



PBS-SR-0030

Soils and Groundwater Project

Risk Management Plan

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Revision 0

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ACRONYMS

B	Benefit
C	Consequence
CMP	Chemical, Metals and Pesticides
D&D	Deactivation and Decommissioning
DOE	Department of Energy
EM	Environmental Management
FFA	Federal Facility Agreement
RMP	Risk Management Plan
HQ	Headquarters
IOU	Integrator Operable Unit
L	Likelihood
MNA	monitored natural attenuation
NFA	no further action
NOD	Notice of Deficiency
NOV	Notice of Violation
OU	operable unit
PBS	Project Baseline Summary
PMP	Performance Management Plan
R&O	Risk & Opportunity
RCRA	Resource Conservation and Recovery Act
SGCP	Soil and Groundwater Closure Projects
SGP	Soils and Groundwater Project
SR	Savannah River
STD	Standard
WSRC	Washington Savannah River Company

EXECUTIVE SUMMARY

The Project Baseline Summary (PBS) Risk Management Plan for PBS SR-0030, Soils and Groundwater Project (SGP), documents the results of the risk and opportunity assessment conducted by Department of Energy (DOE) Savannah River Operations Office (SR) and Washington Savannah River Company (WSRC), communicates the risk handling strategies developed for identified risks, and provides a plan for monitoring risks throughout the life of the project. It establishes the basis of the amount to be used as a contingency estimate for this PBS. Project and programmatic risks for the entire project (both near-term—FY 2007 through FY 2012—and the balance of the lifecycle baseline—FY 2013 through FY 2031) are considered and contingency estimated. The contingency estimate for this PBS, other Savannah River Site (SRS) PBS, and crosscutting project and programmatic risks are documented in *SRS Risk Summary and Integrated Contingency Estimate* (Document No. Y-RAR-B-00003, Revision 0). The integrated contingency data establishes the SRS portion of the DOE unfunded contingency amount used to determine the EM liability that must be added to the EM performance baseline.

This PBS provides for the protection of human health and the environment through the cleanup of contamination that exists in the environment at SRS. The cleanup methods focus on treating or immobilizing the source of the contamination in the environment to mitigate contamination transport through soil and groundwater and cleaning up, or slowing the movement of or monitoring, contamination that has already migrated from the source. It is the goal of the SGP to safely and cost effectively investigate, assess, remediate, and close inactive waste units and groundwater units. Inactive waste units and contaminated groundwater will be remediated so that all regulatory requirements and compliance commitments stipulated in the Federal Facility Agreement (FFA), Resource Conservation and Recovery Act (RCRA) Permit, other environmental permits, settlement agreements, administrative orders, consent decrees, Notices of Deficiency (NODs), Notices of Violation (NOVs), and closure plans or regulatory direction are met.

Risk Identification and Assessment

A risk and opportunity management process is used to identify the risks and opportunities associated with the SGP. The risks and opportunities are analyzed and handling strategies developed to ensure risks are managed to acceptable levels and opportunities are availed to improve the probability of successful completion of the EM work scope.

A team of DOE and WSRC subject matter experts and management conducted the risk and opportunity

assessment. Risk and opportunities were identified by considering risks and opportunities identified in previous documentation, including the SRS Environmental Management Program Performance Management Plan (PMP), DOE SR and WSRC management briefings, and summaries submitted to DOE Headquarters (HQ). The methodology employed for the risk and opportunity assessment followed the guidance provided in the *SR Project Management Manual* and the *Systems Engineering Methodology Guidance Manual* (References 3 and 4, Section 7.0). The risk assessment addresses the planned remaining lifecycle for this PBS through 2031.

This PBS risk assessment does not reflect any schedule impacts caused by acquisition strategy changes over the PBS lifecycle.

A total of eight risks and two opportunities have been identified, assessed, and classified. Classification is based on results of a probability and impact analysis. Of the eight risks identified for PBS SR-0030, 6 are classified as high and 2 as moderate. Of the two opportunities, one was high and one was moderate. The risk and their assigned identification are listed below:

- Risk ID SGP-R-001 - Funding Reductions and/or Delays Impact Regulatory Commitments
 - Risk ID SGP-R-002 - Site Evaluation No Further Actions (NFAs) Not Accepted by the Regulators
 - Risk ID SGP-R-003 - Additional Environmental Contamination/Media Remediation Required Post Decontamination and Decommissioning (D&D)
 - Risk ID SGP-R-004 - New, Additional and/or more Extensive Releases Identified
 - Risk ID SGP-R-005 - Remedial Action Duration Differs from Baseline Assumptions
 - Risk ID SGP-R-006 - Additional Groundwater Remediation Beyond Passive Technologies
 - Risk ID SGP-R-007 - Integrator Operable Unit (IOU) Final Action Uncertainty
 - Risk ID SGP-R-008 - Delay in D&D Project Execution
-

The following two opportunities were identified for this PBS:

- Opportunity ID SGP-O-001 - Use of Hardened Facilities for SGP Waste Consolidation
- Opportunity ID SGP-O-002 - Future Land Use and Exposure Scenario Modification

Risk Handling Strategies and Contingency Estimates

After identifying, assessing, and classifying risks and opportunities, handling strategies were developed. A summary of the risks and opportunities and their handling strategies is presented in Table ES-1. Risks for which no mitigation strategy was identified were accepted, classified as residual risk, and contingency estimates developed. Contingency estimates generated for PBS residual risks were not included in the PBS cost baseline, but were used to identify the amount to be used for this PBS toward an 80% confidence level estimate for DOE unfunded contingency used in the annual EM environmental liability review. Unfunded contingency will only be added to the lifecycle costs for this PBS when the estimates associated with a specific risk or mitigation strategy are converted to funds appropriated to deal with that particular risk event or execution of a particular mitigation strategy.

Risk Monitoring

As risk management is an ongoing process, the risk assessment elements of identification, grading, handling, impact determination and integration (risk status and reporting to closure) will be conducted as warranted by the Federal Project Director but at least semi-annually over the lifecycle of this PBS to assess the impact of changes to programs and assumptions on risk determinations and handling strategies.

Table ES-1. Summary of Risks and Opportunities

Risk Identifier and Risk Title	Source of Risk	Affected Projects	PBS Impact Cost Schedule Performance	Likelihood	Consequence (\$M months)	Risk Level	Risk Handling Strategy (RHS)	Risk Level after RHS	Time Frame to Occur (1)
High									
SGP-R-001 Funding Delays Impact Regulatory commitments	External	All	Cost Schedule	Very Likely	Critical \$10M 24 Months	H	Accept	H	Near Term
SGP-R-003 Additional Environmental Media Remediation Required Post D&D	Internal	All Area Operable Units	Cost Schedule	Very Likely	Critical \$26M 12 Months	H	Reduce/ Transfer	M	Life Cycle
SGP-R-004 Additional and/or more Extensive Releases Identified	Internal	All Area OUs with Exception of T-Area	Cost Schedule	Likely	Critical \$13M	H	Mitigate	M	Life Cycle
SGP-R-006 Additional Groundwater Remediation Beyond Passive Technologies	External	All Groundwater OUs, A/M Areas, F/H Areas	Cost Schedule	Likely	Critical \$140M 24 Months	H	Mitigate	M	Life Cycle
SGP-R-007 IOU Final Action Uncertainty	External	All IOUs	Cost Schedule	Likely	Critical \$20M 24 Months	H	Mitigate	H	Out Year
SGP-R-008 Delay in D&D Project Execution	External	A/F/H/D/N/R/P/C/K/L Areas	Cost Schedule	Very Likely	Critical \$50K 24 Months	H	Mitigate	M	Life cycle
Moderate									
SGP-R-002 Site Evaluation NFAs Not Accepted by Regulatory Agencies	External	Site Evaluation in Various Areas	Cost	Unlikely	Significant \$4M	M	Mitigate	L	Near Term
SGP-R-005 Remedial Action Duration Differs from Baseline Assumptions	External	C/A/M/P Areas	Cost	Very Likely	Marginal \$9M	M	Mitigate	L	Life Cycle
Opportunity									
SGP-O-001 Use of Hardened Facilities for SGP Waste Consolidation	Internal	P/R/C/L/K Areas	Cost	Likely	Exceptional	H	Enhance	N/A	Out Year
SGP-O-002 Future Land Use and Exposure Scenario Modification	External	P/R/C/L/K/F/H/D Areas	Cost Schedule	Unlikely	Exceptional	M	Enhance	N/A	Out Year

(1) Near Term FY07-FY2012, Out Year FY2013-2031, Lifecycle FY07-FY2031

1.0 INTRODUCTION

1.1 Background

Savannah River Site (SRS) was constructed during the early 1950s to produce basic materials such as plutonium and tritium used for nuclear weapons production. The site covers approximately 310 square miles in South Carolina and borders the Savannah River. Chemical and radioactive wastes are byproducts of nuclear material production processes. These wastes have been treated, stored and, in some cases, disposed at SRS. Past disposal practices have resulted in soil, groundwater, and surface water contamination. Remediation of the soil and groundwater is being pursued at 515 waste sites within SRS in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response Compensation and Recovery Act (CERCLA). CERCLA established a National Priorities List of sites targeted for assessment and potential restoration, and SRS was placed on the list in 1989.

The primary Department of Energy (DOE) programs at SRS are the Environmental Management (EM) and the National Nuclear Safety Administration (NNSA) Programs. The DOE EM Program work has been organized into Project Baseline Summaries (PBSs). The PBSs have been projectized so that the management principles contained in DOE Manual 413.3-1, *Project Management for the Acquisition of Capital Assets*, can be applied. The requirements are being tailored for EM work.

Risk management at SRS is consistent with guidance provided in DOE Order 413.3 and DOE Manual 413.3-1. The risk and opportunity assessment process employed for SRS projects is documented in SRM 410.1.1D, *SR Project Management Manual* (PMM) and *Systems Engineering Methodology Guidance Manual* (WSRC-IM-98-00033). Risk assessments are performed jointly by federal and contractor subject matter experts with appropriate oversight by DOE-SR and contractor management².

1.2 PBS Purpose and Objectives

The Soil and Groundwater Project (SGP) provides for the protection of human health and the environment through the cleanup of contamination that exists in the environment at SRS.

The cleanup methods focus on treating or immobilizing the source of the contamination in the environment to mitigate contamination transport through soil and groundwater and cleaning up, or

slowing the movement of or monitoring, contamination that has already migrated from the source.

Goals and objectives of PBS SR-0030 include the following:

- Remediate waste units, groundwater, and surface water to reduce risk to human health and the environment.
- Remediate the waste units so that all regulatory requirements and compliance commitments are met.
- Achieve Area Operable Unit (OU) completion in partnership with the Nuclear Facilities Deactivation and Decommissioning (D&D) project (PBS SR-0040).
- By the end of FY 2031, all inactive waste units will be remediated and any contaminated groundwater will be remediated or under going remediation.

2.0 PBS ASSESSABLE ELEMENTS

The PBS risk and opportunity (R&O) assessment is an integrated analysis of risk of all elements of the project. The lowest level of work scope considered for assessment is referred to as an “assessable element.” The R&O assessment team identifies the assessable elements and develops a listing of typical program and project risks to be used as screening criteria when reviewing the assessable element. Table 2.1.1 provides the technical risk screening criteria used for this PBS. The team reviews work tasks, goals, objectives, assumptions; and external interfaces associated with the assessable element to identify risks and opportunities, and to formulate effective plans for risk management and/or mitigation. The team also reviews previously performed R&O assessments to identify risks and opportunities to be included in any current assessment.

2.1 Scope Descriptions and Assumptions

The Soil and Groundwater Project is comprised of 14 Area Completions that are organized into three groups based on process history or geography to address cleanup of soil and groundwater contamination: Upper Three Runs Areas, General Separations Areas, and Reactor Areas (Sections 2.2.1 through 2.2.3). To fully integrate protection of human health and the environment from exposure to contamination in surface water, six watersheds have been identified as Integrator Operable Units (Section 2.2.4). These four groups were considered “assessable elements” for the R&O assessment.

Scope descriptions and assumptions for the Soil and Groundwater Project assessable elements are provided in the remainder of the section.

2.1.1 Upper Three Runs Areas (A and M Areas, and B Area)

A and M Areas

The A and M Areas contained the main SRS administrative and manufacturing facilities. These areas are often addressed together because of their close proximity and commingled contaminants. When combined, the A and M Areas contain one of the most extensive contaminated groundwater plumes under remediation in the country. Contamination resulted from waste discharged from fuel and target assemblies, research and development operations, and the disposal of waste and general debris. The principal contaminants in the areas are solvents in the groundwater and vadose zone.

Assumptions

- Aggressive source remedies are in place or are planned to eliminate or reduce the associated risk,
- M-Area will be complete no later than FY 2011, and
- A-Area will be completed in FY 2022.

B-Area

B Area is primarily an administrative office complex. B Area contains the SRS Sanitary Landfill (SLF), at which solvent rags and wipes were disposed. The SLF will be closed and remediated consistent with the RCRA Permit.

Assumptions

- Groundwater cleanup will continue below the SLF.
- A few low-risk site evaluation waste units remain in B Area.
- B Area is not targeted for closure because of the continued need for long term use.

2.1.2 General Separations Area (D Area, E Area, F and H Areas, N Area, and T Area)

D Area

The D Area facilities were utilized to separate heavy water from river water, and to remove tritium from the reactor moderator water. D Area has been for the disposal of coal ash, oil, chemicals, and construction debris. A power station is operating in D Area. Historical records, over-flight data, and sampling results indicate that sediments and groundwater in the area are impacted by metals, tritium, and solvents.

Assumption

- D-Area will be completed in FY 2019.

E Area

E Area contains facilities that were primarily used for the disposal of hazardous and radioactive waste and spent solvents generated from chemical and manufacturing processes. One facility, the Burial Ground Complex (BGC), occupies approximately 195 acres and is comprised of contiguous facilities that were used for the disposal of waste containing RCRA-regulated metals, volatile organic compounds, tritium and other radionuclides). The BGC is comprised of three primary facilities: Old Radioactive Waste Burial Ground (ORWBG), Low-Level Radioactive Waste Disposal Facility (LLRWDF), and the Mixed Waste Management Facility (MWMF), all of which have underlying contaminated groundwater. Remedial actions for the soil have been taken at the LLRWDF and MWMF. Consistent with the RCRA permit, effective corrective actions have been taken for the associated groundwater units. The ORWBG, (highest risk surface unit) has been consolidated with three nearby waste units to form the General Separations Area Consolidation Unit (GSACU) and remediation is in process.

Assumptions

- The scheduled closure of the units associated with the GSACU will achieve 99% risk reduction to industrial workers upon completion.
- Final remedial action at the ORWBG will be attained in 2008.
- E Area is not targeted for closure because of the continued need for long term use.

F and H Areas

F and H Areas contain part of the general separations operations where plutonium was separated from irradiated reactor assemblies for refinement into metal buttons. H Area was also used to process tritium and uranium and to produce plutonium-238. Contained in each area is a canyon and associated facilities, a tank farm containing high-level waste, and seepage basins that were used for waste water disposition from the canyons and were closed consistent with the RCRA permit.

In F Area, the principal contaminants of concern are tritium within the groundwater, and strontium, uranium, heavy metals, and solvents in soils or pond sediments. In addition to soil capping, other remedies utilized to address the groundwater contamination in F Area include monitored natural attenuation, base injection with a funnel and gate barrier system and phytoremediation.

In H Area, the principal contaminants of concern are tritium, strontium, and mercury. Many of the accessible high-risk H-Area waste units have been completed or are in remediation. For example, Warner's Pond, HP-52 Outfall, and H Retention Basin, are being remediated as part of the GSACU. Other area waste units will be remediated or placed under institutional control pending the decommissioning of key area facilities.

Assumptions

- F Area will be completed in FY 2031.
- F Tank Farm will be completed in FY 2031
- H Area will be completed in FY 2030
- H Tank Farm Area will be completed in FY 2031.
- Phase 3 remediation for the F&H Groundwater Units will start in FY 2010.

N Area

N Area contains burning/rubble pits, equipment maintenance areas, and chemical and runoff basins. Between 1951 and 1973, the area was principally used for the disposal of organic and inorganic chemicals, inert solid waste, and low level radioactive waste.

Assumptions

- The N Area OU and a few low-risk site evaluation waste units remain in N Area.
- N Area will be completed in FY2 017.

T Area

T Area (or TNX Area) was utilized from the mid-1950s through the mid-1980s for conducting pilot tests to support SRS operations. The principal contaminants are mercury, thorium, uranium, radium, and chlorinated solvents.

Assumptions

- Because of its close proximity to the SRS boundary, this area is the first of fourteen area operable units and will be completed in November 2006.
- T-1 air stripper operation to treat contamination groundwater is anticipated to continue through 2018.

2.1.3 Reactor Area Operable Units (C-, K-, L-, P- and R-Areas, CMP Pits and Sludge Land Application Units)

Reactor Areas

SRS Reactor Areas contain similar facilities in which similar processes were conducted. The Reactor Areas contain formally utilized disposal units which contain hazardous waste, radioactive waste, and spent solvents. The areas also contain burning/rubble pits, equipment maintenance areas, and basins, all used to dispose of various waste. R Area contains six seepage basins with highly contaminated sediments. Principal contaminants of concern in the Reactor Areas are cesium-137, strontium, tritium, spent organic chemicals, and low-level radioactive waste.

Assumptions

- In development of the project baseline, monitored natural attenuation was assumed as sufficient to address contaminated groundwater.
- P Area will be completed in FY 2015.
- R Area will be completed in FY 2016.
- C Area will be completed in FY 2018.
- K Area will be completed in FY 2020.
- L Area will be completed in FY 2021.

Chemicals, Metals, and Pesticides Pits

The Chemicals, Metals, and Pesticides (CMP) Pits are located about a mile north of the L Area Reactor and were used for the disposal of chemicals, metals and pesticides.

As a result of past disposal processes, surface soil and groundwater have been primarily contaminated with volatile organic compounds, pesticides, and polychlorinated biphenyls (PCBs). In 1984, the pits were excavated, and drums and highly contaminated soil were removed.

Assumptions

- Soil vapor extraction will continue to be effective in the removal of organics from subsurface soils.
- Contaminated groundwater will be addressed through source control and monitored natural attenuation.

Sludge Land Application Units

The K-Area Sludge Land Application Unit (KSLAU) is located in the central portion of SRS. The KSLAU was a 17 acre borrow pit that also utilized for land applications of sewage sludge. In 1980, about 300,000 gallons of liquid sludge from Augusta Wastewater Treatment Plant was injected 5 to 8 inches below the soil. In 1988, about 210 tons of sanitary sewage sludge from the Central Shops (CS) Sewage Sludge Lagoon was spread on top of the soil.

The Par Pond Sludge Land Application Unit (PSLAU), which is approximately 10 acres, is located north of Par Pond. PSLAU also received sludge from the Central Shops Sewage Sludge Lagoon. The lagoon sludge came from SRS Sewage Treatment Plants. In 1989, it was learned that this sludge contained chlordane, a hazardous pesticide used in termite control, as well as certain metals (including silver, cadmium, nickel, and lead) in concentrations higher than in the underlying soils.

Assumption

- No further action is needed for both KSLAU and PSLAU. NFA RODs will be approved in FY 2006.
-

2.1.4 Integrator Operable Units

The Integrator Operable Unit (IOU) program was established in 1994 with three objectives. The first objective was to evaluate the human health and ecological risk associated with contamination in the streams and associated floodplains. This evaluation is being accomplished through a comprehensive data collection and analysis of water, soil, and ecological specimens with screening-level risk analysis. Six IOUs have been established:

- Lower Three Runs
- Steel Creek
- Pen Branch
- Fourmile Branch
- Upper Three Runs
- Savannah River and Floodplain Swamp

The second objective of the IOU program was to develop conceptual models to determine the sources of contamination. The models facilitate a more comprehensive understanding of the origin of the contamination in surface waters and predict the impacts of OU remedial actions. These conceptual models are included in the End-State Vision document.

The final objective is to provide a process to finalize the evaluation of the surface and groundwater units.

Assumption

- The final phase of the IOU Program is sequenced to be executed once the contributing contaminant sources and Area RODs for the contributing watersheds have been assessed and appropriate remedial actions have been completed. The final IOU phase will include a comprehensive CERCLA evaluation of the human health and ecological risks along with appropriate remedial actions as determined by the FFA Core Team. The Savannah River and Floodplain Swamp IOU will be evaluated once all other OUs and IOUs have been completed.

2.2 Technical Risk Screening Criteria

Table 2.2-1 provides a checklist of program and project typical risk categories. The checklist was used as a tool to assist in the identification of risks and opportunities for each of the PBS assessable elements.

**Table 2.2-1 Project/Program Typical Risk Categories
Screening Criteria**

<p style="text-align: center;"><u>Design</u></p> <ul style="list-style-type: none">• Undefined, Incomplete, Unclear Functions or Requirements• Complex Design Features• Numerous or Unclear Assumptions or Bases• Reliability• Inspectability• Maintainability• Safety Class• Availability• Errors and Omissions in Design <p style="text-align: center;"><u>Regulatory & Environmental</u></p> <ul style="list-style-type: none">• Environmental Impact Statement Req'd. (EIS)• Additional Releases• Undefined Disposal Methods• Permitting• State Inspections• Order Compliance• Regulatory Oversight <p style="text-align: center;"><u>Resource/Conditions</u></p> <ul style="list-style-type: none">• Material/Equipment Availability• Specialty Resources Required• Existing Utilities Above and Underground• Support Services Availability• Geological Conditions• Temporary Resources (Power, Lights, Water, etc.)• Resources Not Available• Construction Complexities<ul style="list-style-type: none">- Transportation- Critical Lifts- Population Density• Escorts• Personnel Training & Qualifications• Tools, Equipment Controls & Availability• Experience with system/component (design, operations, maintenance)• Work Force Logistics• OPC Resources<ul style="list-style-type: none">- Operations Support- Health Physics- Facility Support- Facility Maintenance Centralized Maintenance- Construction Support Post Modifications• Training• Research and Development Support• Multiple Project/Facility Interface• Facility Work Control Priorities• Lockout Support <p style="text-align: center;"><u>Safeguards & Security</u></p> <ul style="list-style-type: none">• Category I nuclear materials• Classified process / information	<p style="text-align: center;"><u>Technology</u></p> <ul style="list-style-type: none">• New Technology• Existing Technology Modified• New Application of Existing Technology• Unknown or Unclear Technology <p style="text-align: center;"><u>Procurement</u></p> <ul style="list-style-type: none">• Procurement Strategy• First-use Subcontractor/Vendor• Vendor Support <p style="text-align: center;"><u>Construction Strategy</u></p> <ul style="list-style-type: none">• Turnover/Start-up Strategy• Direct Hire/Subcontract• Construction/Maintenance Testing• Design Change Package Issues <p style="text-align: center;"><u>Testing</u></p> <ul style="list-style-type: none">• Construction• Maintenance• Operability• Facility Startup• System Startup (Subcontractor or PE&CD) <p style="text-align: center;"><u>Safety</u></p> <ul style="list-style-type: none">• Criticality Potential• Fire Watch• Exposure Contamination Potential• Authorization Basis Impact• Hazardous Material Involved• Emergency Preparedness• Safeguards & Security• Confinement Strategies <p style="text-align: center;"><u>Interfaces</u></p> <ul style="list-style-type: none">• Multiple Agencies, Contractors• Special Work Control/Work Authorization Procedures• Operating SSCs Including Testing• Multiple Customers• Co-Occupancy• Outage Requirements• Multiple systems• Radiological Conditions (Current and Future)<ul style="list-style-type: none">- Contamination- Radiation• Multiple Projects• Proximity to Safety Class Systems <p style="text-align: center;"><u>Management</u></p> <ul style="list-style-type: none">• Funding uncertainties• Stakeholders Program Strategy Changes• Errors and Omissions in Estimates• Fast track/critical need• Infrastructure influence
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3.0 RISK AND OPPORTUNITY ASSESSMENT

3.1 Risk/Opportunity Assessment Scope

As defined in Section 2.0, the scope of PBS SR-0030 was divided into four assessable elements.

For the purposes of this assessment, an annual PBS budget of approximately \$100M was used (reference Table 4.1-3 for lifecycle estimates by fiscal year). This profile provides the basis for the PBS cost consequences shown in Appendix B.

3.2 Risk/Opportunity Assessment Objectives

The primary objective of risk and opportunity assessment was to identify risks to successful completion of the mission as defined in PBS SR-0030 within the planned cost budgets and schedule. A secondary objective was to identify opportunities for reducing cost and schedules and/or providing cost effective performance improvements.

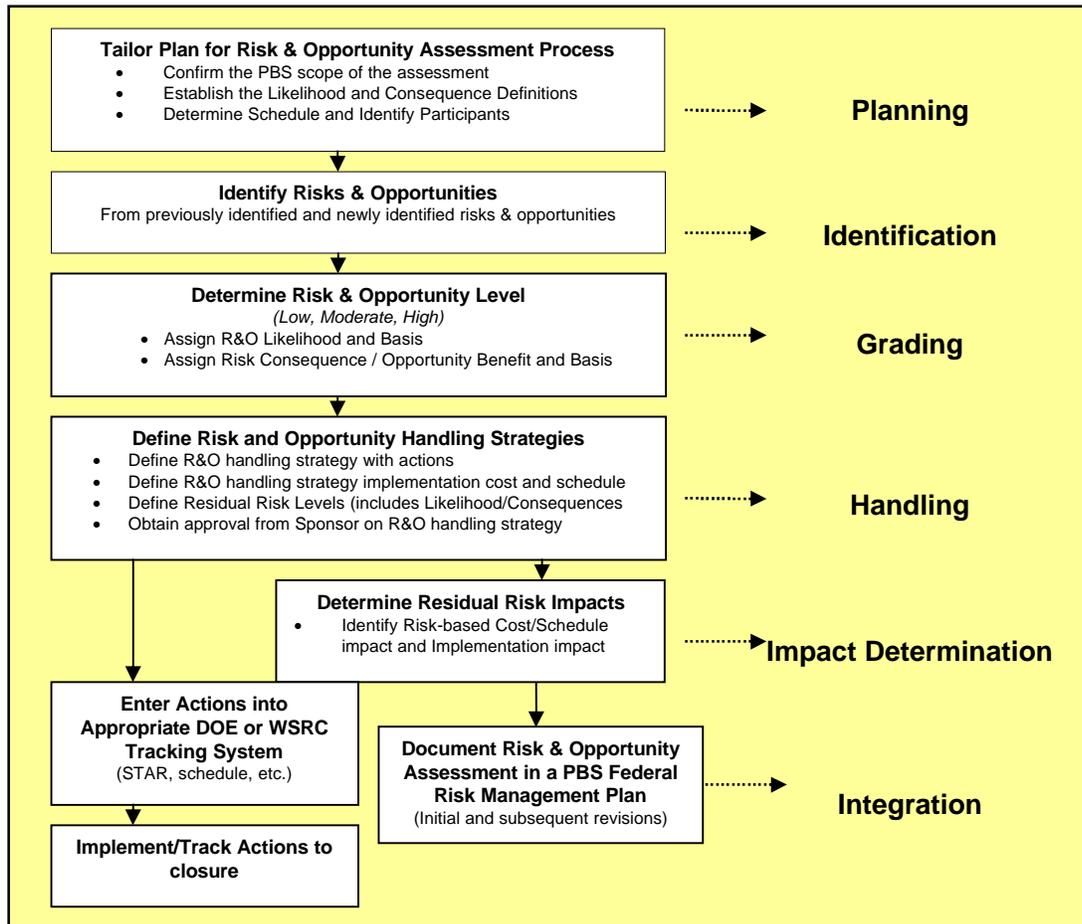
3.3 Risk and Opportunity Assessment Team

The R&O assessment team was comprised of DOE SR and Washington Savannah River Company (WSRC) staff and management. The team structure included a core team comprised of individuals responsible for the PBS scope of work with additional independent subject matter experts (SMEs) participating as appropriate in the R&O assessment process. Team composition to develop the initial RMP in December 2005 included expertise from a broad spectrum of multiple functional areas that included project management, environmental compliance, engineering, facility deactivation and decommissioning (D&D), environmental remediation, finance, and business planning. The RMP was updated in June 2006 and a list of the R&O team members for PBS SR-0030 is included as Appendix A. Table 3.3-1 delineates team roles and responsibilities. Figure 3.3-1 provides R&O activities performed by the team.

Table 3.3-1 R&O Assessment Team Responsibilities

<u>DOE-SR Federal Project Director for the PBS</u>	
Identifies and assigns DOE participants	Approves the Risk Management Plan (RMP) and its revisions
Identifies SMEs and obtains commitment for participation	Approves the transfer of risk from facility, project, or modification activities to the PBS Attaining Office of the Assistant Manager approval of the RMP
Approves Core Team members	Provides oversight of the R&O management process to ensure implementation and integration between DOE and contractors
<u>WSRC Manager for PBSs</u>	
Chairs formal R&O meetings	Actively engages in monitoring and addressing project R&Os; ensures R&Os are identified and managed
Ensures R&O process steps specified in this plan are implemented	Proposes the assessment likelihood and consequences/benefit criteria and any changes to those criteria
Identifies budget and resources to support R&O process	Ensures R&O status is reviewed and updated on an annual basis or more frequently as warranted by PBS
Approves the RMP	
Defines scope/schedule of risk assessments	Ensures R&O handling strategies are implemented and tracked to closure
Nominates/Determines WSRC Team members	Ensures configuration control is maintained for PBS R&O database
Assigns R&O handling strategies	
<u>WSRC R&O Lead</u>	
Prepares and maintains RMP	Prepares status/tracking/closure reports as requested
Provides training and guidance to R&O Team on applying R&O management process	Ensures R&O and their handling strategy responsibilities transferred to the PBS from facilities, projects and modifications are approved, documented and reflected in subsequent R&O analyses
Facilitates assessment meetings as required	
Performs R&O analysis and prepares R&O forms	Maintains configuration control of initial PBS database

Figure 3.3-2 R&O Assessment Activities



4.0 RISK MANAGEMENT IMPLEMENTATION

4.1 Methodology and Process Flow

The methodology utilized for the risk and opportunity assessment followed the guidance provided in *SR Project Management Manual* and the *Systems Engineering Methodology Guidance Manual* (References 3 and 4, Section 7.0). A functional flow diagram of the process is shown in Figure 4.1-1. Process steps performed during this assessment were limited to the elements of identification, grading, handling, and impact determination. Grading is specific to each project. Grading criteria are provided in the next

section. Information obtained during the assessment was recorded on the risk and opportunity assessment forms found in Appendix B.

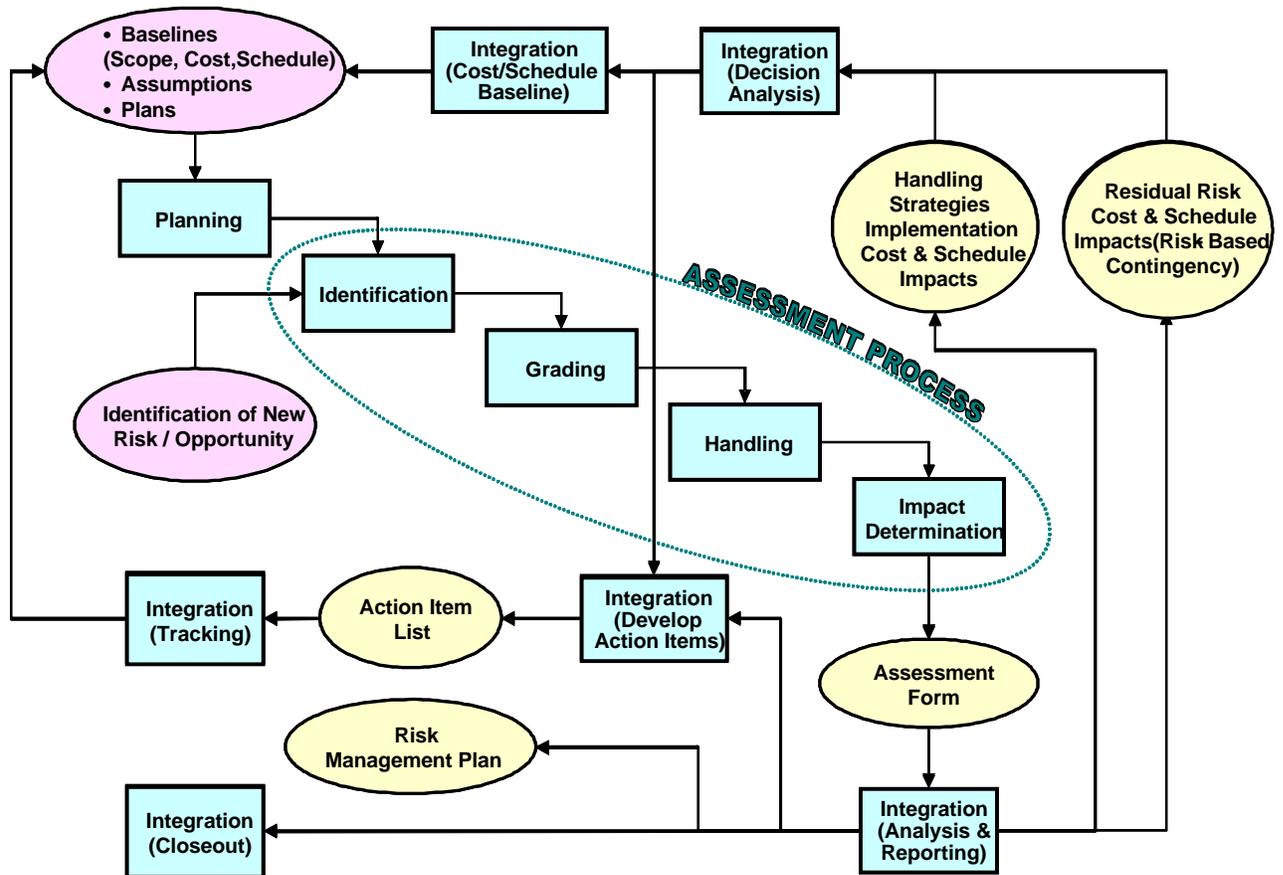


Figure 4.1-1. Risk and Opportunity Assessment Process Functional Flow Diagram

4.2 Risk Grading

Grading involves determining the likelihood of an occurrence and the consequences of occurrence in the absence of any handling strategy to identify the “Risk or Opportunity Level.” Following team discussion and reaching consensus, likelihood and consequence values and their associated bases are documented on the Risk and Opportunity Assessment Form. This level represents a judgment as to the relative risk or opportunity to the scope as a whole and is categorized as Low, Moderate or High.

Consequence criteria are unique to each PBS assessment scope and were determined during the Assessment Planning Phase. Figures 4.2-1 and 4.2-2 criteria determine “Risk” levels.

Risk grading involves determining the likelihood of an occurrence (Table 4.2-1) and the consequences of occurrence (Table 4.2-2) in the absence of any handling strategy to identify the “Risk Level.” Following team discussion and reaching consensus, likelihood and consequence values and their associated bases are documented on the Risk and Opportunity Assessment Form. Based on these values the “Risk” level is determined utilizing Figure 4.2-1. This level represents a judgment as to the relative risk to the scope as a whole and is categorized as Low, Moderate or High.

Opportunity grading involves determining the likelihood of an occurrence (Table 4.2-4) and the benefit of implementation (Table 4.2-5) to identify the “Opportunity Level.” Following team discussion and reaching consensus, likelihood and benefit values and their associated bases are documented on the Risk and Opportunity Assessment Form. Based on these values the “Opportunity” level is determined utilizing Figure 4.2-2. This level represents a judgment as to the relative opportunity to the scope as a whole and is categorized as Low, Moderate or High.

Table 4.2-1. Risk-Likelihood Criteria

Likelihood of Occurrence (L)	Criteria
Non-Credible*	Determined (through formal probability calculations) to have a probability of occurrence of $\bullet 10^{-6}$ (or other non-credible probability defined for the activity)
Very Unlikely	<ul style="list-style-type: none"> • Will not likely occur anytime in the life cycle of the facilities/PBS ; or • Estimated recurrence frequency < 1 (i.e., event not expected to recur); or • $0 < \text{Likelihood of single event occurrence} < 0.15$.
Unlikely	<ul style="list-style-type: none"> • Will not likely occur in the life cycle of the facility/PBS; or • $1 \bullet \text{Estimated recurrence frequency} < 2$ (i.e., event expected to recur but not more than once); or • $0.15 \bullet \text{Likelihood of single event occurrence} < 0.45$.
Likely	<ul style="list-style-type: none"> • May occur sometime during the life cycle/PBS; or • $2 \bullet \text{Estimated recurrence frequency} < 5$ (i.e., event expected to recur from 2 to 4 times); or • $0.45 \bullet \text{Likelihood of single event occurrence} < 0.75$.
Very Likely	<ul style="list-style-type: none"> • Will likely occur sometime during the life cycle/PBS; or • Estimated recurrence frequency $\bullet 5$ (i.e., event expected to recur more than five times); or • $0.75 \bullet \text{Likelihood of single event occurrence} < 1$.

Note: *This category is normally reserved for the evaluation of residual risks associated with *Crisis* consequences.

Table 4.2-2. Risk-Consequence Criteria

Consequence of Occurrence (C)	Criteria for PBS SR-0030
Negligible	<ul style="list-style-type: none"> • Minimal consequences; unimportant • Some potential transfer of money (• \$50K), but budget estimates not exceeded. • Negligible impact on program; slight potential for schedule change (< 3 months of life cycle schedule); compensated by available schedule float.
Marginal	<ul style="list-style-type: none"> • Small reduction in modification/work task technical performance. • Moderate threat to facility mission, environment, or people; may require minor facility redesign or repair, minor environmental remediation, or first aid/minor medical intervention. • Cost estimates marginally exceed budget (> \$50K but • \$.5M). • Minor slip in schedule (3 to 6 months of life cycle schedule) with some potential adjustment to milestones required.
Significant	<ul style="list-style-type: none"> • Significant degradation in modification/project/contract technical performance. • Significant threat to facility mission, environment, or people; requires some facility redesign or repair, significant environmental remediation, or causes injury requiring medical treatment. • Cost estimates significantly exceed budget (5 to 10% or Annual PBS Budget). • Significant slip in schedule (6 months to 1 year of life cycle schedule) with resulting milestones changes that may affect facility mission.
Critical	<ul style="list-style-type: none"> • Technical goals of work task cannot be achieved. • Serious threat to facility mission, environment, or people; possibly completing only portions of the mission or requiring major facility redesign or rebuilding; extensive environmental remediation, or intensive medical care for life-threatening injury. • Cost estimates seriously exceed budget (10 - 20% of Annual PBS Budget). • Excessive schedule slip (1 to 2 years of life cycle schedule) unacceptably affecting overall mission of facility/site/DOE objectives, etc.
Crisis	<ul style="list-style-type: none"> • Modification/Project cannot be completed. • Catastrophic threat to facility mission, environment, or people; possibly causing loss of mission, long-term environmental abandonment, and death.

Note: First-of-a-kind (FOAK) risks will receive special attention because they are often associated with project failure. FOAK risks should receive a Critical or Crisis consequence estimate unless there is a compelling argument for lesser consequence.

Table 4.2-3. Annual Budget Basis for Risk Assessment

\$Million per Annual PBS Budget
 (Lifecycle Estimate: FY 2006 Project Execution Plan / FY 2008 IPABS Budget)

PBS SR-0030, Soils and Groundwater Project

FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
49.4	106.4	117.4	115.7	123.3	131.1	145.0	120.8	139.1	124.2	143.2	134.1	111.6
FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31		
114.4	199.5	82.4	66.2	64.6	82.0	60.2	50.8	40.8	40.5	29.2		

Table 4.2-4 Opportunity-Likelihood Criteria

Likelihood of Realization (L)	Criteria
Very Likely	• 0.75 • Likelihood of benefit realization < 1
Likely	• 0.45 ≤ Likelihood of benefit realization < 0.75
Unlikely	• 0.15 ≤ Likelihood of benefit realization < 0.45
Very Unlikely	• 0.15 > Likelihood of benefit realization > 0

Table 4.2-5. Opportunity Benefits Criteria

Benefit of Implementation (B)	Criteria for PBS SR-0030
Negligible	<ul style="list-style-type: none"> • Minimal benefit; unimportant • Some potential transfer of money, but budget estimates unchanged • Negligible impact on program; slight potential for reduction in schedule
Marginal	<ul style="list-style-type: none"> • Small improvement in technical performance • Moderate improvement to the mission, environment, or people • Cost estimates reduced by up to \$.5M per year • Minor reduction in schedule with some potential adjustment to level 1 milestone
Significant	<ul style="list-style-type: none"> • Significant improvement in technical performance • Significant improvement to the mission, environment, or people • Cost estimates reduced between \$.5M and \$1M • Significant reduction in schedule with resulting level 1 milestone changes
Exceptional	<ul style="list-style-type: none"> • Technical goals of the program improved • Exceptional improvement to the mission, environment, or people • Cost estimates reduced over \$1M • Exceptional reduction in schedule with resulting level 1 milestone changes

Note: *Any one or more of the criteria in the four levels of benefits may apply to a single opportunity. The overall benefit level for the opportunity being evaluated must be based upon the highest level for which a criterion applies.

From the risk likelihood and consequence values, the risk level is determined as shown in Figure 4.2-1.

Likelihood (L)	Very Likely	Low	Moderate	High	High	High
	Likely	Low	Moderate	Moderate	High	High
	Unlikely	Low	Low	Moderate	Moderate	High
	Very Unlikely	Low	Low	Low	Moderate	High
	* Non-Credible	Low				
		Negligible	Marginal	Significant	Critical	Crisis
		Consequence (C)				

* Normally limited to assessing residual risks with Crisis consequences

Figure 4.2-1. Risk-Level Matrix

From the opportunity likelihood and consequence values, the opportunity level is determined as shown in Figure 4.1-2.

Likelihood (L)	Very Likely	Low	Moderate	High	High
	Likely	Low	Moderate	Moderate	High
	Unlikely	Low	Low	Moderate	Moderate
	Very Unlikely	Low	Low	Low	Moderate
		Negligible	Marginal	Significant	Exceptional
		Benefit (B)			

Figure 4.2-2. Opportunity-Level Matrix

The R&O levels are documented on the Risk and Opportunity Assessment Form, Appendix A.

4.3 Documentation and Risk Monitoring

The Risk Management Plan (RMP) documents the results of the risk and opportunity assessment, communicates the risk handling strategies developed for identified risks, and provides a plan for monitoring risks. The DOE Federal Project Director is responsible for directing risk and opportunity assessments, developing risk handling strategies, preparing the Risk Management Plan, and implementing risk management throughout the life of the project.

5.0 RESULTS OF THE ANALYSIS

5.1 Assessment Results

The Risk and Opportunity Assessment Team identified risks and opportunities using the PBS SR-0030 assessable elements defined in the Section 2.0. Risk and opportunities were identified by considering risks and opportunities identified in previous documentation, including the SRS Environmental Management Program Performance Management Plan (PMP), DOE SR and WSRC management briefings, and summaries submitted to DOE HQ. The team also reviewed the risk category table in Section 2.0 to identify any additional risks and opportunities. As PBS-SR-0030 level risks were identified, risk and opportunity assessment forms were prepared. This assessment addresses the planned remaining life cycle for this PBS through 2031.

A total of eight risks and two opportunities were identified and documented in the risk and opportunity forms found in Appendix B. Using the likelihood and consequence/benefit criteria defined in Section 4.0, six of the risks were graded as high and two as moderate. Since several of the risks had the potential for addressing multiple individual assessable areas, grading was accomplished based on the worst case impact to the PBS. The statements of event for each of the seven high risks are provided below:

1. Risk ID SGP-R-001 - The latest approved Federal Facility Agreement (FFA) provides milestone dates for completion of 14 areas with characterization field starts at one-year intervals. Key settlement agreements and the SRS RCRA Permit require that groundwater monitoring and corrective action be conducted until remedial goals are met. There is a risk that funding to support these activities/schedule could be reduced or delayed. A delay or reduction in funding may impact the ability to meet regulatory commitments (including RCRA Permit commitments). A 10% reduction/delay is assumed as the most likely reduction/delay based on recent history.
-

2. Risk ID SGP-R-003 - Currently, the program cost profile does not include any costs associated with the characterization or remediation of contamination left in place and/or contaminated environmental media under or surrounding facility slabs, foundation, or the remaining subgrade that will exist after decommissioning activities have been completed. There is a risk that additional characterization and remediation may be required. This event may impact project cost and schedule.
3. Risk ID SGP-R-004 - The current cost profile and program schedule does not include costs for areas of newly discovered releases or more extensive releases than previously identified. There is a risk that new releases will be discovered or that some releases may be more extensive than previously assumed (e.g., F/H Area seep lines, process sewer lines), thus requiring additional characterization and possible remedial action. This event may impact project cost and schedule.
4. Risk ID SGP-R-006 - The typical remedial strategy for groundwater remediation assumes that passive technologies (e.g., monitored natural attenuation) will be an acceptable final remedial action for low concentration and dilute portions of the contaminated groundwater plumes. There is a risk that the regulators will not accept passive technologies as a stand-alone final remedy, resulting in the implementation of more costly active remedies. This event may impact project cost and schedule.
5. Risk ID SGP-R-007 - The current strategy for the IOU program assumes minimal, if any, remedial action will be required for completion (e.g., institutional controls). There is a risk that additional assessment and remediation will be required. This event may impact project cost and schedule.
6. Risk ID SGP-R-008 - The D&D and SGP are schedule dependent; therefore, there is a risk that a delay in the D&D project will affect the ability to complete the area operable unit (OU) and IOU schedules as defined in the FFA. This event may impact project cost and schedule.

In addition, the team identified two moderate risks. These risk and the statements of event are:

1. Risk ID SGP-R-002 – There are 14 Site Evaluation (SE) Reports currently in the review and approval process that are proposing No Further Action (NFA). There is a risk the proposed NFA determination will not be accepted by the regulators. This will increase the number of waste units requiring assessment and possible remedial action. This event may impact the project cost profile and schedule.
-

2. Risk ID SGP-R-005 – The current project baseline assumes specific durations of remedial actions for each operable unit. Due to the more conservative requirements (e.g. remedial goals) being imposed by the regulators, there is a risk that the operating duration will differ from the duration assumed in the baseline cost estimate. This event may impact project cost and schedule.

5.2 Analysis by Assessable Element

The analysis by the assessable elements presented in Table 5.2-1 shows that General Separations Area has the greatest number and severity of risks.

Table 5.2-1. Assessable Element Summary

Assessable Element	Risk Events	Summary
<p><u>30.1</u> Upper Three Runs Area (A- and M-Areas, and B-Area)</p>	<p>High Risk</p> <p>ID 001- Funding Reductions and/or Delays Impact Regulatory Commitments</p> <p>ID 003 - Additional Environmental Contamination/Media Remediation Required Post D&D</p> <p>ID 004 – New, Additional and/or More Extensive Releases Identified</p> <p>ID 006 - Additional Groundwater Remediation Required beyond Passive Technologies (e.g. Monitored Natural Attenuation (MNA))</p> <p>ID 008 - Delay in D&D Project Execution</p> <p>Moderate Risk</p> <p>ID 005 - Remedial Action Duration Differs from Baseline Assumptions</p>	<p>Cost and schedule impacts associated with the potential for additional groundwater remediation and the potential additional characterization and remediation for previously unidentified contaminated areas.</p>

Table 5.2-1. Assessable Element Summary (Continued)

Assessable Element	Risk Events	Summary
<p><u>30.2</u> General Separations Area (D-Area, E-Area, F- and H-Areas, N-Area, and T-Area)</p>	<p>High Risk</p> <p>ID 001- Funding Reductions and/or Delays Impact Regulatory Commitments</p> <p>ID 003 - Additional Environmental Contamination/Media Remediation Required Post D&D</p> <p>ID 004 – New, Additional and/or More Extensive Releases Identified</p> <p>ID 006 - Additional Groundwater Remediation Required beyond Passive Technologies (e.g., Monitored Natural Attenuation (MNA))</p> <p>ID 008 - Delay in D&D Project Execution</p> <p>Moderate Risk</p> <p>ID 002 - Site Evaluation NFAs Not Accepted by the regulators</p> <p>ID 005 - Remedial Action Duration Differs from Baseline Assumptions</p>	<p>Major cost and schedule impacts associated with the potential additional characterization and remediation for previously unidentified contaminated areas.</p>
<p><u>30.3</u> Reactor Areas (C-, K-, -L, and R-Areas, CMP Pits and Sludge Land Application Units)</p>	<p>High Risk</p> <p>ID 001- Funding Reductions and/or Delays Impact Regulatory Commitments</p> <p>ID 003 - Additional Environmental Contamination/Media Remediation Required Post D&D</p> <p>ID 004 – New, Additional and/or More Extensive Releases Identified</p> <p>ID 008 - Delay in D&D Project Execution</p> <p>Moderate Risk</p> <p>ID 005 - Remedial Action Duration Differs from Baseline Assumptions</p>	<p>Major cost and schedule impacts associated with the potential additional characterization and remediation for previously unidentified contaminated areas.</p>
<p><u>30.4</u> Integrator Operable Units (Lower Three Runs, Steel Creek, Pen Branch, Four Mile Branch, Upper Three Runs and Savannah River Floodplain Swamp)</p>	<p>High Risk</p> <p>ID 007 - IOU Final Action Uncertainty</p>	<p>Cost and schedule impacts with the potential additional characterization and remediation for previously unidentified contaminated areas.</p>

5.3 Analysis of Handling Strategy Effectiveness

The team recommended the handling strategy of “Accept” for one of the eight risks. Six of the risks had handling strategies of “Mitigate.” The mitigation handling strategy reduced the risk level for four of the risks; the other risks remained the same because the likelihood of occurrence could not be reduced or the consequence was not sufficiently reduced to affect the risk level. The overall PBS risk level is high/moderate as shown in Table 5.3-1.

Table 5.3-1. Assessable Element Handling Strategy Summary

Risk Level	Risk Event	Summary
<p>High</p>	<p>ID 001- Funding Reductions and/or Delays Impact Regulatory Commitments</p>	<p>Accept – The source of the event is outside the control of DOE SR and WSRC. If a reduction or delay is realized action will be taken to mitigate the consequences by identifying and implementing scope/cost reductions and seeking additional funding.</p>
	<p>ID 003 - Additional Environmental Contamination/Media Remediation Required Post D&D</p>	<p>Reduce/Transfer – D&D has assumed the responsibility for collecting additional subsurface data therefore a portion of the risk was transferred for ID 003.</p>
	<p>ID 004 – New, Additional and/or More Extensive Releases Identified</p>	<p>Mitigate - Utilize early actions to reduce documentation. Limit response actions to remedies that are practicable and cost effective through regulatory negotiations. These risks may be further mitigated in the future when more information and data is available. High risk sites could under go minimal essential characterization and sampling to support sound remedial decisions.</p>
	<p>ID 006 - Additional Groundwater Remediation Required beyond Passive Technologies (e.g., Monitored Natural Attenuation (MNA))</p>	<p>Mitigate - This risk can be mitigated through use of the Core Team process and collecting groundwater data during the Area OU investigation in order to provide additional justification for passive remedies in the future.</p>

Table 5.3-1. Assessable Element Handling Strategy Summary Table (Continued)

Risk Level	Risk Event	Summary
High	ID 007 - IOU Final Action Uncertainty ID 008 - Delay in D&D Project Execution	Mitigate - This risk can be mitigated through the regulatory negotiation process. Mitigate - This risk can be mitigated through implementation of the existing process that allows Area OU completion while operating facilities remain in the area.
Moderate	ID 002 - Site Evaluation NFAs Not Accepted by the regulators ID 005 - Remedial Action Duration Differs from Baseline Assumptions	Mitigate - This risk can be mitigated by collecting additional data to support NFA if required. Mitigate - This risk can be mitigated through the regulatory negotiation process and the continued implementation of low cost remediation technologies.

5.4 Analysis of Cost and Schedule Impact

All of the eight identified risks have cost impacts at the PBS level; seven of the risks have schedule impacts at the PBS level. The risk impacts are shown in Table ES-1.

6.0 CONCLUSIONS

The R&O assessment conducted for PBS SR-0030 identified eight individual PBS-level risks. Although the new additional risk reduction strategies identified in the assessment are limited, this PBS risk assessment provides a:

- continuing joint forum for WSRC and DOE SR to identify and understand potential cost and schedule impacts to the PBS life cycle,
- documented WSRC and DOE SR understanding of the PBS level risks and opportunities, and
- documented PBS level risks and opportunities communication tool to provide decision makers with the bases to understand the PBS level impacts associated with remediation of waste sites and groundwater.

The team also identified two potential opportunities. The potential use of hardened facilities for SGP waste consolidation will be evaluated for implementation as part of the feasibility study to be conducted during the remedy evaluation process for each reactor area. The future land use and exposure scenario

modification will continue to be a topic of discussion for the Area Completion Team and the Management Core Team. Updates will be provided as part of the periodic evaluation of risk and opportunities.

As risk management is an ongoing process, the risk assessment elements of identification, grading, handling, impact determination and integration (risk status and reporting to closure) will be conducted as warranted by the Federal Project Director but at least semi-annually over the lifecycle of this PBS to assess the impact of changes to programs and assumptions on risk determinations and handling strategies.

7.0 REFERENCES

1. DOE Order 413-3, Project Management for the Acquisition of Capital Assets
 2. DOE Manual 413-3.1, Project Management for the Acquisition of Capital Assets
 3. SRM 410.1.1D, SR Project Management Manual
 4. *Systems Engineering Methodology Guidance Manual*. WSRC Manual WSRC-IM-98-00033, Revision 12, Savannah River Site, Aiken, SC 29808 (11/07/05).
 5. 2006 Savannah River Site Environmental Management Program Project Execution Plan Predecisional Draft
 6. WSRC-RP-96-00172, Project Execution Plan for the Environmental Restoration Division, Revision 4
 7. Soil and Groundwater Closure Projects Administrative Procedure ER-AP-177, "Risk Management for Soil and Groundwater Closure Projects," Revision 1
 8. Environmental Management Program Performance Management Plan – Predecisional Draft (July 2005)
 9. United States Department of Energy, Savannah River Site End State Vision – July 26, 2005
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8.0 APPENDICES

Appendix A Risk and Opportunity Assessment Team

Appendix B Risk and Opportunity Assessment Forms

APPENDIX A

**PBS SR-0030, Soils and Groundwater Project
June 2006 Risk and Opportunity Assessment Team**

Name	Organization
Wade Whitaker	DOE SR, Soils and Groundwater Project (SGP)
Diana Hannah	DOE SR, SGP
Brian Hennessey	DOE SR, SGP
Rita Stubblefield	DOE SR, SGP
Philip Prater	DOE SR, SGP
Mary Bennington	DOE SR, SGP
Chris Bergren	WSRC, Soil and Groundwater Closure Projects (SGCP)
Ed McNamee	WSRC, SGCP
Cathy Lewis	WSRC, SGCP
Mary Flora	WSRC, SGCP
Mike Griffith	WSRC, SGCP
Tom Gaughan	WSRC, SGCP
Pat Nakagawa	WSRC, SGCP

APPENDIX B RISK AND OPPORTUNITY ASSESSMENT FORMS

Risk Assessment Form									
ID Number: SGP-R-001		Revision: 0	Last Date Evaluated: 5/15/06						
Status: Active									
Event Title: Funding Reductions and/or Delays Impact Regulatory Commitments									
Type: Risk External		Category: Management							
Assess. Element: 30.1, 30.2, 30.3, 30.4		Title: Upper Three Runs (A/M/B-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas), Integrator Operable Units							
Responsible Org: SGP		Contact: W. Whitaker	Date Identified: 11/16/05						
Statement of Event The latest approved Federal Facility Agreement provides milestone dates for completion of 14 areas with characterization field starts at one year intervals. Key settlement agreements and the SRS RCRA Permit require that groundwater monitoring and corrective action be conducted until remedial goals are met. There is a risk that funding to support these activities/schedule could be reduced or delayed. A delay or reduction in funding may impact the ability to meet regulatory commitments (including RCRA Permit commitments). A 10% reduction/delay is assumed as the most likely reduction/delay based on recent history.									
Likelihood:	Very Likely	Basis: Based on current proposals being considered by Congress a reduction in funding is very likely.							
Consequence / Benefit:	Critical	Basis: FFA milestones and RCRA permit commitments are regulatory enforceable and failure to meet can result in fines and penalties. If the identification and implementation of cost/scope reductions is unsuccessful, funding for other projects on site maybe redirected to ensure regulatory obligations are met. Assume 10% reduction in funding (does not assume fines and penalties will be levied).							
Most Significant Cost Impact (\$K per year): \$10,000K		Most Significant Schedule Impact (Mos): 12							
Level:	High	Event Trigger: Annual budget allotment is received							
Handling Strategy:	Accept	Description: If a reduction or delay is realized action will be taken to mitigate the consequences by identifying and implementing scope/cost reductions and seeking additional funding.							
HS Implementation Cost (\$K):	N/A	Basis: N/A for Accept Handling Strategy							
HS Implementation Schedule (Mos):	N/A	Basis: N/A for Accept Handling Strategy							
Other Handling Strategies:									
Statement of Residual Risk: : Same as initial evaluation for accept handling strategy									
Residual Likelihood:	Very Likely	Basis: Same as initial evaluation for Accept handling strategy							
Residual Consequence:	Critical	Basis: Same as initial evaluation for Accept handling strategy							
Residual Risk Level:	High	Residual Impact Basis: Due to nature of fines and penalties associated with the RCRA Permit (criminal penalties possible), funding reductions will occur in the FFA program in order to preserve all RCRA funding and meet legal requirements. Due to the government goals for deficit reduction these funding reductions will be assumed to continue for at least 5 years under the worst case. Best Case: Assumes completion of documentation for the P-Area OU can be accomplished in FY07 however. Most Likely: 2 year reduction delays both the P-Area OU and R-Area OU. Worst Case: The Field Start for R-Area and remedial action in M-Area is delayed by 2 years.							
Residual Cost Impact (\$K):	<table border="1"> <thead> <tr> <th><u>Best Case</u></th> <th><u>Most Likely</u></th> <th><u>Worst Case</u></th> </tr> </thead> <tbody> <tr> <td>\$10,000K one time event</td> <td>\$10,000K per year for two years</td> <td>\$10,000K per year for 5 years</td> </tr> </tbody> </table>			<u>Best Case</u>	<u>Most Likely</u>	<u>Worst Case</u>	\$10,000K one time event	\$10,000K per year for two years	\$10,000K per year for 5 years
<u>Best Case</u>	<u>Most Likely</u>			<u>Worst Case</u>					
\$10,000K one time event	\$10,000K per year for two years	\$10,000K per year for 5 years							
Residual Schedule Impact (Mos):	<table border="1"> <tbody> <tr> <td>0</td> <td>12</td> <td>24</td> </tr> </tbody> </table>	0	12	24					
0	12	24							
Impacted Scope of Work: SGP Scope									
Evaluation Comments:									

Risk Assessment Form			
ID Number: SGP-R-002		Revision: 0	Last Date Evaluated: 5/15/06
Status: Active			
Event Title: Site Evaluation NFAs Not Accepted by the Regulators			
Type: Risk External		Category: Regulatory & Environmental	
Assess. Element: 30.1, 30.2, 30.3		Title: Upper Three Runs (A/M/B-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas)	
Responsible Org: SGP		Contact: W. Whitaker	Date Identified: 11/16/05
Statement of Event There are several Site Evaluation (SE) Reports currently in the review and approval process that are proposing No Further Action (NFA). There is a risk the proposed NFA determination will not be accepted by the regulators. This will increase the number of waste units requiring assessment and possible remedial action. This event may impact project cost and schedule.			
Likelihood:	Unlikely	Basis: A review of the Site Evaluation Program was conducted by the three parties several years ago. Those SEs with a high probability of requiring additional assessment were moved to Appendix C. The SE units in question await final regulatory evaluation.	
Consequence / Benefit:	Significant	Basis: May result in added work for an individual waste unit; however the FFA project schedule would not be impacted. Assume 2 units are impacted at a cost of \$4M over four years.	
Most Significant Cost Impact (\$k per year): \$1,000k, 4 years		Most Significant Schedule Impact (Mos): None	
Level:	Moderate	Event Trigger: Receipt of comments from the regulators	
Handling Strategy:	Mitigate	Description: Implement management strategy to address unresolved SEs.	
HS Implementation Cost (\$K):	\$30K per unit	Basis: Average cost for additional technical evaluation to support NFA decision.	
HS Implementation Schedule (Mos):	3-6 months	Basis: Average time to conduct technical evaluation to support NFA decision.	
Other Handling Strategies:			
Statement of Residual Risk: There is a risk that additional technical evaluation may not support NFA decision for the two units			
Residual Likelihood:	Very Unlikely	Basis: Based on discussions to date some additional technical evaluation of the units may be needed but NFA is acceptable.	
Residual Consequence:	Marginal	Basis: Minor slip in project schedule (3-6 months)	
Residual Risk Level:	Low	Residual Impact Basis: Best Case: NFAs accepted without further comment. Most likely: Additional comments received and NFA approved, schedule delay. Worst Case: 2 units moved to Appendix C	
Residual Cost Impact (\$K):	<u>Best Case</u> 0	<u>Most Likely</u> \$10K	<u>Worst Case</u> \$1,000K for 4 years
Residual Schedule Impact (Mos):	0	0	0
Impacted Scope of Work: Site Evaluations in various areas			
Evaluation Comments:			
Event Comments:			

ID Number: SGP-R-003		Revision: 0		Last Date Evaluated: 5/15/06		Status: Active	
Event Title: Additional Environmental Contamination/Media Remediation Required Post D&D							
Type: Risk Internal				Category: Regulatory & Environmental			
Assess. Element: 30.1, 30.2, 30.3			Title: Upper Three Runs (A/M/B-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas)				
Responsible Org: SGP				Contact: W. Whitaker		Date Identified: 11/16/05	
Statement of Event Currently, program cost profile does not include any cost associated with the characterization or remediation of the contamination left in place and/or contaminated environmental media under or surrounding facility slabs, foundation or the remaining sub grade that will exist after decommissioning activities are completed. There is a risk that additional characterization and remediation may be required. This event may impact project cost and schedule.							
Likelihood:	Very Likely	Basis: Due to the extensive number of facilities supporting the General Separations Area process, below grade contamination is very likely to exist beneath a limited number of buildings. In addition, contamination is very likely to exist in A-Area associated with the laboratories.					
Consequence / Benefit:	Significant	Basis: Significant cost may be associated with possible remediation of contamination left in place and/or media under or surrounding facility slabs, foundation or the remaining sub grade. Assume (as an average) two facilities per area for 13 areas at a cost of \$1M each. Total cost \$26,000K over 10 years.					
Most Significant Cost Impact (\$K per year): \$2,600k, 10 years				Most Significant Schedule Impact (Mos): 18			
Level:	High	Event Trigger: At completion of D&D project and prior to initiation of characterization activities within an area, there is a discovery that conditions exist that indicate contamination may be present (i.e., the receipt of field characterization data).					
Handling Strategy:	Reduce/ Transfer	Description: Develop Area OU specific integrated SGP and D&D sampling and characterization plans.					
HS Implementation Cost (\$K):	N/A	Basis: Included in present cost					
HS Implementation Schedule (Mos):	Ongoing	Basis: N/A					
Other Handling Strategies: Transfer characterization costs to D&D project, whereas remediation costs are additive to Soil & Groundwater project. This will allow identification of potential additional scope earlier in the process.							
Statement of Residual Risk: Same as initial evaluation for accept handling strategy							
Residual Likelihood:	Likely	Basis: Likelihood can be reduced by expanding D&D scope to include limited subsurface characterization and remediation where appropriate. Reduces likelihood of adding additional subunits to Area OU.					
Residual Consequence:	Significant	Basis: Same as initial evaluation for Accept handling strategy due the uncertainty with regards to them potential number of facilities per area.					
Residual Risk Level:	Moderate	Residual Impact Basis: Best Case: Assume no action required after characterization complete; characterization cost transferred to D&D; no schedule impact. Most Likely: Characterization identifies problem warranting action, assume cover required @ \$500K per unit; minor schedule impact to extend area covers. Worst Case: Characterization identifies problem warranting action; assume cover and limited excavation required @ \$1M per unit, 12 month schedule impact for excavation.					
Residual Cost Impact (\$K):	<u>Best Case</u> \$0K	<u>Most Likely</u> \$1,300K per year for 10 years	<u>Worst Case</u> \$2,080K per year for 10 years				
Residual Schedule Impact (Mos):	0	6	18				
Impacted Scope of Work: All Area Operable Units							
Evaluation Comments:							
Event Comments:							

Risk Assessment Form

ID Number: SGP-R-004		Revision: 0		Last Date Evaluated: 5/15/06		Status: Active	
Event Title: New, additional and/or more extensive releases identified							
Type: Risk Internal				Category: Regulatory & Environmental			
Assess. Element: 30.1, 30.2, 30.3			Title: Upper Three Runs (A/M-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas)				
Responsible Org: SGP				Contact: W. Whitaker		Date Identified: 11/16/05	
Statement of Event The current cost profile and program schedule does not include costs for areas of new discovered releases or more extensive releases than previously identified. There is a risk that new releases will be discovered or that some releases may be more extensive than previously assumed thus requiring additional characterization and possible remedial action. This event may impact project cost and schedule.							
Likelihood:	Likely	Basis: Several new and expanded contamination discoveries have been made over the past few years. This trend is expected to continue as assessment of major operating areas begins.					
Consequence / Benefit:	Critical	Basis: Assume \$1M per area for 13 areas throughout the lifecycle. However these costs could increase if new or expanded areas of contamination are discovered.					
Most Significant Cost Impact (\$k per year): \$1,000k, 13 years				Most Significant Schedule Impact (Mos): 12			
Level:	High	Event Trigger: Receipt of field characterization results; setting of final remedial goals; permit conditions/direction to perform early action/corrective measure					
Handling Strategy:	Mitigate	Description: Sites could under go minimal essential characterization and sampling to support sound remedial decisions. Utilize early actions to reduce documentation. Limit response actions to remedies that are practicable and cost effective through regulatory negotiations.					
HS Implementation Cost (\$K):	N/A	Basis: Baseline includes for cost regulatory negotiation.					
HS Implementation Schedule (Mos):	On-going	Basis:					
Other Handling Strategies							
Statement of Residual Risk: Same as initial evaluation							
Residual Likelihood:	Likely	Basis: Regulatory negotiations may result in reduced characterization and remediation activities; however there remains some uncertainty as to the scope therefore the likelihood remains likely.					
Residual Consequence:	Significant	Basis: Regulatory negotiations may result in reduced characterization and remediation activities. Use of early actions will reduce regulatory documentation. Use of presumptive remedies will reduce cost.					
Residual Risk Level:	Moderate			Residual Impact Basis: Best Case: Characterization (\$200Kper area) each but no additional remediation required in areas. Most Likely: Releases in areas require cover (\$500K); minor schedule impact to extend area covers. Worst Case: Remediation in areas includes limited excavation (\$300K) Assumes new areas will be included in Area Operable Unit. Schedule Impact: 12 month schedule impact for excavation.			
Residual Cost Impact (\$K):	Best Case	Most Likely	Worst Case				
	\$200K per year for 13 years	\$700K per year for 13 years	\$1,000K per year 13 years				
Residual Schedule Impact (Mos):	6	12	18				
Impacted Scope of Work: All Area Operable Units with the exception of T-Area							
Evaluation Comments:							
Event Comments:							

Risk Assessment Form			
ID Number: SGP-R-005		Revision: 0	Last Date Evaluated: 5/15/06
Status: Active			
Event Title: Remedial Action Duration Differs from Baseline Assumptions			
Type: Risk External		Category: Regulatory & Environmental	
Assess. Element: 30.1, 30.2, 30.3		Title: Upper Three Runs (A/M-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas)	
Responsible Org: SGP		Contact: W. Whitaker	Date Identified: 11/16/05
Statement of Event The current project baseline assumes specific durations of remedial actions for each operable unit. Due to the more conservative requirements (e.g. remedial goals) being imposed by the regulators, there is a risk that the operating duration will differ from the duration assumed in the baseline cost estimate. This event may impact project cost and schedule.			
Likelihood:	Very Likely	Basis: The regulators have insisted upon more restrictive RGOs for VOC remediation which will extend the operating period for vadose zone remediation systems.	
Consequence / Benefit:	Marginal	Basis: May affect individual unit schedules by greater than 12 months and significantly impact program cost. Up to six remediation units (C/P/A/M and CMP) may be impacted at a cost of \$300K per year over a 5 year period. Total of \$9M.	
Most Significant Cost Impact (\$k per year): \$1,800 for 5 yrs		Most Significant Schedule Impact (Mos): None	
Level:	Moderate	Event Trigger: Remedy effectiveness evaluation	
Handling Strategy:	Mitigate	Description: Continue efforts to evaluate and implement low cost remediation technologies (such as soil fracturing or alternative bioremediation techniques) and approaches (presumptive remedies, monitored natural attenuation, mixing zone, etc.), and negotiate less conservative remedial goals and/or utilizing multiple line of converging evidence as remedial goals.	
HS Implementation Cost (\$K):	N/A	Basis: Baseline includes cost for the above handling strategy.	
HS Implementation Schedule (Mos):	On-going	Basis:	
Other Handling Strategies:			
Statement of Residual Risk: There is risk that remediation at the six units may be extended however a lower cost remedy could be implemented.			
Residual Likelihood:	Unlikely	Basis: Based on recent experience the Core Team process has been effective in evaluating remedy effectiveness.	
Residual Consequence:	Marginal	Basis: Average cost per unit is reduced due implementation of lower cost remedial technology.	
Residual Risk Level:	Low	Residual Impact Basis: Best Case: Successful implementation of the handling strategy will mitigate risks for all units and result in the use of lower cost technology were appropriate. Most Likely: Successful implementation of the handling strategy will mitigate risks for all units and result in the use of lower cost technology were appropriate Worst Case: 6 units require extended operations with existing/planned technology.	
Residual Cost Impact (\$K):	<u>Best Case</u> \$600K	<u>Most Likely</u> \$600K	<u>Worst Case</u> \$1,800K for 5 years
Residual Schedule Impact (Mos):	0	0	0
Impacted Scope of Work: C/A/M/P-Areas			
Evaluation Comments:			
Event Comments:			

ID Number: SGP-R-006		Revision: 0		Last Date Evaluated: 5/15/06		Status: Active	
Event Title: Additional Groundwater Remediation Required beyond Passive Technologies (e.g. Monitored Natural Attenuation (MNA))							
Type: Risk External				Category: Regulatory and Environmental			
Assess. Element: 30.1, 30.2, 30.3			Title: Upper Three Runs (A/M/B-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas)				
Responsible Org: SGP				Contact: W. Whitaker		Date Identified: 11/16/05	
Statement of Event The typical remedial strategy for groundwater remediation assumes that passive technologies (e. g. Monitored Natural Attenuation) will be an acceptable final remedial action for low concentration and dilute portions of the contaminated groundwater plumes. There is a risk the regulators will not accept passive technologies as a stand-alone final remedy, resulting in the implementation of more costly active remedies. This event may impact project cost and schedule.							
Likelihood:	Likely	Basis: Although passive technologies have been evaluated during the remedy selection phase the regulators have expressed a concern about approving these as final remedies especially when the time to achieve remedial goals is protracted.					
Consequence / Benefit:	Critical	Basis: Using design and construction cost of \$20M over a 2 year period for a barrier wall will address an average size plume (i.e. L-Area Southern Groundwater) over a two year period. Assuming 7 units (CMP, Western Sector Groundwater, MWMF, F & H Areas Seepage Basins, GSA Eastern, and GSA Western) may require more active remedial technologies for a total cost of \$140M over 10 years. Because the major cost impacts will occur greater than 5 years into the future the consequence is determined to be critical.					
Most Significant Cost Impact (\$k per year): \$14,000k for 10 years				Most Significant Schedule Impact (Mos): 24			
Level:	High	Event Trigger: Proposed Plan scoping; RCRA Corrective Action Program & Reports; Annual Performance Evaluation Reports; and, 5 Year ROD Reviews					
Handling Strategy:	Mitigate	Description: Utilize Core Team process to control scope. Realigned groundwater units to address sources prior to groundwater remediation. Establish monitoring requirements to support MNA and mixing zones.					
HS Implementation Cost (\$K):	\$500K per area	Basis: \$100K for initial data collection, \$40K per year for an average of 10 years for monitoring and reporting					
HS Implementation Schedule (Mos):	TBD	Basis: TBD					
Other Handling Strategies:							
Statement of Residual Risk: There is a risk that at least three units may require additional active remediation.							
Residual Likelihood:	Likely	Basis: As a result of the implementation of the Area Operable Unit strategy, sources to groundwater will be identified earlier in the program. This combined with additional IOU data collection and evaluation should provide sufficient justification to select MNA or mixing zones as a final remedy.					
Residual Consequence:	Significant	Basis: Reduction in number of units from seven to three					
Residual Risk Level:	Moderate					Residual Impact Basis: Best Case – Passive final remedies accepted for all units. Most Likely: 3 groundwater OUs require active remediation. Worst Case: 7 groundwater OUs require active remediation	
Residual Cost Impact (\$K):	Best Case \$0K	Most Likely \$10,000K for 6 years	Worst Case \$14,000K for 10 years		Schedule Impact: Because the groundwater OUs are scheduled near SGCP completion date adding scope will have a greater impact.		
Residual Schedule Impact (Mos):	0	24	24				
Impacted Scope of Work: A/M Area Groundwater, F/H Area Groundwater, GSA Western Groundwater, GSA Eastern Groundwater							
Evaluation Comments:							
Event Comments:							

ID Number: SGP-R-007		Revision: 0		Last Date Evaluated: 5/15/06		Status: Active	
Event Title: IOU Final Action Uncertainty							
Type: Risk External				Category: Regulatory & Environmental			
Assess. Element: 30.4			Title: Integrator Operable Units				
Responsible Org: SGP				Contact: W. Whitaker		Date Identified: 11/16/05	
Statement of Event The current strategy for the Integrator Operable Units (IOU) assumes minimal, if any, remedial action will be required for completion (e.g. institutional controls). There is a risk that additional assessment and remediation will be required. This event may impact project cost and schedule.							
Likelihood:		Likely		Basis: Contamination exists in sediments in the streams, wetlands, and floodplains (e.g., Steed Pond, D-Area Wetlands) which may require remedial action.			
Consequence / Benefit:		Critical		Basis: If the two areas referenced require remediation significant costs and schedule impacts will be incurred. Total cost for 2 areas is \$20M with a potential 24 month schedule impact.			
Most Significant Cost Impact (\$k per year): 10,000k for 2 years				Most Significant Schedule Impact (Mos): 24			
Level:		High		Event Trigger: Setting of final remedial goals require active remediation.			
Handling Strategy:		Mitigate		Description: Use the Core Team process to establish cleanup goals based on reasonable risk scenarios and future land use assumptions.			
HS Implementation Cost (\$K):		N/A		Basis:			
HS Implementation Schedule (Mos):		N/A		Basis:			
Other Handling Strategies: Continue wildlife and ecological studies.							
Statement of Residual Risk: Although cleanup goals based on reasonable risk scenarios and land use assumptions there remains a risk that some areas in the IOUs may require active remediation.							
Residual Likelihood:		Likely		Basis: The risk may be mitigated by reducing the number of areas impacted, the size of the areas, and negotiating reasonable approaches.			
Residual Consequence:		Critical		Basis: The consequence is reduced based on limiting the scope of a large area that potentially requires remediation. However, due to the uncertainty associated with outcome of negotiations to be conducted so far in the future the consequence remains high.			
Residual Risk Level:		High		Residual Impact Basis: Best Case: Based on negotiated cleanup goals no areas require remediation. Most Likely: Based on current knowledge at least 1 area (Steed Pond) may require some level of active remediation.			
Residual Cost Impact (\$K):		<u>Best Case</u> \$0K		<u>Most Likely</u> \$10,000K		<u>Worst Case</u> \$20,000K for two areas	
Residual Schedule Impact (Mos):		0		12		24	
Impacted Scope of Work: All IOUs							
Evaluation Comments:							
Event Comments:							

Risk Assessment Form					
ID Number: SGP-R-008		Revision: 0	Last Date Evaluated: 5/15/06		
Status: Active					
Event Title: Delay in D&D Project Execution					
Type: Risk External		Category: Interfaces			
Assess. Element: 30.1, 30.2, 30.3, 30.4		Title: Upper Three Runs (A/M/B-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas), Integrator Operable Units			
Responsible Org: SGP		Contact: W. Whitaker	Date Identified: 11/16/05		
Statement of Event The D&D and Soil and Groundwater project are schedule dependent, therefore there is a risk that a delay in the D&D project will affect the ability to complete the area OU and IOU schedules as defined in the FFA. This event may impact project cost and schedule.					
Likelihood:	Very Likely	Basis: Mission durations, including the startup of new facilities and continued length of operations, and D&D funding uncertainties may delay the execution of the D&D project therefore impacting the completion of the SGP. Mission extensions for some facilities have been established while others are being considered.			
Consequence / Benefit:	Critical	Basis: Based on new direction extending the mission for some facilities a schedule extension of up to 6 years is assumed. (current operating assumptions extends this project to 2031)			
Most Significant Cost Impact (\$k): 100k		Most Significant Schedule Impact (Mos): 72			
Level:	High	Event Trigger: Mission extension of operating facilities or funding reduction/delay in D&D Project.			
Handling Strategy:	Mitigate/ Transfer	Description: Mitigate by sequencing the D&D Project and Area OU schedules to minimize schedule impacts. Implement existing strategy that allows completion of Area OUs while operating facilities remain. Transfer portions of the program to another organization for long-term stewardship.			
HS Implementation Cost (\$K):	N/A	Basis: Included in existing program.			
HS Implementation Schedule (Mos):	N/A	Basis:			
Other Handling Strategies:					
Statement of Residual Risk: Although schedules may be adjusted and Area OUs completed there is risk the IOU project will be extended.					
Residual Likelihood:	Very Likely	Basis: There were no actions identified that could change the likelihood of occurrence. The risk event is outside the control of the SGP.			
Residual Consequence:	Marginal	Basis: Area OUs would be completed. Final assessment and remediation of the IOUs could begin however final Record of Decision would be delayed.			
Residual Risk Level:	Moderate	Residual Impact Basis: Best Case: Assumes final RODs for IOUs completed on schedule. Most Likely: All IOUs with the exception of FMB are completed on schedule. Final ROD for FMB delayed 72 months. Worst Case: Assumes Interim ROD is needed to begin remediation for FMB IOU.			
Residual Cost Impact (\$K):	<u>Best Case</u> \$0K			<u>Most Likely</u> \$0K	<u>Worst Case</u> \$100K
Residual Schedule Impact (Mos):	0			72	72
Impacted Scope of Work: A/F/H/D/N/R/P/C/L/K-Area Operable Units					
Evaluation Comments:					
Event Comments:					

Opportunity Assessment Form					
ID Number: SGP-O-001		Revision: 0	Last Date Evaluated: 5/15/06		
Status: Active					
Event Title: Use of Hardened Facilities for SGP Waste Consolidation					
Type: Opportunity Internal/External		Category: Regulatory & Environmental			
Assess. Element: 30.3		Title: Reactor Areas (R/P/K/L/- Areas)			
Responsible Org: SGP		Contact: W. Whitaker	Date Identified: 11/16/05		
Statement of Event: The reactor buildings are large facilities with concrete walls up to three feet thick. There is an opportunity for each of these facilities to be used for the consolidation of SGCP waste generated during closure of the area.					
Likelihood:	Likely	Basis: Based on recent discussions with the regulators consolidation of SGP waste in a reactor facility may be acceptable.			
Benefit:	Exceptional	Basis: The disassembly basin in each reactor area has a total capacity of 400,000 cu-ft. Assume 80% useful capacity equals 320,000 cu-ft for consolidation. If the facility could be used a potential cost avoidance of \$1M could be realized, based on using one reactor for consolidation. The cost for performing studies to ensure environmental integrity or the cost of any required facility upgrades is not included.			
Most Significant Cost Impact (\$k): \$1,000k		Most Significant Schedule Impact (Mos): N/A			
Level:	High	Event Trigger: Approval to consolidate waste in a Reactor facility.			
Handling Strategy:	Enhance	Description: The potential use of reactor buildings for SGP waste consolidation will be evaluated for implementation as part of the feasibility study to be conducted during the remedy evaluation process for each reactor area.			
HS Implementation Cost (\$K):		Basis:			
HS Implementation Schedule (Mos):		Basis:			
Other Handling Strategies:					
Statement of Residual Risk:					
Residual Likelihood:		Basis:			
Residual Consequence:		Basis:			
Residual Risk Level:		Residual Impact Basis:			
Residual Cost Impact (\$K):	<u>Best Case</u>			<u>Most Likely</u>	<u>Worst Case</u>
Residual Schedule Impact (Mos):					
Impacted Scope of Work: R/P/C/L/K Area Operable Units					
Evaluation Comments:					
Event Comments:					

Opportunity Assessment Form			
ID Number: SGP-O-011		Revision: 0	Last Date Evaluated: 5/15/06
Status: Active			
Event Title: Future Land Use and Exposure Scenario Modification			
Type: Opportunity Internal/External		Category: Regulatory & Environmental	
Assess. Element: 30.1, 30.2, 30.3		Title: Upper Three Runs (A/M/B-Areas), General Separations (D/E/F/H/N/T-Areas), Reactor Areas (R/P/K/L/C-Areas)	
Responsible Org: SGP		Contact: W. Whitaker	Date Identified: 11/16/05
Statement of Event: The planned land use and exposure scenario and consequent cleanup levels for essentially all SRS areas is industrial. For many areas of SRS assuming that land use and exposure scenarios will be limited to infrequent maintenance activities is reasonable, therefore there is an opportunity to reach an agreement with the regulators and stakeholders that would define an alternative end state. Agreement on the alternative end state could reduce cleanup goals and cost and accelerate closure.			
Likelihood:	Unlikely	Basis: The regulators and the public must accept an alternate land use scenario that represents DOE's stated future land use plans.	
Benefit:	Exceptional	Basis: The potential schedule and cost impacts could be about one million dollars.	
Most Significant Cost Impact (\$k): ~\$1M		Most Significant Schedule Impact (Mos): >12	
Level:	Moderate	Event Trigger: Acceptance of Alternative Scenario by Regulators and Stakeholders	
Handling Strategy:	Enhance	Description: Improve the likelihood by using the Area Completion Team to develop a regulatory and technical strategy to begin the negotiation process. Develop and implement a stakeholder involvement strategy. DOE will consider making a commitment to keep SRS in federal ownership in perpetuity	
HS Implementation Cost (\$K):		Basis:	
HS Implementation Schedule (Mos):		Basis:	
Other Handling Strategies:			
Statement of Residual Risk:			
Residual Likelihood:		Basis:	
Residual Consequence:		Basis:	
Residual Risk Level:		Residual Impact Basis:	
Residual Cost Impact (\$K):	<u>Best Case</u>	<u>Most Likely</u>	<u>Worst Case</u>
Residual Schedule Impact (Mos):			
Impacted Scope of Work: P/R/C/L/K/F/H/D-Area Operable Units			
Evaluation Comments:			
Event Comments:			