

FINAL

Office of River Protection

Tri-Party Agreement

Project Summary Report

April 26, 2011



Office of River Protection  
Tri-Party Agreement Milestone Review Meeting  
April 26, 2011

| Page           | Topic  | Leads                                     | Time  |
|----------------|--|---|-------|
| TPA 34 / CD 8  | WTP Overall TPA and CD Summary and Milestones Status; M-62-01; M-62-49; D-00A-01, -06, -17   | Delmar Noyes / Dan McDonald / Jeff Lyon   | 9:00  |
| TPA 35 / CD 10 | WTP Pretreatment (PT) Facility; D-00A-13, -14, -15, -16, -19   | Wahed Abdul / Dan McDonald                | 9:15  |
| TPA 37 / CD 13 | WTP High-Level Waste (HLW) Facility; D-00A-02, -03, -04, -21   | Jeff Trent / Dan McDonald                 | 9:25  |
| TPA 38 / CD 15 | WTP Low-Activity Waste (LAW) Facility; D-00A-07, -08, -09  | Gary Olsen / Dan McDonald                 | 9:35  |
| TPA 40 / CD 18 | WTP Analytical Laboratory (LAB); D-00A-05  |   | 9:40  |
| TPA 42 / CD 21 | WTP Balance of Facilities (BOF); D-00A-12  |   | 9:45  |
| <b>BREAK</b>   |  |   |       |
| TPA 1 / CD 1   | Statistics / Status  | Woody Russell / Dan McDonald / Jeff Lyon  | 10:15 |
| TPA 7          | Single-Shell Tank Corrective Action; M-45, -50, -60  | Bob Lober / Jeff Lyon                     | 10:20 |
| TPA 9 / CD 5   | Single-Shell Retrieval and Closure Program TPA Milestones Status; M-45-00 series, <ul style="list-style-type: none"> <li>- Tank in Appendix H Status</li> <li>- C-Farm Critical Path</li> <li>- Tanks with Individual Milestones</li> <li>- Double-Shell Tank Closure</li> <li>- 242-A Evaporator Status</li> </ul> SST Retrieval and Closure CD Milestones and TWRWP Status; D-00B series | Chris Kemp / Dan Knight / Jeff Lyon       | 10:35 |
| TPA 18         | SST Integrity Assurance; M-45-91   | Jeremy Johnson / Michelle Hendrickson     | 11:00 |
| TPA 21         | Interim Stabilization Consent Decree (closed, to be removed after May TPA Quarterly Meeting)   | Jeremy Johnson / Nancy Uziemblo           | ---   |
| TPA 22         | In Tank Characterization and Summary   | Jeremy Johnson / Michael Barnes           | 11:05 |
| TPA 23         | Tank Operations Contract (TOC) Overview  | Kathy Higgins / Dan McDonald / Jeff Lyon  | 11:10 |
| TPA 30         | Acquisition of New Facilities; M-90-00; M-47-00  | Janet Diediker / Jeff Lyon / Dan McDonald | 11:15 |
| TPA 31         | Supplemental Treatment and Part B Permit Applications; M-62-00, -20, -30, -45  | Steve Pfaff / Jeff Lyon / Dan McDonald    | 11:30 |
| TPA 33         | System Plan; M-62-40   | Ron Koll / Jeff Lyon / Dan McDonald       | 11:45 |

**Fiscal Year 2011 Tri-Party Agreement Milestone Status**

| Milestone No. | Description  | Due Date | Date Completed | On Schedule | At Risk | Recoverable | To Be Missed | Missed | In Litigation | Deleted | In Program Planning | In Abeyance | Dispute Resolution |
|---------------|--|----------|----------------|-------------|---------|-------------|--------------|--------|---------------|---------|---------------------|-------------|--------------------|
| M-062-40A     | Select a Minimum of 3 scenarios  | 10/31/10 | 10/27/10       |             |         |             |              |        |               |         |                     |             |                    |
| D-001-00-R46  | Quarterly Report   | 10/31/10 | 10/28/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-100     | Submit to Ecology an Agreement Primary Document a Catch Tank "Assumed Leak" Response Plan.                           | 12/28/10 | 12/28/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-101     | Submit to Ecology as an Agreement Primary Document a Report on all Catch Tanks and Pipelines Used for SST Operations | 12/28/10 | 12/28/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-91A     | Submit an Agreement Change Package with Interim Milestones to Implement the Panel's Recommendations M-045-91         | 12/27/10 | 09/27/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-92D     | Complete Negotiations to Schedule Remaining 4 Additional Barriers  | 12/31/10 | 12/07/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-92E     | Meet Yearly on Performance of Barrier  | 12/31/10 | 12/07/10       |             |         |             |              |        |               |         |                     |             |                    |

### Fiscal Year 2011 Tri-Party Agreement Milestone Status

| Milestone No. | Description   | Due Date | Date Completed | On Schedule | At Risk | Recoverable | To Be Missed | Missed | In Litigation | Deleted | In Program Planning | In Abeyance | Dispute Resolution |
|---------------|---|----------|----------------|-------------|---------|-------------|--------------|--------|---------------|---------|---------------------|-------------|--------------------|
| M-062-20      | Complete All 28 Issues in Independent WTP Flowsheet & Throughput Assessment   | 12/31/10 | 08/20/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-80      | Complete those Portions of C-200 Closure Demonstration Plan Necessary to Complete Closure Plan Development for SST System | 01/31/11 | 12/28/10       |             |         |             |              |        |               |         |                     |             |                    |
| M-062-01V     | Submit Semi-Annual Project Compliance Report  | 01/31/11 | 01/27/11       |             |         |             |              |        |               |         |                     |             |                    |
| D-001-00-R47  | Quarterly Report  | 01/31/11 | 01/28/11       |             |         |             |              |        |               |         |                     |             |                    |
| M-045-91G-T05 | Provide Report of the Visual Inspections of 12 SSTs in Table 3.3  | 03/31/11 | 3/11/11        |             |         |             |              |        |               |         |                     |             |                    |
| M-045-92K     | Barrier 1 Design/Monitoring Approval from Ecology   | 06/30/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-15      | Interim Completion of Tank S-102 SST Waste Retrieval and Closure Demonstration Project.                                   | 06/30/11 |                |             | X       |             |              |        |               |         |                     |             |                    |
| M-045-15A     | Submit a Retrieval Data Report Pursuant to Agreement Appendix I   | 06/30/11 |                |             | X       |             |              |        |               |         |                     |             |                    |

**Fiscal Year 2011 Tri-Party Agreement Milestone Status**

| Milestone No. | Description  | Due Date | Date Completed | On Schedule | At Risk | Recoverable | To Be Missed | Missed | In Litigation | Deleted | In Program Planning | In Abeyance | Dispute Resolution |
|---------------|--|----------|----------------|-------------|---------|-------------|--------------|--------|---------------|---------|---------------------|-------------|--------------------|
| M-045-15B     | Remaining Wastes Adequately Characterized; Risk Assessment Completed for Residuals Remaining in the Tank | 06/30/11 |                |             | X       |             |              |        |               |         |                     |             |                    |
| M-045-15C     | Update S-102 Component Closure Activity Plan   | 06/30/11 |                |             | X       |             |              |        |               |         |                     |             |                    |
| M-045-15D     | Exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H                                   | 06/30/11 |                |             | X       |             |              |        |               |         |                     |             |                    |
| M-036-01A     | Submit to EPA & Ecology Lifecycle, Scope, Schedule & Cost for Hanford Site (RL is DOE Lead)              | 07/25/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| D-001-00-R49  | Quarterly Report   | 07/31/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-56G     | Ecology and DOE Agree to Meet, at a Minimum, Yearly (by July)  | 07/31/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-062-01W     | Submit Semi-Annual Project Compliance Report   | 07/31/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91C     | Implement DQO Process, Test Plan to Evaluate the Chemistries   | 09/30/11 |                | X           |         |             |              |        |               |         |                     |             |                    |

**Fiscal Year 2011 Tri-Party Agreement Milestone Status**

| Milestone No. | Description   | Due Date                                 | Date Completed | On Schedule | At Risk | Recoverable | To Be Missed | Missed | In Litigation | Deleted | In Program Planning | In Abeyance | Dispute Resolution |
|---------------|---|--|----------------|-------------|---------|-------------|--------------|--------|---------------|---------|---------------------|-------------|--------------------|
| M-045-91G-T01 | Provide AOR Final Doc. For SSTs on 530,000 Gallon Tanks           | 09/30/11                                 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-13      | Interim Completion of Tank S-112 SST Waste Retrieval and Closure  | TBD [In accordance with M-045-84 or -85] |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-13E     | Complete Negotiations for Interim Milestones for Closure of S-112 | TBD [In accordance with M-045-84 or -85] |                | X           |         |             |              |        |               |         |                     |             |                    |

### Fiscal Year 2012 Tri-Party Agreement Milestone Status

| Milestone No. | Description  | Due Date | Date Completed | On Schedule | At Risk | Recoverable | To Be Missed | Missed | In Litigation | Deleted | In Program Planning | In Abeyance | Dispute Resolution |
|---------------|--|----------|----------------|-------------|---------|-------------|--------------|--------|---------------|---------|---------------------|-------------|--------------------|
| M-062-30      | Complete Negotiations Establishing Milestones for Near-Term Actions              | 10/25/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-062-40B     | Submit System Plan   | 10/31/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-062-49      | Submit Report to Ecology Demonstrating WTP Design Meets Vit. Criteria            | 10/31/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91B     | Submit a Sampling and Analysis Plan to Ecology                                   | 12/30/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-92F     | Meet Yearly on Performance of Barrier  | 12/31/11 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91F-T02 | Provide Report of Liner Failures for SSTs  | 01/31/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91G-T02 | Provide AOR Final Doc. For SSTs on 750,000 Gallon Tanks                          | 01/31/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91F-T01 | Provide Report of the Liquid Leak Rate Assessments                               | 01/31/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91D     | Submit Analytical Test Plan for Cores Removed from C-107 Plug                    | 03/31/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91G-T06 | Provide Report of the Visual Inspection of 12 SSTs per criteria in M-045-91G-T05 | 03/31/12 |                | X           |         |             |              |        |               |         |                     |             |                    |

**Fiscal Year 2012 Tri-Party Agreement Milestone Status**

| Milestone No. | Description   | Due Date | Date Completed | On Schedule | At Risk | Recoverable | To Be Missed | Missed | In Litigation | Deleted | In Program Planning | In Abeyance | Dispute Resolution |
|---------------|---|----------|----------------|-------------|---------|-------------|--------------|--------|---------------|---------|---------------------|-------------|--------------------|
| M-045-92L     | Barrier 1 Construction Complete                           | 06/30/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-92M     | Barrier 2 Design/Monitoring Approval from Ecology         | 06/30/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-047-06      | Complete Negotiation of No More Than 2 Interim Milestones | 06/30/12 |                | X           |         |             |              |        |               |         |                     |             |                    |
| M-045-91G-T03 | Provide AOR Final Doc for SSTs on 1,000,000 Gallon Tanks  | 09/30/12 |                | X           |         |             |              |        |               |         |                     |             |                    |

## **WBS 5.2 Retrieve and Close Single Shell Tanks**

**M-045-58, Submit to Ecology for Review and Approval as an Agreement primary document, a phase 2 CMS Master Work Plan, Due: 12/31/08 Status: Complete.**

Master Work Plan is in the Primary document revision process. ORP transmitted its response to Ecology on August 18, 2010. Ecology extended review of comment responses to October 29, 2010. Ecology requested at the October PMM a two week extension from October 27, 2010. ORP acknowledged that Ecology's comment response will be considered in abeyance until DOE-ORP, Ecology, and EPA complete their negotiation of the AIP applicable to Appendix I. Ecology assumed that negotiations would be done December 24, 2010. They have been extended.

**M-045-60, Submit to Ecology for review and approval as an Agreement primary document DOE's Phase 2 RFI/CMS Work Plan and Sampling and Analysis Plan (SAP) for WMA C, Due: 12/31/08, Status: Complete.**

ORP and Ecology continue to meet monthly to identify and manage changes in the work plan. Meetings were held January 27 and February 25, 2011. Meeting minutes for the November 17 session have been signed by the parties and have been entered into the TPA administrative record and applicable change requests. Meeting minutes for the January 27 session have been signed by the parties and have been entered into the TPA administrative record and applicable change requests. The February minutes are under review.

**M-045-56G, Complete Implementation of Agreed to Interim Measures, Due: 07/31/11, Status: On Schedule**

**M-045-92F, DOE and Ecology will meet yearly to review the monitoring data, agree to changes in monitoring (if needed) and assess the performance of the demonstration barrier, Due: 12/31/2011, Status: On Schedule**

**M-045-61, Submit to Ecology for review and approval as an Agreement primary document a Phase 2 RFI/CMS Report for WMA C, Due: 12/31/14, Status: On Schedule**

**M-045-62, Submit to Ecology for review and approval as an Agreement primary document a Phase 2 Corrective Measures Study Report for WMA C, Due: 06/30/2015, Status: On Schedule**

**M-045-92, DOE and Ecology will establish selection criteria for installation of additional interim barriers at additional WMAs (beyond the T-106 and TY barriers), Due: 9/30/2016, Status: On Schedule**

**M-045-59, Control surface water infiltration pathways as needed to control or significantly reduce the likelihood of migration of subsurface contamination to groundwater at the SST WMAS (pending the CMS report, milestone M-45-58, and implementation of other interim corrective measures), Due: TBD, Status: On Schedule**

### **Significant Past Accomplishments:**

- T-Farm interim barrier monitoring continues.
- TY Interim Barrier Construction monitoring continues.
- Continued direct push characterization in C Farm at various planned locations
- Continued the joint process with Ecology and other regulatory agencies and stakeholders to define the inputs, approaches, assumptions and methods that will be used for development of a performance assessment for Waste Management Area C.
- Continued remediation technology assessments in support of a Corrective Measures Study for WMA C.
- Completed 3-D SGE data analysis and reporting for western 241-BY farm, including depth electrodes placed by direct push (RPP-RPT-49129).
- Continued design activities for a surface barrier in 241-SX farm.
- Completed direct push campaign in eastern BY farm, supporting Interim Barrier.
- Continued the Data Quality Objective process for the Phase 2 RFI-CMS work plan for WMA A/AX.
- Completed reanalysis of well-to-well resistivity data from C Farm using recent advancements in codes and hardware; report in process.
- Continued analysis of 3-D SGE data set for UPR-200-E-82 in C farm; 2-D lines remain to be collected.

**Significant Planned Actions in the Next Six Months:**

- Continue direct push campaign in C Farm.
- Initiate direct push campaign in S-Farm in support of a future interim barrier.
- Initiate 3-D SGE data collection in eastern BY farm.
- Complete resistivity data collection for 3-D SGE characterization of UPR-82 in C Farm.
- Continue remediation technology assessments in support of a Corrective Measures Study for WMA C.
- Perform additional updates to WMA C RFI/CMS workplan based on requested changes from Ecology.
- Complete design of interim surface barriers for SX farm.
- Complete the Data Quality Objective process for the Phase 2 RFI/CMS work plan for waste management area A/AX.

**Issues:**

ORP would like to address Ecology's request for additional RFI/CMS milestones as part of the next tank farm closure discussions underway.

## SST Retrieval and Closure Program

**M-045-82, Submit complete permit mod requests for Tiers 1, 2, & 3 of the SST, Due: 9/30/2015 Status: On Schedule**

**M-045-84, Complete negotiations of TPA interim MS for closure of second WMA, Due: 1/31/2017, Status: On Schedule**

**M-045-83, Complete the closure of WMA C, Due: 6/30/2019, Status: On Schedule**

**M-045-85, Complete negotiations of TPA interim MS for closure of remaining WMAs, Due: 1/31/2022, Status: On Schedule**

**M-045-70, Complete waste retrieval from all remaining SSTs, Due: 12/31/2040, Status: On Schedule**

**M-045-00, Complete Closure of all Single Shell Tank Farms, Due: 1/31/2043, Status: On Schedule**

**M-045-86, Submit retrieval data report to Ecology for 19 tanks retrieved, Due: TBD (12 months after retrieval certification), Status: On Schedule**

### **Significant Past Accomplishments:**

See discussions above and related discussions in Consent Decree report.

### **Significant Planned Activities in the Next Six Months:**

See discussions above and related discussions in Consent Decree report.

### **Issues:**

- C-106 Closure Plan approval and SST radiological Categorical Notice of Construction (NOC) Phase 3 (closure) and a toxics categorical NOC application are pending completion of the Tank Closure and Waste Management Environmental Impact Statement (EIS) and associated Record of Decision (ROD); forecast completion for the final EIS is in the Winter of 2011.
- The Richland Office of USDOE has proposed an IS-1 alternate to the planned deliverable, as we understand the "IS-1 Common Vision" discussion on 1-18-11. IS-1 requires the delivery of an RFI/CMS that would include Tank Farm Pipelines. Ecology remains unclear on the objective of the USDOE Plans for IS-1 but must have this work plan to ensure that we can complete the SST Closure plan on schedule for the TPA milestones. This should be included in the critical path as well.

- USDOE is delaying the final numeric modeling supporting the WMA C performance assessment to align the timing with completion of the Tank Closure and Waste Management EIS. Impacts of this delay are being incorporated into the critical path schedules.

## **Tank in Appendix H. Status - Single Shell Waste Retrieval Criteria**

### **Tank 241-C-106**

#### **Significant Past Accomplishments:**

None

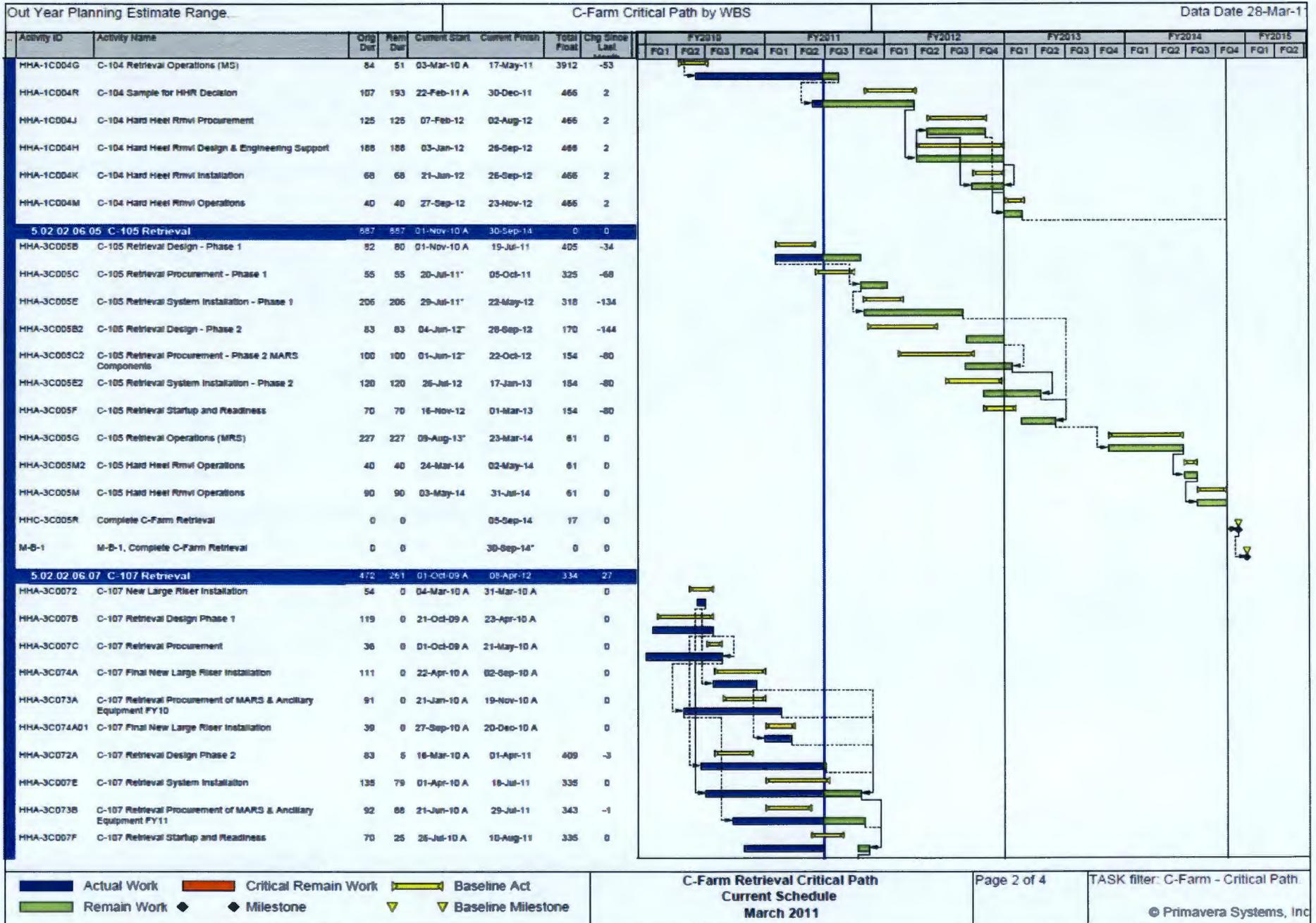
#### **Significant Planned Activities in the Next Six Months:**

- Continue U.S. Nuclear Regulatory Commission (NRC) review of the C-106 exception request. A Request for Additional Information (RAI) was received from the NRC in February 2009. (It has been discussed with the NRC that much of the additional information requested is dependent upon development of C-Farm residual waste PA and, therefore, cannot be provided until the PA is published.)
- Continue WMA-C PA workshops with Ecology, EPA, NRC, and DOE HQ focused ecological risk assessment, and review of results from soil sampling.

#### **Issues:**

None









## Tank Retrievals with Individual Milestones

### Tank 241-S-102

**M-045-15, Interim Completion of Tank S-102 SST Waste Retrieval and Closure Demonstration Project**, Due: 6/30/11 Status: At Risk. See discussion below under "Issues". Change Request M-45-07-01 approved by DOE and Ecology on December 4, 2007.

**M-045-15A, Embedded Milestone, Submit a Retrieval Data Report Pursuant to Agreement Appendix I**, Due: 6/30/11, Status: At risk. See discussion below under "Issues".

**M-045-15B, Embedded Milestone, Remaining Wastes have been adequately Characterized, and a Risk Assessment has been completed for residuals that remain in the tank**, Due: 6/30/11, Status: At risk. See discussion below under "Issues".

**M-045-15C, Embedded Milestone, An update to the S-102 Component Closure Activity Plan has been submitted by DOE**, Due: 6/30/11, Status: At risk. See discussion below under "Issues".

**M-045-15D, Embedded Milestone, if appropriate, DOE has requested an exception to waste retrieval criteria pursuant to Agreement Appendix H**, Due: 6/30/11, Status: At risk.

#### **Significant Past Accomplishments:**

None

#### **Significant Planned Activities in the Next Six Months:**

None

#### **Issues:**

- Tank S-102 retrieval by June 30, 2011 is at risk. It is technically imprudent to attempt to accelerate retrieval of S-102, at this time, because of the rheological nature of the waste.
- ORP submitted TPA Change Package M-45-11-03 signed 03/30/11 to Ecology for proposal of substitution of tank 241-S-102 to tank 241-A-103 with closure of tank 241-S-102 under M-045-85 and 241-A-103 closure to be determined in accordance with milestone M-045-84. After 14 days Ecology neither approved nor disapproved the M-45-11-03 Change Package, but provided comments and changes. The M-45-11-03 is considered denied. After internal review of Ecology's comments and changes, a follow-up, signed Change Package M-45-11-04 and unsigned draft AIP was submitted by ORP to Ecology on 04/18/11. Ecology signed M-45-11-04 on 04/19/11. Changes from this change package will be reflected in next month's report.

**Tank 241-S-112**

**M-045-13, Interim Completion of Tank S-112 SST Waste Retrieval and Closure Demonstration Project**, Due: TBD (in accordance with M-045-84 or M-045-85), Status: On Schedule

**M-045-13E, Complete Negotiations for Interim Milestones for Closure of S-112**, Due: TBD Status: On Schedule as part of M-045-84 and M-045-85.

**Significant Past Accomplishments:**

- Ecology letter of January 7, 2008, concurred with ORP that retrieval of Tank S-112 is complete.

**Significant Planned Activities in the Next Six Months:**

None

**Issues:**

None

**Complete Closure of Double Shell Tanks**

**M-042-00A, Complete closure of all double shell tank farms**, Due: TBD, based upon completion of retrieval under M-62-45 plus 5 yrs but no later than 9/30/2052 Status: On Schedule

**Significant Past Accomplishments:**

None

**Significant Planned Actions in the Next Six Months:**

None

**Issues:**

None

## 242-A Evaporator Status (previously reported under Milestone M-48, which has been closed out)

### 242-A Campaign strategy:

One (1) cold run (utilizing water only) and two (2) waste processing campaigns were completed in FY2010. No additional campaigns are anticipated in CY2011 due to ongoing 242-A and Tank Farm Life Extension and ARRA funded facility upgrades. The 242-A Campaign Strategy for FY2010 through FY2015 depicted below has been updated based on ORP-11242, River Protection Project Plan, Revision 5, and ongoing schedule integration efforts.

| Fiscal Year | Campaign No. | Feed Source                | Slurry Tank      | Comments   |
|-------------|--------------|----------------------------|------------------|--|
| FY10        | 10-01        | AW-106                     | AW-106           | Campaigns 10-01/10-02 were performed back-to back starting in late August and completing in early October 2010. Campaign 10-02 was an acceleration of previously planned Campaign 11-01. |
| FY10        | 10-02        | AW-106                     | AW-106           |  |
| FY11        | NA           | NA                         | NA               | No campaign planned in FY11 due to ongoing 242-A and Tank Farm facility life extension and ARRA funded upgrades.   |
| FY12        | 12-01        | AP-107<br>AZ-102           | AP-104<br>AP-107 | Estimated start June 2012. Anticipates blending AZ-102 high cesium concentration with AP-107 waste. May require two (2) passes to achieve waste volume reduction.                        |
| FY12        | 12-02        | AP-107<br>AZ-102           | AP-107           | Estimated start August 2012. Anticipates blending AZ-102 high cesium concentration with AP-107 waste. May require two (2) passes to achieve waste volume reduction.                      |
| FY13        | 13-01        | AW-106                     | AP-107           | Estimated start March 2013. Two (2) passes required.   |
| FY13        | 13-02        | AZ-101<br>AN-101<br>AW-106 | AP-107           | Estimated start September 2013. Two (2) passes required.   |
| FY14        | 14-01        | AN-106<br>AZ-102<br>AW-106 | AP-107           | Estimated start March 2014. Two (2) passes required.   |
| FY15        | 15-01        | AY-101<br>AZ-102           | AP-107           | Estimated start March 2015. Three (3) passes required.   |
| FY15        | 15-02        | AY-101                     | AP-107           | Estimated start August 2015. Four (4) passes required.   |

## SST Integrity Assurance

**M-045-91G-T05, Provide to Ecology a report documenting and evaluating the visual inspection of 12 SSTs per the criteria listed in Table 3.3 in RPP-PLAN-46847, Rev.0, Due: 3/31/2011, Status: Complete 03/11/11 (Letter 11-TF-039)**

**M-045-91C, implement the DQO process to develop and provide Ecology a Test Plan to evaluate the chemistries as specified in RPP-RPT-43 116. Rev 0, Due: 9/30/2011, Status: On Schedule**

**M-045-91G-T01, Provide to Ecology the Structural Analyses of Record final documentation for SSTs for 530, 000 gallon tanks (B, BX, C, T and U Farms), Due: 9/30/2011, Status: On Schedule**

**M-045-91B, Submit a Sampling and Analysis Plan to Ecology for the sampling of sidewall cores from tank 241-A-106 or alternate tank approved by Ecology, Due: 12/30/2011, Status: On Schedule**

**M-045-91F-T01, Provide to Ecology as a HFFACO secondary document a report evaluating the applicability to Hanford SSTs of the liquid leak rate assessments of sludge and salt-cake from the Savannah River Site, Due: 1/31/2012, Status: On Schedule**

**M-045-91F-T02, Provide to Ecology as a HFFACO secondary document a report evaluating the common factors of liner failures for SSTs that have leaked and will provide recommendations as appropriate, such as enhanced Leak Detection, Monitoring, and Mitigation, Due: 1/31/2012, Status: On Schedule**

**M-045-91G-T02, provide to Ecology the Structural Analyses of Record final documentation for SSTs for 750,000 gallon tanks (BY, S, TX and TY Farms), Due: 1/31/2012, Status: On Schedule**

**M-045-91D, Submit to Ecology an analytical test plan for the cores removed from the C-107 plug, Due: 3/31/2012, Status: On Schedule**

**M-045-91G-T06, Provide to Ecology a report documenting and evaluating the visual inspection of 12 SSTs per the criteria in M-045-91G-T05, Due: 3/31/2012, Status: On Schedule**

**M-045-91G-T03, Provide to Ecology the Structural Analyses of Record final documentation for SSTs for 1,000,000gallon tanks (A, AX and SX Farms), Due: 9/30/2012, Status: On Schedule**

**M-045-91D-T01, Provide Ecology a report containing the results and interpretation of testing, and analysis performed on the concrete dome samples obtained from the Tank C-107 plug, Due: 5/31/2013, Status: On Schedule**

**M-045-91F-T03, Provide to Ecology, as a HFFACO secondary document a report assessing the feasibility of testing for ionic conductivity between the inside and outside of SSTs, Due: 5/31/2013, Status: On Schedule**

**M-045-91F-T04, provide to Ecology, as a HFFACO secondary document, a report on the 100-series single-shell tanks which have been or will be identified as having leaked in RPP-32681, Rev 0, Due: 7/31/2013, Status: On Schedule.** Ecology and ORP are jointly drafting a Class III Change Request, M-45-11-01, aligning the completion dates of this milestone and M-045-91F-T02 ("Common Factors of Liner Failures for SSTs" report) to ensure all of this milestone's leak evaluations will be available for use in the Common Factors report.

**M-045-91E, Provide to Ecology a compilation of the Single-Shell Tank farms dome deflection surveys every two years, beginning 9/30/2013, Due: 9/30/2013, Status: On Schedule**

**M-045-91G-T04, provide to Ecology the Structural Analyses of Record final documentation for SSTs for 55,000 gallon tanks (B, C, T and U Farms), Due: 10/31/2013, Status: On Schedule**

**M-045-91F, Provide to Ecology a report (Summary Conclusions Report on Leak Integrity) summarizing and evaluating the information submitted under M-045-91F-T01 through - T04, Due: 12/31/2013, Status: On Schedule**

**M-045-91G, Provide a Summary Conclusions Report of Structural Analysis of Record (AOR) for SSTs, Due: 4/30/2014, Status: On Schedule**

**M-045-91B-T01, Provide Ecology a report containing the results and interpretation of testing and analysis, performed on the concrete core obtained from Tank A- 106 or alternate tank, Due: 9/30/2014, Status: On Schedule**

**M-045-91H, Submit a change package (if deemed necessary by DOE and Ecology) to establish additional milestones based on information obtained from the actions in the preceding M-045-91 series milestones to date, Due: 7/31/2015, Status: On Schedule**

**M-045-91I, Provide to Ecology an IQRPE certification of SSTs structural integrity for the remainder of the mission, or for such time as the IQRPE believes he/she can reasonably certify, Due: 9/30/2018, Status: On Schedule**

#### **Significant Past Accomplishments:**

- M-045-91G-T05: Complete 03/11/11 (Letter 11-TF-039)

#### **Significant Planned Actions in the Next Six Months:**

- M-045-91B: Draft DQO report sent to Ecology 04/11/20. One additional meeting in May planned. SAP is planned to be submitted to Ecology 07/2011. Due 12/30/11.
- Complete milestone M-045-91D, analytical test plan for Tank C-107 dome core analyses efforts. Draft planned to be submitted to Ecology in April. Due: 03/31/2012.

- Complete milestone M-045-91C, implement the DQO process to develop and provide Ecology a Test Plan to evaluate the chemistries as specified in RPP-RPT-43 116. Rev 0, Due: 9/30/2011. Two meetings in April are anticipated to complete this.
- Complete milestone M-045-91F-T03, plan to provide Ecology, Ionic Conductivity Feasibility Report in July. Due: 5/31/2013.
- M-045-91F-T04: Leak assessments are ongoing with meetings every other week through 2012.
- Complete milestone M-045-91G-T01, Provide to Ecology the Structural Analyses of Record final documentation for SSTs for 530, 000 gallon tanks (B, BX, C, T and U Farms), planned submittal to Ecology in July. Due: 9/30/2011.
- Complete milestone M-045-91G-T02, Provide to Ecology the Structural Analyses of Record final documentation for SSTs for 750, 000 gallon tanks (BY, S, TX, and TY Farms), planned submittal to Ecology in October. Due: 1/31/2012.

**Issues:**

None

## Interim Stabilization Consent Decree

### I. Near-Term Deliverables:

#### D-001-00, Complete Interim Stabilization of all 29 SSTs

Due: 09/30/04

Status: Completed on March 31, 2004, with discontinuation of pumping in U-108 and subsequent consultation with Ecology staff. Interim stabilization of S-102 and S-112 is held in abeyance by third amendment to the Consent Decree. ORP's obligation to interim stabilize S-112 was satisfied upon completion of retrieval operations. Retrieval of S-102 has been impacted by the spill at this tank. A review of the January 25, 2010, video of the tank has shown approximately 2,400 gallons of supernatant liquid remaining. This is below the criteria for interim stabilization of less than 5000 gallons supernatant liquid.

On October 21, 2010, ORP received a letter from Ecology notifying ORP of Ecology's decision to require ORP to Interim Stabilize tank 241-S-102 within 18 months of receipt of its notification. ORP transmitted the required documentation to Ecology to demonstrate that tank 241-S-102 meets the requirements for interim stabilization, as set forth in Case Number CT-99-5076, Third Amendment on December 9, 2010 via letter 10-TPD-163.

On March 8, 2011, the Interim Stabilization Consent Decree was terminated.

### II. Significant Accomplishments:

- Termination papers signed by court on 03/08/2011. This closes out the D-001-00 milestone series.

### III. Significant Planned Actions in the Next 6 Months:

- None

### IV. Issues

- None

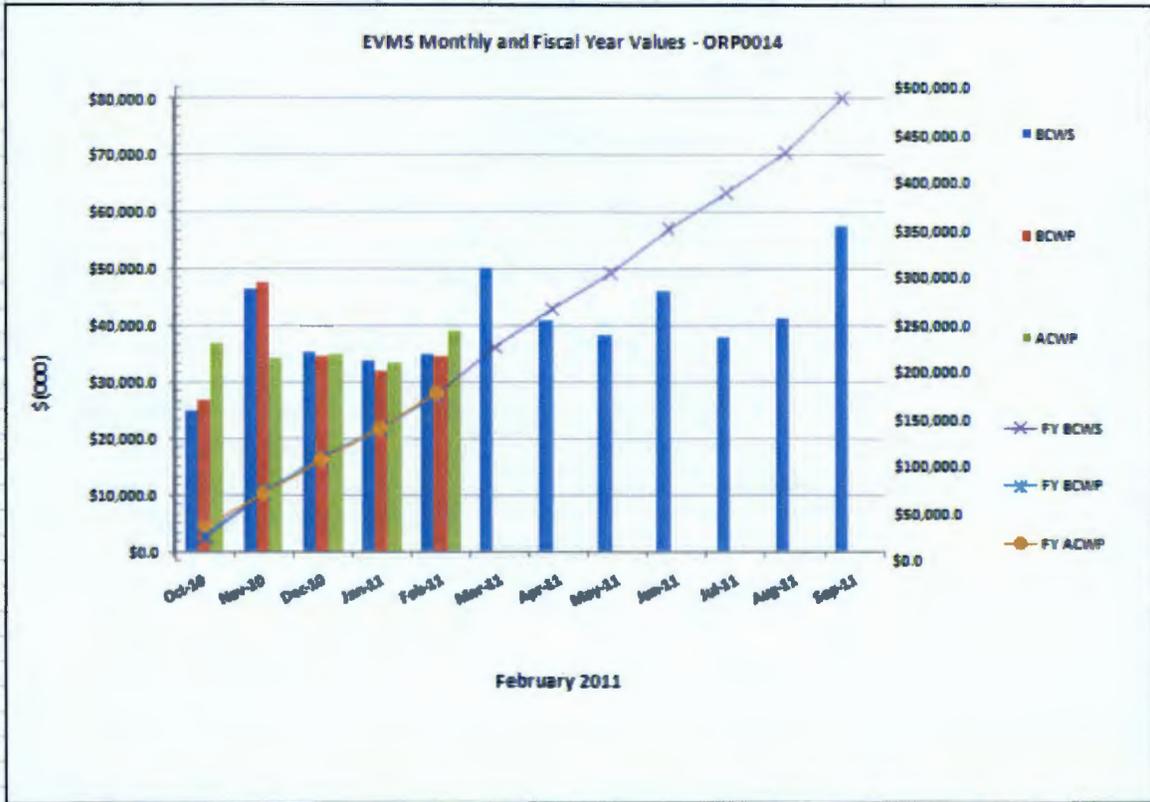
## In Tank Characterization and Summary

For the period from March 1 – March 31, 2011:

- **Accomplishments:**
  - Completed Revision 0 of RPP-RPT-48233, *Independent Analysis of Small Scale Mixing Demonstration Test*, on March 1, 2011.
  - Completed Revision 0 of the tank data report, RPP-RPT-44825, *Final Report for Tank 241-AZ-102 Liquid Grab Samples Collected in Support of the Evaporator Program*, on March 24, 2011.
  - Completed Revision 0 of the TSAP RPP-PLAN-49070, *Tank Sampling and Analysis Plan for 241-AY-101 Liquid Grab samples in Fiscal Year 2011* on March 28, 2011.
  
- **Planned Action within the next Six Months:**
  - Tank Sampling
    - Tank 241-C-109 off riser sampling scheduled for April 2011.
    - Tank 241-AP-105 corrosion mitigation grab samples scheduled for April 2011.
    - Tank 241-AY-101 corrosion mitigation grab samples scheduled for May 2011.
    - Tank 241-C-104 off riser sampling scheduled for June 2011.
    - Tank 241-AW-106 evaporator sample scheduled for June 2011.
    - Tank 241-C-108 hard heel dissolution samples scheduled for August 2011.
  
  - BBI Updates
    - Seven tank updates were planned for FY11 Quarter 2. Six updates were completed and published to TWINS on March 10. The data for the seventh tank was not received from the laboratory in time and was postponed until FY11 Quarter 3.
    - Nine tank updates are planned for FY11 Quarter 3.
  
  - Data Quality Objectives (DQO)
    - Complete Revision 18 of the Compatibility DQO in April 2011.
    - Complete Revision 0 of the 244-CR Vault tanks in May 2011.
    - Complete Revision 3 of the PCB Management DQO in June 2011.
  
- **Issues:**
  - None

## TANK OPERATIONS CONTRACT (TOC) OVERVIEW

*Office River Protection – Tank Farm – Fiscal Year To-Date Performance*



| Value Month | BCWS        | BCWP        | ACWP        | SPI  | CPI  | FY BCWS     | FY BCWP     | FY ACWP     | FY SPI | FY CPI |
|-------------|-------------|-------------|-------------|------|------|-------------|-------------|-------------|--------|--------|
| Oct-10      | \$24,918.8  | \$26,782.0  | \$37,083.6  | 1.07 | 0.72 | \$24,918.8  | \$26,782.0  | \$37,083.6  | 1.07   | 0.72   |
| Nov-10      | \$46,528.0  | \$47,510.9  | \$34,301.0  | 1.02 | 1.39 | \$71,446.8  | \$74,292.9  | \$71,384.5  | 1.04   | 1.04   |
| Dec-10      | \$35,469.5  | \$34,558.3  | \$35,056.5  | 0.97 | 0.99 | \$106,916.3 | \$108,851.1 | \$106,441.0 | 1.02   | 1.02   |
| Jan-11      | \$33,862.5  | \$32,115.2  | \$33,376.8  | 0.95 | 0.96 | \$140,778.8 | \$140,966.4 | \$139,817.8 | 1.01   | 1.00   |
| Feb-11      | \$35,157.1  | \$34,800.5  | \$39,288.6  | 0.98 | 0.88 | \$175,935.9 | \$175,766.8 | \$179,106.4 | 0.99   | 0.98   |
| Mar-11      | \$50,218.9  |             |             |      |      | \$226,154.8 |             |             |        |        |
| Apr-11      | \$40,824.6  |             |             |      |      | \$266,979.4 |             |             |        |        |
| May-11      | \$38,352.8  |             |             |      |      | \$305,332.2 |             |             |        |        |
| Jun-11      | \$46,207.5  |             |             |      |      | \$351,539.7 |             |             |        |        |
| Jul-11      | \$38,125.9  |             |             |      |      | \$389,665.6 |             |             |        |        |
| Aug-11      | \$41,389.0  |             |             |      |      | \$431,054.6 |             |             |        |        |
| Sep-11      | \$57,715.5  |             |             |      |      | \$488,770.1 |             |             |        |        |
| CTD         | \$935,991.5 | \$929,000.6 | \$871,229.3 | 0.99 | 1.07 |             |             |             |        |        |

The unfavorable current month (CM) schedule variance (SV) of **(\$1,747k)** is driven by the following projects:

**CLIN 1 – Base Operation, \$(1,507k)**

- 222-S Lab Reliability Upgrades for room and waste renovations
- 222-S Lab Mobile Office replacement

**CLIN 2 - Retrieval and Closure SSTs, (\$490k)**

- Design delays for the AW Trailer Complex Mobile Office
- Tank AN-107 ultrasonic examination due to resources
- SX Farm Infrastructure Sludge Cooler Removal Project
- C-101- retrieval design ventilation delays in the development of construction acceptance test documents / installation bid award contract (will not impact construction activities)
  - a. Procurement activities started early – impacts early start and completion of installation, startup readiness and operations
- C-104 – retrieval operations (ms) delayed due to failure of slurry pump (subsequently replaced since March)
- C-105 – retrieval design phase 1 & 2, procurement phase 1 & 2 (MARS components), installation phase 1 & 2, and retrieval startup and readiness are delayed due to baseline changes that defers this scope and enables resources to support C-107 installation of the MARS sluicing equipment
- C-107 – improved completion of hard heel removal operations - reflecting scope deferral from C-105.
- C-108 – engineering support is extended to support repairs to POR-014 valve box
- C-109 – hard heel removal of samples was delayed due to weather conditions;
  - a. HHR delay impacted procurement and engineering support but did not impact HHR operations due to the existing retrieval sequencing to tank AN-106 (DST receiver tank)
- C-112 – delays in bid award purchase orders and finalizing design media due to incorporating extended reach sluicing system (ERSS) containment box and HIHTL splitter box scope
  - a. Follow on logic that affected retrieval procurement activities.
- DST receiver Tank 3 (AN-106) – Delays in initiating procurement activities due to the design for the new transfer pump, pump assembly and jumpers
  - a. Construction activities was initiated to remove failed equipment which was impacted by DST-to-DST transfers that prevented access to the AN-06A pit – which further delayed start and readiness activities.

The unfavorable current month (CM) cost variance (CV) of **(\$1,262k)** is driven by the following projects:

**CLIN 1 - Base Operations**

- 222-S Lab upgrades for hardware/software procurement
- 242-A Evaporator Exhauster Upgrades on skid fabrication and installation design

**CLIN 2 - Retrieval and Closure SST's**

- C-107 Retrieval for the Mobile Are Retrieval System (MARS)
- C-104 Retrieval for the Operational Acceptance Testing and resolution of Slurry Pump issues
- The Articulating Mast System modifications and testing

The unfavorable contract to date (CTD) schedule variance (SV) of **(\$6,634k)** is driven by the following projects:

**CLIN 1 - Base Operations, (\$1,206k)**

- Design delays for the Core Sampling Truck Replacement
- 222-S Facility Reliability deferrals
- Design delays of the AZ Condensate Line Upgrade

- Design delays of jumper fabrication and line installation
- Design delays for the AW Trailer Complex
- Remove Obsolete Equipment delays

**CLIN 2 – Retrieval and Closure SST's, (\$4,783k)**

- C-108 Retrieval due to delays in hard heel removal
- C-104 Retrieval pumping delays due to obstruction
- SX Farm Infrastructure Sludge Cooler Removal
- C-109 hard heel removal samples delayed due to weather
- C-105 defer scope / resources to C-107 MARS sluicing equipment

The favorable contract to date (CTD) cost variance (CV) of \$62,259 is due to the following projects:

**CLIN 1 – Base Operations, \$30,068**

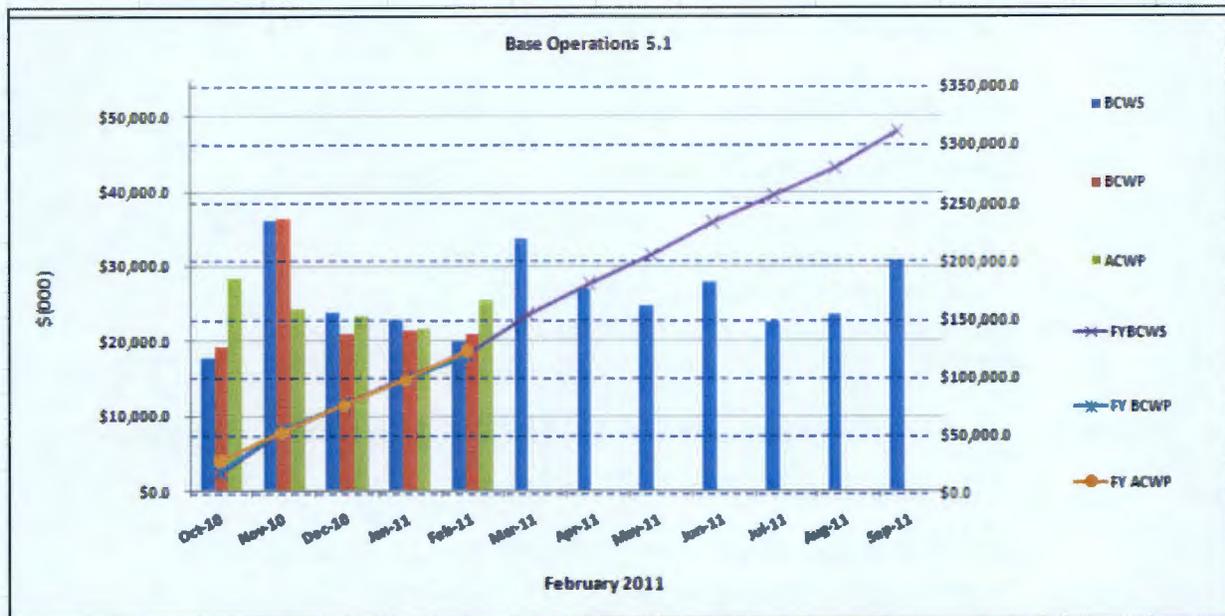
- Facility and Property Management FY09 unfilled positions and slow ramp-up
- 222-S Roof Replacement costs less than originally planned
- Information Resource Management costs due to lower material expenditures as the result of receiving items from Yucca Mountain at a savings
- DST Integrity Project due to cost efficiencies on encasement pressure checks and labor efficiencies during AW-101, AW-104, AW-105 and AW-106 UT examinations
- Fabrication of jumpers for AP, AN-1 and AN-B Valve pits savings

**CLIN 2 – Retrieval and Closure, \$9,698**

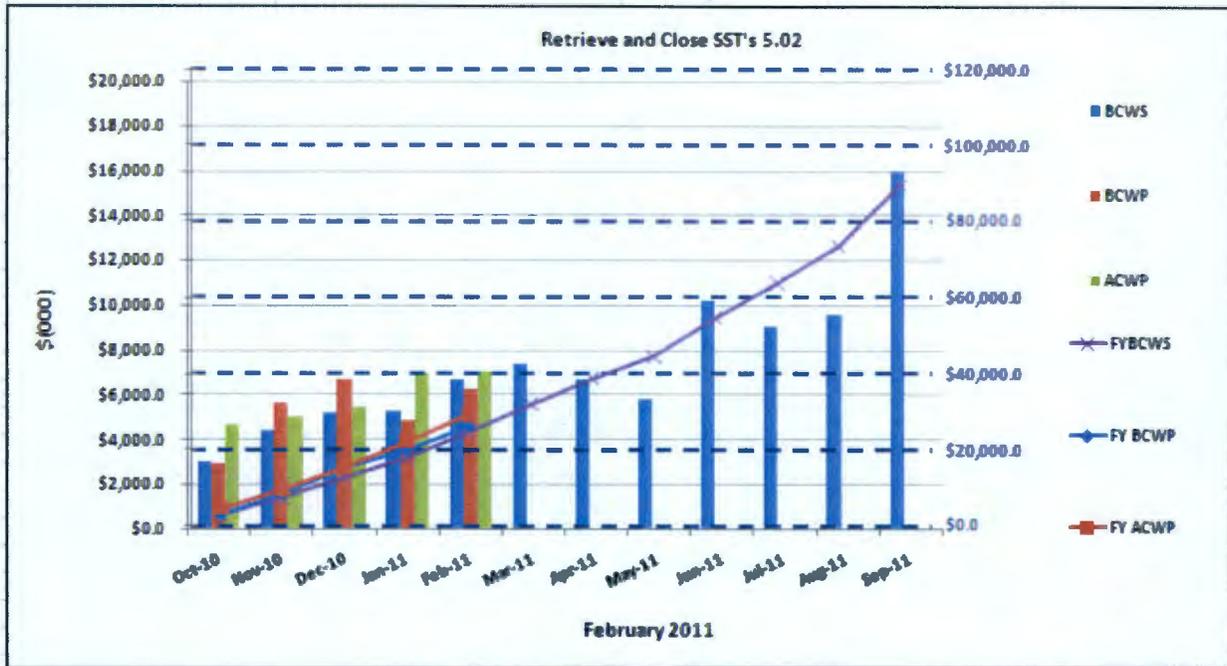
- Hose in Hose Transfer Line disposition efficiencies
- C-110 Retrieval and Catch Tank Reporting efficiencies
- Catch Tank & Pipeline Reporting due to efficiencies gained by using direct labor rather than contract labor

**WFD/Treatment PLNG/DST Retrieval/Closure, \$21,964k**

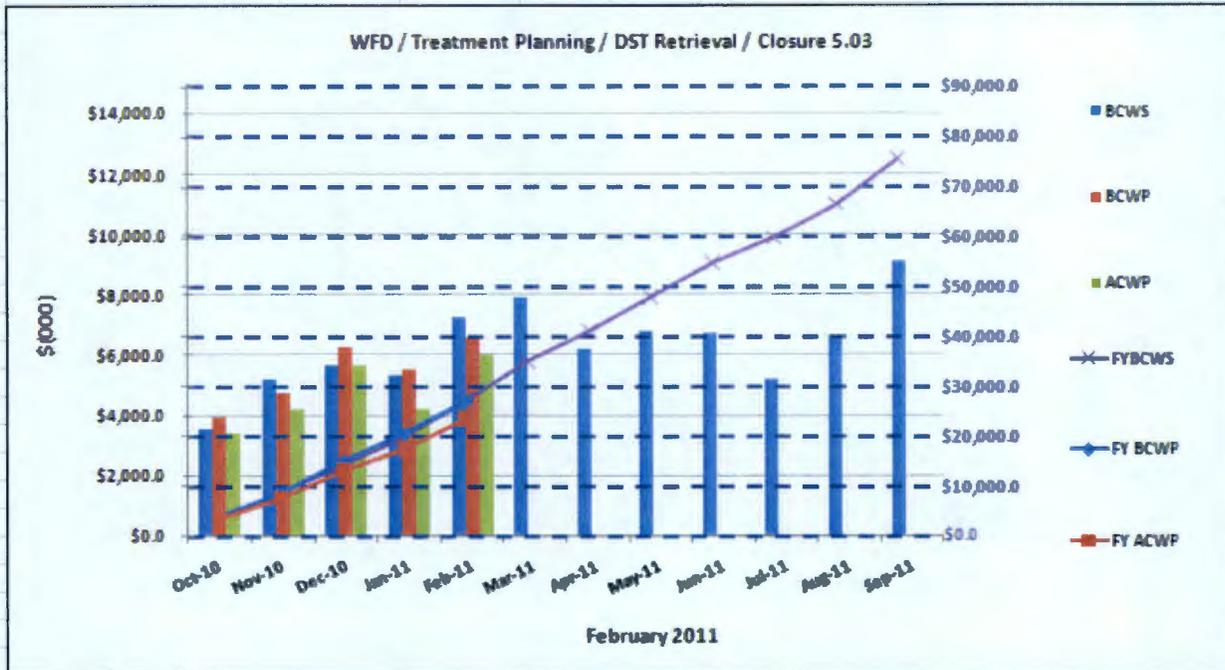
- Wiped Film Evaporator decreased procurement cost savings
- Waste Feed Delivery flow sheet due to lack of contract support and hiring delays
- AW Cob Isolation efficiencies gained by awarding to an experienced contractor and requiring fewer resources than planned



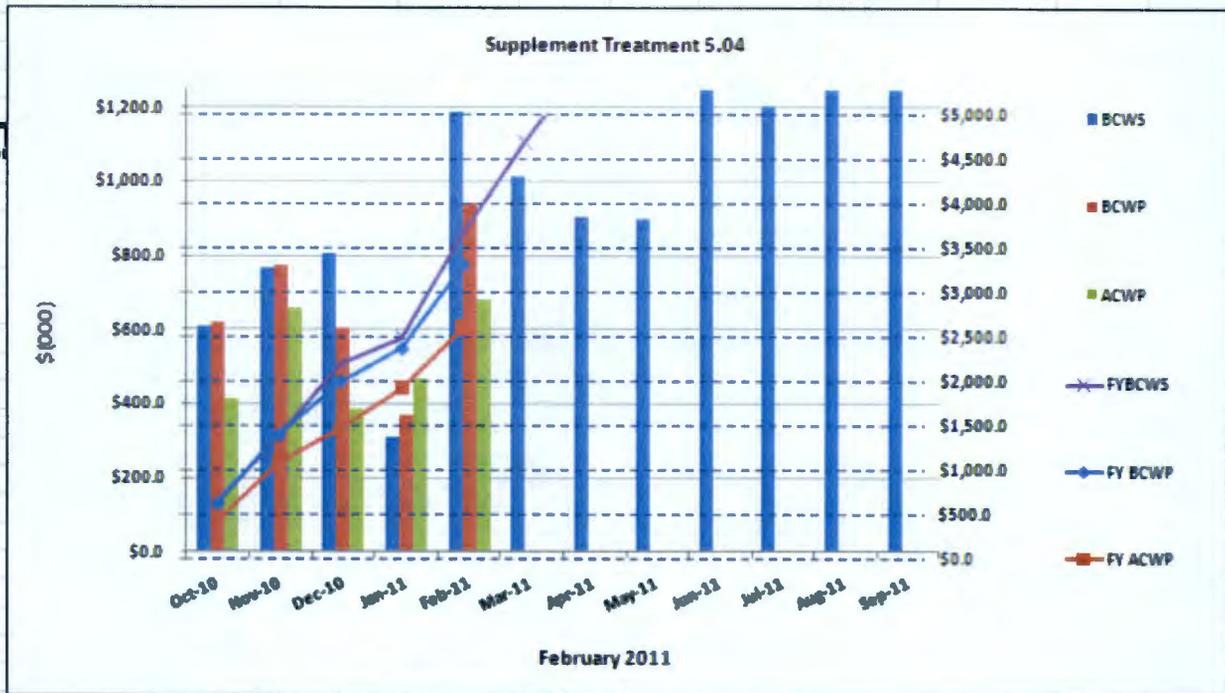
| Earned Value Month | BCWS               | BCWP               | ACWP               | SPI         | CPI         | FYBCWS      | FY BCVP     | FY ACWP     | FY SPI | FY CPI |
|--------------------|--------------------|--------------------|--------------------|-------------|-------------|-------------|-------------|-------------|--------|--------|
| Oct-10             | \$17,777.2         | \$19,285.1         | \$20,549.6         | 1.08        | 0.68        | \$17,777.2  | \$19,285.1  | \$20,549.6  | 1.08   | 0.68   |
| Nov-10             | \$36,143.1         | \$36,366.3         | \$24,452.2         | 1.01        | 1.49        | \$53,920.3  | \$55,651.4  | \$53,001.8  | 1.03   | 1.05   |
| Dec-10             | \$23,775.6         | \$20,995.7         | \$23,448.8         | 0.88        | 0.90        | \$77,695.9  | \$76,647.1  | \$76,450.6  | 0.99   | 1.00   |
| Jan-11             | \$22,876.6         | \$21,370.0         | \$21,705.1         | 0.93        | 0.98        | \$100,572.5 | \$98,017.1  | \$98,155.7  | 0.97   | 1.00   |
| Feb-11             | \$20,031.0         | \$21,023.0         | \$25,607.6         | 1.05        | 0.82        | \$120,603.5 | \$119,040.1 | \$123,763.3 | 0.99   | 0.96   |
| Mar-11             | \$33,883.9         |                    |                    |             |             | \$154,487.4 |             |             |        |        |
| Apr-11             | \$26,989.3         |                    |                    |             |             | \$181,476.7 |             |             |        |        |
| May-11             | \$24,825.5         |                    |                    |             |             | \$206,302.2 |             |             |        |        |
| Jun-11             | \$28,050.3         |                    |                    |             |             | \$234,352.5 |             |             |        |        |
| Jul-11             | \$22,688.4         |                    |                    |             |             | \$257,040.9 |             |             |        |        |
| Aug-11             | \$23,719.6         |                    |                    |             |             | \$280,760.5 |             |             |        |        |
| Sep-11             | \$30,894.2         |                    |                    |             |             | \$311,654.7 |             |             |        |        |
| <b>CTD</b>         | <b>\$633,587.4</b> | <b>\$633,373.4</b> | <b>\$607,889.8</b> | <b>1.00</b> | <b>1.04</b> |             |             |             |        |        |



| Earned Value Month | BCWS               | BCVP               | ACVP               | SPI         | CPI         | FYBCWS     | FY BCVP    | FY ACVP    | FY SPI | FY CPI |
|--------------------|--------------------|--------------------|--------------------|-------------|-------------|------------|------------|------------|--------|--------|
| Oct-10             | \$2,991.6          | \$2,932.6          | \$4,707.6          | 0.98        | 0.62        | \$2,991.6  | \$2,932.6  | \$4,707.6  | 0.98   | 0.62   |
| Nov-10             | \$4,412.7          | \$5,622.7          | \$5,006.7          | 1.27        | 1.12        | \$7,404.3  | \$8,555.3  | \$9,714.3  | 1.16   | 0.88   |
| Dec-10             | \$5,209.7          | \$6,682.7          | \$5,494.0          | 1.28        | 1.22        | \$12,614.0 | \$15,238.0 | \$15,208.3 | 1.21   | 1.00   |
| Jan-11             | \$5,310.0          | \$4,820.2          | \$6,975.6          | 0.91        | 0.69        | \$17,924.0 | \$20,058.2 | \$22,183.9 | 1.12   | 0.90   |
| Feb-11             | \$6,670.0          | \$6,253.2          | \$7,006.6          | 0.94        | 0.89        | \$24,594.0 | \$26,311.4 | \$29,190.5 | 1.07   | 0.90   |
| Mar-11             | \$7,379.3          |                    |                    |             |             | \$31,973.3 |            |            |        |        |
| Apr-11             | \$6,709.5          |                    |                    |             |             | \$38,682.8 |            |            |        |        |
| May-11             | \$5,854.3          |                    |                    |             |             | \$44,537.1 |            |            |        |        |
| Jun-11             | \$10,202.7         |                    |                    |             |             | \$54,739.8 |            |            |        |        |
| Jul-11             | \$9,031.9          |                    |                    |             |             | \$63,771.7 |            |            |        |        |
| Aug-11             | \$9,630.5          |                    |                    |             |             | \$73,402.2 |            |            |        |        |
| Sep-11             | \$16,001.6         |                    |                    |             |             | \$89,403.8 |            |            |        |        |
| <b>CTD</b>         | <b>\$185,864.0</b> | <b>\$180,664.6</b> | <b>\$171,719.6</b> | <b>0.97</b> | <b>1.05</b> |            |            |            |        |        |



| Earned Value Month | BCWS        | BCWP        | ACWP       | SPI  | CPI  | FYBCWS     | FY BCWP    | FY ACWP    | FY SPI | FY CPI |
|--------------------|-------------|-------------|------------|------|------|------------|------------|------------|--------|--------|
| Oct-10             | \$3,540.0   | \$3,944.3   | \$3,413.8  | 1.11 | 1.16 | \$3,540.0  | \$3,944.3  | \$3,413.8  | 1.11   | 1.16   |
| Nov-10             | \$5,203.6   | \$4,748.8   | \$4,184.7  | 0.91 | 1.13 | \$8,743.6  | \$8,693.1  | \$7,598.5  | 0.99   | 1.14   |
| Dec-10             | \$5,677.1   | \$6,277.7   | \$5,689.4  | 1.11 | 1.10 | \$14,420.7 | \$14,970.8 | \$13,287.9 | 1.04   | 1.13   |
| Jan-11             | \$5,366.1   | \$5,557.1   | \$4,225.6  | 1.04 | 1.32 | \$19,786.8 | \$20,527.9 | \$17,513.5 | 1.04   | 1.17   |
| Feb-11             | \$7,269.3   | \$6,582.6   | \$5,993.5  | 0.91 | 1.10 | \$27,056.1 | \$27,110.5 | \$23,507.0 | 1.00   | 1.15   |
| Mar-11             | \$7,941.8   |             |            |      |      | \$34,997.9 |            |            |        |        |
| Apr-11             | \$6,224.2   |             |            |      |      | \$41,222.1 |            |            |        |        |
| May-11             | \$6,775.5   |             |            |      |      | \$47,997.6 |            |            |        |        |
| Jun-11             | \$6,703.1   |             |            |      |      | \$54,700.7 |            |            |        |        |
| Jul-11             | \$5,199.8   |             |            |      |      | \$59,900.5 |            |            |        |        |
| Aug-11             | \$6,653.1   |             |            |      |      | \$66,553.6 |            |            |        |        |
| Sep-11             | \$9,116.0   |             |            |      |      | \$75,669.6 |            |            |        |        |
| CTD                | \$109,966.3 | \$108,766.0 | \$86,213.1 | 0.99 | 1.26 |            |            |            |        |        |



| Earned Value Month | BCWS      | BCWP      | ACWP      | SPI  | CPI  | FYBCWS     | FY BCWP   | FY ACWP   | FY SPI | FY CPI |
|--------------------|-----------|-----------|-----------|------|------|------------|-----------|-----------|--------|--------|
| Oct-10             | \$610.0   | \$619.9   | \$412.6   | 1.02 | 1.50 | \$610.0    | \$619.9   | \$412.6   | 1.02   | 1.50   |
| Nov-10             | \$768.6   | \$773.1   | \$657.3   | 1.01 | 1.18 | \$1,378.6  | \$1,393.0 | \$1,069.9 | 1.01   | 1.30   |
| Dec-10             | \$807.0   | \$602.2   | \$384.2   | 0.75 | 1.57 | \$2,185.6  | \$1,995.2 | \$1,454.1 | 0.91   | 1.37   |
| Jan-11             | \$309.8   | \$368.0   | \$470.6   | 1.19 | 0.78 | \$2,495.4  | \$2,363.2 | \$1,924.7 | 0.95   | 1.23   |
| Feb-11             | \$1,186.8 | \$941.8   | \$680.9   | 0.79 | 1.38 | \$3,682.2  | \$3,305.0 | \$2,605.6 | 0.90   | 1.27   |
| Mar-11             | \$1,013.9 |           |           |      |      | \$4,696.1  |           |           |        |        |
| Apr-11             | \$901.6   |           |           |      |      | \$5,597.7  |           |           |        |        |
| May-11             | \$897.5   |           |           |      |      | \$6,495.2  |           |           |        |        |
| Jun-11             | \$1,251.4 |           |           |      |      | \$7,746.6  |           |           |        |        |
| Jul-11             | \$1,205.8 |           |           |      |      | \$8,952.4  |           |           |        |        |
| Aug-11             | \$1,385.8 |           |           |      |      | \$10,338.2 |           |           |        |        |
| Sep-11             | \$1,700.7 |           |           |      |      | \$12,038.9 |           |           |        |        |
| CTD                | \$6,573.8 | \$6,196.6 | \$5,406.8 | 0.94 | 1.15 |            |           |           |        |        |

## Acquisition of New Facilities

**M-090-11, Complete the Negotiation of No More Than Two Canister Storage Facility Construction Interim Milestones, Due: 12/31/12, Status: On Schedule.** Negotiations are not yet underway.

**M-090-00, Acquire/modify facilities for storage of IHLW, Due: 12/31/2019, Status: On Schedule**

**M-047-06, Complete negotiation of no more than two interim milestones governing work necessary to support completion of M-047-00, Due: 06/30/12, Status: Negotiations are not yet underway.**

**M-047-00, Complete Work Necessary to provide facilities for management of secondary waste from the WTP, Due: 12/31/2022, Status: On Schedule**

### **Significant Past Accomplishments:**

None

### **Significant Planned Actions in the Next Six Months:**

None

### **Issues:**

None

## Supplemental Treatment and Part B Permit Applications

**M-062-30, Complete negotiations establishing milestones for near term actions, Due:** 10/25/11, Status: On schedule. Draft agreement in principle (AIP) provided by ORP to Ecology on April 8, 2011. Milestone negotiations are not yet underway. See "Issues" below for further discussion.

**M-062-45ZZ, Negotiate a one-time supplemental treatment selection, Due:** 4/30/2015, Status: On schedule. Negotiations are not yet underway. See "Issues" below for further discussion.

**M-062-45ZZ-A, Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones, Due:** 4/30/2015, Status: On Schedule.

**M-062-31-T01, Complete final design and submit RCRA Part B permit mod request, Due:** 4/30/2016, Status: On schedule

**M-062-32-T01, Start construction of supplemental vitrification treatment facility and/or WTP enhancements, Due:** 4/30/2018, Status: On schedule

**M-062-33-T01, Complete construction of supplemental vitrification treatment facility and/or WTP enhancements, Due:** 4/30/2021, Status: On schedule

**M-062-45XX, No later than 12/31/2021, the DOE and Ecology shall complete negotiations to establish a mechanism that will apply to resolve future disputes regarding the determinations in M-062-45, paragraphs 4 and 5, due:** 12/31/2021, Status: On Schedule

**M-062-34-T01, Complete hot commissioning of supplemental vitrification treatment facility and/or WTP enhancements, Due:** 12/30/2022, Status: On schedule

**M-062-21, Annually, submit data that demonstrates operation of the WTP, Due:** 2/28/2023, Status: On Schedule

**M-062-00, Complete Pretreatment Processing and Vitrification of HLW and LAW Tank Wastes, Due:** 12/31/2047, Status: On Schedule

### Significant Past Accomplishments:

- Draft agreement in principle (AIP) provided by ORP to Ecology on April 8, 2011.

### Significant Planned Actions in the Next Six Months:

- ORP and Ecology negotiate Agreement in Principle for M-62-30 negotiations in the next 30 days.

### Issues:

ORP received a letter from Ecology on 01/13/11 stating Ecology has "...formed the opinion that USDOE actions jeopardize completion of HFFACO Milestone M-062-30."

DOE-ORP letter 11-ESQ-024 (sent to Ecology on 02/03/11) responded to the 01/13/11 Ecology letter, and ORP submitted a draft AIP to Ecology on 04/08/2011 to establish negotiations for HFFACO Milestone M-062-30.

## System Plan

**M-062-40B, Submit a system plan describing the disposition of all tank waste managed by ORP, Due: 10/31/2011, Status: On Schedule**

**M-062-40C, Select a minimum of three scenarios that will be analyzed in the system plan, Due: 10/31/2013, Status: On Schedule**

**M-062-40D, Submit a system plan describing the disposition of all tank waste managed by ORP, Due: 10/31/2014, Status: On Schedule**

**M-062-40ZZ, Submit a one-time Tank Waste Supplemental Treatment Technologies report if a supplemental treatment technology is proposed other than a 2nd LAW, Due: 10/31/2014, Status: On Schedule.**

**M-062-45-T01, Every six years, within six-months after last revision of the System Plan, negotiate tank waste retrieval sequencing, Due: 4/30/2015, Status: On Schedule**

### **Significant Past Accomplishments:**

Modeling and result verification for Scenario 1: Baseline Case, Scenario 2: TRU to WTP and Scenario 4: WTP Delay with 10% increased Vitrification were completed during March 2011. Results of the Baseline Case were reviewed with OPR and Ecology on March 21, 2011. Modeling was started or nearly completed for Scenario 6: WTP Delay w/8 new DSTs, Scenario 9: Early U Farm Retrieval, Scenario 10: Increased SST Retrieval Duration and Scenario 5: 2020 Vision.

### **Significant Planned Actions in the Next Six Months:**

Work on System Plan Rev. 6 supporting M-062-40B during the next six months will include the following activities: Complete HTWOS modeling, V&V and data analysis and perform periodic reviews with ORP and Ecology. The reviews will include reviews of the model results as well as 50% and 90% reviews of the System Plan report.

### **Issues:**

None

## Hanford Waste Treatment and Immobilization Plant (WTP) Project

**M-062-01W, Submit Semi-Annual Project Compliance Report, Due: 7/31/2011, Status: On Schedule**

**M-062-49, Submit a report to Ecology demonstrating that the WTP is designed to accomplish, pretreat 100% of retrievable waste, vitrify 100% of separated hi level waste, WTP LAW with Supplemental treatment can vitrify 100% of separated low level waste stream, Due: 10/31/2011, Status: BNI was provided direction to prepare this report on March 30, 2011, letter 11-WTP-106 Subject: Tri-Party Agreement (TPA) Changes and BNI Support.**

There are about 3,400 FTE equivalent contractor [Bechtel National Inc. (BNI)] and subcontractor personnel working on the WTP Project, including 1,178 craft, 556 non-manual, and about 178 subcontractor personnel FTE equivalents working at the WTP construction site (all facilities). Overall project percent complete through February 2011 is 57%, design and engineering is 80% complete, procurement is 60% complete and construction is 53% complete.

In February 2011, the facility percent complete values for Construction decreased. This decrease in values was tied to the incorporation of the final commodity changes included in the BNI Forecast Update Four EAC. This resulted in an increase in the facility construction budgets, which has correspondingly reduced the to-date percent complete values.

The overall WTP Project Schedule Variance (SV) in February was a positive \$1.8M, the Cost Variance (CV) was a positive (\$6.4M). Both the positive cost and schedule variances came primarily from the Construction and Plant Equipment control accounts.

Following is the status through the end of February for current project issues:

### Significant Past Accomplishments:

- Revised Project Execution Plan sent to HQ first week of March

### Significant Planned Actions in the Next Six Months:

- There was a mini Construction Project Review in March 2011
- A full Construction Project Review is scheduled for May 2011
- Complete analytical results from the Low Order Accumulation Model (LOAM) validation testing for the non-Newtonian vessel configuration
- Erection of PT 4<sup>th</sup> tier structural steel (77ft to 98ft elevation)
- Commence Siding and Roofing of HLW Annex
- Complete vendor fabrication of the LAW Carbon Bed Adsorber (CBA)
- Complete the BOF water treatment facility

### Issues:

No significant issues at this time.

## Pretreatment (PT) Facility

### Significant Past Accomplishments:

The PT Facility will separate radioactive tank waste into High Level Waste (HLW) and Low-Activity Waste (LAW) fractions and transfer each waste type to the respective vitrification facility for immobilization. Through March 2011, overall facility percent complete is 46%, engineering is 77% complete, procurement is 42% complete, and construction is 34% complete.

In March, overall construction continues to perform well. Rebar and embed installation and fabrication of rebar wall curtains continues to support additional slab and wall placements at the 56ft to 98ft elevations. Construction completions for March include: placement of two 5<sup>th</sup> lift (77ft to 98ft elevation) walls for 247 CY.

On-going work includes: erection on the 4<sup>th</sup> tier structural steel on the northwest corner of the 77ft elevation; fabrication of piping modules; and installation of drain piping, service air piping, cable trays and supports, and ductwork.

Engineering continues to implement changes from the technical issue resolutions into Piping and Instrumentation Design (P&ID) and piping isometric drawings. PT engineering issued over 500 piping isometric drawings, two P&IDs for the Cesium Nitric Acid Recovery Process (CNP) system, and ten P&IDs for Plant Service Air (PSA) system racks associated with the Feed Evaporator Process (FEP) system. Analysis and design was completed for HLW Lag Storage and Feed Blending Process vessel HLP-22, and the Preliminary Coupled Dynamic Analysis for the Waste Feed (FEP) and Treated Law (TLP) evaporators was also completed – meeting two Contract fee milestones.

Material requisitions were issued for 4 Autosamplers and one mechanical agitator for a Cesium Resin Addition Process (CRP) system vessel. In addition, fabrication was completed on eight chilled water pumps, which were released to ship.

### Significant Planned Actions in the Next Six Months:

- Complete analytical results from the Low Order Accumulation Model (LOAM) validation testing for the non-Newtonian vessel configuration
- Complete planning for the Large Scale testing for the validation of vessel mixing Scale-up
- Issue the revised design option and P&ID's for the Pretreatment Vessel Vent Process (PVP) system and the Process Vessel Vent (PVV) system
- Complete fabrication of four major Jumper frames
- Complete placement of one 56-ft elevation slab, completion of the basemat slab, three 4<sup>th</sup> lift (56ft to 77ft) walls, twenty-nine 5<sup>th</sup> lift walls, and initial placements of the Control Building slab, totaling approximately 5,200 CY
- Erection of 4<sup>th</sup> tier structural steel (77ft to 98ft elevation)
- Award contract for High Efficiency Mist Eliminator (HEME)
- Award contract for on-site vessel modifications
- Obtain Ecology authorization to proceed with the vessel alteration for Waste Feed Receipt Process (FRP) vessels 2A/B/C/D

**Issues:**

- **Vessel Critical Path:** Fabrication of vessel HLP-22 continues to be the critical path for the PT Facility. The fabrication of the vessel is in progress and on track to complete as planned by October 2012. Efforts are also ongoing for the analysis of the on-site vessels in order to support the vessel modifications. The permitting strategy for the on-site vessels to be modified has been developed jointly with Ecology. Initial site work and pre-modification preparation work has begun. Schedules for the vessel modifications and permit needs have been provided to Ecology. The current plan is to award the first set of vessels modifications by May 2011. Permitting strategy for the off-site vessel modifications are under discussions with Ecology for finalizing. Ecology is being briefed routinely on the status of vessel design, fabrication and permitting schedule, due to the critical nature of this activity.
- **LOAM Test Results:** The physical benchmark testing of the LOAM for application to the 5 non-Newtonian vessels is complete. The results of the testing are being evaluated to determine the validity of LOAM for the 5 non-Newtonian vessels.
- **PVP/PVV System Upgrades:** The PVP/PVV systems were upgraded from passive to active safety systems to maintain negative pressure during all normal, off-normal and Design Basis Earthquake (DBE) conditions. As part of the changes from the Material-at-Risk (MAR) accident analysis, the postulated aerosol loading was increased by several orders of magnitude. This is affecting PVP/PVVs ability to meet functional requirements during off-normal condition. The WTP path forward is to perform the following evaluation to ensure that the system design meets the functional criteria:
  1. Develop an improved aerosol model based on testing that is more aligned with the physical plant configuration. Preliminary indications are that this would lower the aerosol loading significantly.
  2. Evaluate alternative operating scenarios to reduce aerosol generation.
  3. Execute performance testing for equipment currently in the system design to determine the full extent of their operating capability.

## High-Level Waste (HLW) Facility

### Significant Past Accomplishments:

BNI Engineering completed the Civil, Structural, and Architectural (CSA) Title II Design Complete Contract Milestone on February 17, 2011. This represents a definitive stage of design completion, signifying adequate maturity to support the specification, bidding, and procurement of all remaining CSA components. DOE-WTP reviewed the CSA design completion deliverables in accordance with the contract, and formally concurred on March 15, 2011.

The majority of HLW Filter Cave activities have transitioned from procurement to the installation phase. Installation of the C5V supply header is complete, and efforts continue on the exhaust header and vertical riser. Additional activities include the installation of support steel to the +8ft elevation and staging of large-bore piping by direct-hire craft. Installation of steel and piping will continue to the +14ft elevation to coordinate with upcoming filter housing installations.

The first C5V filter housing is currently planned for installation in mid-June. Filter housings and dampers will be installed sequentially starting from the outermost units and working in towards the center of the Filter Cave. All of the housing and remote-operated damper installations are to be completed late November to early December 2011. The remaining piping and installation of plate steel decking will be completed in early April 2012.

### Significant Planned Actions in the Next Six Months:

- Receive Initial Delivery of C5V HEPA Filter Housings
- Receive Canister Decontamination Vessels and Canister Rinse Vessel
- Set Shielded Personnel Access Door RWH-DOOR-20 in the Waste Drum Swabbing and Monitoring Area
- Complete Fabrication and Delivery of C5V Dampers
- Commence Siding and Roofing of Annex

### Issues:

The limited number of pre-qualified ASME NQA-1 vendors and suppliers continues to cause difficulties in procuring nuclear-grade quality (i.e., "Q") instruments, components, and vessels. Delays to key Q deliveries have recently been experienced because of material supply issues that require special mill runs to resolve, Commercial-Grade-Dedication (CGD) implementation issues, and difficulties developing the commercial (CM) vendor quality programs to NQA-1 standards. These delays are requiring increased management focus and attention to maintain schedule. These delays have not yet affected the HLW critical path but the re-sequencing of work activities to coordinate with later-than-expected deliveries has negatively impacted performance and efficiency.

The fabrication and delivery of HLW vessels is also being monitored closely. Vessel status and progress is reported weekly to ensure completion and delivery prior to the scheduled installation dates.

## Low-Activity Waste (LAW) Facility

### Significant Past Accomplishments:

The LAW Facility will vitrify low-activity waste from the PT Facility. Waste will be mixed with glass formers, vitrified into glass at an average daily rate of 30 metric tons, and placed in stainless-steel canisters that will be disposed on site in the Integrated Disposal Facility. Overall facility percent complete is 64%, engineering is 89%, procurement is 83%, and construction is 62%.

In December 2010, the facility percent complete values for Design/Engineering and Construction decreased. This decrease in values was tied to the incorporation of the remaining External Flowsheet Review Team (EFRT) Issues. This resulted in an increase in the facility engineering and construction budgets, which has correspondingly reduced the to-date percent complete values.

- Engineering

BNI Engineering issued Controls and Instrumentation (C&I) data sheets for LAW Important-to-Safety (ITS) control valves and regulators and a consumable change-out box data sheet for fire screens. Component Information System (CIS) equipment lists were issued for the LAW High-Pressure Steam (HPS), Low-Pressure Steam (LPS), and Steam Condensate Water (SCW) systems. Engineering also issued control logic diagrams for the LAW Direct Current Electrical (DCE), Low-Voltage Electrical (LVE), Medium-Voltage Electrical (MVE), and Uninterruptible Power Electrical (UPE) systems to support control software development. The LAW melter Equipment Support Handling (LSH) system engineering specification was issued.

- Procurement

LAW secondary offgas treatment systems component procurement activities continued. All major component procurements have been awarded. Vendor design analyses are being performed for the HEPA filter housings, the caustic scrubber, and the thermal catalytic oxidizer/reducer. The carbon bed adsorber and exhausters are being fabricated. Other procurement activities included issuance of a material requisition for the purchase of pressure/differential pressure temperature transmitters.

- Construction

BNI initiated installation of MVE equipment on the ground level of the LAW facility. Thermite welding of rails in the North finishing line continued, as well as installation of the ASX auto-sampling system, fire alarm system, LVE system equipment, melter pour spout cooling panels, exterior melter bay door electrical components, finishing line hoists, and exterior egress stairs. Other normal activities continued, including installation of piping and hangers, cable tray, conduit and wiring, instrument enclosures, lighting fixtures, partition wall framing, gypsum wallboard, coatings, and perimeter sealants.

- Commissioning

Conducted a walk-down of the LAW facility to review the final placement of fan coil units and proposed changes that would allow easier operations access to these units for maintenance activities. Reviewed and provided comments on Communication Electrical System (CME) drawings for phone and card reader locations within the LAW facility. Integrated Control Network (ICN) development for LAW systems continued with software reviews related to the

primary offgas process and radioactive liquid waste disposal systems. Drafting of the LAW training manual continued.

**Significant Planned Actions in the Next Six Months:**

- Complete installation of LAW personnel elevator
- Complete vendor fabrication of the Carbon Bed Adsorber (CBA)

**Issues:**

No major issues.

## Analytical Laboratory

### Significant Past Accomplishments:

The LAB will support WTP operations by analyzing feed, vitrified waste, and effluent streams. Overall facility complete for LAB is 46%, engineering is 80%, procurement is 74%, and construction is 65%.

In December 2010, the facility percent complete values for Design/Engineering and Construction decreased. This decrease in values was tied to the incorporation of the remaining External Flowsheet Review Team (EFRT) Issues. This resulted in an increase in the facility engineering and construction budgets, which has correspondingly reduced the to-date percent complete values.

- Engineering

BNI engineering issued engineering specification for cryogenic tubing, welding, piping, and equipment for the high-purity gas system. BNI engineering also issued nine Controls and Instrumentation (C&I) data sheets for "CM" on/off valves, and seven Component Information System (CIS) equipment lists for the Low Pressure Steam (LPS) system. BNI engineering released 40 pressure differential transmitters, 10 A/D current to field bus converters, 36 temperature transmitters, 12 pressure transmitters, and 17 differential pressure flow transmitters to ship.

- Procurement

BNI procurement issued material requisitions to purchase pressure/differential pressure and temperature transmitters.

- Construction

BNI construction continued installation of piping, scheduled conduit, scheduled/unscheduled electrical raceway, bulk piping/hangers, the trolley, and the application of coatings in various planning areas. They also continued installation of piping in the C2V/C3V system pits. BNI construction completed aligning a fan in planning area 24 for the C5V system, and assembling shield plates in planning area 21.

- Commissioning

A report detailing Factory Acceptance Testing (FAT) of autosamplers (ASX) 12 & 13 was issued. The FAT demonstrated the capability of sample collection, autosampling reliability/repeatability, maintenance tasks, and the performance of the pneumatic transfer system. The ASX performed as expected, and all observations were resolved prior to issue of the report.

The draft Waste Acceptance Criteria (WAC) Data Quality Objective (DQO) report was updated to incorporate WTP internal comments. This updated draft was used during the meeting with the DNFSB staff to discuss results of initial DQO development for WTP feed acceptance criteria parameters as described in ICD-19.

The Laboratory and Remotability teams reviewed the locations and orientations of several valves in the Radioactive Liquid Waste Disposal (RLD) system C3 Pump pit and provided Operations input for potential solutions to clear the interference problems identified by Field Engineering.

The Laboratory and Remotability teams participated in several teleconferences with the Equipment & Mechanical Handling Lead to provide background and Operations status on the LAB RLD C5 Valve Pit valve testing. Shop testing revealed several items that need to be modified for remote operations.

**Significant Planned Actions in the Next Six Months:**

- Install LAB waste drum bogie shield door
- Complete LAB C5 ventilation filter room ceiling design

**Issues:**

No major issues.

## Balance of Facilities (BOF)

### Significant Past Accomplishments:

BOF provides services and utilities to support operation of the main production facilities – PT, HLW, LAW, and LAB. Overall facility percent complete for BOF is 46%, engineering is 77%, procurement is 46%, and construction is 60%.

In December 2010, the facility percent complete values for Design/Engineering and Construction decreased. This decrease in values was tied to the incorporation of the remaining External Flowsheet Review Team (EFRT) Issues. This resulted in an increase in the facility engineering and construction budgets, which has correspondingly reduced the to-date percent complete values.

- Engineering

BNI engineering issued five mechanical systems component lists for the Steam Condensate Water (SCW) system, and completed scoping of SetRoute and TeamWorks for the switchgear building.

- Procurement

BNI procurement issued material requisition to purchase pressure/differential pressure temperature transmitters.

- Construction

BNI construction continued install of Plant Service Air (PSA) line/transport piping at the glass former facility, fire alarm detection equipment, pressure testing piping in the Water Treatment Facility (WTF), and working punchlist items for turnover of the WTF.

- Commissioning

A review was performed of BOF Non-Radioactive Liquid Waste Disposal (NLD) and Fire Service Water (FSW) graphics with Operations Controls Systems and Training personnel.

### Significant Planned Actions in the Next Six Months:

- Award EDG procurement
- Complete concrete placements for BOF Ammonia Facility
- Receive BOF ammonia vaporizer skid
- Complete water treatment facility

### Issues:

No major issues

| Waste Treatment Plant Project - Percent Complete Status<br>Through February 2011 |  |   |               |   |  |               |   |  |               |   |  |               |
|--|--|---|---------------|---|--|---------------|---|--|---------------|---|--|---------------|
| (Dollars - Millions)   | Overall Facility Percent Complete<br>Unallocated Dollars |   |               | Design/Engineering<br>Unallocated Dollars       |  |               | Procurement<br>Unallocated Dollars              |  |               | Construction<br>Unallocated Dollars             |  |               |
|  | Performance<br>Measurement<br>Baseline<br>(PMB)          | Budgeted<br>Cost of Work<br>Performed<br>(BCWP) | %<br>Complete | Performance<br>Measurement<br>Baseline<br>(PMB) | Budgeted<br>Cost of<br>Work<br>Performed<br>(BCWP) | %<br>Complete | Performance<br>Measurement<br>Baseline<br>(PMB) | Budgeted<br>Cost of<br>Work<br>Performed<br>(BCWP) | %<br>Complete | Performance<br>Measurement<br>Baseline<br>(PMB) | Budgeted<br>Cost of<br>Work<br>Performed<br>(BCWP) | %<br>Complete |
| Low-Activity Waste   | 935.2  | 601.2   | 64%           | 222.5   | 198.7  | 89%           | 229.3   | 190.1  | 83%           | 335.3   | 206.3  | 62%           |
| Analytical Lab   | 340.6  | 157.6   | 46%           | 52.2  | 41.8   | 80%           | 55.9  | 41.3   | 74%           | 97.3  | 63.0   | 65%           |
| Balance of Facilities  | 523.4  | 241.2   | 46%           | 77.2  | 59.3   | 77%           | 81.2  | 37.3   | 46%           | 228.8   | 136.3  | 60%           |
| High-Level Waste   | 1,451.2  | 754.0   | 52%           | 332.5   | 285.8  | 86%           | 450.6   | 285.6  | 63%           | 550.3   | 178.6  | 32%           |
| Pretreatment   | 2,454.6  | 1,131.1   | 46%           | 669.5   | 518.5  | 77%           | 710.9   | 301.5  | 42%           | 891.6   | 305.4  | 34%           |
| Shared Services  | 4,787.2  | 3,145.8   | 66%           | 1,101.9   | 866.8  | 79%           | 467.2   | 338.5  | 72%           | 1,418.3   | 994.0  | 70%           |
| <b>Total WTP w/o UB</b>  | <b>10,492.3</b>  | <b>6,031.0</b>                                  | <b>57%</b>    | <b>2,455.9</b>                                  | <b>1,970.8</b>                                     | <b>80%</b>    | <b>1,995.2</b>                                  | <b>1,194.3</b>                                     | <b>60%</b>    | <b>3,521.6</b>                                  | <b>1,883.6</b>                                     | <b>53%</b>    |
| Undistributed Budget   | 5.8  | n/a   | n/a           | n/a   | n/a  | n/a           | n/a   | n/a  | n/a           | n/a   | n/a  | n/a           |
| <b>Total WTP</b>   | <b>10,498.1</b>  | <b>6,031.0</b>                                  | <b>57%</b>    | <b>2,455.9</b>                                  | <b>1,970.8</b>                                     | <b>80%</b>    | <b>1,995.2</b>                                  | <b>1,194.3</b>                                     | <b>60%</b>    | <b>3,521.6</b>                                  | <b>1,883.6</b>                                     | <b>53%</b>    |

Source: WTP Contract Performance Report - Format 1, Data for February 2011

Note: Starting with the June 2009 report, facility Construction percent complete values decreased significantly, and a couple of Design/Engineering facility percent complete values went down as well. The decrease in values was tied to Phase I of BNI's elimination of WBS 1.08, Plant Wide EPCC; scope from WBS 1.08 was moved to facilities as appropriate or to WBS 1.90, Shared Services. This resulted in an increase in the facility construction budgets, which has correspondingly reduced the to-date percent complete values. In July 2010 the allocation of 1.90 to the facilities was removed to show true facility percent complete.