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Hanford Federal Facility Agreement and Consent Order Quarterly Progress Report for the Period Ending March 31, 1990

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EXECUTIVE SUMMARY

This is the fourth quarterly report as required by the *Hanford Federal Facility Agreement and Consent Order (Ecology et al. 1989)*, also known as the Tri-Party Agreement, established between the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology). The Tri-Party Agreement sets the plan and schedule for achieving regulatory compliance and cleanup of waste sites at the Hanford Site. This report covers progress for the quarter that ended March 31, 1990.

Tri-Party Agreement Status at a Glance

All 6 milestones that were scheduled for completion during the quarter that ended March 31, 1990 were completed on or ahead of schedule and are listed below:

M-17-05: 'Select 300 Area Process Trench effluent treatment option and establish schedule for implementing treatment and ceasing liquid discharges'

M-20-08: 'Submit 305-B Storage Facility (S-3-2) Part B to Ecology and EPA'

M-20-09: 'Submit 216-B-3 Pond (D-2-5) Closure/Post-Closure Plan to Ecology and EPA'

M-23-02: 'Resubmit request for Part A Permit Application withdrawal for the following facilities: 221-T Containment System Test Facility and the 324 Sodium Removal Pilot Plant'

M-23-07: 'Complete Interim Status Corrective Actions for 222-S Storage Pad'

M-25-00: 'Provide annual reports of studies/efforts that are in progress to identify alternatives to land disposal of radioactive mixed wastes'

All of the 36 milestones that were scheduled for completion by March 31, 1990 were completed on or ahead of schedule.

The following 12 milestones are scheduled for completion in the quarter ending June 30, 1990:

M-12-08: 'Submit 100-BC-1 Operable Unit Work Plan (source operable unit) to EPA and Ecology for review'

M-12-09: 'Submit 100-BC-5 Operable Unit Work Plan (groundwater operable unit) to EPA and Ecology for review'

M-20-10: 'Submit 300 Area Waste Acid System (TS-3-1) Closure Plan to Ecology and EPA'

M-20-13: 'Submit 303-K Storage Area (S-3-1) Closure Plan to Ecology and EPA'

M-20-15: 'Submit 304 Concretion Facility (TS-3-2) Closure Plan to Ecology and EPA'

M-23-01: 'Resubmit Treatment by Generator Requests for: T-Plant, 222-S, PUREX and 204-AR'

M-23-04: 'Complete Waste Analysis Plans for 4843 Storage Facility and Single Shell Tanks'

M-23-05: 'Complete Contingency Plans for Low-Level Burial Grounds, 4843 Storage Facility, Central Waste Complex, T-Plant, TRUSAF, and 616'

M-23-08: 'Complete Interim Status Corrective Actions for 4843 Storage Facility'

M-23-15: 'Complete Interim Status Corrective Actions for TRUSAF (224-T)'

M-23-16: 'Complete Interim Status Corrective Actions for 616 Facility'

M-23-17: 'Complete Interim Status Corrective Actions for Central Waste Complex'

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1.0 HIGHLIGHTS

This section highlights the activities completed during the first quarter of calendar year 1990. A more detailed discussion of activities during the quarter is provided in the technical status section.

300 AREA PROCESS TRENCHES. A proposed option and a schedule to cease discharge to the 300 Area Process Trenches were developed and submitted to the Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) on March 30, 1990 fulfilling the requirements of Milestone M-17-05. The proposed option and schedule include possible facility minimization actions that could reduce effluents to the process trenches by approximately 80 percent. The DOE does not currently expect the December 1991 milestone (M-17-06) to cease discharges to the 300 Area Process Trenches can be achieved. However, significant effluent volume reductions are possible as well as acceleration of the 300 Area Liquid Effluent Treatment Facility, which is currently scheduled for June 1995. This issue is currently being worked by the DOE, EPA, and Ecology.

The 300 Area Process Trenches are located at the north end of the 300 Area of the Hanford Site. These two trenches currently receive nonregulated process and cooling waters from operations in the 300 Area and have historically received mixed wastes from several research and development laboratories and from the fuels fabrication process. These wastes were discharged to the 300 Area Process Trenches and allowed to percolate into the soil column underlying the trenches. These trenches will be closed under the State of Washington Hazardous Waste Management Act (1976).

THE 305-B STORAGE FACILITY PART B PERMIT APPLICATION. The *305-B Storage Facility Dangerous Waste Permit Application* (DOE-RL 1990a) was submitted to the EPA and Ecology for review. The submittal of the Part B Permit Application met the Interim Milestone M-20-08 date of January 31, 1990.

The 305-B Storage Facility is a waste assembly area that services research and development operations as a 300 Area satellite storage area. Wastes are brought into the facility for storage, repackaging, and/or consolidation of wastes, generally into 55-gallon drums.

A 216-B-3 POND CLOSURE PLAN. The *216-B-3 Pond System Closure/Post-Closure Plan* (DOE-RL 1990b) was submitted to the EPA and Ecology for review on March 29, 1990. The submittal of the closure/post-closure plan met the Interim Milestone M-20-09 date of March 31, 1990.

The 216-B-3 Pond has served as a disposal facility at the 200 East Area on the Hanford Site. The pond has received process and cooling waters from the Plutonium Uranium Extraction (PUREX) Plant, B Plant, and other 200 Area

facilities. The 216-B-3 Pond has also received potentially corrosive dangerous wastes from the regeneration of demineralizer columns in PUREX. These wastes were neutralized before reaching the pond by successive additions of acidic and caustic wastes.

ANNUAL UPDATE TO THE TRI-PARTY AGREEMENT. The annual update to the Tri-Party Agreement Work Schedule (Appendix D) was available for public comment from December 22, 1989 to January 30, 1990. No comments were received and the annual update was approved by the U.S. Department of Energy (DOE), the EPA, and Ecology. The first annual update to the work schedule contained in the Tri-Party Agreement revised the previous work schedule by deleting calendar year 1989, providing monthly activity detail for calendar year 1990, and providing quarterly detail for calendar year 1991. A new calendar year, 1996, was added to the end of the work schedule. The annual update has the same format as the original work schedule, with the addition and adjustment of target dates, and incorporation of approved milestone additions in accordance with Section 12 of the Tri-Party Agreement Action Plan. Appendix B (identifying treatment, storage and disposal groups), Appendix C (identifying operable units), and Appendix E (identifying key individuals) were updated to incorporate any approved changes or other revisions agreed to by the parties. No changes to previously established milestones were made; however, 30 new interim milestones were added as follows: three new interim milestones from the approved 1100-EM-1 Work Plan (DOE-RL 1989a), seven new interim milestones establishing RCRA well locations for 1991, and 20 new interim status compliance interim milestones. Numerous target dates were also added in the expansion of the work schedule. The annual update will be issued as Volume 2 of the Tri-Party Agreement, containing Appendixes B, C, D, and E (Volume 1 will be the Legal Agreement and Action Plan). The new volume 2 will be issued annually as part of the required updates.

2.0 TECHNICAL STATUS

2.1 DISPOSAL OF TANK WASTES

SINGLE-SHELL TANK INTERIM STABILIZATION. The single-shell tanks were used to store highly radioactive liquid wastes through the 1970's. The tanks are made of reinforced concrete with a single carbon-steel liner. Eventually these tanks were taken out of service and replaced with double-shell tanks that were built in part to store liquid removed from the single-shell tanks. The free liquid in the single-shell tanks was concentrated by evaporation and pumped out, leaving (1) the liquid coating the saltcake, (2) the sludge contained within the tanks as part of operations, and (3) small, isolated pockets of freestanding liquid. An interim stabilization program is currently implementing processes for the removal of the pumpable liquid still contained within the single-shell tanks. The following status is provided.

- Electrical, instrument and utilities upgrades are now approximately 90 percent complete in support of stabilization.
- Work began on the jet pumps and jet pump assemblies that will be used to remove the remaining liquid from the single-shell tanks.
- The flowmeters that required replacement, (as reported in the last quarterly progress report) were received and are being installed in support of stabilization.

However, overall interim stabilization activities toward meeting Interim Milestone M-05-02 are running approximately one month behind schedule. These delays are due to the diversion of manpower to resolve the ferrocyanide issues and other unforeseen equipment problems that developed during the last quarter. Acceleration of schedules is being pursued to regain the time lost.

SINGLE-SHELL TANK WASTE SAMPLING AND CHARACTERIZATION. Sampling of the single-shell waste storage tanks is being performed to develop data for the following:

- Support the timely development of tank waste retrieval technology
- Assist in preparation of the supplemental environmental impact statement (for determining final disposal or remediation of single-shell tank wastes)
- Prepare single-shell tank closure plans.

Sampling the contents of the single-shell tanks is a complex process because of the radioactive and hazardous nature of the waste, as well as the complexity of the equipment. Under the requirements of the Tri-Party Agreement, sampling will involve the removal of at least two core samples

from each of the 149 single-shell tanks. The *Waste Characterization Plan for the Hanford Site Single-Shell Tanks* (Winters et al. 1989) describes the initial phase of a two-phase plan to characterize the mixed wastes stored in single-shell tanks on the Hanford Site. The waste characterization plan is based on the requirements of RCRA and the *State of Washington Hazardous Waste Management Act* (1976), and is used for characterizing radioactive waste under the *Atomic Energy Act of 1954*. The waste characterization plan represents an all-purpose plan to identify analytical requirements for regulatory performance assessment and technology, and some process development.

Ecology provided extensive reviews of the plan and required additional work scope be added to the existing characterization work effort. The DOE included the requested work scope. These additions include public review of the plan and performance of extraction procedure toxicity tests on selected samples from two already sampled reference tanks before future sampling. The *Waste Characterization Plan for the Hanford Site Single-Shell Tanks* (Winters et al. 1989) will be revised to incorporate the additional work scope requested by Ecology.

Resolving Ecology's comments required adjustments to single-shell tank sampling interim milestones. A Tri-Party Agreement change form was developed and submitted to the EPA and Ecology. This change form will reduce the number of core samples obtained for interim Milestones M-10-04 and M-10-05 (the change form was approved on April 10, 1990). The deferred core samples will be obtained in subsequent interim milestones in later years. These changes to the interim milestones do not impact the major Milestone M-10-00 for obtaining two core samples from each single-shell tank.

SINGLE-SHELL TANK CLOSURE/CORRECTIVE ACTION WORK PLAN. The *Single-Shell Tank System Closure/Corrective Action Work Plan* (DOE-RL 1989b) addresses activities associated with the final disposition of the single-shell tank operable units. This plan will serve as the basis for the more detailed documentation that will be prepared as work proceeds.

A notice of deficiency was received from Ecology on the closure/corrective action work plan that was submitted in calendar year 1989. Comment resolution has begun; however, some comments (request for a vadose zone monitoring plan) may require deferral until a strategy is developed for plan preparation.

SINGLE-SHELL TANK WASTE RETRIEVAL TECHNOLOGY. Waste contained in the single-shell tanks varies in volume from 5 percent to 95 percent full and consistency from liquid to sludge to saltcake. The waste consists of hazardous, chemical and nuclear (high and/or low-level radioactive) waste. In consideration of these conditions and in support of final closure of the single-shell tanks a retrieval equipment test facility is necessary. This test facility will develop and simulate installation and removal of retrieval equipment and demonstrate the equipment's ability to remove various simulated waste types in a nonradioactive environment. The facility, as planned, would consist of

a complete cylindrical, full-scale, tank and support buildings. Retrieval technology, development, reliability and operability testing, and operator training will be important functions of this facility.

Single-shell tank waste retrieval activities performed during the quarter that ended March 31, 1990 included the initiation of conceptual design activities for the retrieval test facility per the work schedule in Appendix A. Work also was continued on the development of two sludge simulants that will be used in the testing of single-shell tank sludge retrieval equipment. These nonradioactive, nonhazardous simulants will physically represent the sludge waste present in the single-shell tanks.

GROUT DISPOSAL PROGRAM. The Grout Treatment Facility consists of transportable processing equipment and disposal vaults. Liquid waste is piped from a waste feed tank into the transportable grout equipment. The dry blend from the Dry Materials Facility, which blends commercially produced cement-based materials, is hauled in trucks to the transportable grout equipment where it is mixed with the liquid waste. The resulting slurry is then pumped to large underground concrete vaults where it will harden. The grout vaults are designed to meet the requirements established by Ecology and the EPA for hazardous waste disposal, including a double liner/leachate collection system.

Construction of grout vaults is currently three months behind schedule. The majority of the delay stems from the requirement to incorporate a new diffusion barrier design in the vaults. The new design will solve diffusional-release and vapor-return issues. The new design was incorporated into the current vault design, requiring further unanticipated effort. Plans and actions are now in progress to recover the delays in the schedule.

HANFORD WASTE VITRIFICATION PLANT. The Hanford Waste Vitrification Plant will immobilize pretreated high-level and transuranic waste currently stored in underground double-shell tanks at the Hanford Site. The facility will process the waste into a borosilicate glass waste form in stainless steel canisters for temporary storage in the facility until shipment to an offsite federal geologic repository.

Detailed design of the Hanford Waste Vitrification Plant was initiated in January 1990 (see target dates in the work schedule in Appendix A under Milestone M-03-00). A draft design construction schedule was also submitted to Ecology on January 30, 1990, completing the corresponding target date ahead of schedule.

The preliminary design report (target date of June 30, 1990) will not be produced as scheduled. Design changes resulting from the value engineering/cost reduction efforts have extended the preliminary design activities until September 1990. Design-description documentation and drawings will be made available following this effort, and the report will be issued in November 1990.

Work is currently being performed to allow the DOE-Headquarters to determine if a supplement to the *Final Environmental Impact Statement: Disposal of Hanford Defense High-Level, Transuranic, and Tank Wastes* (DOE 1987) is required for the Hanford Waste Vitrification Plant. The work performed for the DOE-Headquarters will also be used (in conjunction with other documentation) to determine the level of documentation required under the *State Environmental Policy Act* (Ecology 1983).

B-PLANT PREPARATION FOR PRETREATMENT OF TANK WASTES. Some Hanford Site wastes stored in double-shell tanks must be pretreated before final disposal. Current plans call for the necessary pretreatment operations to be performed in an upgraded B Plant facility located in the 200 East Area. Waste, from various double-shell tanks, will be routed to the B Plant for separation of low-level waste from the high-level waste streams. The plans call for the low-level wastes to be routed to the Grout Treatment Facility for immobilization and final disposal in near-surface vaults as a cementitious grout. The remaining high-level waste will be returned to double-shell tanks for interim storage until immobilized in a borosilicate glass waste form at the Hanford Waste Vitrification Plant, with final disposal in a geologic repository.

Conceptual design was performed for the B Plant Safety Class Vent Upgrade per the target date contained in the work schedule in Appendix A. The conceptual design for the vent upgrades is undergoing final approvals.

Detailed planning efforts related to B Plant operation for pretreatment of double-shell tank waste determined that problems exist with start up and full operation of B Plant by October 31, 1993. As a result of funding shortfalls in the fiscal year 1990 budget, B Plant may not be able to support M-02-01, "Initiate Pretreatment of Neutralized Current Acid Waste," (October 1993) as currently defined. A significant schedule slippage is possible. Efforts are now underway to fully define any impacts to the B Plant pretreatment milestones. When all of the impacts have been fully determined, a Tri-Party Agreement change form will be prepared for negotiation with the DOE, the EPA, and Ecology in order to reach an acceptable resolution. Hanford Waste Vitrification Plant (M-03) milestones are not expected to be impacted.

2.2 CLEANUP OF PAST-PRACTICE UNITS

THE 1100-EM-1 OPERABLE UNIT. The 1100-EM-1 operable unit is the first of 78 operable units identified for investigation in the Tri-Party Agreement. It includes seven waste units in the southeastern corner of the Hanford Site in close proximity to the city of Richland, as shown in Figure 1. It has been used as a maintenance area, warehouse facility, and equipment storage yard in support of Hanford Site operations.

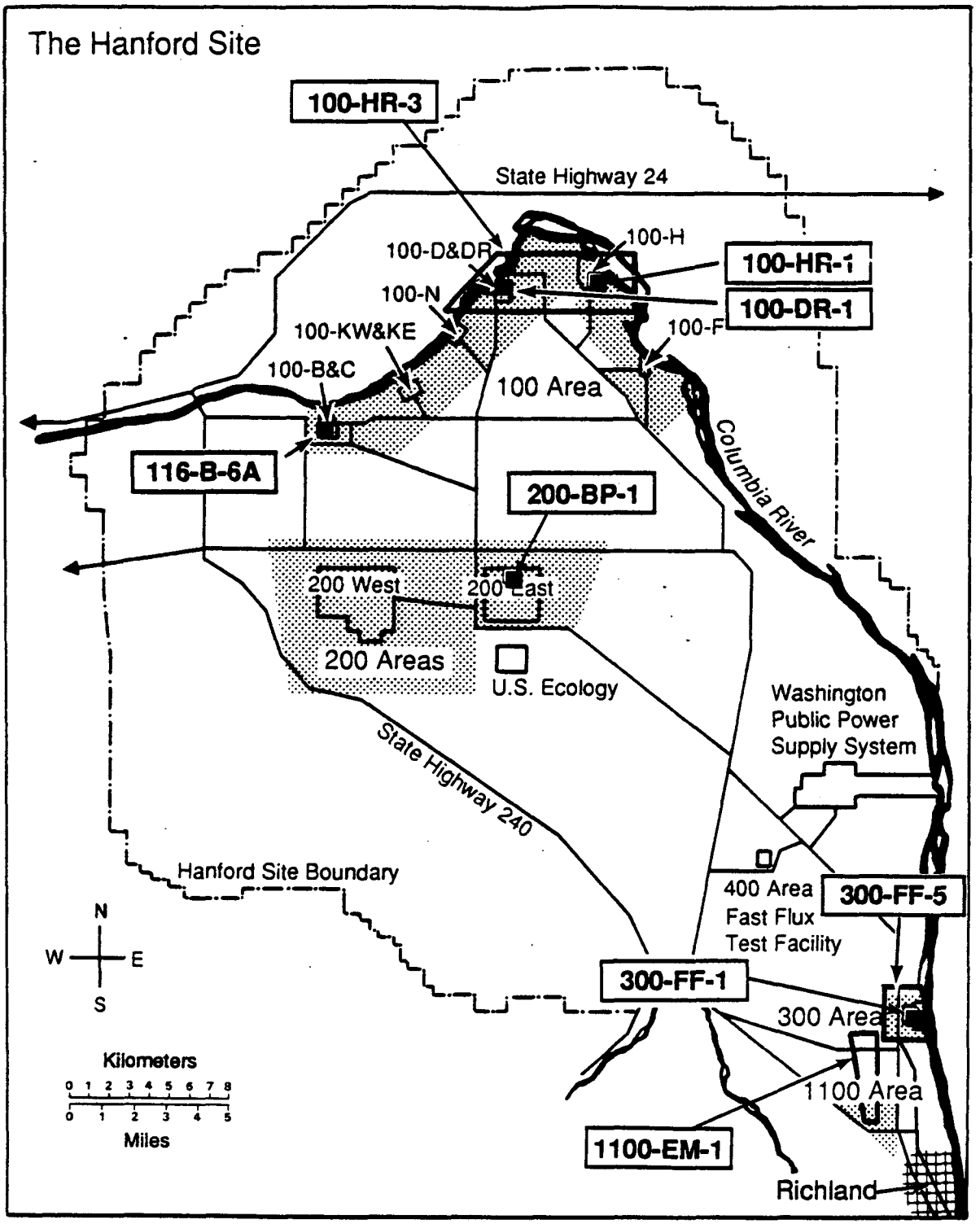

Figure 1. Map of the Hanford Site Showing the Four National Priorities List Areas (1100, 300, 200, and 100 Areas), the First Operable Units Currently Being Worked, and the In Situ Vitrification Demonstration Site.

The following are Phase 1 remedial investigation activities that were ongoing or completed in accordance with the approved 1100-EM-1 operable unit work plan (DOE-RL 1989a).

- Near surface soil sampling for reconnaissance and remedial investigation continued with approximately 130 samples collected so far.

- Vadose zone drilling and sampling continued with 23 vadose holes completed and approximately 195 samples taken. Sampling is now complete with data from the samples undergoing evaluation.

- The 16 groundwater monitoring wells to be drilled in the program were completed on February 16, 1990. Sampling of the wells was also completed last quarter, with laboratory results expected back next quarter.

- Preliminary analysis of samples taken from monitoring wells and vadose zone holes around the Horn Rapids Landfill has indicated the presence of trichloroethylene and nitrates. Initial sample results from two groundwater wells at the Horn Rapids Landfill indicate trichloroethylene at up to 92 parts per billion. These values are above drinking water standards of 5 parts per billion. Nitrates have initially been found at 170 to 215 parts per million which is above drinking water standards of 45 parts per million. Groundwater flow at the landfill is generally to the east-northeast, toward the 300 Area and away from the Richland well field. Therefore, no immediate health risks exist. These results are not a surprise, since previous gas sampling results indicated that trichloroethylene might be present, and nitrates in groundwater are common at landfills.

- Work is continuing on the preparation of the feasibility study phase 1 and 2 report by Golder Associates Incorporated, which will identify alternatives for remedial action.

THE 200-BP-1 OPERABLE UNIT WORK PLAN. The 200-BP-1 operable unit is the first operable unit involving an investigation of waste units contaminated with radioactive substances such as tritium, cobalt, uranium, cesium, strontium, and plutonium. It is located approximately in the center of the Hanford Site, along the northern boundary of the 200 East Area (see Figure 1). The 200-BP-1 operable unit includes nine inactive cribs, as well as three unplanned release sites designated as waste units. The cribs received low-level liquid waste from U Plant uranium reclamation operations and waste storage tank condensate from the adjacent 241-BY Tank Farm. The 200-BP-1 operable unit is a high priority operable unit because of its possible contribution to groundwater contamination observed in the vicinity, and because of its proximity to single-shell tanks.

The EPA and Ecology have completed their final review of the *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989c). Modifications to the

plan, as a result of additional Westinghouse Hanford Company (Westinghouse Hanford) Health Physics and Safety reviews, have improved the accuracy of the work plan in dealing with aspects of radiation protection and pre-job safety. Recent revisions to the schedule have placed additional emphasis on making early decisions about work to be carried out under Phase 2 of the remedial investigation and resolved previous issues. The *Remedial Investigation/Feasibility Study Work Plan for the 200-BP-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989c) was approved by the EPA and Ecology.

THE 300-FF-1 WORK PLAN. Adjacent to the Columbia River, the 300-FF-1 operable unit is located in the northeastern corner of the 300 Area of the Hanford Site (see Figure 1), and is comprised of 19 waste units. These waste units include process trenches, retention basins, burial grounds, and process ponds that have received and/or continue to receive wastes from reactor fuel fabrication, laboratory operations, filter backwash from the water treatment plant, power house operation (flyash slurry), and sanitary sewers. The 300 Area process trenches will be closed, under RCRA requirements, in conjunction with a remedial investigation/feasibility study (RI/FS) work plan and subsequent remedial actions associated with the 300-FF-1 operable unit.

Final comments from the EPA and Ecology were received on the *Draft Remedial Investigation/Feasibility Study Work Plan for the 300-FF-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989d). The public comment period was scheduled to begin during the first part of April 1990.

Radiation survey work and biotic sampling in the 300-FF-1 Operable Unit began during the quarter that ended March 31, 1990. The source data compilation report was also released during that quarter.

THE 300-FF-5 WORK PLAN. The 300-FF-5 operable unit is a groundwater operable unit and consists of the aquifer beneath the 300-FF-1, 300-FF-2, and 300-FF-3 operable units. Ultimately, the extent of the operable unit will include all significant contamination emanating from 300-FF-1, 300-FF-2, and 300-FF-3. The 300-FF-5 operable unit is located adjacent to the Columbia River, on the southeasternmost section of the Hanford Site in Benton County, Washington.

Final comments from the EPA and Ecology were received on the *Draft Remedial Investigation/Feasibility Study Work Plan for the 300-FF-5 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989e). The public comment period was scheduled to begin during the first part of April 1990.

THE 100-HR-1 AND 100-HR-3 OPERABLE UNIT WORK PLANS. The 100-HR-1 and 100-HR-3 operable units are located in the 100 Area of the Hanford Site (see Figure 1), adjacent to the Columbia River. The 100-HR-1 operable unit is situated within the 100-H Area of the Hanford Site and is composed of

10 waste units that include percolation cribs and trenches, burial grounds, and evaporation basins. Present in these waste units are process liquid wastes, reactor exhaust stack emissions, radioactive solid wastes, sanitary liquid wastes, and reactor fuel fabrication wastes.

The 100-HR-3 unit is a 'groundwater only' operable unit (a geographic area representing the potential extent of groundwater contamination and addressing only the groundwater contaminants) that addresses the groundwater plume(s) associated with the 100-HR-1, 100-HR-2, 100-DR-1, 100-DR-2, 100-DR-3, and 100-IU-4 operable units. Both the 100-HR-1 and 100-HR-3 operable units are being addressed under RCRA corrective action authority.

Ecology submitted its initial technical comments on the *Draft Resource Conservation and Recovery Act Facility Investigation/Corrective Measures Study Work Plan for the 100-HR-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989f) on October 12, 1989. The original review period was extended by Ecology, primarily because of a lack of Ecology's contractor support in assisting with technical aspects of the review. Agreement of the disposition of technical comments was reached at the February unit-managers meeting, but submission of the revised work plan was still on hold pending resolution of programmatic and groundwater integration issues raised by Ecology. This is the first work plan to be developed under the RCRA process, and Ecology is working closely with the DOE and the EPA to ensure that the content of this work plan meets the technical requirements of the RCRA regulations and guidance, and that the technical content is equivalent to that of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) work plans.

On October 20, 1989, Ecology submitted its initial technical comments on the *Draft Resource Conservation and Recovery Act Facility Investigation/Corrective Measures Study Work Plan for the 100-HR-3 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989g). The work plan review status is the same as described above for the 100-HR-1, except that agreement on technical comment dispositions was reached during the March unit-managers meeting. Action was also initiated by a joint Westinghouse Hanford/DOE-RL working group to arrive at a position on the groundwater/source-unit integration strategy.

THE 100-DR-1 OPERABLE UNIT WORK PLAN. The 100-DR-1 operable unit is in the 100-D/DR Area of the Hanford Site, 30 miles north of Richland and adjacent to the Columbia River (see Figure 1 for location of the 100-DR-1 operable unit). The 100-D/DR Area contains two of the old reactors that are awaiting decommissioning along with their support facilities. There are also numerous waste units within the 100-D/DR Area that were used in past operations. These include cribs, trenches, retention basins, and septic tanks. The 100-DR-1 operable unit covers the northern section of the 100-D/DR Area, where most of the liquid disposal sites are located. There are 19 waste units identified in the 100-DR-1 operable unit, which includes the 100-D Ponds that currently

receive liquid and are regulated as RCRA treatment, storage and/or disposal units as a result of prior discharges. The 100-DR-1 operable unit is being addressed under RCRA corrective action authority. Ecology is the lead regulatory agency.

Ecology and the EPA have notified the DOE that reviews of the *RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1989h) will be extended. The parties believe that resolving the issues with 100-HR-1 and 100-HR-3 before focusing attention on 100-DR-1 will be more productive, since many of the same concerns apply to each of the operable units.

THE 100-BC-1, 100-BC-5, 100-KR-1, AND 100-KR-4 OPERABLE UNIT WORK PLANS. Work has continued on the preparation of the 100-BC-1, 100-BC-5, 100-KR-1, and 100-KR-4 operable unit work plans during the quarter that ended March 31, 1990. Preparation of 100-BC-1 and 100-BC-5 work plans began in November 1989, and the preparation of 100-KR-1 and 100-KR-4 work plans started in December 1989.

These work plans are considered on schedule for submittal to the EPA and Ecology, per the milestones contained in the Tri-Party Agreement Work Schedule.

IN SITU VITRIFICATION DEMONSTRATION. The in situ vitrification process was developed by Pacific Northwest Laboratory to provide significantly lower leach properties of metal ions and to degrade organic materials to reduce the hazard of contaminated soils without exhumation. An array of four electrodes is inserted into the ground and a 'starter path' of electrically conductive material is placed between the electrodes. An electric current is passed between the electrodes and through the starter path, creating temperatures high enough to melt the starter path and the soil beneath it. As the molten zone grows downward and outward to a depth of approximately 20 feet, it encompasses the contaminated soil and incorporates the radionuclides and hazardous elements into a glass-like form, while destroying organic components by pyrolysis. A hood placed over the area being treated directs the gaseous effluents to an offgas treatment system. Upon cooling, the product of in situ vitrification is a glass-like mass of high strength and enhanced chemical integrity.

Preparations were completed for the in situ vitrification treatability test to be conducted at the 116-B-6A site. The four twelve-inch-diameter graphite and molybdenum electrodes were installed to a depth of 25 feet into the soil and the offgas hood was placed over the area to be treated. Final electrical and piping connections were completed and the in situ vitrification equipment instrumentation was checked and calibrated in preparation for the test.

Other work associated with the treatability test included taking water samples from three groundwater monitoring wells installed at the site. Following completion of the test, water samples will be taken quarterly to verify that the test did not impact the groundwater below the site.

2.3 PERMITTING AND CLOSURE OF TREATMENT, STORAGE, AND DISPOSAL UNITS

PART A PERMIT WITHDRAWAL REQUESTS. Part A Permit application withdrawal requests for the 324 and 221-T facilities were resubmitted in January 1990,. in accordance with the new M-23-02 Interim Milestone. These two facilities do not manage dangerous wastes and are described below:

- The 221-T Alkali Metal Treatment and Storage Facility is a research laboratory where experiments are performed using alkali metal compounds. The waste generated by the tests and experiments is shipped off the premises for disposal. There are no plans for waste treatment at the facility.

- The 324 Sodium Removal Pilot Plant was originally built to develop and demonstrate processes for sodium removal. Analysis of the regulations showed that sodium removal is not a waste management activity.

INTERIM STATUS CORRECTIVE ACTIONS FOR THE 222-S STORAGE PAD. The 222-S Storage Pad consists of two metal storage modules placed on a concrete pad. Radioactive mixed waste is stored in these buildings in 55-gallon drums. The design capacity of the buildings is 3,300 gallons of radioactive mixed waste.

Interim Milestone M-23-07 required waste characterization of four unknown mixed-waste drums stored in the modules. The sampling and analyses, initiated earlier in the year, were completed on March 9, 1990, meeting Interim Milestone M-23-07.

THE 2727-S STORAGE FACILITY CLOSURE PLAN. The 2727-S Nonradioactive Dangerous Waste Storage Facility is located in the southeastern portion of the 200 West Area. It provided container storage for nonradioactive dangerous wastes generated by the research and development laboratories, process operations, and maintenance and transportation functions throughout the Hanford Site.

Responses were completed to the notice of deficiency received from Ecology on the *2727-S Nonradioactive Dangerous Waste Storage Facility Closure Plan* (DOE-RL 1988). These responses were submitted to Ecology and the EPA.

THE 183-H SOLAR EVAPORATION BASINS CLOSURE. The 183-H Solar Evaporation Basins are located in the 100-H Area, near the northern end of the Hanford Site. Four of the 100-H Area deactivated concrete basins (formerly used for water treatment) were designated for use as solar evaporation basins in 1973. The basins were used for the storage/treatment of radioactive mixed wastes generated at the N Reactor fuel-fabrication facilities. The last shipment of wastes to the 183-H Basins took place in November 1985.

Work resumed in February (work was suspended in January because of weather considerations) on the cleanout of the crystallized material from Basins 2 and 3. Phase I soil samples from underneath Basins 1 and 4 were also obtained. Results of soil sample analyses are expected to be available next quarter. Work is also continuing on revisions to the *183 Solar Evaporation Basins Closure/Post-Closure Plan, Rev. 2* (DOE-RL 1990c), for submittal to the EPA and Ecology.

THE SIMULATED HIGH-LEVEL WASTE SLURRY TREATMENT AND STORAGE UNIT CLOSURE. The Simulated High-Level Waste Slurry Treatment/Storage Unit in the 1100 Area of the Hanford Site is an area used to store containerized, simulated, commercial power reactor metal nitrate slurries representing two PUREX wastestreams. The unit was also used to treat the stored slurry, using in-place grouting techniques, in November 1988. The facility is now undergoing closure.

Ecology advised that the grouted waste must pass the acute oral rat toxicity test before disposal of the drums containing grouted waste could be approved. These tests were conducted and the results were transmitted to Ecology on January 11, 1990. None of the rats involved in the testing died and final necropsy results did not reveal any ill effects from exposure to the material. Approval to dispose of the grouted waste is awaiting Ecology's determination that the grouting process has adequately stabilized toxic constituents in the waste material.

Responses to Ecology comments on the notice of deficiency for the closure plan were forwarded to Ecology on March 2, 1990.

THE GROUT DISPOSAL PERMIT APPLICATION. (See grout facility description in Section 2.1.)

Responses to the EPA and Ecology comments in the notice of deficiency for the *Grout Treatment Facility Dangerous Waste Permit Application (DOE-RL 1989i)* were incorporated into the permit application and resubmitted to the EPA and Ecology on January 17, 1990. Approximately 130 of the original 175 notice-of-deficiency comments have been resolved. Further comments were received from Ecology on March 18, 1990. Responses to these new comments were in preparation at the end of the quarter.

THE HANFORD WASTE VITRIFICATION PLANT PERMIT APPLICATION. (See Hanford Waste Vitrification Plant description in Section 2.1.)

The first notice of deficiency on the *Hanford Waste Vitrification Plant Dangerous Waste Permit Application (DOE-RL 1989j)* was reviewed and a response table was prepared. The response table was submitted to Ecology on February 20, 1990, as scheduled.

THE 2101-M POND CLOSURE PLAN. The 2101-M Pond is a U-shaped earthen pond located in the 200 East Area of the Hanford Site. It was constructed in 1953 to receive nondangerous waste water from the 2101-M building. Sampling verified that no dangerous waste inventory remains at the 2101-M Pond that would require removal, transportation, treatment, storage, or disposal.

A response table to comments contained in the first notice of deficiency was prepared and submitted to Ecology and the EPA on March 30, 1990. This submittal date was within the extension requested from Ecology by DOE-RL. Preparation of the second draft of the post-closure plan (DOE-RL 1989m) was also completed during the last quarter.

NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY PART B PERMIT APPLICATION. Operation of the 616 Nonradioactive Dangerous Waste Storage Facility began in September 1986 as a RCRA interim status unit. It is located in the 600 Area of the Hanford Site between the 200 East and 200 West areas. This facility was designed and constructed in accordance with the requirements for hazardous waste container storage units.

Preliminary notice-of-deficiency responses on the *616 Nonradioactive Dangerous Waste Storage Facility Dangerous Waste Permit Application* (DOE-RL 1989l) were discussed with Ecology at the unit managers meeting on January 23, 1990. Comments resulting from this meeting were incorporated into the final notice-of-deficiency table that was transmitted to Ecology on February 19, 1990. Ecology is currently reviewing the response table.

LOW-LEVEL BURIAL GROUNDS PART B PERMIT APPLICATION. The low-level burial grounds are designed to dispose of solid low-level radioactive mixed wastes. These wastes are generated from many different operations both on and off the Hanford Site. The wastes are packaged in steel, concrete, or wooden containers and then placed into disposal trenches.

Review comments were received from Ecology on the *Low-Level Burial Grounds Dangerous Waste Permit Application* Rev. 0 (DOE-RL 1989m) in March with more expected on May 14, 1990, which will address regulatory aspects of the permit application. The *Request for Interim Approval to Operate 218-E-12B Trench 94 as a Chemical Waste Landfill for Disposal of Polychlorinated Biphenyl Wastes in Submarine Reactor Compartments* (DOE-RL 1990d) was submitted to the EPA on February 28, 1990.

300 AREA SOLVENT EVAPORATOR CLOSURE PLAN. The 300 Area Solvent Evaporator facility had been operated as a treatment tank that evaporated volatile spent solvents received from the N Reactor Fuel Manufacturing Facility from 1975 to November 1985. During this time period the treatment facility is estimated to have handled approximately 6,000 gallons of spent solvents. The 300 Area Solvent Evaporator was demolished in 1985 and 1986.

The *300 Area Solvent Evaporator Interim Status Closure Plan, Rev. 3* (DOE-RL 1989n), was transmitted to Ecology and the EPA on March 29, 1990, meeting the submittal schedule established by Ecology. This submittal was for final approval before submittal for public comment.

WASTE RECEIVING AND PROCESSING. The Waste Receiving and Processing facility, which will be located at the 200 West Area of the Hanford Site, will provide treatment for radioactive and/or hazardous solid wastes. The Waste Receiving and Processing facility has been divided into two modules (Milestones M-18 and M-19) to expedite those portions of the facility that use known technology and allow more time to better define the processing functions needed for the remainder of the facility. Module 1 will provide the necessary examination, certification and shipping services for both boxes and drums of contact-handled transuranic waste and small-scale decontamination capability. Module 2 will provide treatment/handling and waste package size reduction facilities for low-level mixed waste, remote-handled wastes and larger scale decontamination.

Advanced conceptual design activities for Module 1 were initiated in support of definitive design activity which is scheduled to begin in January 1991. Engineering study activities have been completed for Module 2 and conceptual design activities were started on schedule during the quarter that ended March 31, 1990 (see appendix A for schedule details).

ANNUAL REPORTS ON ALTERNATIVES TO LAND DISPOSAL OF RADIOACTIVE MIXED WASTES. Submittal of a report of the efforts that are in progress to identify alternatives to land disposal of radioactive mixed wastes is required annually by the Tri-Party Agreement. This report provides information regarding actions taken to minimize waste generation, recycle/reclaim wastes, or treat wastes.

The *Alternatives to Land Disposal of Solid Radioactive Mixed Wastes on the Hanford Site* (WHC 1990) annual report was submitted to the EPA and Ecology on March 27, 1990, meeting Milestone M-25-00, which required the submittal of the annual report by March 31, 1990.

LIQUID EFFLUENT TREATMENT AND DISPOSAL (M-17-00). The current status of liquid effluent treatment and disposal activities, as compared to the plan included in the Tri-Party Agreement (Milestone M-17-00), is displayed in Appendix A.

The following describes technical progress achieved over the last quarter in liquid effluent and disposal activities.

- The PUREX Ammonia Scrubber Distillate and Process Condensate Treatment Systems are planned to be incorporated into a single facility. Authority to proceed with this concept may enable the completion and operation of these facilities in advance of the 1995 Interim Milestone M-17-02.

- A best-available-technology evaluation for the PUREX Steam Condensate System was completed ahead of schedule in February 1990. Work is proceeding toward establishing a schedule to execute the project and submit a change request by June 30, 1990, with appropriate target dates for completion.

- Work toward completion of a best-available-technology evaluation for the U03 Plant Process Condensate Treatment System is proceeding on schedule for completion by April 30, 1990. A change request will then be prepared and submitted by June 30, 1990, establishing a schedule for executing the project.

- The definitive design phase of the Plutonium Finishing Plant Wastewater Treatment System has fallen approximately one month behind schedule. This was caused by delays in work activities supporting safety evaluation work and hazard classification work.

- The Aqueous Makeup Unit Installment Upgrade and Spill Containment Systems for the Plutonium Finishing Plant were completed on schedule in March 1990, meeting the work schedule target date of March 31, 1990.

- The definitive design phase of the environmental compliance upgrade for B Plant was scheduled to begin in January, but started in March 1990 because of delays in safety documentation issues. The definitive design phase will be completed in December 1990 per target dates in the work schedule.

- Initial delays were incurred in the activities supporting B Plant Interim Milestone M-17-04. The Chemical Sewer Neutralization System definitive design phase is expected to be completed in January 1991. These delays are not expected to affect completion of the Interim Milestone M-17-04.

- Start of the definitive design phase for the B Plant Aqueous Makeup Unit is six months behind schedule. This delay will impact completion of construction but is not expected to impact the Interim Milestone M-17-04.

- Plans are being pursued for an early project to provide 242-A Evaporator process condensate treatment in early 1992, three years ahead of the target date of June 1995.

- Best-available-technology evaluation was completed in January for the 222-S Laboratory Chemical Sewer Upgrades and a change request for establishing target dates in the work schedule was prepared for submittal.

- Conceptual design, which included a plan to route all 200 East and West Area wastewater streams to a single treatment facility, exceeded all previous estimates of implementation costs. Scope reductions that eliminate the major Phase II streams in the 200 East Area from the facility and utilize interim Liquid Effluent Retention Facility basins, as well as the treatment planned for the 242-A Evaporator project, have caused substantial changes in this project. Conceptual design that was originally developed on the total scope is being revised. Best-available-technology evaluations and later project submittals will be required for the three very large Phase II streams in the 200 East Area that are now excluded from the project.

RCRA GROUNDWATER MONITORING WELLS. The RCRA groundwater monitoring wells are being installed at various locations on the Hanford Site to comply with RCRA groundwater monitoring requirements. Locations and installation of groundwater monitoring networks for Hanford Site facilities are prioritized based on regulatory requirements and monitoring needs. Determining well locations and priorities is accomplished during each annual update to the Tri-Party Agreement Work Schedule.

The Tri-Party Agreement requires the installation of 30 RCRA groundwater monitoring wells in 1990. Progress on the 1990 RCRA well program continues, so that 19 of the 30 required wells were drilled by March 31, 1990.

A Liquid Effluent Retention Facility is planned that will store effluent from the 242-A Evaporator and other facilities until treatment facilities are available. To support regulatory requirements for the installation of these retention facilities, it has been proposed that four wells that are scheduled to be installed around the single-shell tanks in 1991 should instead be installed at the retention facility. The installation and operation of the Liquid Effluent Retention Facility is necessary to the operation of the 242-A Evaporator, which in turn is necessary for the completion of Tri-Party Agreement milestones such as single-shell tank stabilization and grout. A change request for the substitution of the wells was submitted to the EPA and Ecology. (This change request was subsequently denied by Ecology.)

Purgewater issues that initially delayed the 1989 RCRA well drilling program were resolved by the use of interim storage that allowed completion of M-24-00 on time. Currently the installation of the first of two one-million-gallon modular tanks for the interim storage of purgewater was completed in mid January 1990. All purgewater stored at the 100-K West Area storage tanks was transported to the new tank. The second modular tank was completed in mid February 1990. Negotiations for agreement between the

DOE, the EPA and Ecology were concluded in March 1990 and established the principles to be followed for the containment and treatment of purgewater generated on the Hanford Site. Final drafts of the agreement are being prepared for approval.

2.4 OTHER TRI-PARTY AGREEMENT ACTIVITIES AND ISSUES

NEW TRI-PARTY AGREEMENT PROJECT MANAGERS. Ecology, the EPA, and the DOE have each designated an individual who serves as project manager and is the primary point of contact for all activities carried out under the Tri-Party Agreement. Their primary responsibilities are to implement the scope, terms, and conditions of the Tri-Party Agreement.

During the first quarter of 1990 both Ecology and the DOE designated new project managers to lead the cleanup under the Tri-Party Agreement. Timothy Nord was named the new Ecology project manager on March 19, 1990. Steve Wisness was named as the new DOE project manager on January 1, 1990.

COMMUNITY RELATIONS PLAN CHANGES. As required by environmental laws applicable to the cleanup of the Hanford Site, a community relations plan was developed. The community relations plan lists specific community relations activities that the three parties will conduct during the cleanup and permitting at the Hanford Site. The plan also lists contacts from each of the three parties, who are available to answer questions and provide information. In addition, the community relations plan describes the Hanford Site background, history of community involvement, and community concerns regarding the Hanford Site.

The comments received from Ecology were resolved resulting in the signing of the community relations plan during the quarter that ended March 31, 1990.

PUBLIC INFORMATION REPOSITORY. Gonzaga University in Spokane, Washington has signed an agreement with the DOE to operate a Tri-Party Agreement public information repository. Documents were transferred from the Spokane Public Library to the Crosby Library at Gonzaga. This action is expected to facilitate public access to Hanford cleanup documentation.

TRI-PARTY AGREEMENT CHANGES. Since the signing of the Tri-Party Agreement on May 15, 1989, several areas requiring changes have become apparent. These changes range from updating the Richland address for the administrative record to incorporating land disposal restriction compliance actions.

These proposed changes to the Tri-Party Agreement were still under development during the quarter that ended March 31, 1990. Issues still remaining to be resolved include language changes dealing with QA/QC, laboratory analytical time requirements, and regulatory access to characterization data. The proposed changes will be subject to public comment before approval.

LIQUID EFFLUENT STUDY. The *Draft Liquid Effluent Study Project Plan Revision 2* (WHC 1989) provides a plan and schedule to characterize Hanford Site liquid effluents, to assess waste disposal sites and groundwater contamination in area wells, and to evaluate the potential for contaminant migration within receiving soil sites (i.e., flow and transport characteristics).

The final project plan was submitted to the EPA and Ecology in March 1990 for approval. The submittal included detailed flow and transport analysis of three sites and a modified sampling plan to accommodate the opportunity to sample streams from facilities that were inactive at the time the draft plan was prepared in June 1989.

Also during the quarter that ended March 31, 1990, two bi-monthly reports for the periods of October-November and December-January were submitted that delineated progress and status of the study.

Thirty-three preliminary stream specific reports on the Hanford Site liquid effluents are in final review and draft reports are scheduled to be submitted to Ecology and the EPA by April 30, 1990 (delays in meeting the April 30 date have occurred and will be discussed in the next Quarterly progress report). Completion of the entire liquid effluent study by August 31, 1990 is also considered on schedule.

242-A EVAPORATOR/LIQUID EFFLUENT RETENTION FACILITY. Process waste stored in Hanford Site underground tanks was routinely evaporated to allow for more storage volume in the double-shell tanks and to reduce the volume of waste that must be disposed of eventually. The 242-A evaporator-crystallizer located in the 200 East Area of the Hanford Site is currently used for this task.

The evaporator was shut down on April 12, 1989, when it was determined that the evaporator waste feed may contain low levels of RCRA hazardous constituents. In this case, continued discharge of condensate to a crib is precluded by RCRA statutory prohibitions against placement of liquids into hazardous waste landfills.

Operation of the evaporator is important to several Tri-Party Agreement milestones, including (1) completion of 14 grout campaigns by September 1994 (Milestone M-01-00) and (2) completion of single-shell tank interim stabilization by September 1995. These milestones are all dependent on the availability of double-shell tank space.

The importance of the 242-A Evaporator issue was recognized before the Tri-Party Agreement was signed, and the DOE, EPA and Ecology agreed to give high priority to resolution of this issue. A liquid effluent retention facility is planned to deal with the interim storage of the 242-A Evaporator process condensate. This project is aimed at enabling the restart of the 242-A Evaporator in order to relieve some of the impacts on the above-mentioned milestones. The facility will consist of retention basins that will be lined and covered to prevent the effluent from reaching the environment. Preliminary work in permitting of the facility has begun in anticipation of the approval of the facility.

3.0 ACTIVITIES PLANNED FOR THE QUARTER ENDING JUNE 30, 1990

3.1 DISPOSAL OF TANK WASTES

SINGLE-SHELL TANK INTERIM STABILIZATION. The following activities are planned for next quarter:

- Complete electrical, instrument and utilities repairs and upgrades
- Complete jet pump and jet pump assemblies repairs in preparation for liquid removal
- Conduct readiness reviews for start of stabilization
- Actual jet pumping of liquids from single-shell tanks is expected to begin in May 1990.

GROUT DISPOSAL PROGRAM. Construction on grout vaults 102 through 105 will continue next quarter with increased efforts to recover the schedule slippage that occurred due to the redesign of the diffusion barrier.

B-PLANT PREPARATION FOR PRETREATMENT OF TANK WASTES. The following activities are planned for next quarter:

- Complete approvals of conceptual design for the B Plant safety class ventilation upgrades
- Continue design of the B Plant process condensate treatment facility
- A safety evaluation will be completed for the B Plant environmental compliance upgrades.

3.2 CLEANUP OF PAST-PRACTICE UNITS

THE 200-BP-1 OPERABLE UNIT WORK PLAN. Work is expected to begin on the installation of groundwater wells at the 200-BP-1 Operable Unit.

THE 300-FF-1 WORK PLAN. The public comment period was scheduled to begin during the first part of April 1990.

THE 300-FF-5 WORK PLAN. The public comment period was scheduled to begin during the first part of April 1990.

THE 100-BC-1 AND 100-BC-5 OPERABLE UNIT WORK PLANS. Work will be completed on the preparation of these work plans with submittal to the EPA and Ecology by June 30, 1990 to meet Interim Milestones M-12-08 and M-12-09.

IN SITU VITRIFICATION DEMONSTRATION. The in situ vitrification treatability test at the 116-B-6A site has been scheduled for performance during the quarter ending June 30, 1990. The test will convert abut 800 tons of contaminated soil into a glass-like material and will take about 10 days to perform. After the test has been performed it will be followed by a cooling period of approximately 1 year. Tests will then be performed to measure the performance of in situ vitrification on the waste site.

3.3 PERMITTING AND CLOSURE OF TREATMENT, STORAGE, AND DISPOSAL UNITS

The following permits/closure plans will be under review by Ecology and the EPA during the next quarter:

- The *305-B Storage Facility Dangerous Waste Permit Application* (DOE-RL 1990a)
- The *Hanford Waste Vitrification Plant Dangerous Waste Permit Application* (DOE-RL 1989j).

Comments will be resolved with Ecology on permits/closure plans for the following facilities:

- The *2101-M Pond Interim Status Closure Plan, Rev. 2* (DOE-RL 1989k).

The final revision of the *183 Solar Evaporation Basins Closure/Post-Closure Plan, Rev. 2* (DOE-RL 1990c) will be submitted to the EPA and Ecology for approval.

Closure plans for the following facilities will be submitted to Ecology and the EPA during the next quarter:

- The 300 Area waste acid system
- The 303-K storage area
- The 304 concretion facility.

THE 2101-M POND CLOSURE PLAN. Semi-annual groundwater samples for the four 2101-M Pond monitoring wells will be obtained in May, 1990.

Groundwater characterization information was scheduled to be submitted to Ecology by June 30, 1990, but will be delayed until August 31, 1990, because of impacts arising from the first notice-of-deficiency comments.

3.4 OTHER TRI-PARTY AGREEMENT ACTIVITIES

WORK SCHEDULE ANNUAL UPDATE. The first annual update to the work schedules contained in the Tri-Party Agreement will be printed and distributed during the quarter ending June 30, 1990.

TRI-PARTY AGREEMENT CHANGES. The changes being negotiated on the Tri-Party Agreement will be finalized and the changes will be issued for public comment during the quarter ending June 30, 1990.

COMMUNITY RELATIONS PLAN CHANGES. The community relations plan will be formally issued for use during the quarter ending June 30, 1990.

4.0 WORK SCHEDULE STATUS THROUGH MARCH 31, 1990

The status of many of the Tri-Party Agreement activities was discussed in the Highlights and Technical Status sections of this report. As of March 31, 1990, all major and interim milestones were completed on or ahead of schedule. Appendix A contains the Tri-Party Agreement work schedule, which is marked with a vertical dashed line to indicate progress on milestones. Notes are provided on the work schedule to explain significant deviations.

Note that the first annual update to the Tri-Party Agreement work schedule revised the previous work schedule by deleting calendar year 1989, providing monthly activity detail for calendar year 1990, and providing quarterly detail for calendar year 1991. A new calendar year, 1996, was added to the end of the work schedule. The new work schedule is in the same format as the original work schedule, with the addition and adjustment of target dates and incorporation of approved milestone additions in accordance with Section 12 of the Tri-Party Agreement Action Plan. None of the changes made during the annual update resulted in delayed dates for the original milestones.

Table D-4 has been removed from the quarterly progress report because the remaining interim status compliance actions were incorporated into the new work schedule as interim milestones under Milestone M-23-00.

5.0 REFERENCES

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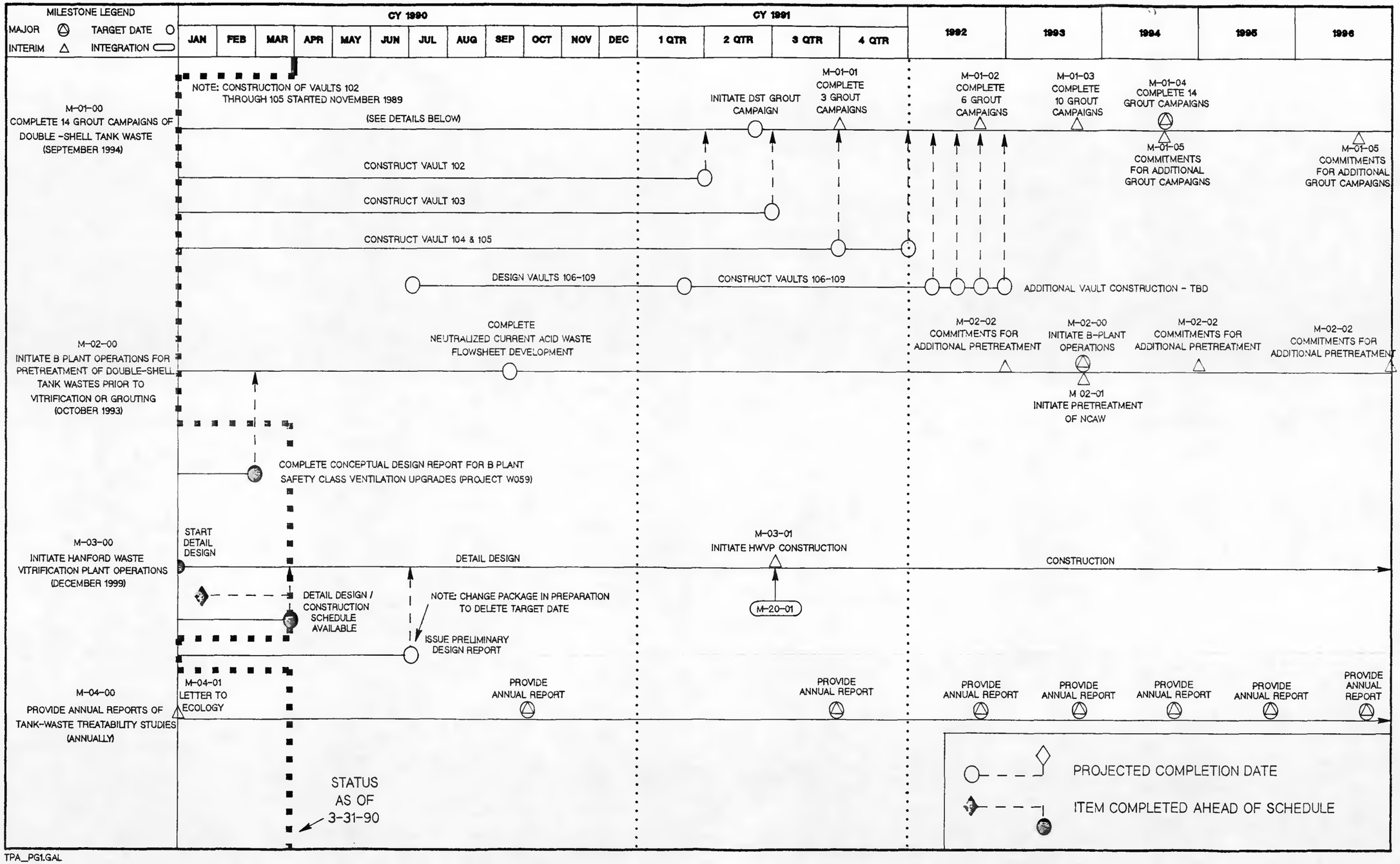
APPENDIX A

THE HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER ACTION PLAN WORK SCHEDULES

The following schedules include status lines to show the progress of activities toward the respective milestone or target date. The vertical status lines show actual progress as of March 31, 1990. Movement of the line to the left indicates work behind schedule, and movement to the right indicates work ahead of schedule. Notes have been included in some cases to explain a particular status.

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



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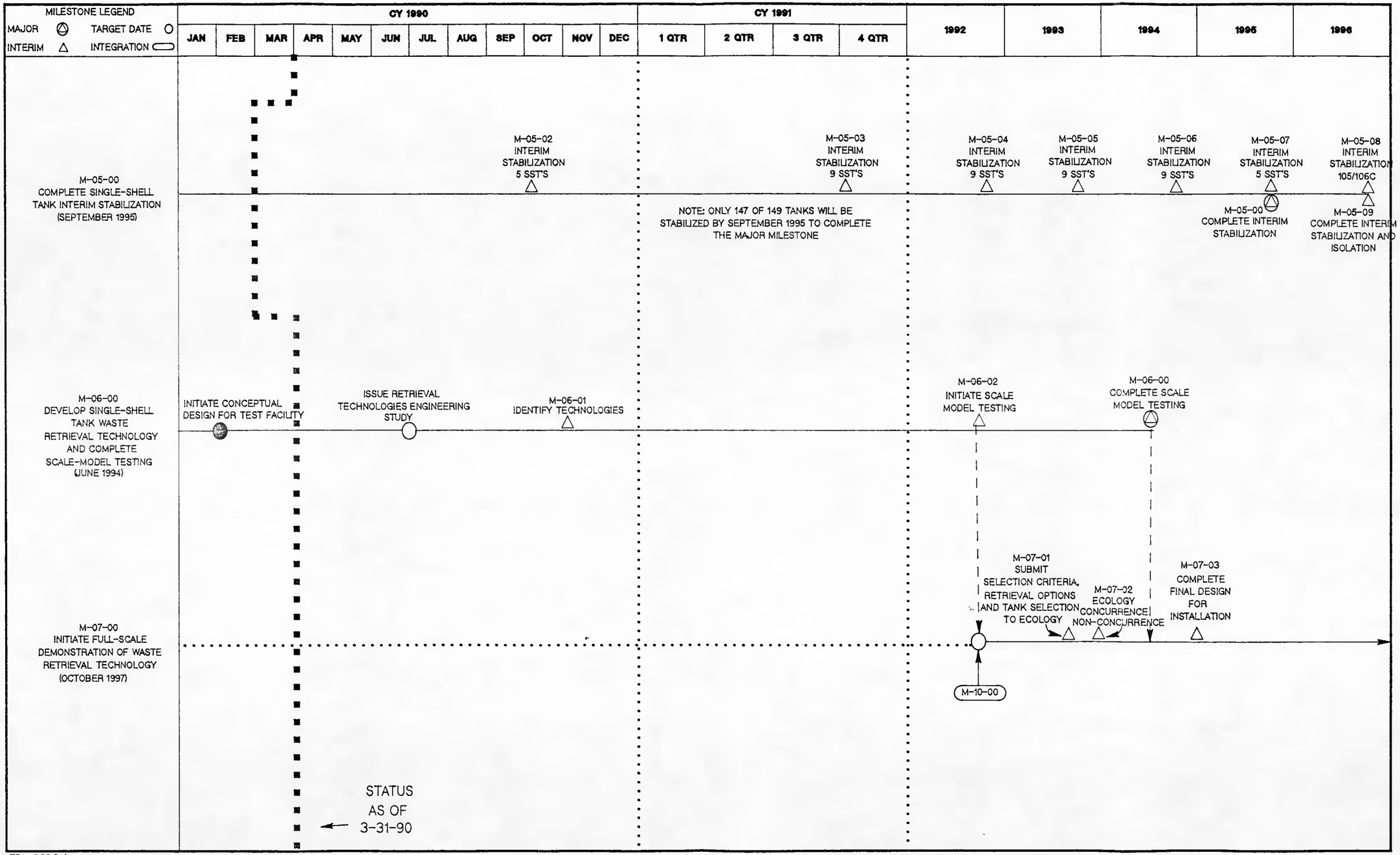
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



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FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE

MILESTONE LEGEND
MAJOR ◬ TARGET DATE ○
INTERIM △ INTEGRATION ⊂⊃

CY 1990												CY 1991				1992	1993	1994	1995	1996
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1 QTR	2 QTR	3 QTR	4 QTR					

M-08-00
INITIATE FULL-SCALE TANK FARM CLOSURE DEMONSTRATION PROJECT (JUNE 2004)

NO ACTIVITY THRU DEC 1996 – FOLLOW ON ACTIVITY TO M-06-00 AND M-07-00

M-09-00
COMPLETE CLOSURE OF ALL 149 SINGLE-SHELL TANKS (JUNE 2018)

DEFINITIVE SCHEDULE TO BE INCORPORATED BASED ON SST SYSTEM CLOSURE/CORRECTIVE ACTION WORK PLAN (SEE M-20-03)

RFI/CMS WORK PLANS AND SST OPERABLE UNIT CHARACTERIZATION

NOTE: APPROVED CHANGE FORM #M-10-90-1 HAS DELAYED ACTIVITIES FOR INTERIM MILESTONES M-10-04 AND M-10-05 DUE TO INCREASED WORK SCOPE IN CHARACTERIZATION PLAN

M-10-00
COMPLETE ANALYSES OF AT LEAST TWO COMPLETE CORE SAMPLES FROM EACH SINGLE-SHELL TANK (SEPTEMBER 1998)

M-10-03 OBTAIN 15 CORE SAMPLES FROM 2 TANKS (DECEMBER 1989)
INITIATE USE OF THROW AWAY SAMPLERS
INITIATE USE OF CORE TRUCK WIND SCREEN
M-10-04 OBTAIN 12 CORE SAMPLES FROM 6 TANKS
M-10-05 OBTAIN 20 CORE SAMPLES FROM 10 TANKS
M-10-06 OBTAIN 20 CORE SAMPLES FROM 10 TANKS
M-10-07 OBTAIN 22 CORE SAMPLES FROM 11 TANKS
M-10-08 OBTAIN 44 CORE SAMPLES FROM 22 TANKS
M-10-09 OBTAIN 44 CORE SAMPLES FROM 22 TANKS
M-10-10 OBTAIN 44 CORE SAMPLES FROM 22 TANKS
M-07-00

M-11-00
COMPLETE CONSTRUCTION & INITIATE OPERATIONS OF EXPANDED LABORATORY HOT CELLS FOR HIGH-LEVEL RADIOACTIVE MIXED WASTE (JUNE 1994)

NOTE: CDR ISSUED JUNE 1989
FUNDING AUTHORIZATION
START DEFINITIVE DESIGN
M-11-02 COMPLETE DEFINITIVE DESIGN
COMPLETE CONSTRUCTION
M-11-00 INITIATE OPERATIONS

STATUS AS OF 3-31-90

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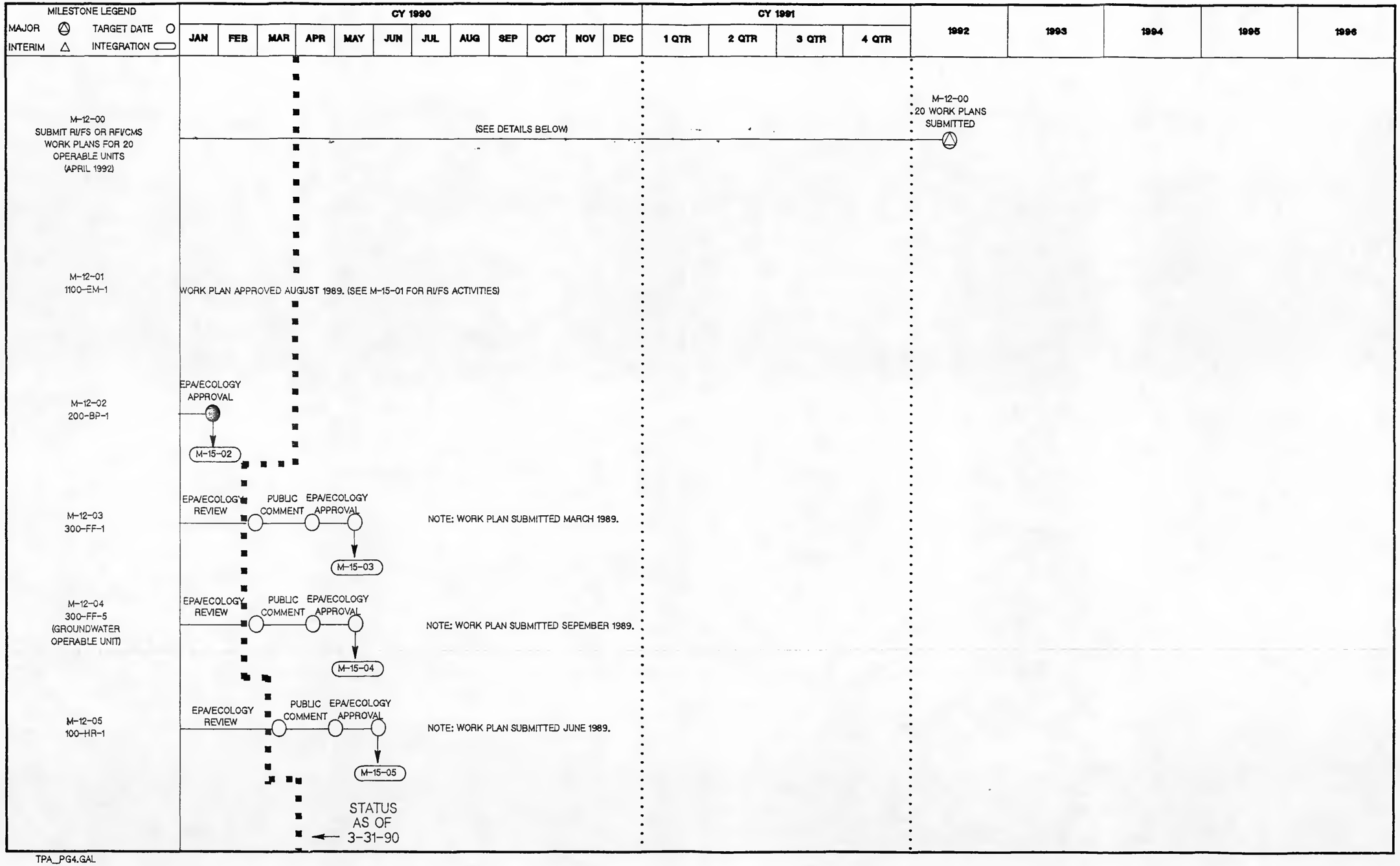
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



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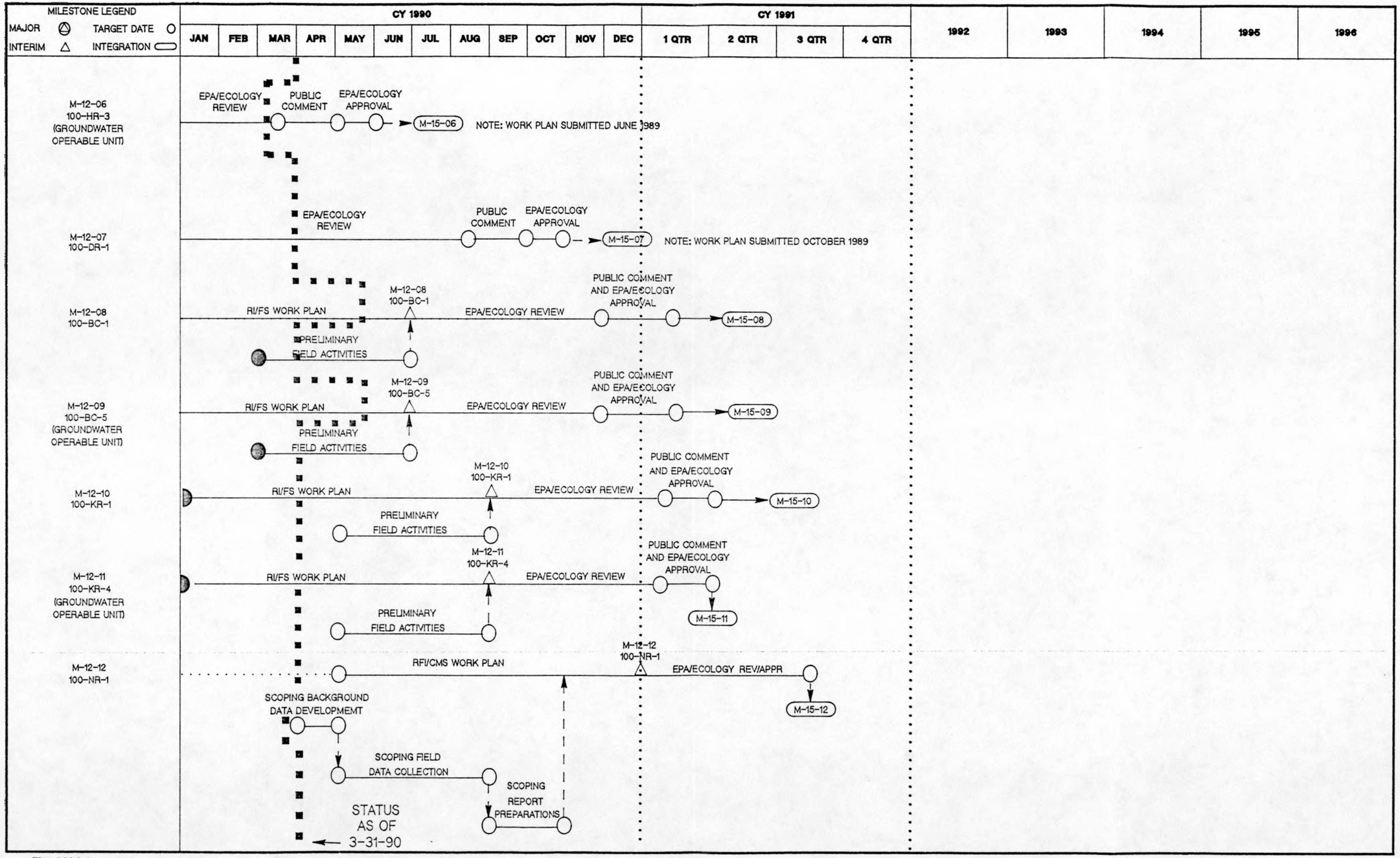
ACTION PLAN WORK SCHEDULE



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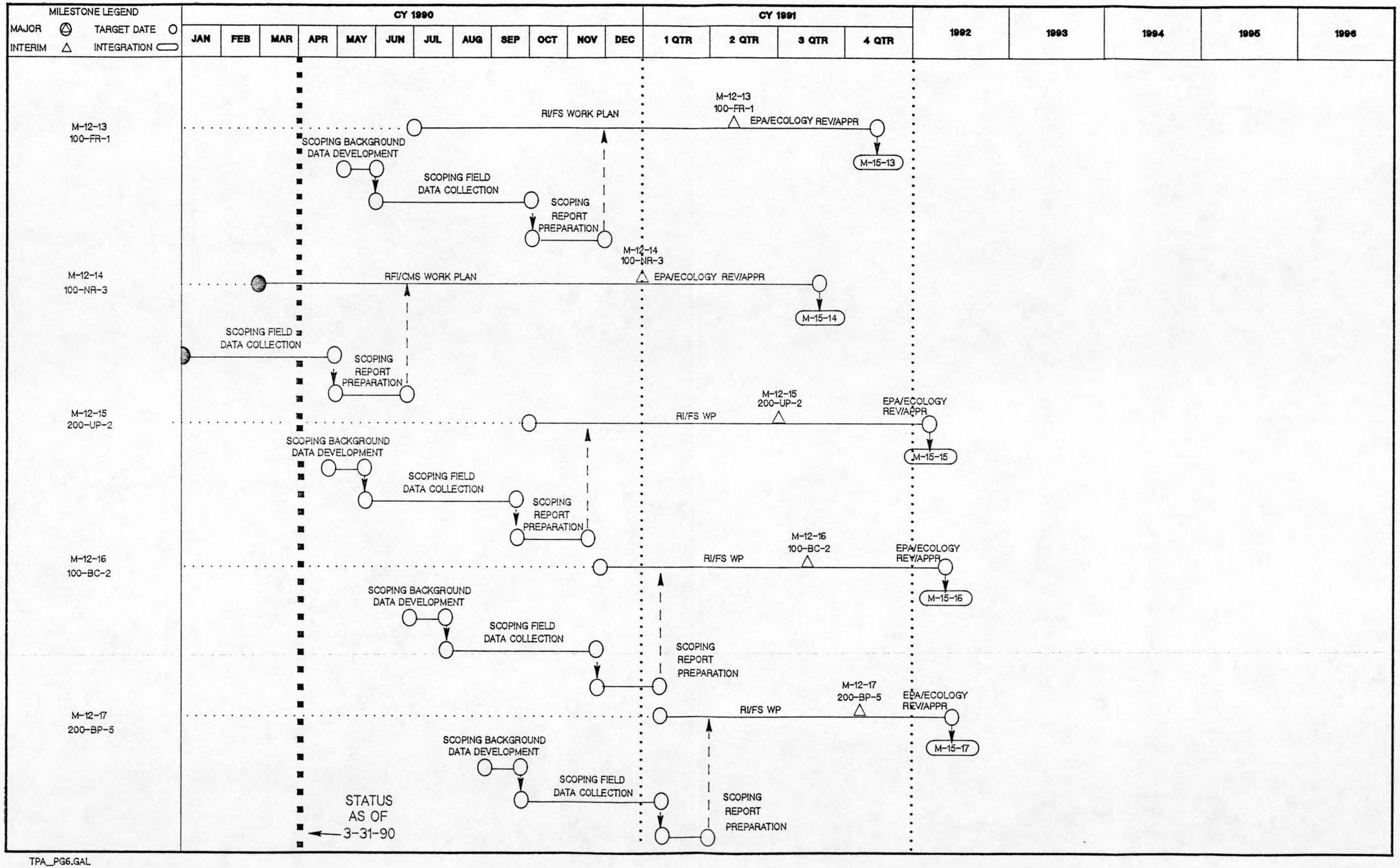
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

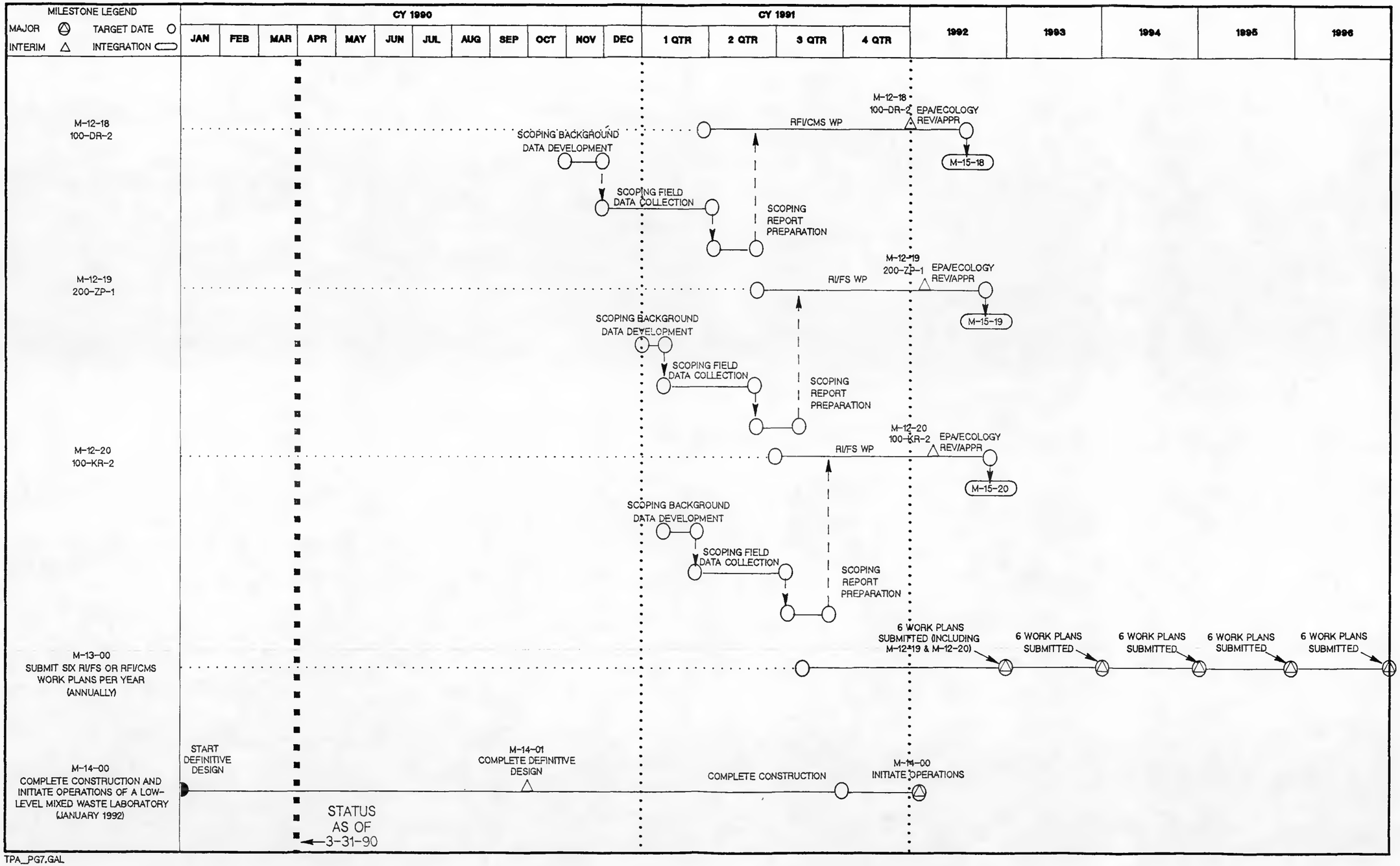
ACTION PLAN WORK SCHEDULE



TPA_PG6.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



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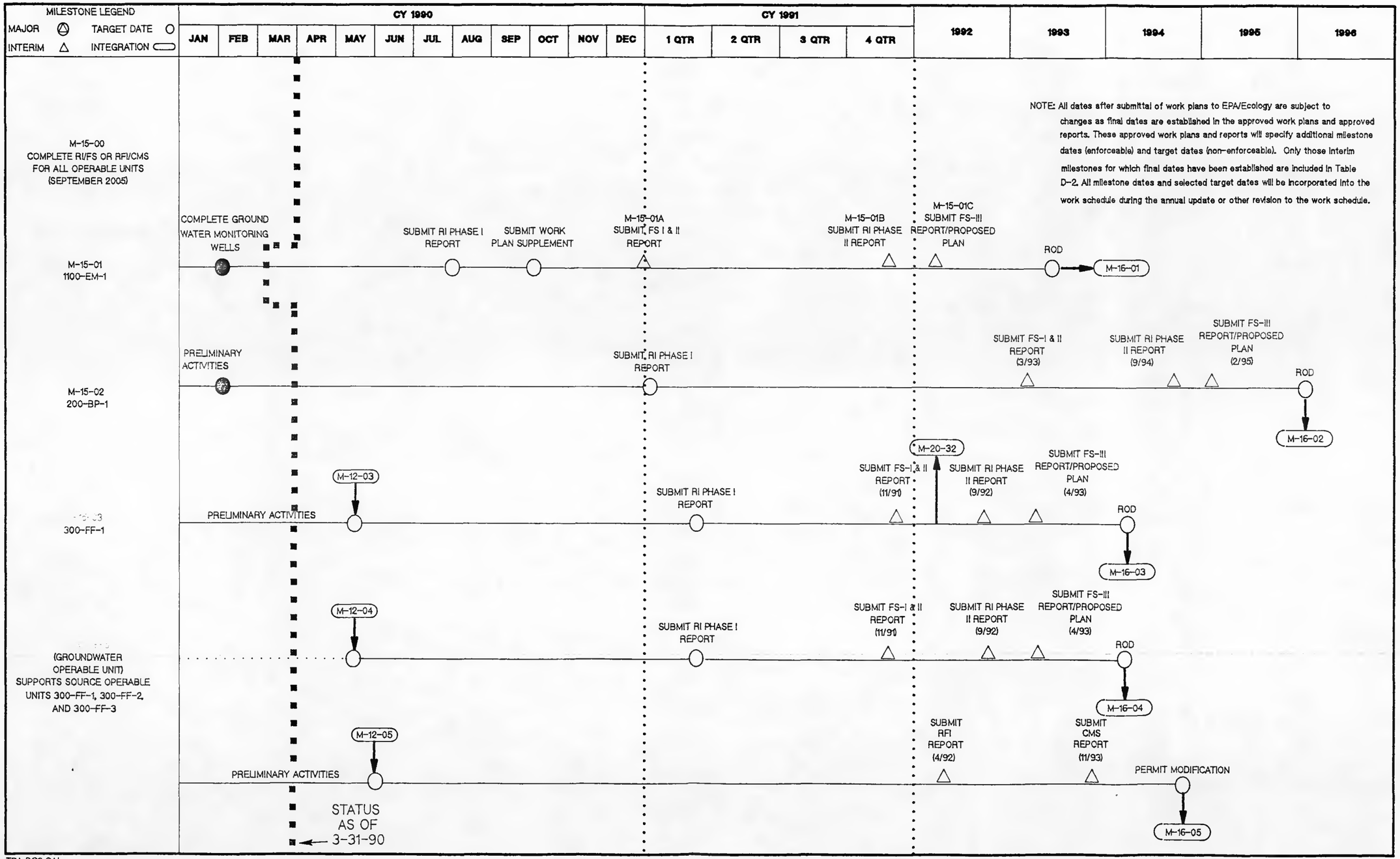
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE

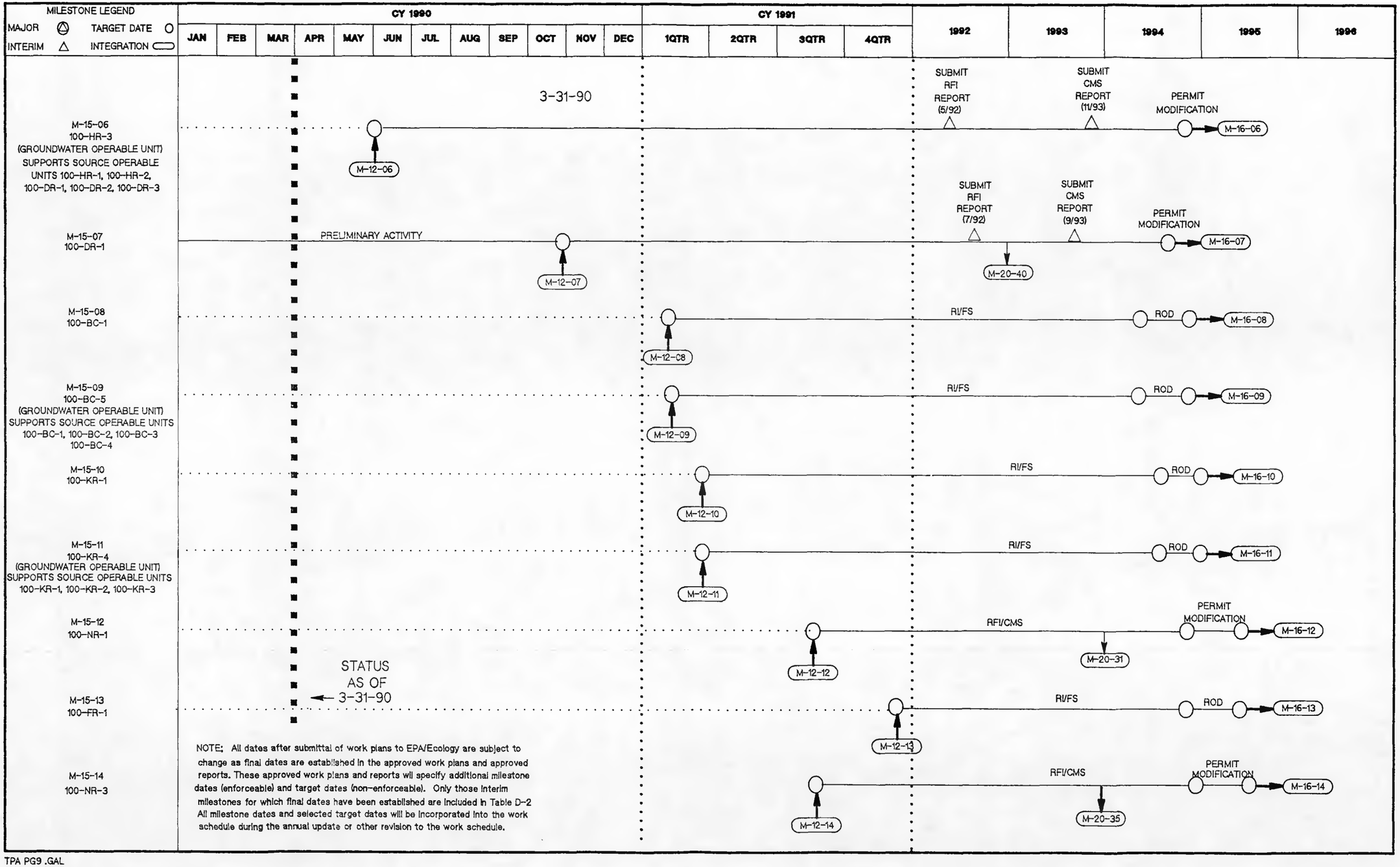


TPA PG8.GAL

FIGURE D-1 WORK SCHEDULE

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE

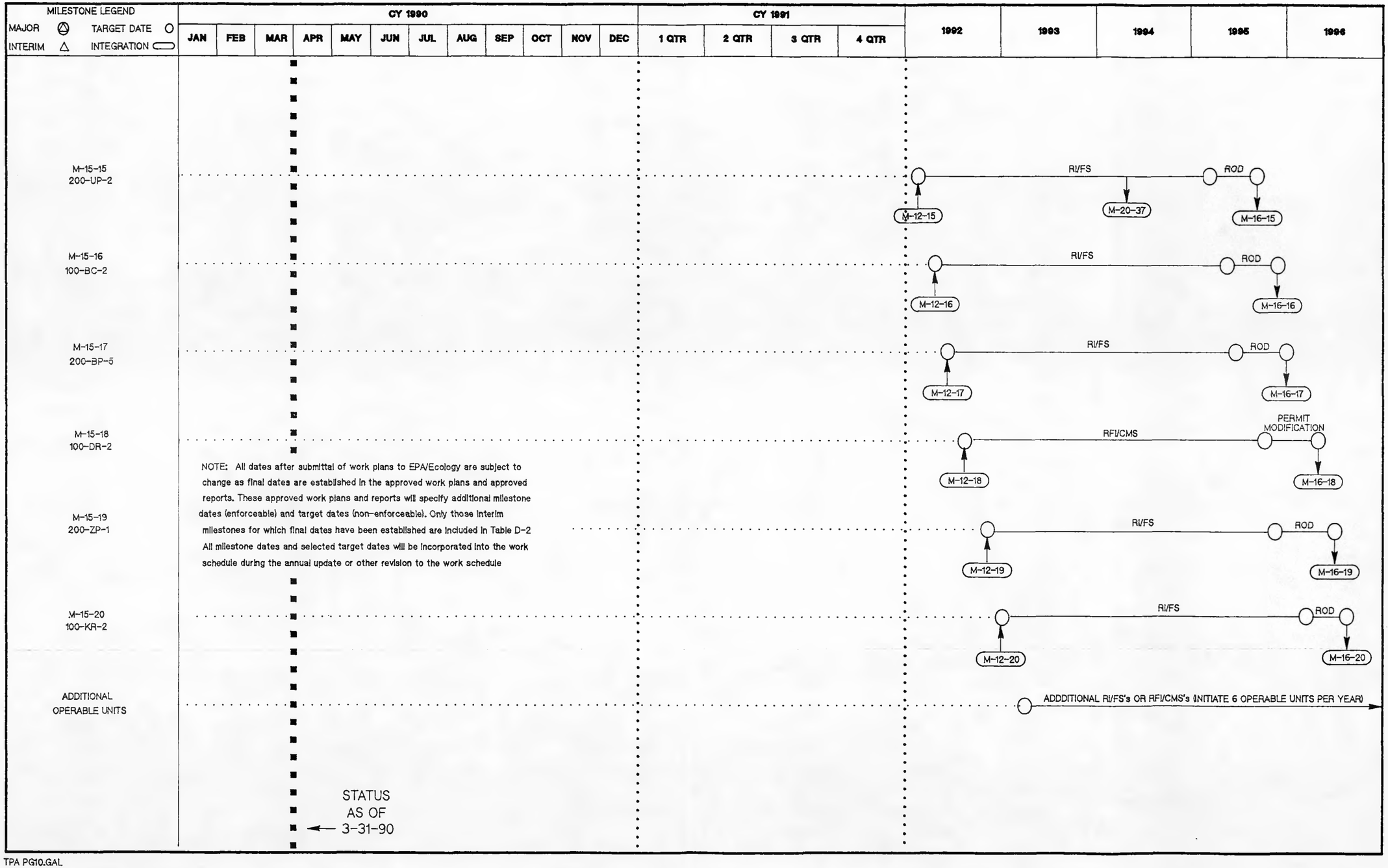


NOTE: All dates after submittal of work plans to EPA/Ecology are subject to change as final dates are established in the approved work plans and approved reports. These approved work plans and reports wil specify additional milestone dates (enforceable) and target dates (non-enforceable). Only those interim milestones for which final dates have been established are included in Table D-2 All milestone dates and selected target dates will be incorporated into the work schedule during the annual update or other revision to the work schedule.

TPA PG9 .GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

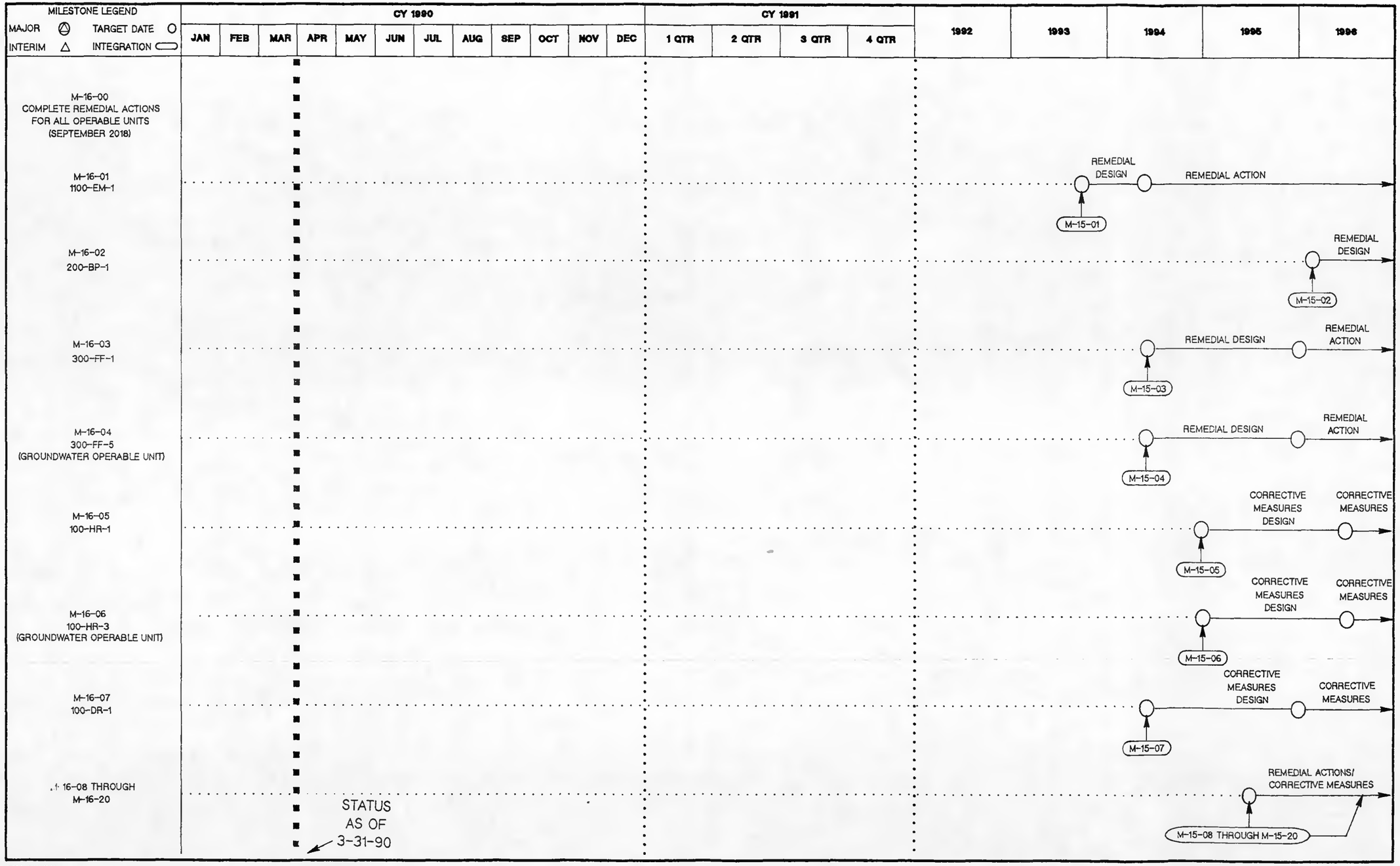
ACTION PLAN WORK SCHEDULE



TPA PG10.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

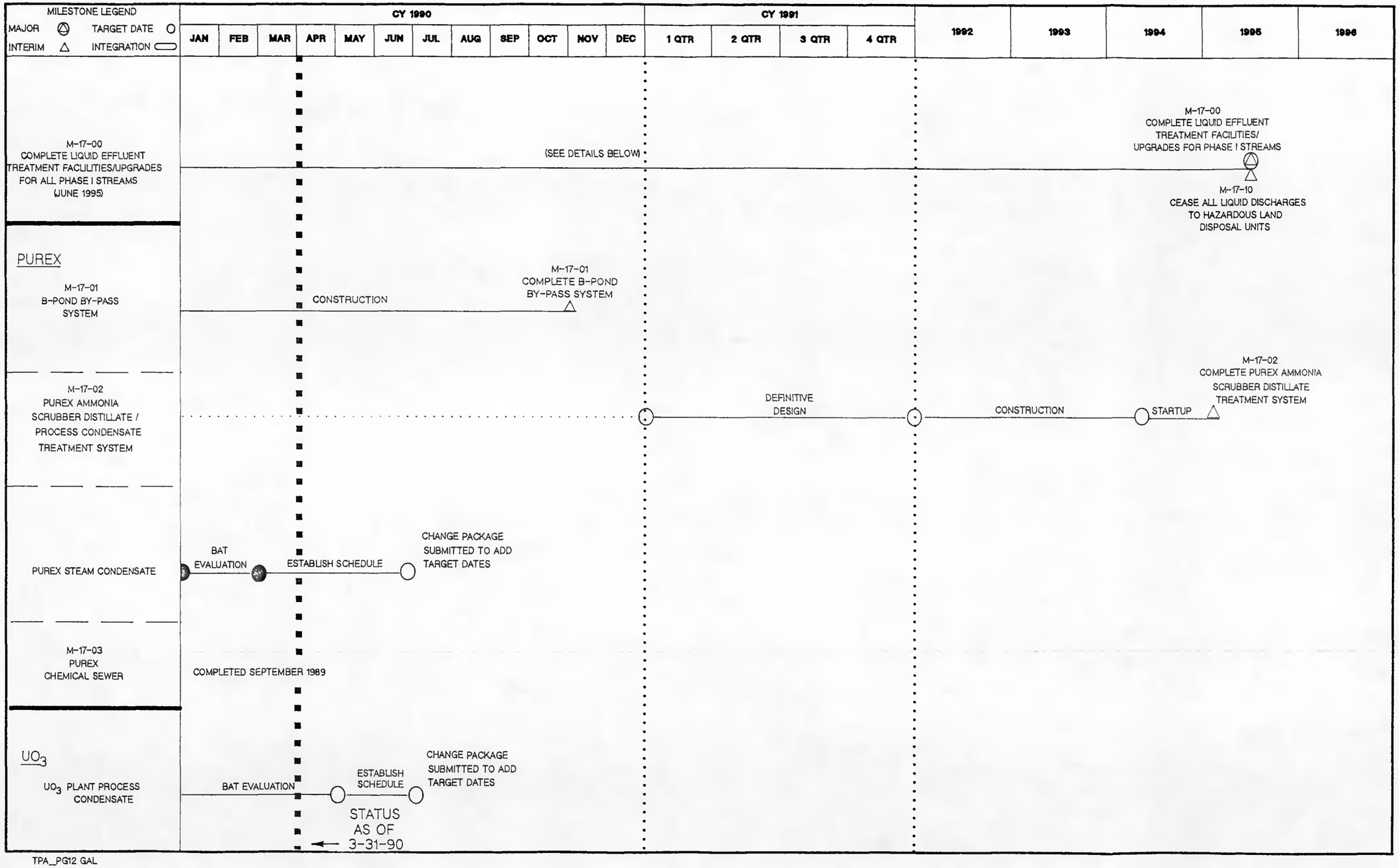
ACTION PLAN WORK SCHEDULE



TPA P11.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

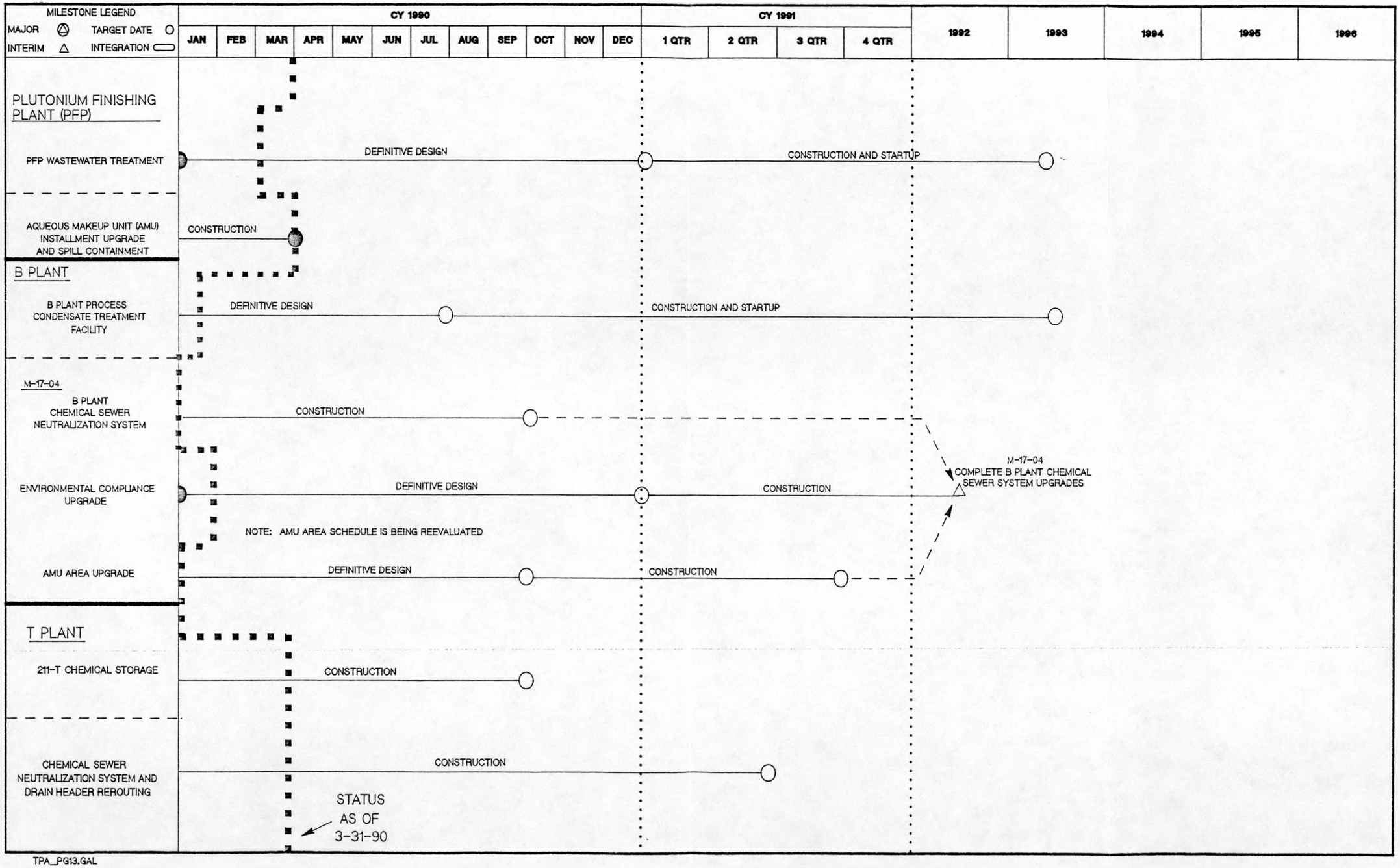
ACTION PLAN WORK SCHEDULE



TPA_PG12 GAL

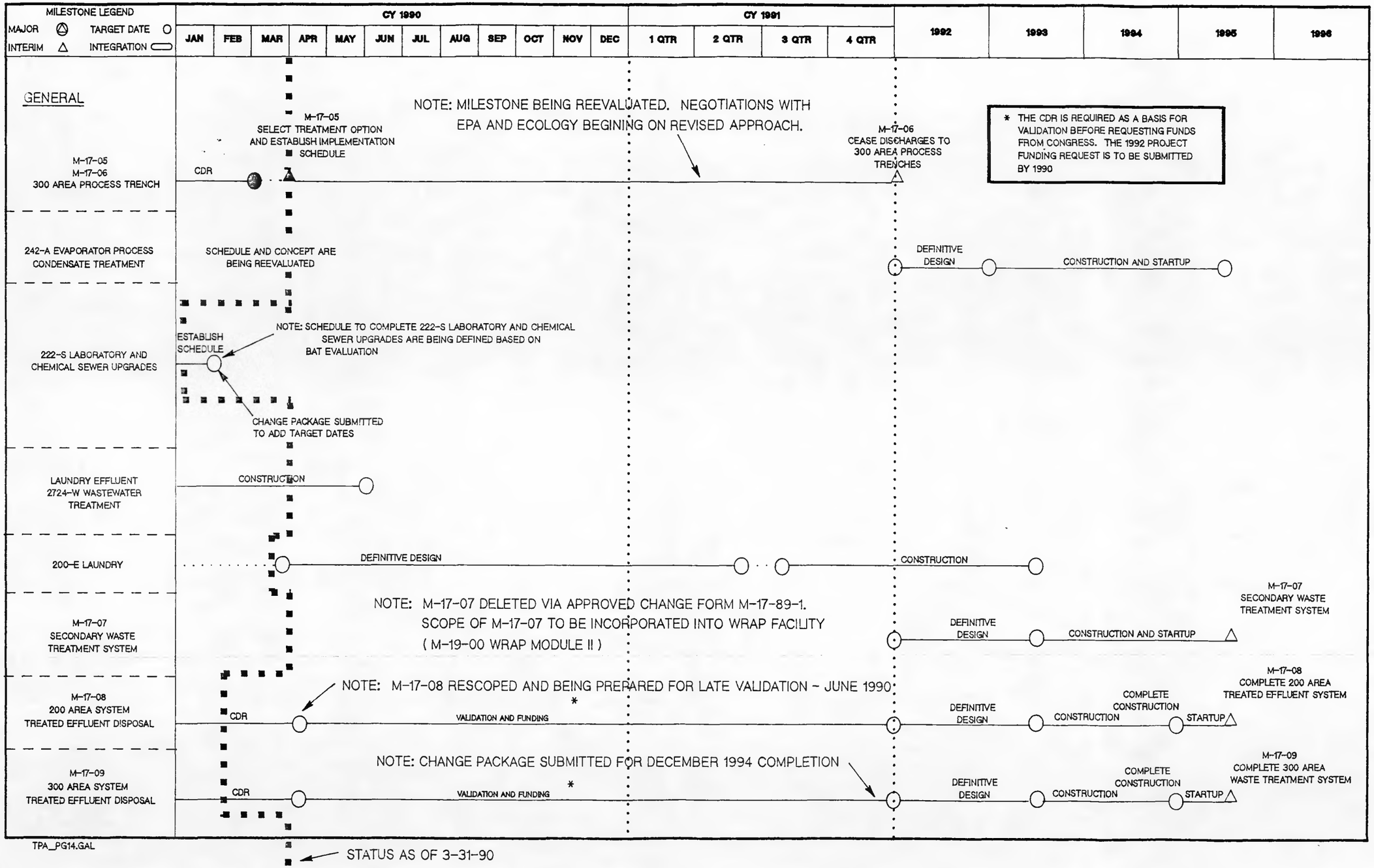
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



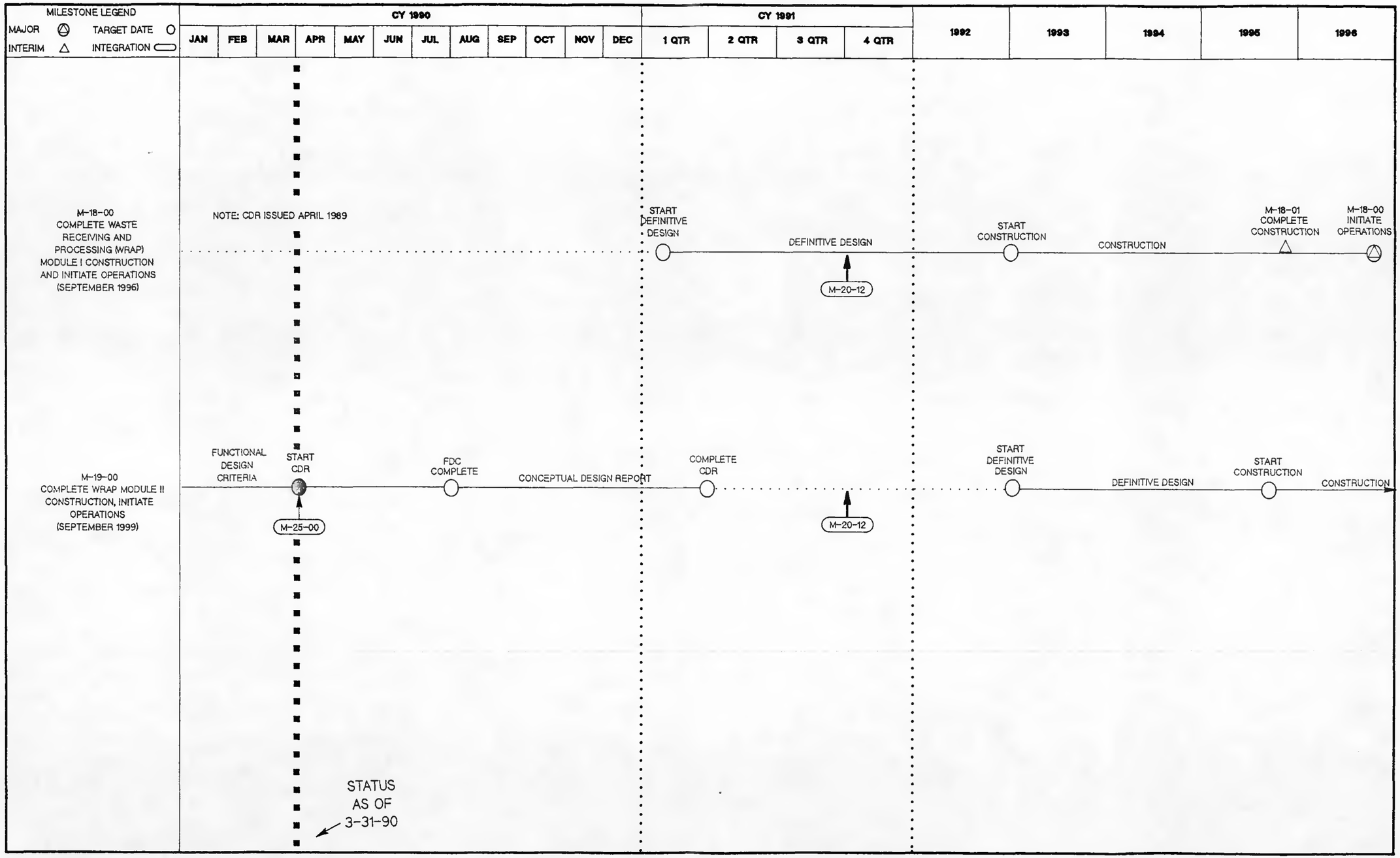
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

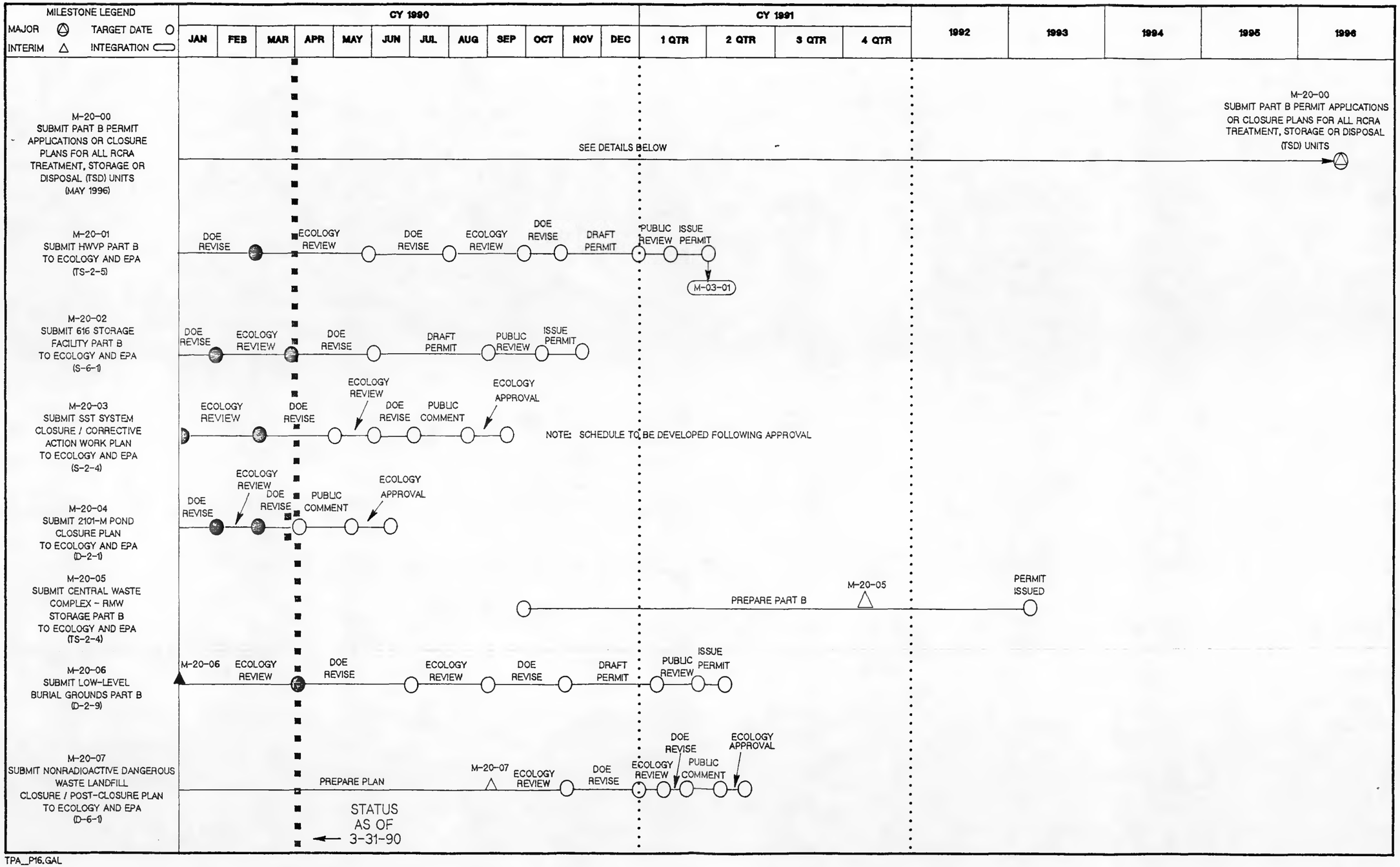
ACTION PLAN WORK SCHEDULE



TPA_PG15.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

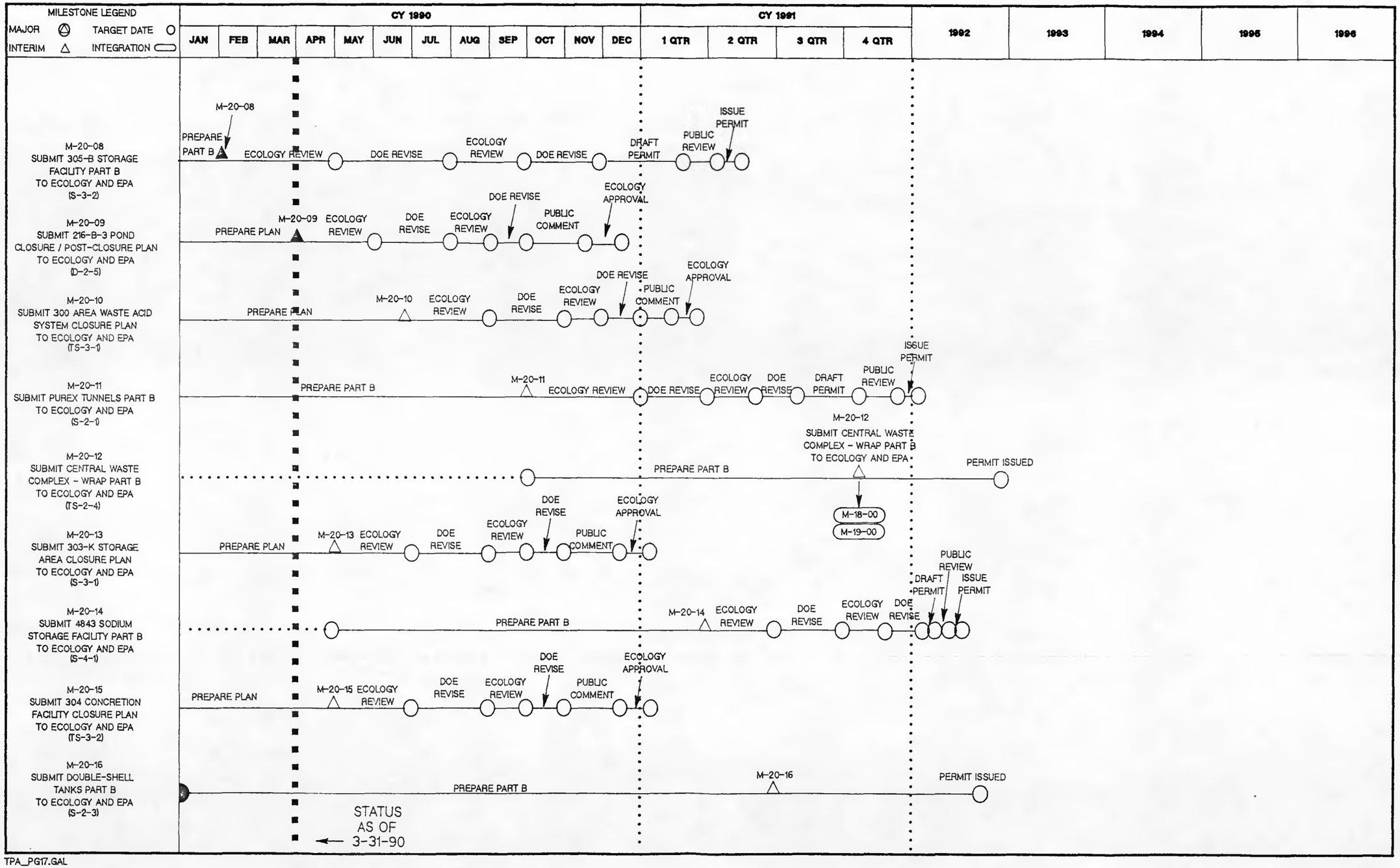
ACTION PLAN WORK SCHEDULE



TPA_P16.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

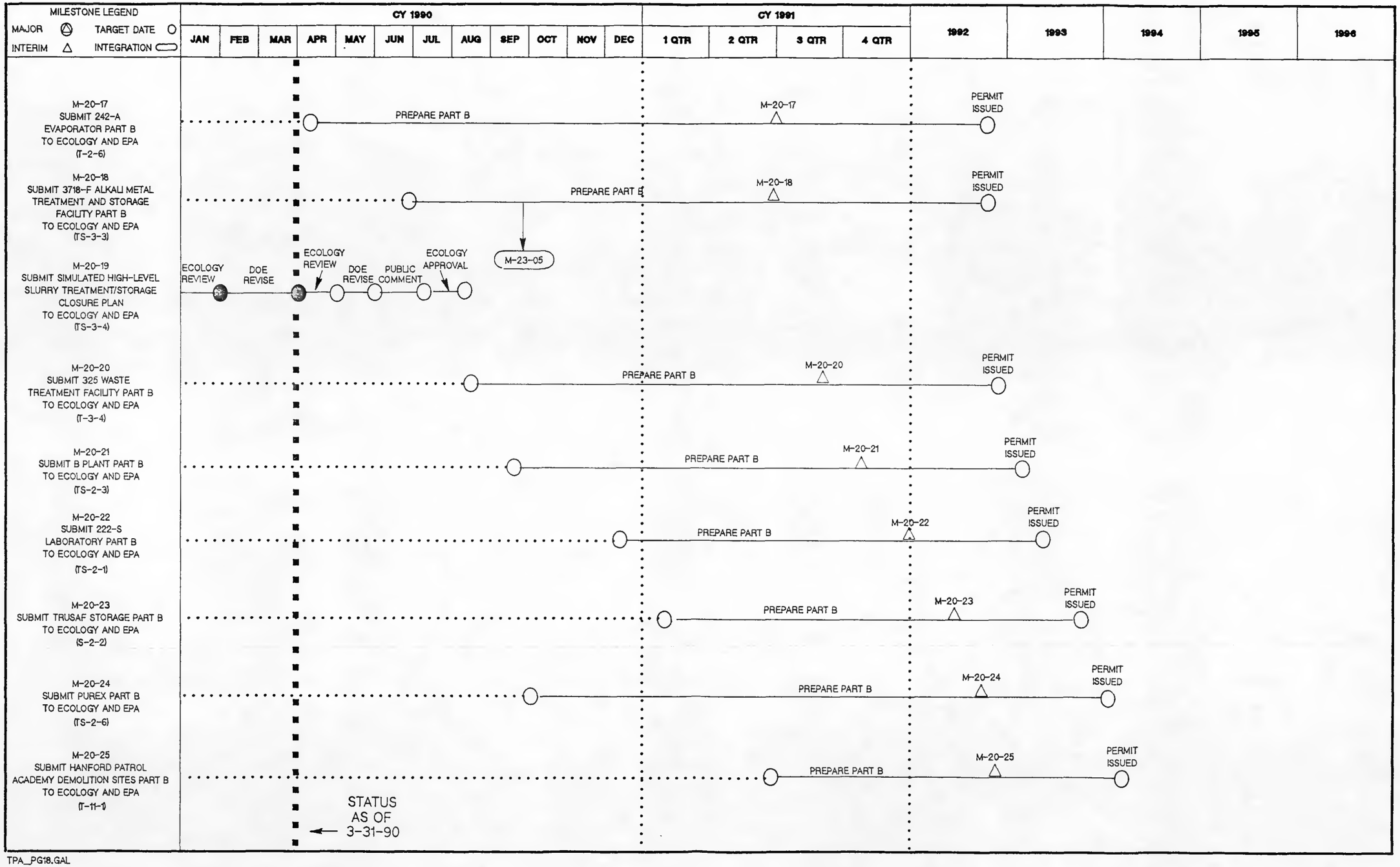
ACTION PLAN WORK SCHEDULE



TPA_PG17.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

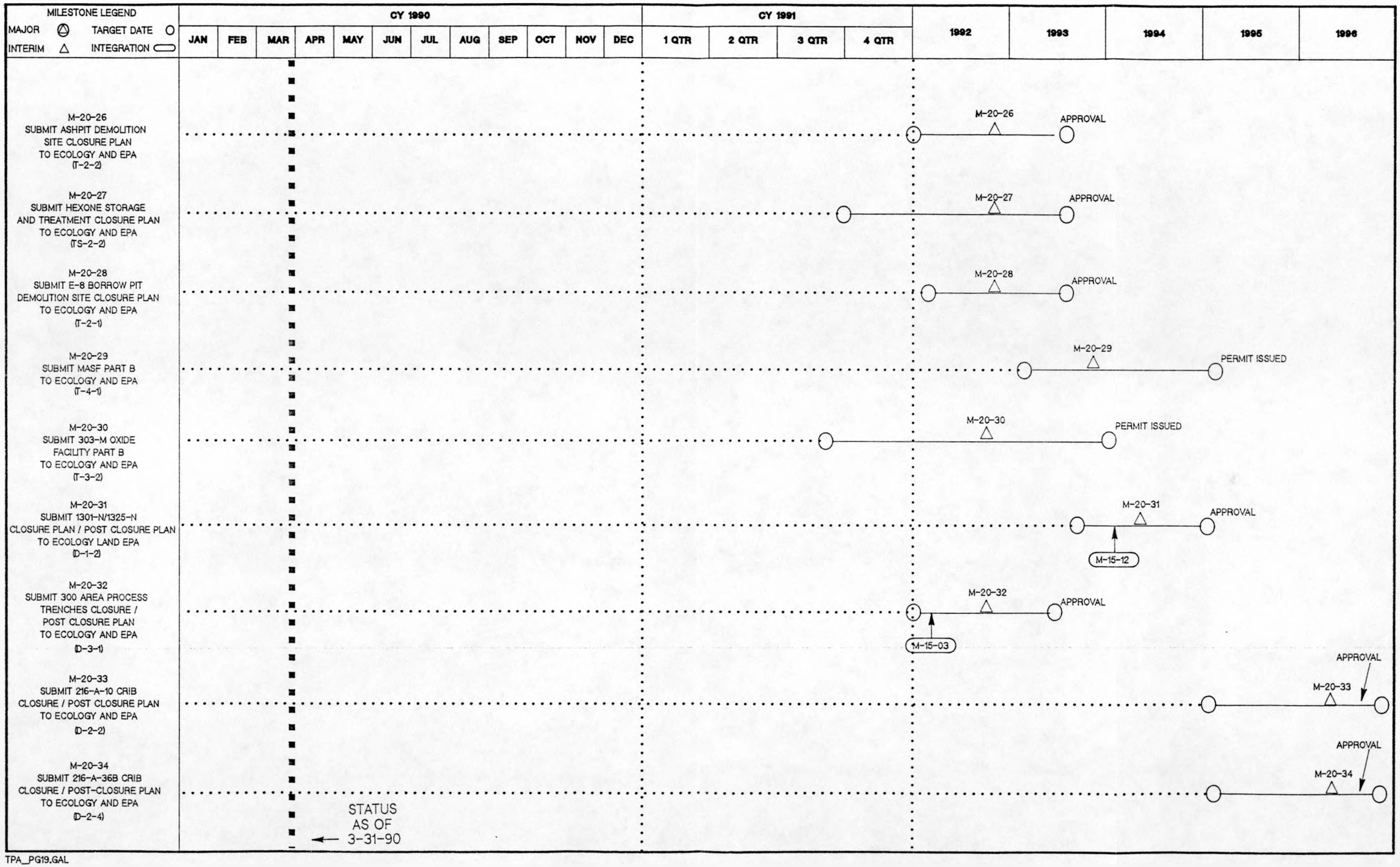
ACTION PLAN WORK SCHEDULE



TPA_PG18.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

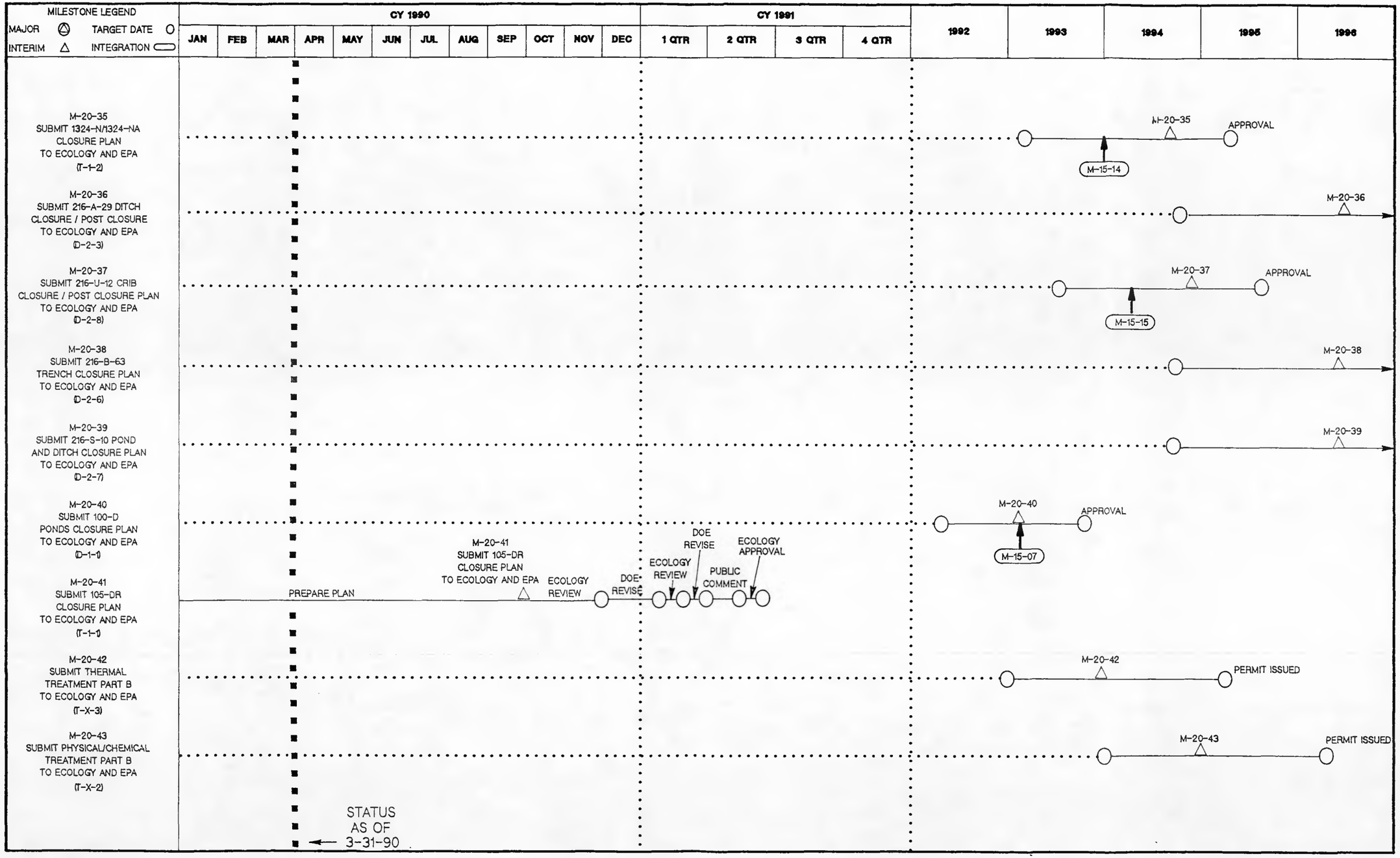
ACTION PLAN WORK SCHEDULE



TPA_PG19.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



TPA_PG20.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE

MILESTONE LEGEND
MAJOR ◇ TARGET DATE ○
INTERIM △ INTEGRATION ⊂⊃

	CY 1990												CY 1991				1992	1993	1994	1995	1996
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1 QTR	2 QTR	3 QTR	4 QTR					

M-20-44
SUBMIT BIOLOGICAL TREATMENT PART B TO ECOLOGY AND EPA
(T-X-1)

M-20-44
SUBMIT BIOLOGICAL TREATMENT PART B TO ECOLOGY AND EPA

M-21-00
SUBMIT RCRA INTERIM STATUS COMPLIANCE ASSESSMENTS FOR ALL TSD UNITS
(APRIL 1989)

COMPLETED APRIL 1989

M-22-00
ESTABLISH ENFORCEABLE COMPLIANCE ACTION SCHEDULES
(DECEMBER 1989)

M-22-00

COMPLETED DECEMBER 1989
INCORPORATED AS PART OF MILESTONE M-23-00

M-23-00
COMPLETE INTERIM STATUS CORRECTIVE ACTIONS

M-23-00
COMPLETE INTERIM STATUS CORRECTIVE ACTIONS (EXCLUDING GROUNDWATER MONITORING AND CLOSURE PLANS). MAJOR UPGRADES TO TANK SYSTEMS ARE BEING NEGOTIATED.

(SEE FOLLOWING DETAILS)

M-23-01
T-PLANT, 222-S, PUREX & 204-AR

M-23-01 RESUBMIT TREATMENT BY GENERATOR REQUESTS FOR: T-PLANT, 222-S, PUREX AND 204-AR

M-23-02
221-T CONTAINMENT-SYSTEM TEST FACILITY & 324 SODIUM-REMOVAL PILOT PLANT

M-23-02 RESUBMIT REQUEST FOR PART A WITHDRAWAL FOR: 221-T CONTAINMENT SYSTEM TEST FACILITY AND THE 324 SODIUM REMOVAL PILOT PLANT

M-23-03
DST,242-A, AND B PLANT WASTE ANALYSIS PLANS

M-23-03 COMPLETE WASTE ANALYSIS PLANS FOR DST, 242-A AND B PLANT

M-23-04
4843 AND SST WASTE ANALYSIS PLANS

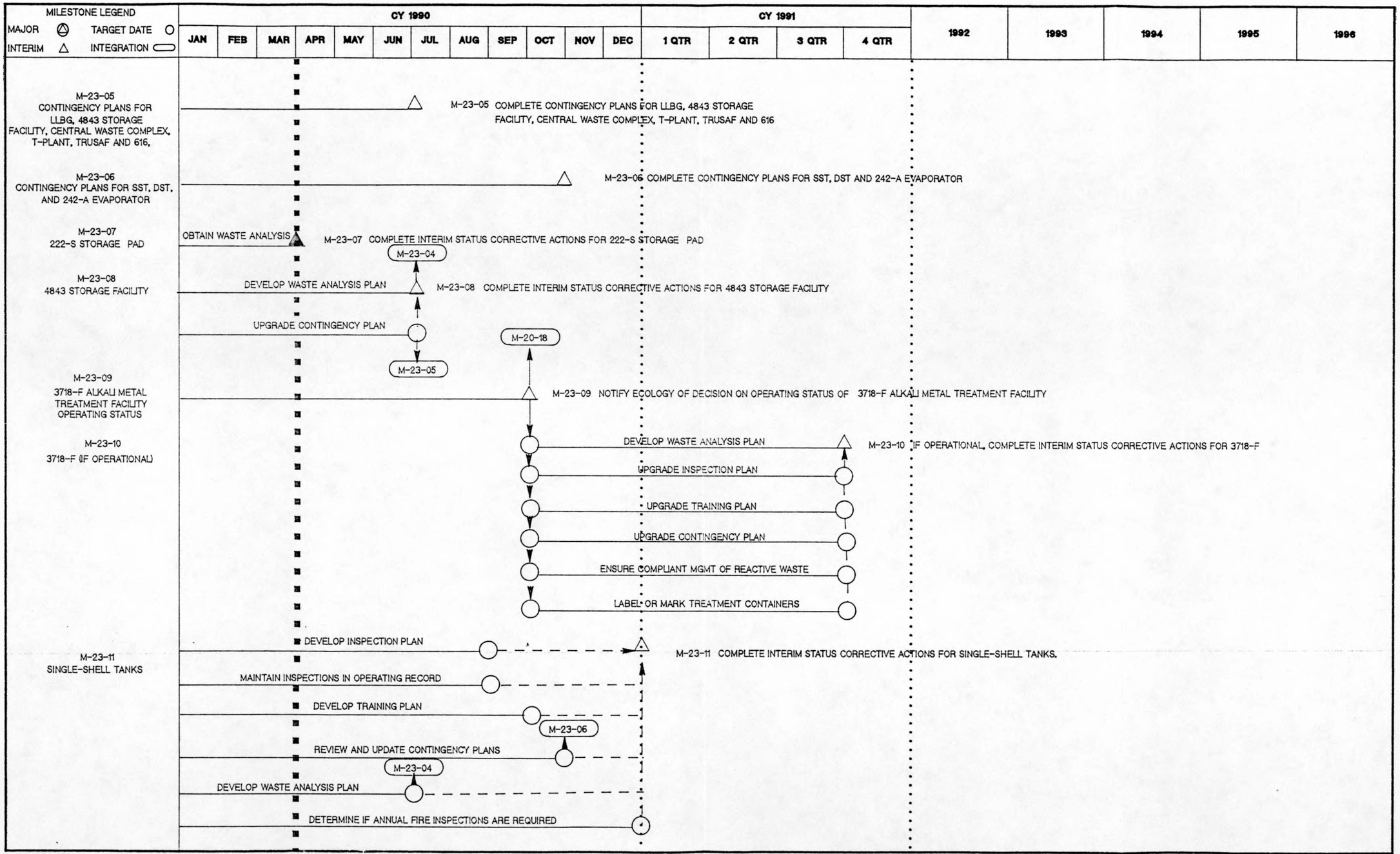
M-23-04 COMPLETE WASTE ANALYSIS PLAN FOR 4843 AND SST

STATUS AS OF 3-31-90

TPA_PG21.GAL

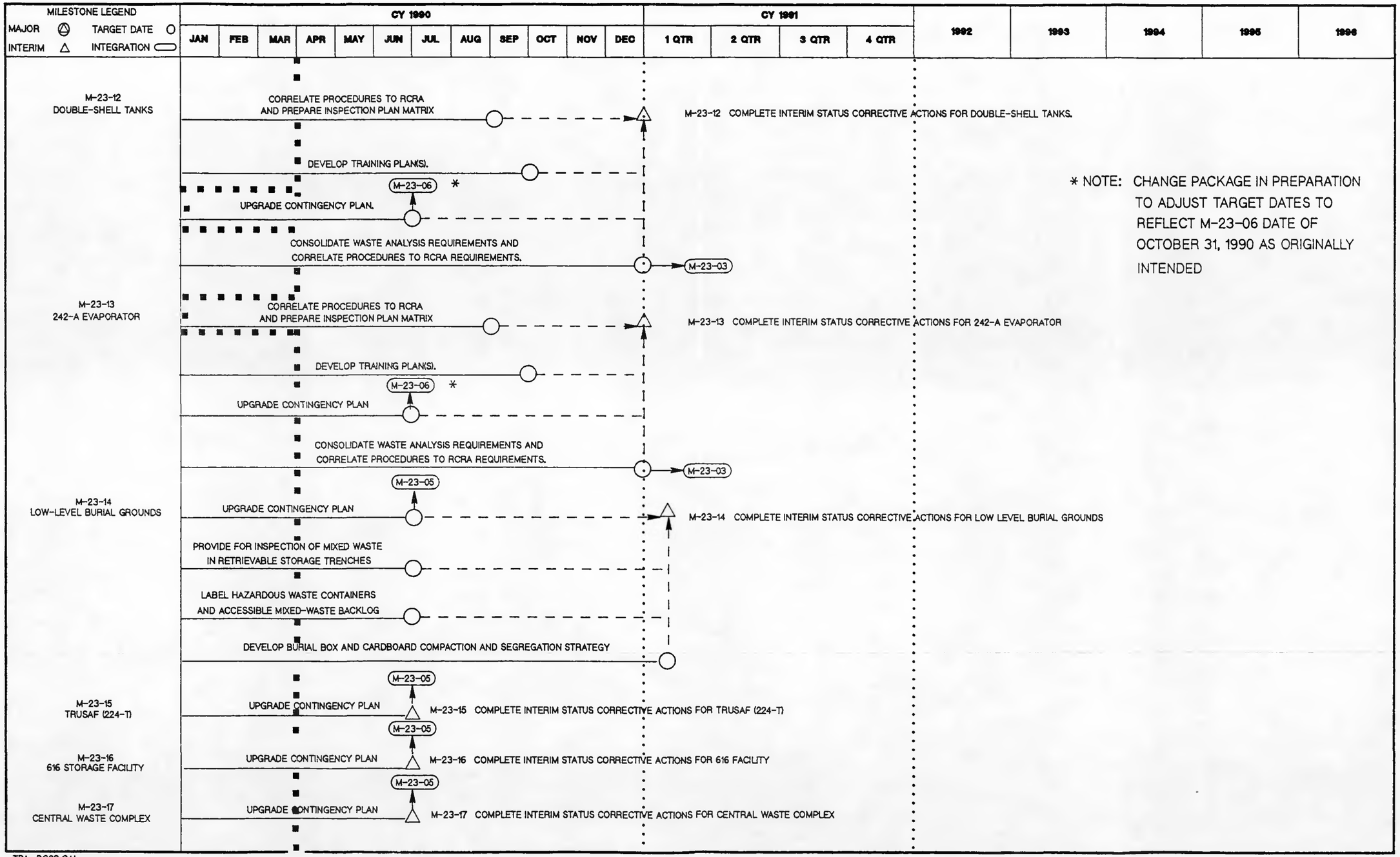
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



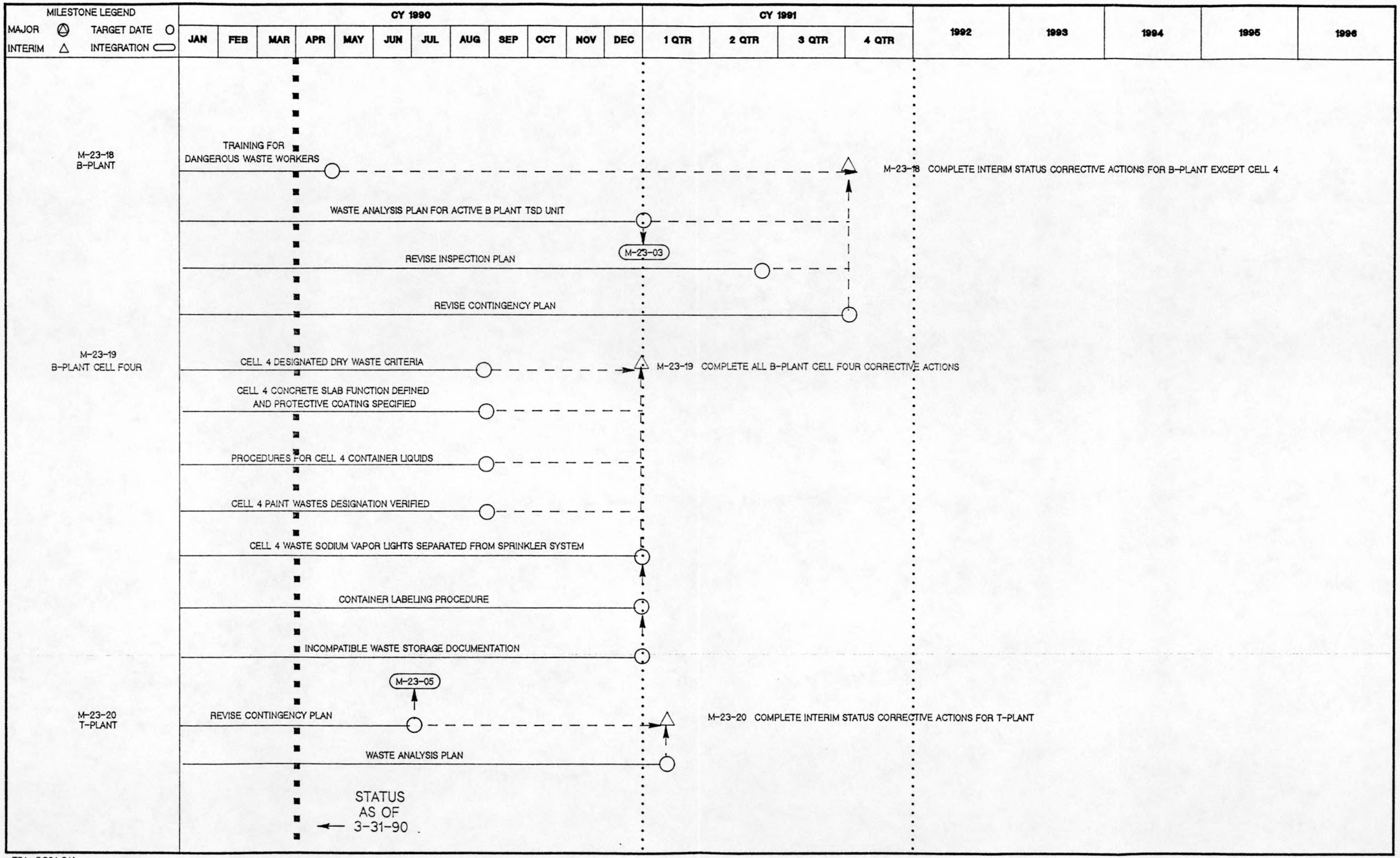
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



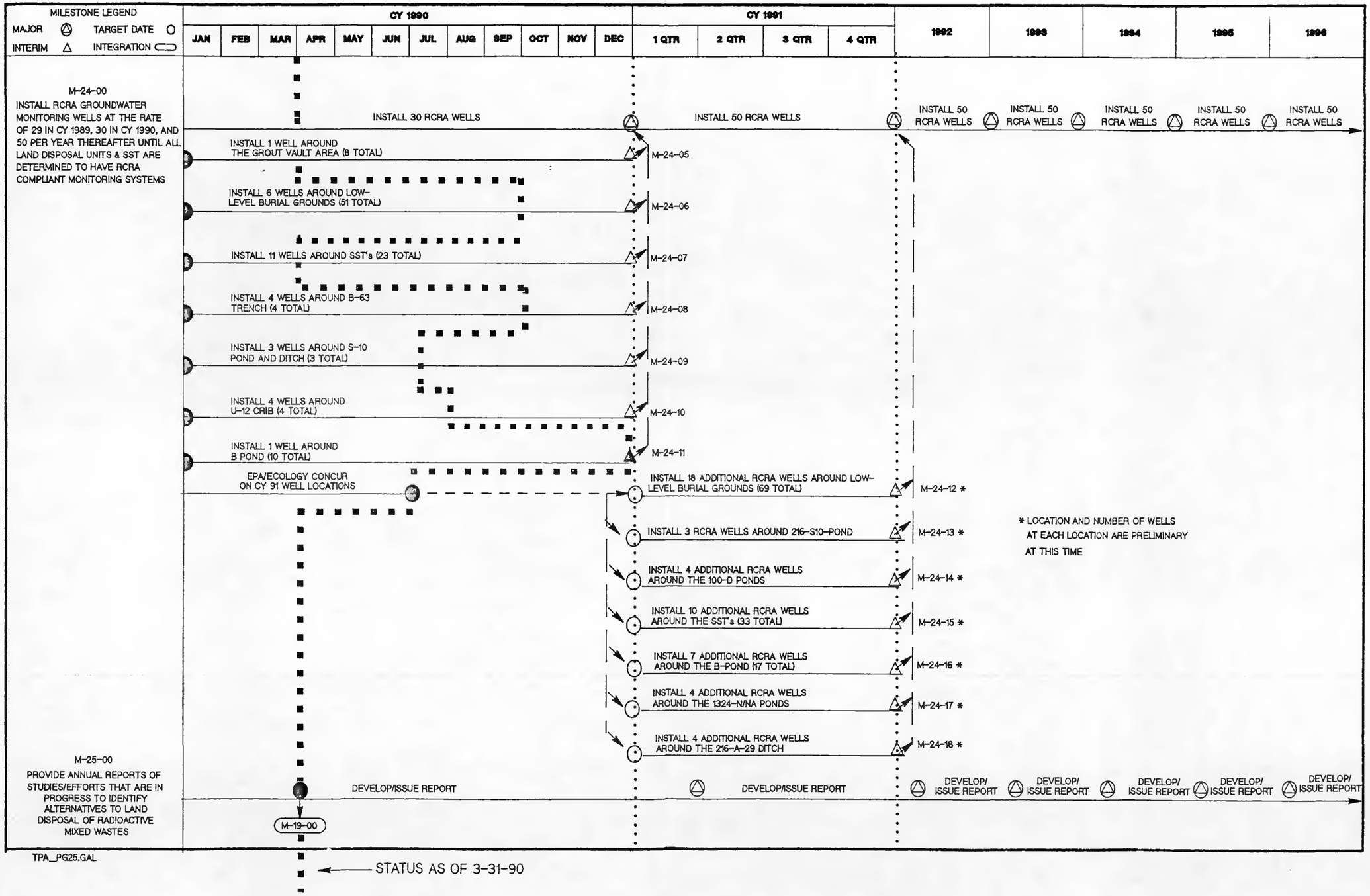
FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

ACTION PLAN WORK SCHEDULE



TPA_PG24.GAL

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER
ACTION PLAN WORK SCHEDULE



APPENDIX B

ACRONYMS

The following acronyms are used in the Quarterly Progress Report and are defined here for reference.

DOE	U.S. Department Of Energy
DOE-RL	U.S. Department Of Energy, Richland Operations Office
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
PUREX	Plutonium/Uranium Extraction
RCRA	Resource Conservation and Recovery Act
RFI/CMS	RCRA Facility Investigation/Corrective Measures Study
RI/FS	Remedial Investigation/Feasibility Study