

# *Project Baseline Summary Report*

Data Source: **EM CDB**

Operations/Field Office: **Oak Ridge**

Site Summary Level: **Oak Ridge Reservation**

Project **OR-241 / Y-12 Surveillance & Maintenance**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0092**

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## **General Project Information**

### **Project Description Narratives**

#### **Purpose, Scope, and Technical Approach:**

The objective of PBS OR-241-Y-12 Surveillance & Maintenance (S&M) is to implement routine actions to ensure sites remain in compliance with established criteria and regulations that protect human health, the environment, and Department of Energy (DOE) assets as well as to ensure that requirements of RCRA post-closure permits (PCPs) and CERCLA decision documents are met for relevant sites and facilities. This objective is met through three distinct subelements; S&M, groundwater monitoring, and pollution prevention.

Active Y-12 S&M includes sites and facilities that are currently managed by the Bechtel Jacobs Company LLC within the Upper East Fork Poplar Creek (including the Chestnut Ridge topographic area) and Bear Creek watersheds as well as the Y-12 9201-4 building (Alpha 4). S&M activities are conducted at these sites and facilities in support of Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) investigations and remedial actions, as well as to ensure compliance with Resource Conservation and Recovery Act (RCRA) post-closure permits for closed treatment, storage, and disposal (TSD) facilities. Because remedial actions have been previously implemented under RCRA at many of the facilities currently within the Y-12 S&M program, a distinction between remedial action S&M and long-term S&M is not made for this PBS.

Groundwater monitoring activities consist of the Oak Ridge Reservation (ORR) Integrated Water Quality Program (IWQP) and its subordinate program at Y-12. IWQP was established by DOE in 1996 to conduct long-term environmental monitoring and reporting throughout the ORR. Its objectives are two-fold: (1) provide data and technical analysis necessary for groundwater and surface water management decisions and to gauge the effectiveness of remedial actions; and (2) ensure compliance with all CERCLA-mandated requirements pertaining to environmental monitoring. It accomplishes these by (1) integrating and coordinating the environmental monitoring activities of the five ORR watersheds, (2) providing data management and evaluation support for environmental data collected by the individual watershed Water Quality Projects, (3) documenting remedial effectiveness at completed CERCLA-remedial action sites for the five watersheds on the ORR and off-site DOE locations, and (4) evaluating and reporting baseline environmental monitoring data collected to support technical and strategic decisions regarding future remedial actions on the ORR. The objectives of the Y-12 Water Quality Program (WQP) are to (1) establish a baseline of water quality for the Y-12 watersheds so that the effectiveness of planned remedial actions can be determined; (2) monitor groundwater and/or surface water pathways to gauge the effect of remedial actions that have been implemented within the Y-12 watersheds; (3) evaluate monitoring data to support additional remedial action decisions within the Y-12 watersheds and assure that assertions regarding hydrologic and contaminant conditions in site conceptual models remain valid; and (4) ensure that monitoring requirements of RCRA decision documents are met for relevant sites.

#### Scope:

Surveillance & Maintenance: S&M includes several interrelated tasks: site/facility inspections, maintenance, and post-decision document compliance oversight. The scope and schedule for these activities varies little from fiscal year to fiscal year, unless sites are added or removed or site conditions warrant some type of stabilization. A few sites at Y-12 will no longer require S&M subsequent to a CERCLA assessment in which a No Further Action determination is made or subsequent to a remedial action which removes the hazard or contamination of concern. Sites or facilities added to the S&M program as a result of a CERCLA decision document will, for the most part, include temporary or permanent facilities or monitoring wells constructed to support a remedial action (e.g., pump and treat actions).

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Specific S&M activities include:

**Project Management and Integration:** This task provides for the management of S&M activities and the reporting of progress, cost, and schedule information. Management also includes subcontract management, quality and safety oversight, and functional group coordination. Included in management are all the utilities under the custody of the Y-12 Plant operations (Facility Maintenance Organization [FMO] group).

**Site/Facility Inspections:** Routine site/facility inspections are conducted according to an established schedule that incorporates the requirements of RCRA PCPs, CERCLA decision documents, state and federal regulations, and/or best management practices. As part of these inspections, the above-grade portion of wells within the RCRA post-closure permit-monitoring network will be inspected quarterly in accordance with permit requirements. Other elements of routine facilities inspection include engineered caps, vegetative covers, asphalt or grout covers, drainage control systems, benchmarks, posted signs, fences, gates, locks, etc.

In the event of a 25-year, 24-hour rain event, capped facilities will be inspected for damage, as required by RCRA PCPs or CERCLA decision documents. Other sites or facilities that are susceptible to damage by erosion also may be inspected subsequent to these events. As a best management practice, sites may be inspected following other intense storm events.

**Maintenance:** Maintenance activities include the implementation of institutional controls, routine maintenance, and remedial maintenance, as well as operation and maintenance (O&M) of future groundwater injection and pump and treat systems. Institutional controls will be implemented as required by CERCLA decision documents.

**RCRA/CERCLA Integration:** This task includes the oversight of implementation of permit or ROD-required inspections and maintenance, and oversight of permit-required groundwater monitoring and reporting to ensure that respective requirements are met. In addition, this task includes the preparation and submittal of any Class I or Class II requests to modify the RCRA post-closure permits that may be required, integration of RCRA and CERCLA requirements for corrective actions and groundwater remediation for permitted facilities, preparation of quarterly reports for each hydrogeologic regime of progress under CERCLA, development and provision of annual site inspector training, and assessment of inspection logbooks, maintenance documentation, and monitoring reports to ensure that compliance with permit or ROD requirements are met. This task also includes support for regulatory audits, project-specific training, update of the inspection training manual, records management, and environmental compliance support to the S&M program.

**D&D Assessments:** Assessments of the Y-12 9201-4 building (Alpha 4) are conducted as required by regulatory and DOE standards and orders. Assessments include radiological surveys, structural assessments, HVAC systems assessments, and hazardous materials characterizations updates.

**D&D Surveillance & Inspections:** Surveillance and inspections of Y-12 9201-4 building (Alpha 4) include container inspections, equipment inspections per DOE Order 5483.1a, fire extinguisher inspections per 29 Code of Federal Regulations (CFR) 1910.157, inventory and control of sealed sources per 10 CFR 835, Lockout/Tagout inspections per 29 CFR 1910.147, monitoring of mercury vapor levels per 29 CFR 1910.120, sump and alarm system monitoring and inspection, winterization and freeze protection inspections, worker compliance for HAZWOPER per the safety and health plan for Building 9201-4, and worker monitoring for mercury and radiation exposure.

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Maintenance D&D Activities: Maintenance D&D S&M activities for Alpha 4 include collection and flasking of elemental mercury, decontamination of fixed radiation areas as required, exterior grounds maintenance such as weed control, storm sewer maintenance, facility winterization, maintenance and repair of facility electrical systems, maintenance and repair of facility mechanical systems, maintenance of rad areas, maintenance of sumps for mercury water monitoring system, mercury recovery as required by Y-12 Plant operations, roof and roof drainage system maintenance, sample collection for waste characterization, and equipment preventative and recall maintenance.

Ground Water Monitoring: IWQP will issue an annual program-wide sampling and analysis plan (SAP) that summarizes planned sampling activities and analytical requirements for all watershed-specific and off-site water quality projects integrated by the IWQP. The IWQP will maintain an ORR-wide database for monitoring results obtained by the watershed-specific Water Quality Programs and it will maintain a monitoring activity database that tracks all environmental monitoring activities of interest to the IWQP. The IWQP will verify and validate environmental monitoring results collected by each of the ORR watersheds, as well as providing validated data to Oak Ridge Environmental Information System (OREIS). The IWQP will prepare the annual Remediation Effectiveness Report (RER) to document performance assessments for completed CERCLA actions, to update the performance histories of the CERCLA actions, and to add descriptions of new remediation activities at all ORR CERCLA sites. IWQP will prepare an annual report summarizing baseline water quality monitoring throughout the ORR that is conducted in support of any planned remedial actions and to support watershed management decisions. As remedial actions within each of the ORR watersheds are implemented, the need for the IWQP Annual Report will decrease and the report will be phased out, as all monitoring will then be conducted solely to gauge remedial effectiveness.

The scope of work for IWQP and Y-12 WQP activities remains basically the same for each fiscal year, although the quantity of data that must be managed and reported will vary as the focus of monitoring shifts from baseline water quality to remedial effectiveness. Tasks to support this core scope of work include:

Project Management: Management of IWQP/Y-12 WQP activities, and the reporting of IWQP/Y-12 WQP technical progress, cost, and schedule information.

Project Support: Provides technical analysis and specialty consulting/trouble shooting for the complete range of IWQP technical scope. Technical integration of IWQP activities within all five ORR watersheds is conducted under this task, including preparation and maintenance (e.g., modifications and updates through addenda) of the annual IWQP SAP and support to the individual watersheds for the CERCLA 5-year reviews. This activity also provides oversight and coordination of environmental management, health and safety, analytical (including support from the Sample Management Office), and quality assurance requirements applicable to the IWQP and the Y-12 WQP. Program implementation documents, such as the Health and Safety Plan, Data Management Plan, and the Quality Assurance Plan, are prepared and updated under this task. This task also provides procurement support to the IWQP/Y-12 WQP, as well as the Subcontract Technical Representative (STR) for the IWQP Technical Services Subcontractor. In support of Y-12 WQP RCRA post-closure permit compliance, this task also includes semi-annual water level measurements, as well as annual comprehensive monitoring well inspections and maintenance.

Data Management: Environmental data necessary for data evaluation and reporting activities are consolidated under the scope of this activity into a standardized and integrated database. Monitoring data and meta-data generated by annual sampling activities of the individual watershed Water Quality Programs, together with historical data required for data analysis and interpretations, are managed using the Project Environmental

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Measurement System (PEMS), Oak Ridge Environmental Information System (OREIS), and an IWQP project-specific database. Data will be received electronically in the PEMS format and will be verified and validated. Additionally, an MS ACCESS-based tracking database summarizing all environmental monitoring activities throughout the ORR is maintained, along with web browsers to facilitate access to the project and tracking databases.

Data Evaluation and Reporting: Reports documenting monitoring results on an ORR-wide basis include: (1) The Annual Remediation Effectiveness Report (RER), an FFA primary document, providing analytical results and evaluations of performance assessment monitoring as required by CERCLA decision documents and/or the project-specific remedial action work plans or remedial action reports. The RER provides any recommendations for changes to the monitoring program within the watershed for the subsequent year. (2) The IWQP Annual Report provides an evaluation of all monitoring results for the five ORR watersheds, including the results of any baseline monitoring required to gauge effectiveness of future remedial actions. The focus of this report is to gauge the overall condition of the entire watershed, to evaluate/modify the watershed conceptual model for contaminant transport, and to provide data and technical analysis necessary for groundwater and surface water management decisions.

The planning and implementation of surface water, groundwater, sediment, and biological monitoring within the Y-12 watersheds and at various off-site locations surrounding the ORR are accomplished under this task, as well as activities conducted in support of RCRA post-closure permit compliance monitoring reporting and of watershed-specific CERCLA 5-year reviews. The scope of work for this task includes the following interrelated activities: sample planning, collection, transport, shipment, tracking; laboratory analysis of samples; RCRA report preparation; CERCLA 5-year reviews; and project administration. The task also includes annual inspection and maintenance, as needed, of RCRA Post-Closure Permit monitoring wells and other permanent monitoring stations within the Y-12 watersheds, water level measurements, recordkeeping, and project-specific training.

Reports to be prepared by the Y-12 WQP include: (1) Annual RCRA Groundwater Quality Reports (GWQRs) for the Bear Creek, UEFPC, and Chestnut Ridge Hydrogeologic Regimes at the Oak Ridge Y-12 Plant; (2) semi-annual RCRA Corrective Action Monitoring Reports for the Bear Creek, UEFPC, and Chestnut Ridge Hydrogeologic Regimes at the Oak Ridge Y-12 Plant; (3) semi-annual RCRA detection monitoring reports, as required by the Chestnut Ridge Hydrogeologic Regime Post-Closure Permit; and (4) reports that document the CERCLA 5-year reviews to gauge the overall effectiveness of remedial actions implemented at sites located within the Y-12 watersheds or DOE off-sites locations.

RCRA Post-Closure Permit Modification: This Y-12 WQP activity includes development of a strategy to reduce the long-term monitoring at detection monitoring sites included in the RCRA post-closure permit for the Chestnut Ridge Hydrogeologic Regime, preparation of an alternative statistical method for data evaluation at the sites, preparation of a post-closure permit modification request to delete replicate monitoring requirements and implement an alternative statistical method for data evaluations, and support activities associated with the permit modification (e.g., modification fee, public meeting, travel to/from Nashville for meetings with TDEC-DSWM personnel, etc.).

CERCLA 5-Year Reviews - This Y-12 WQP activity includes data compilation and evaluation to support CERCLA 5-year reviews in accordance with final decision documents for Operable Units within Y-12 watersheds, including the Chestnut Ridge area and Off-Site locations. The results of these reviews will be documented in report format, which will follow FFA protocol for DOE and regulatory reviews and any comment resolution.

Technical Approach:

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S&M: All required inspections (weekly, monthly, quarterly, semiannual) will be integrated into a single schedule to facilitate resource loading and eliminate any redundancies. Site-specific inspection checklists will be completed by the site inspector. Repairs or maintenance will be requested on Site Maintenance Request forms, which document the maintenance activities completed and follow up inspections to insure repairs were properly completed. All inspection checklists and maintenance documentation will be maintained in a logbook for archival at the end of each fiscal year. A schedule will be prepared for activities associated with the pump and treat system, as well as nutrient injections into groundwater. These activities will be coordinated with the influent/effluent sampling conducted by the Y-12 WQP. Existing manpower and support services will maintain all Alpha-4 S&M activities in a compliant manner until such time that the structure is decontaminated and decommissioned for future use.

Groundwater Monitoring: Monitoring in support of CERCLA activities will be conducted by Water Quality Projects (WQPs) within the five ORR watersheds and will be coordinated and tracked by the IWQP. Fiscal year monitoring objectives for each watershed on the ORR will be determined during technical scoping meetings between IWQP staff (including the IWQP technical services subcontractor) and Bechtel Jacobs Company/DOE watershed team members. Once objectives are determined, specific monitoring data quality objectives will be defined and incorporated into the FY Sampling and Analysis Plan (SAP). Data sharing opportunities with other monitoring programs (e.g., Lockheed Martin Energy System Defense Programs, Bechtel Jacobs Company Waste Management Operations, etc.) throughout the ORR will be identified to minimize the quantity of new sampling required by IWQP to meet its data quality objectives.

The SAP will include, at a minimum, monitoring locations, sampling media and method (i.e., grab, flow proportional, composite, etc.), frequency of sampling, analyze lists, analytical methods, and required analytical detection limits to meet data quality objectives. Any changes to the SAP will be documented by addenda approved by the relevant watershed WQP manager and the IWQP manager. The SAP will incorporate any modifications to the monitoring strategy and requirements that were identified during preparation of the prior year's annual monitoring report and/or RER, or additions to the monitoring programs required by approved CERCLA decision documents.

Implementation of the SAP (sampling, sample shipment, and analytical costs) for each watershed is the responsibility of the watershed WQPs. Sample analyses will be performed through the Bechtel Jacobs Company Sample Management Office (SMO) by analytical support subcontractor(s). The IWQP technical services subcontractor will track sampling activities, sample analysis, receive and verify the electronic data deliverables from the analytical laboratories, validate and screen the data, maintain the analytical project database/web browser/monitoring tracking database, prepare the ORR-wide monitoring reports (i.e., the RER and the IWQP Annual Report), upload data to OREIS as required by FFA protocols, and prepare the IWQP SAP for each fiscal year.

Monitoring activities will be conducted throughout each fiscal year (FY) according to the SAP that will be prepared by the IWQP. The SAP will be developed prior to the beginning of each FY by the IWQP technical support contractor and will incorporate changes recommended in the previous Remediation Effectiveness Report (RER) or dictated by any RCRA post-closure permit modifications or CERCLA decision documents. As remedial activities within the Y-12 watersheds or on DOE off-site locations are implemented, monitoring requirements to establish baseline water quality will be replaced by monitoring to determine the effectiveness of remedial actions. Monitoring locations and requirements will be selected by the Y-12 Water Quality Program manager on the basis of data needs to support performance assessment of implemented or planned remedial actions, as well as post-closure permit requirements. Monitoring will focus on watershed and exit pathway contaminant migration and/or site-specific determinations of contaminant flux.

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Data obtained to provide formal performance assessment of specific remedial actions within the watershed will be provided to the IWQP technical support subcontractor for evaluation and preparation of the relevant sections of the annual RER. Additional monitoring data obtained in the watershed will be provided to the IWQP technical support subcontractor for evaluation and incorporation into the IWQP Annual Report. Data collected for RCRA Post-Closure Permit monitoring will be evaluated and incorporated into permit-required reports by the Y-12 WQP technical services subcontractor and transmitted to TDEC-DSWM, as appropriate.

Reviews of remedial actions conducted within the Y-12 watersheds and DOE off-site locations will be conducted every 5 years subsequent to approval of the CERCLA Record of Decision and implementation of the selected remedy. The review will focus on existing site conditions and the effectiveness of the remedial action. It will include a summary of the surveillance and maintenance activities conducted at the site since implementation of the remedial action or since the last review, as well as a summary and evaluation of relevant monitoring data collected at the site or within the watershed and recommendations for additional or continued activities, if warranted.

A strategy to reduce the long-term monitoring cost will be developed at the detection monitoring sites included in the RCRA post-closure permit for the Chestnut Ridge Hydrogeologic Regime. Part of this strategy will include preparation of an alternative statistical method for data evaluation at the sites that will not require replicate sampling. A request to modify the post-closure to delete replicate monitoring requirements and implement an alternative statistical method for data evaluations will be prepared and submitted to the TDEC-DSWM. This will require a Class III modification fee, a public meeting, and travel to/from Nashville for meetings with TDEC-DSWM personnel, as necessary.

### **Project Status in FY 2006:**

S&M: Through FY 2003, conducted recurring assessments, surveillances, inspections, maintenance, and management activities for the Y-12 Alpha -4 building. D&D of Alpha 4 commences in FY 2004, with S&M requirements decreasing as D&D progresses. Continued utility services to Alpha 4. Conducted the above listed activities plus RCRA/CERCLA integration for the sites and facilities within the Upper East Fork Poplar Creek and Bear Creek watersheds.

Groundwater Monitoring: Issued annual Remediation Effectiveness Reports, annual Integrated Water Quality Program reports, and prepared annual Sampling and Analysis Plans.

### **Post-2006 Project Scope:**

S&M: Through FY2007, conduct recurring assessments, surveillances, inspections, maintenance, and management activities for the Y-12 Alpha -4 with S&M requirements diminishing as D&D progresses to its completion in FY2007. Continued utility services to Alpha 4 until D&D finish in FY2007. Conduct the above listed activities plus RCRA/CERCLA integration for the sites & facilities within the Upper East Fork Poplar Creek and Bear Creek

Groundwater Monitoring: Issue annual Remediation Effectiveness Reports, annual Integrated Water Quality Program reports, and prepared annual Sampling and Analysis Plans.

### **Project End State**

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S&M: S&M requirements for the Alpha 4 facility end when the facility D&D is complete in FY 2007. S&M for remedial action sites continue to ensure sites remain in compliance with established criteria and regulations that protect human health, the environment, and Department of Energy (DOE) assets, and to ensure that requirements of RCRA post-closure permits (PCPs) and CERCLA decision documents are met for relevant sites and facilities.

Groundwater Monitoring: The program is a continuing activity to conduct long-term environmental monitoring and reporting throughout the Oak Ridge Reservation (ORR). The end state for this program is an ongoing, steady-state monitoring program.

### **Cost Baseline Comments:**

The DOE EM Life Cycle Baseline that was recently issued in draft form from Bechtel Jacobs Company to DOE-ORO is the cost basis for the PBS. Following development of scope statements, several methods were used for creating the cost estimates in the Life Cycle Baseline: use of cost estimating models, use of existing estimates, use of unit-price estimates, and extrapolation estimates. Cost Estimating Models - Cost estimating models were developed for use on the majority of new Remedial Action, Decommissioning & Decontamination, and Surveillance & Maintenance projects. These innovative models were prepared using the government-accepted RACER cost database or were based on historical cost data for similar local work. These models were utilized when no other estimates exist, or when the project team needed to increase the quality of an existing estimate. Additionally, these models were developed to include the appropriate level of estimate detail and quality for a life cycle baseline estimate. Approximately forty-five subprojects were estimated using this modeling approach. No matter which estimating method was used, each estimate was reviewed for errors, omissions, and consistency in approach across the DOE-ORO EM Program.

### **Safety & Health Hazards:**

The scope of this PBS (241-Y-12 Surveillance & Maintenance) addresses the active S&M at the Y-12 site, the Integrated Water Quality Program (IWQP) and its subsidiary Y-12 Water Quality Program. The primary S&H hazards for the PBS involve those associated with exposures during S&M and IWQP activities. S&M includes monitoring of pre-remedial action sites, operations and maintenance of post-remedial action sites, monitoring and maintenance of facilities used in support of the remediation program, and monitoring of facilities accepted into the Decontamination and Decommissioning (D&D) program. These activities carry a limited potential for exposure to workers and involve standard industrial type hazards. Little to no risk exists for the public. As the remedial action program progresses, S&M activities will be reduced to inspection and monitoring with more limited risks. The D&D facility, Alpha 4, is not in compliance with safety and health requirements for unrestricted access. Until then, work is limited to inspections and minor corrective maintenance as necessary to ensure safety and minimize exposure. The IWQP involves environmental monitoring and well sampling, which also involves a limited potential for exposure to workers and involves a limited degree of physical field hazards.

### **Safety & Health Work Performance:**

The Integrated Safety Management System will be used to ensure that work is performed safely. The scope of work will be defined in subcontract or other work planning documents. Goals and expectations will be defined in the scope of work. Hazards will be analyzed and identified by both the Bechtel Jacobs Environmental Safety and Health (ES&H) Team and the subcontractor's Safety and Health personnel. Controls are developed and implemented by identifying the standards and requirements using the Work Smart Standards and these standards are included as part of the ES&H crosswalk. After the hazards and the method of work accomplishment are identified, an Activity Hazard Assessment (AHA) is required for each activity or task. Work cannot be performed until all of the required safety documentation is completed and reviewed for accuracy. Workers must also

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be properly trained and participate in pre-job reviews. Workers are required to review the applicable AHAs as well as attend daily safety meetings. The Bechtel Jacobs ES&H Team will conduct oversight of work activities to identify compliance with safety plans, improvement of worker safety, and any additional or unforeseen hazards.

### PBS Comments:

### Baseline Validation Narrative:

The Oak Ridge Operations Office Environmental Management Life Cycle Baseline (LCB) was submitted by the Managing and Integrating Contractor, Bechtel Jacobs Company LLC Co., to DOE-ORO on April 1, 1999. The final draft LCB will be submitted to DOE-ORO on June 1, 1999 after formal receipt and incorporation of comments. A validation of the baseline is in process using an independent contractor to DOE-ORO. The validation will be ongoing until complete and the final validation report is scheduled to be issued on June 25, 1999.

## General PBS Information

### Project Validated?

### Date Validated:

Has Headquarters reviewed and approved project?

No

Date Project was Added: 3/10/1999

Baseline Submission Date: 7/1/1999

FEDPLAN Project? Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y	N	N	N	Y	N	N

## Project Identification Information

DOE Project Manager: Dave Adler

DOE Project Manager Phone Number: 423-576-4094

DOE Project Manager Fax Number: 423-576-5333

DOE Project Manager e-mail address: adlerdg@oro.doe.gov

Is this a High Visibility Project (Y/N):

## Planning Section

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## Baseline Costs (in thousands of dollars)

	<b>1997-2006 Total</b>	<b>2007-2070 Total</b>	<b>1997-2070 Total</b>	<b>1997</b>	<b>Actual 1997</b>	<b>1998</b>	<b>Actual 1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	
PBS Baseline (current year dollars)	52,862	872,368	925,230	2,951	2,565	2,951	1,713	5,925	6,038	6,266	5,459	5,596	5,752	5,965	5,959	
PBS Baseline (constant 1999 dollars)	49,633	356,380	406,013	2,951	2,565	2,951	1,713	5,925	5,914	6,011	5,129	5,150	5,184	5,266	5,152	
PBS EM Baseline (current year dollars)	52,862	872,368	925,230	2,951	2,565	2,951	1,713	5,925	6,038	6,266	5,459	5,596	5,752	5,965	5,959	
PBS EM Baseline (constant 1999 dollars)	49,633	356,380	406,013	2,951	2,565	2,951	1,713	5,925	5,914	6,011	5,129	5,150	5,184	5,266	5,152	
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011- 2015</b>	<b>2016- 2020</b>	<b>2021- 2025</b>	<b>2026- 2030</b>	<b>2031- 2035</b>	<b>2036- 2040</b>	<b>2041- 2045</b>	<b>2046- 2050</b>	<b>2051- 2055</b>	<b>2056- 2060</b>	<b>2061- 2065</b>	<b>2066- 2070</b>
PBS Baseline (current year dollars)	6,084	6,259	6,366	6,601	37,202	41,512	46,058	51,102	56,697	62,906	69,794	77,437	85,917	95,325	105,763	117,345
PBS Baseline (constant 1999 dollars)	5,152	5,191	5,171	5,252	27,823	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981
PBS EM Baseline (current year dollars)	6,084	6,259	6,366	6,601	37,202	41,512	46,058	51,102	56,697	62,906	69,794	77,437	85,917	95,325	105,763	117,345
PBS EM Baseline (constant 1999 dollars)	5,152	5,191	5,171	5,252	27,823	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981	27,981

## Baseline Escalation Rates

<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
0.00%	0.00%	0.00%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

# Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge**

Print Date: **3/9/2000**

Site Summary Level: **Oak Ridge Reservation**

HQ ID: **0092**

Project **OR-241 / Y-12 Surveillance & Maintenance**

2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

## Project Reconciliation

### Project Completion Date Changes:

Previously Projected End Date of Project:

Current Projected End Date of Project: 9/30/2070

Explanation of Project Completion Date Difference (if applicable):

### Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):		Actual 1997 Cost:	2,565	Actual 1998 Cost:	1,713
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	-4,278	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			-116
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	-4,394				

### Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	-4,394	
Additional Amount to Reconcile (+):	404,505	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	<b>400,111</b>	

### Milestones

Dataset Name: **FY 1999 Planning Data**

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Date of Dataset: **9/20/1999**

# Project Baseline Summary Report

Data Source: **EM CDB**

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Project **OR-241 / Y-12 Surveillance & Maintenance**

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-001		2/26/1999	2/28/1999			Y				
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-002		2/28/2000	2/28/2000			Y				
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-003		2/28/2001	2/28/2001			Y				
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-004		2/28/2002								
Start Date for the Y-12 S&M PBS - PBS Start Date	OR241-005		10/1/1996								
End Date for the Y-12 S&M PBS - PBS End Date	OR241-006		9/30/2070								
Y-12 S&M Mission Completion	OR241-007		9/30/2070								

## Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-001										Integrated Water Quality Program
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-002										Integrated Water Quality Program
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-003										Integrated Water Quality Program
IWQP-SUBMIT DRAFT REMEDIAL EFFECTIVENESS RPT TO REGS FOR REVIEW	OR241-004										Integrated Water Quality Program
Start Date for the Y-12 S&M PBS - PBS Start Date	OR241-005			Y							Start Date for the Y-12 S&M PBS
End Date for the Y-12 S&M PBS -	OR241-006				Y						End Date for the Y-12 S&M PBS -

Dataset Name: **FY 1999 Planning Data**

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Date of Dataset: **9/20/1999**

# Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge**

Print Date: **3/9/2000**

Site Summary Level: **Oak Ridge Reservation**

HQ ID: **0092**

Project **OR-241 / Y-12 Surveillance & Maintenance**

## Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
PBS End Date											Date reach steady state
Y-12 S&M Mission Completion	OR241-007					Y					

## Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
<b>Rem. Waste</b>														
Disposed	M3	0.00	327.00	327.00										
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	Planned 2036 - 2040
<b>Rem. Waste</b>														
Disposed	M3					327.00								
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total				
<b>Rem. Waste</b>														
Disposed	M3									327.00				