed below, the construction and waste placement operations of the Hazardous Waste Landfill component of the Rocky Mountain Arsenal remedy are complete.

1. HWL Liner and Facility Construction (Phase 1) CCR approved by EPA on September 27, 2000;
2. HWL Liner and Facility Construction (Phase 2) CCR approved by EPA on April 18, 2001;
3. Cell 1 Final Construction Quality Assurance Report approved by CDPHE on April 28, 1999;
4. Phase II Final Construction Quality Assurance Report approved by CDPHE on October 6, 2000;
5. HWL and Facilities Operations CCR approved by EPA on April 8, 2008; and
6. Construction Quality Assurance Report for the HWL Final Cover approved by CDPHE on March 23, 2010.

Ongoing operation and maintenance of the HWL leachate collection and leak detection system, treatment of the leachate, and HWL-specific groundwater monitoring demonstrate that the HWL is functioning properly and operating in accordance with the design and post-closure plan. Accordingly, EPA approves the CCR for the HWL Final Cap Construction Project as submitted and accepts the HWL remedy component as operational and functional.

Sincerely,

Russell Leclerc
Director, Federal Facilities Program

Enclosure: CDPHE Concurrence Letter

cc: Ms. Susan Newton, CDPHE
Ms. Melody Mascarenaz, TCHD
Mr. Kelly Cable, RVO
Mr. Richard Lotz, CO-AG Office
Mr. David A. Carson, DOJ
Mr. Mark Thomson, Shell
Mr. Tom Jackson, USFWS
Mr. Jim Bush, PWT
Mr. Wes Erickson, RVO

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STATE OF COLORADO

Bill Ritter, Jr., Governor
Martha E. Rudolph, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Located in Glendale, Colorado

http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

June 30, 2010

Ms. Carol Campbell
Assistant Regional Administrator
Office of Ecosystem Protection and Remediation
U.S. EPA Region VIII
1595 Wynkoop Street
Denver, CO 80202-1129

Re: **CDPHE Concurrence with Hazardous Waste Landfill Final Cap Construction Project Construction Completion Report**

Dear Ms. Campbell:

CDPHE has reviewed the Rocky Mountain Arsenal's Hazardous Waste Landfill Final Cap Construction Project Construction Completion Report. This report was evaluated for compliance with the objectives described in the Record of Decision, as amended by the Remediation Design and Implementation Schedule. Based upon this evaluation and upon our observations while the work was being performed, I am pleased to inform you of the State's concurrence with the referenced Construction Completion Report.

Sincerely,

Gary W. Baughman
Director
Hazardous Materials and Waste Management Division

cc: Bruce Huenefeld, RMA
Roger Shakely, Shell
Tom Jackson, USFWS
Jack Lipschultz, DOJ
Weslyn Erickson, RMA
Laura Williams, EPA
Melody Mascarenaz, TCHD
Richard Lotz, AGO
Trevor Klotz, Sentinel Consulting
RMA File #7.6-35

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM

22 July 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Letter for the Following Integrated Cover System Projects

1. Currently the enforceable Implementation Finish milestone date is 30 July 2010, for the following Integrated Cover System Projects: South Plants Balance of Areas and Central Processing Area Soil Remediation Phase II, Complex (Army) Disposal Trenches – Cover, Section 36 Lime Basins Soil Remediation. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone date to 30 September 2010. The Implementation Finish deadline is dependent on receiving the Regulatory Agencies' acceptance of the Integrated Cover System Construction Quality Assurance Engineer's Certification Report (ICS Cert Report). The approval process for the ICS Cert Report is expected to take longer to complete than previously forecast.

2. There is no impact to the critical path/overall Remedy schedule due to moving the Implementation Finish deadline of this project.

3. The point of contact on this matter is Mr. James Green at 303-289-0412.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
U.S. Environmental Protection Agency, (Mr. Ron Bertram), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Room 5136, Denver, Colorado 80202-1129
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Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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Phone 800-227-8917
http://www.epa.gov/region08

August 2, 2010

Ref: 8EPR-F

Mr. Bruce Huenefeld
Rocky Mountain Arsenal
Building 129
5650 Havana Street
Commerce City, Colorado 80022-1748

RE: Integrated Cover System Projects,
Rocky Mountain Arsenal, Commerce City,
Colorado

Dear Mr. Huenefeld:

The Environmental Protection Agency (EPA) approves an extension of the referenced document milestone date to 30 September 2010. The extension was requested by the Army in a letter dated 22 July 2010.

If you need information regarding this transmittal, please contact Greg Hargreaves, EPA's contact for this project, at 303-312-6661 EPA, 303-808-0576 Cell, 303-216-0148 Home Office.

Sincerely,

Greg Hargreaves
EPA Representative for RMA Committee

cc: Ms. Susan Newton, CDPHE
Mr. Mark Thomson, Shell Oil
Mr. Tom Jackson, USFWS
Mr. Jim Bush, PWT
Mr. Melody Mascarenaz, TCHD
Mr. David Carson, DOJ
Mr. Richard Lotz, AGO
Mr. Wes Erickson, RVO

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ROCKY MOUNTAIN ARSENAL
5650 HAVANA STREET
BUILDING 129
COMMERCE CITY, CO 80022-1748

DAIM-ODB-RM

2 September 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Extension on the Basin F and Basin F Exterior Remediation – Resource Conservation and Recovery Act - Equivalent Cover Construction Project

1. Currently the enforceable Implementation Finish milestone date for the Basin F and Basin F Exterior Remediation – Resource Conservation and Recovery Act (RCRA)-Equivalent Cover Construction Project is 31 August 2010. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 30 September 2010. The Implementation Finish Deadline is dependent on the Regulatory Agencies' acceptance of the Closure Certification Report for the Basin F/ Basin F Exterior RCRA-Equivalent Cover.

2. There is no impact to the critical path/overall remedy schedule due to moving the Implementation Finish Deadline of this project.

3. The point of contact on this matter is Mr. Lou Greer at 303-853-3951.

Bruce M Huenefeld

BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
Pacific Western Technologies, Ltd., (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033
Shell Oil Company, (Mr. Roger B. Shakely), P.O. Box 538, Commerce City, Colorado 80037
URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748
Tri-County Health Department Environmental Health Division, (Ms. Melody Mascarenaz), 4201 East 72nd Avenue, Commerce City, Colorado 80022-1488
Rocky Mountain Arsenal, (DAIM-ODB-RM/Document Tracking Center), 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

September 13, 2010

Ref: 8EPR-F

Mr. Bruce Huenefeld
Rocky Mountain Arsenal
Building 129
5650 Havana Street
Commerce City, Colorado 80022-1748

RE: Milestone Extension on the Basin F and Basin F Exterior Remediation RCRA Equivalent Cover Construction Project, Rocky Mountain Arsenal, Commerce City, Colorado

Dear Mr. Huenefeld:

The Environmental Protection Agency (EPA) agrees to an extension of this milestone to 30 September 2010 for the referenced document.

If you need information regarding this transmittal, please contact Greg Hargreaves, EPA's contact for this project, at 303-312-6661 EPA, 303-808-0576 Cell, 303-216-0148 Home Office.

Sincerely,

Greg Hargreaves
EPA Representative for RMA Committee

Enclosure

cc: Ms. Susan Newton, CDPHE
Mr. Mark Thomson, Shell Oil
Mr. Tom Jackson, USFWS
Mr. Jim Bush, PWT
Mr. Melody Mascarenaz, TCHD
Mr. David Carson, DOJ
Mr. Richard Lotz, AGO
Mr. Wes Erickson, RVO

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DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
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5650 HAVANA STREET, BUILDING 129
COMMERCE CITY, COLORADO 80022-1748

DAIM-ODB-RM

30 September 2010

MEMORANDUM FOR U.S. Environmental Protection Agency, (Mr. Greg Hargreaves), Region VIII, Mail Code 8EPR-F, 1595 Wynkoop Street, Denver, Colorado 80202-1129

SUBJECT: Milestone Extension for Integrated Cover System Projects

1. The enforceable Implementation Finish Milestone date is 30 September 2010 for the following Integrated Cover System (ICS) Projects: South Plants Balance of Areas & Central Processing Area Soil Remediation Phase II, Complex (Army) Disposal Trenches – Cover, Section 36 Lime Basins Soil Remediation. In accordance with Paragraphs 26.8-26.18 and 34.22 of the Federal Facility Agreement, the Remediation Venture Office is requesting an extension of this milestone to 31 October 2010. The Implementation Finish Deadline is dependent on receiving the Regulatory Agencies' acceptance of the ICS Construction Quality Assurance Engineer's Certification Report (ICS Cert Report). The approval process for the ICS Cert Report is expected to take longer to complete than previously forecast because it depends upon the closing of several Nonconformance Reports, which requires the Regulatory Agencies' approval of three Design Change Notifications.

2. There is no impact to the critical path/overall remedy schedule due to moving the Implementation Finish Milestone of this project.

3. The point of contact on this matter is Mr. James L. Green at 303-289-0412.

Bruce M Huenefeld
BRUCE M. HUENEFELD
RMA Committee Coordinator

CF:
Program Manager Rocky Mountain Arsenal, (DAIM-ODB-RM/Mr. M. Weslyn Erickson), Chief Counsel, 5650 Havana Street, Building 129, Commerce City, Colorado 80022-1748
Pacific Western Technologies, Ltd., (Mr. Jim Bush/Mr. Levi Todd), 11049 West 44th Avenue, Suite 200, Wheat Ridge, Colorado 80033
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URS Washington Division, (Mr. Mark Thomson), P.O. Box 1717, Commerce City, Colorado 80022
U.S. Fish and Wildlife Service, (Mr. Tom Jackson), Rocky Mountain Arsenal, 5650 Havana Street, Building 130, Commerce City, Colorado 80022-1748

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