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# Office of River Protection



## Monthly Reporting Period

July 1–July 31, 2019<sup>1</sup>

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<sup>1</sup> The narrative descriptions of progress in this report cover the reporting period. Information outside the reporting period may also be included for purposes of providing continuity or useful context. Information may be repeated in multiple sections of this report for continuity and clarity. Earned Value Management System data and descriptions cover the period through June 2019.

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## Acronyms and Abbreviations

CV	cost variance
DOE	U.S. Department of Energy
DST	double-shell tank
Ecology	Washington State Department of Ecology
ETF	Effluent Treatment Facility
FY	fiscal year
HFFACO	<i>Hanford Federal Facility Agreement and Consent Order</i> (HFFACO and TPA are used interchangeably throughout this report)
IQRPE	independent, qualified, registered, professional engineer
LERF	Liquid Effluent Retention Facility
ORP	U.S. Department of Energy, Office of River Protection
SST	single-shell tank
SV	schedule variance
TPA	Tri-Party Agreement
TSCR	tank-side cesium removal
WRPS	Washington River Protection Solutions LLC
WMA	waste management area

**Administrative Items/Milestone Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
<b>Prior Years</b>				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	R. Bang	In Dispute
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection	04/30/2015	R. Bang	In Dispute
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones	04/30/2015	R. Bang	In Dispute
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	R. Bang	In Dispute
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements	04/30/2018	R. Bang	In Dispute
<b>Fiscal Year 2019</b>				
M-062-01AL	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2019	B.R. Trimberger	Complete
M-062-01AM	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2019	B.R. Trimberger	Complete
M-045-56O	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2019	R.A. Lobos	Complete
M-045-91E3	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2019	D.M. Stewart	On Schedule
M-045-59	Control Surface Water Infiltration Pathways as Needed	TBD <sup>1</sup>	R.A. Lobos	On Schedule

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
M-045-62	Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C	TBD <sup>1</sup>	R.A. Lobos	On Schedule
M-045-83	Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan	TBD <sup>1</sup>	R.A. Lobos	On Schedule
<b>Fiscal Year 2020</b>				
M-062-40G	Select a Minimum of 3 Scenarios	10/31/2019	K.W. Burnett	On Schedule
M-045-92V	Complete Construction of Barriers 1 (North) and 2 (South) and Expansion Barrier in 241-SX Farm	10/31/2019	R.A. Lobos	On Schedule
M-045-92W	Submit to Ecology Design for Barrier 3 in 241-TX Farm	10/31/2019	R.A. Lobos	On Schedule
M-045-92AC	Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers	10/31/2019	R.A. Lobos	On Schedule
M-045-92X	Barrier 3 in 241-TX Farm Design Approved by Ecology	01/31/2020	R.A. Lobos	On Schedule
M-062-01AN	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2020	B.R. Trimberger	On Schedule
M-045-93	Submit Report for Description, Analysis and Technology for Removing Draggable Liquids from SSTs	06/30/2020	J.J. Rambo	On Schedule
M-062-01AO	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2020	B.R. Trimberger	On Schedule

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
M-045-56P	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2020	R.A. Lobos	On Schedule
M-045-99	Submit to Ecology the Preliminary Performance Assessment/Closure Analysis	09/30/2020	V.A. Turner	On Schedule

<sup>1</sup> To be established in accordance with the date identified in the M-045-82 Tier 2 closure plan.

CD-1/-2 = critical decision-1/-2.

CMIP = corrective measures implementation work plan.

CR = change request.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

Mod = modification.

PM = project manager.

RCRA = *Resource Conservation and Recovery Act*.

SST = single-shell tank.

TBD = to be determined.

WTP = Waste Treatment and Immobilization Plant.

WMA-C = C Tank Farm waste management area.

## System Plan

**Responsible Assistant Manager:** TBD  
**Federal Program Manager:** Kaylin Burnett  
**Ecology Project Manager:** Dan McDonald, Jeff Lyon

### Significant Past Accomplishments

The U.S. Department of Energy (DOE), Office of Environmental Management received a letter from the Director of the Washington State Department of Ecology (Ecology) dated May 29, 2019, that set forth a proposal for concluding the *River Protection Project System Plan* (System Plan) negotiations and entering into negotiations aimed at putting the parties “on a holistic path forward” to address Hanford tank waste. The DOE Office of River Protection (ORP), U.S. Environmental Protection Agency, and Ecology have ended negotiations related to milestone M-062-45 with ORP letter 19-ORP-0005, “Milestones in the Hanford Federal Facility Agreement and Consent Order Placed “In Abeyance” During the System Plan 8 Negotiations,” to Ecology dated June 21, 2019, and Ecology letter 19-NWP-097, “Correspondence Regarding Tank Waste Retrieval and Treatment Pathway at Hanford,” to ORP dated June 27, 2019, in which ORP requested to keep the milestones in abeyance until the holistic negotiations were completed and Ecology denied the request. This resulted in initiation of the Tri-Party Agreement’s (TPA) dispute process.

Additionally, Ecology attached change packages with their concurring signatures for DOE to respond to within the 14-day required period related to topics covered in the negotiations related to milestone M-062-45. DOE responded accepting three of the five change packages via letter, 19-ORPMGR-0006, “Correspondence Regarding Tank Waste Retrieval and Treatment Pathway at Hanford and Proposed Tri-Party Agreement Change Packages,” dated July 11, 2019, with a basis for acceptance or rejection.

### Significant Planned Actions in the Next Six Months

- Resolve dispute regarding milestone M-062-45 and associated milestones.
- Ecology and ORP will continue discussions to develop scenarios for System Plan, Rev. 9, due October 31, 2019.

### Issues

- Continue to work with Ecology on path forward to resolve failed negotiations through the dispute process for milestones associated to milestone M-062-45.

## Acquisition of New Facilities

**Tank Farms Assistant Manager:** Rob Hastings  
**Deputy Federal Project Director:** Janet Diediker  
**Ecology Project Manager:** Dan McDonald, Jeff Lyon

- M-047-07 CD-1 for Secondary Liquid Waste Treatment and CR<sup>2</sup> for CD-2 to Ecology**  
 Due: Deleted.  
 Note: Change Control Form M-47-19-01 signed July 25, 2019, deleted this milestone from the TPA. Milestones created by Change Control Form M-62-19-02 supersede this milestone.
- M-090-14 Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW**  
 Due: March 31, 2021.  
 Status: On Schedule.  
 Note: Change Control Form M-90-19-01 signed July 25, 2019, added this milestone to the TPA.
- M-090-13 CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY<sup>3</sup>**  
 Due: September 30, 2025.  
 Status: On Schedule.  
 Note: Change Control Form M-90-19-01 signed July 25, 2019, modified the due date for this milestone.
- M-090-00 Acquire/Modify Facilities for Storage of First Two Years of IHLW<sup>4</sup> from the WTP<sup>5</sup> Operations**  
 Due: December 31, 2036.  
 Status: On Schedule.
- M-047-00 Completion of Work for Management of Secondary Waste from the WTP**  
 Due: To Be Determined.  
 Status: On Schedule.

## Significant Past Accomplishments

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

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<sup>2</sup> Tri-Party Agreement change request.

<sup>3</sup> ECY denotes Washington State Department of Ecology.

<sup>4</sup> IHLW denotes immobilized high-level waste.

<sup>5</sup> WTP denotes Waste Treatment and Immobilization Plant.



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

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

### **Issues**

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

## Supplemental Treatment and Part B Permit Applications

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Project Director:** Ricky Bang  
**Ecology Project Manager:** Dan McDonald

The current status for each of the projects listed below, unless noted differently, is:

- In Dispute. Ecology and DOE have ended negotiations related to the M-062-45 Milestone and have initiated dispute. Therefore, the status of the milestones below has changed to “In Dispute.”

<b>M-062-45-T01</b>	<b>Complete Negotiations 6-Months after Last Issuance of System Plan</b>
Due:	April 30, 2015.
<b>M-062-45-ZZ</b>	<b>Negotiate a One-Time Supplemental Treatment Selection</b>
Due:	April 30, 2015.
<b>M-062-45-ZZ-A</b>	<b>Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones</b>
Due:	April 30, 2015.
<b>M-062-31-T01</b>	<b>Complete Final Design and Submit RCRA<sup>6</sup> Part B Permit Modification Request for Enhanced WTP &amp; Supplemental Treatment</b>
Due:	April 30, 2016.
<b>M-062-32-T01</b>	<b>Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements</b>
Due:	April 30, 2018.
<b>M-062-33-T01</b>	<b>Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements</b>
Due:	April 30, 2021.
<b>M-062-45-XX</b>	<b>Complete Negotiations to Resolve Future Disputes M-062-45, Paragraphs 4 and 5</b>
Due:	December 31, 2021.
Status:	On Schedule.
<b>M-062-34-T01</b>	<b>Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements</b>
Due:	December 30, 2022.
<b>M-062-21</b>	<b>Annually Submit Data Which Demonstrates Operation of the WTP at a Rate Sufficient to Meet M-062-00</b>
Due:	February 28, 2023.

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<sup>6</sup> RCRA denotes *Resource Conservation and Recovery Act*.

Status: At risk.

**M-062-00 Complete Pretreatment Processing and Vitrification of HLW<sup>7</sup> and LAW<sup>8</sup> Tank Wastes**

Due: December 31, 2047.

Status: At risk.

**Significant Past Accomplishments**

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

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

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

**Issues**

- See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

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<sup>7</sup> HLW denotes high-level waste.

<sup>8</sup> LAW denotes low-activity waste.

## Low-Activity Waste Pretreatment System

**Tank Farms Assistant Manager:** Rob Hastings  
**LAWPS Federal Manager:** Steve Pfaff  
**Ecology Project Manager:** Dan McDonald

**M-062-50**    **Submit to Ecology as a secondary document, a Mass Balance Flow**

Due: January 30, 2021.  
Status: On Schedule.  
Note: Change Control Form M-62-19-02 signed July 25, 2019, added this milestone to the TPA.

### Significant Past Accomplishments

- None.

### Significant Planned Actions in the Next Six Months

- None.

### Issues

- None.

## Tank-Side Cesium Removal System

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Project Manager:** Sahid Smith  
**Ecology Project Manager:** Dan McDonald

This section only covers the Tank Farms Project scope of the direct-feed low-activity waste mission. Please refer to the Consent Decree monthly report for the Waste Treatment and Immobilization Plant Project scope pertaining to direct-feed low-activity waste.

### Significant Past Accomplishments

- The Tank-Side Cesium Removal (TSCR) system and supporting infrastructure (tank farm upgrades and waste feed delivery) final design reviews were initiated in July 2019.
- The following TSCR technology testing was completed in July 2019:
  - Tall column.
  - Gas generation with ion exchange media.
  - Ion exchange media drying.

### Significant Planned Actions in the Next Six Months

- The following TSCR technology testing is projected to be completed in August 2019:
  - Batch contact.
- TSCR spent ion exchange column storage pad 90-percent design review is projected to begin in August 2019.
- TSCR system fabrication is projected to be completed in September 2019.
- TSCR system factory acceptance testing is projected to begin in October 2019.

### Issues

- Since April 2018, DOE and Ecology have been engaged in discussions on the potential regulatory significance of the TSCR emissions. Ecology has expressed a concern about permitting a system that sends air emissions or ventilation to a double-shell tank (DST) or single-shell tank (SST). Based on recent discussions, and to address Ecology's concerns, ORP is developing and evaluating potential options for sampling and monitoring TSCR emissions vented to the AP Tank Farm.
- On December 3, 2018, Ecology sent ORP and the DOE Richland Operations Office letter 18-NWP-177, "Hanford Site Ambient Air Boundary Concerns," regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. DOE, Ecology, and the Washington State Department of Health have met several times to attempt to develop a shared understanding of existing conditions and a path forward.

## 242-A Evaporator Status

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Program Manager:** Paul Hernandez  
**Ecology Project Manager:** Jeff Lyon

The 242-A Evaporator campaign strategy for fiscal year (FY) 2019 is in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2019	EC-10	102-AW	102-AW	A cold run followed by a short hot run was completed on June 27, 2019, at the 242-A Evaporator. This run occurred while design of new transfer lines from 242-A Evaporator to 241-AW Tank Farm continued. This run helped to maintain 242-A Evaporator staff proficiency, cycled idle equipment, and allowed for new equipment testing.

### Significant Past Accomplishments

- Completed campaign EC-10
- Completed run-in and leak testing of the PB-1 recirculation pump
- Awarded fabrication contract for PB-1 spare pump.

### Significant Planned Actions in the Next Six Months

- Procure new PB-1 and PB-2 replacement pumps
- Prepare 242-A Evaporator air instrument dryer upgrade design
- Prepare 60-percent design for 242-A Evaporator transfer line replacement
- Replace the sock filter assembly on the filtered raw water system.

### Issues

- None.

## Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Program Manager:** Richard Valle  
**Ecology Project Manager:** Stephanie Schleif/John Temple<sup>9</sup>  
 Dan McDonald (for milestones)

- M-062-51-T01**    **Submit To Ecology, As a Primary Document for Approval a Secondary Liquid Waste Disposition Work Plan**  
 Due: December 31, 2021.  
 Status: On Schedule.  
 Note: Change Control Form M-62-19-02 signed July 25, 2019, added this milestone to the TPA.
- M-062-51-T02**    **Submit Permit Modification Request for Redesign Upgrades And Operations to Support Volumes of Waste Types Expected**  
 Due: May 15, 2022.  
 Status: On Schedule.  
 Note: Change Control Form M-62-19-02 signed July 25, 2019, added this milestone to the TPA.
- M-062-51**    **Achieve Substantial Completion of LERF/ETF Construction Upgrades Necessary for LAW Hot Commissioning**  
 Due: April 15, 2023.  
 Status: On Schedule.  
 Note: Change Control Form M-62-19-02 signed July 25, 2019, added this milestone to the TPA.

### Significant Past Accomplishments

- Total FY 2019 processing volume: 1.7 million gallons
- Continued waste processing of Liquid Effluent Retention Facility (LERF) Basin 42 effluent through the Effluent Treatment Facility (ETF).
- Began mobilization and fieldwork preparations for repair of the ETF verification Tank B to replace the interior protective epoxy coating. Each of the three verification tanks will be repaired over the next 3 years (one per fiscal year).

### Significant Planned Actions in the Next Six Months

- Initiate ETF cleanout activities at the completion of LERF Basin 42 processing.
- Begin fieldwork to upgrade facility stairs and ladders to improve personnel safety and ergonomics.

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<sup>9</sup> Stephanie Schleif's transition project manager effective starting August 1, 2019.

- Receive peroxide decomposer vessel procurements (e.g., new stainless steel tanks, catalytic media) to support the system upgrade project in FY 2019. Begin fieldwork to upgrade peroxide decomposer vessel media and columns.
- Begin fieldwork to support upgrading the ETF rough filter and hoist to reduce processing down-time and worker exposure.

### Issues

- Work has paused on the LERF Basin 44 cover replacement project while nuclear safety evaluations are performed by Washington River Protection Solutions LLC (WRPS). The evaluations are due to visual indication of solid material in the basin and sample results from that material.

### LERF Volume Tracking

LERF liquid levels, inventory, and received waste are shown in the table below. Volumes in the table are estimated. Tanker shipment volumes are estimated by multiplying the number of shipments by the capacity of the tanker being used.

Description	242AL-42 (Basin 42)	242AL-43 (Basin 43)	242AL-44 (Basin 44)
AZ-301 Condensate	+ 5,600	-	-
Mixed Waste Trench 31 and 34	+ 38,700	-	-
Other (SWLL)	-	+ 450	-
Processing Campaign(s)	- 500,000	-	-
<b>Total Volume</b>	<b>5,400,000</b>	<b>6,460,000</b>	<b>680,000</b>

Data Date: August 1, 2019

Values shown in gallons.

SWLL = solid waste landfill lysimeter.



## Tank System Update

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Program Manager:** Dustin Stewart  
**Ecology Project Manager:** Jeff Lyon, Nina Menard

Reports are identified as completed (internal access only) or released (external access).

### Double-Shell Tank Integrity

#### Significant Past Accomplishments

- The annual comprehensive inspection of Tank AY-101 annulus was completed in January 2019. Engineering is reviewing the inspections. The previous annulus visual inspection was completed in January 2018.
- Ultrasonic testing inspections were completed for the following tanks in FY 2019:
  - 241-AP-107
  - 241-AP-108
  - 241-AN-102
  - 241-AP-106
  - 241-AP-106 (air slot inspection)
  - 241-AP-108 (air slots inspection)
  - 241-AN-102 (air slot inspection).
- Completed enhanced annulus visual inspection in FY 2019:
  - 241-AN-101
  - 241-AN-102
  - 241-AN-103
  - 241-AN-104
  - 241-AN-105
  - 241-AN-106
  - 241-AN-107
  - 241-AZ-101
  - 241-AZ-102.

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

- Ultrasonic testing inspection is planned for the following tank in FY 2019:
  - 241-AP-102 (annulus floor ultrasonic testing only; air slot inspection)
- Procure/Design annulus floor cleaning technology in FY 2019 to clean the annulus floor of Tank AY-101
- Procure a design of a primary tank bottom volumetric inspection system to be deployed into the annulus of DSTs and used to characterize regions of the primary tank bottom

- Procure and install a retractable corrosion monitoring probe in Tank AY-101.

### Issues

- None.

### Single-Shell Tank Integrity

#### Significant Past Accomplishments

- Visual inspections were completed for the following tanks in FY 2019:
  - 241-B-102
  - 241-B-103
  - 241-BX-104
  - 241-B-110
  - 241-B-111
  - 241-B-112
  - 241-SX-114
  - 241-T-103
  - 241-T-202
  - 241-U-101
  - 241-U-106
  - 241-U-109.

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

- Visual inspections are planned for the following tanks in FY 2019:
  - 241-SX-115
  - 241-T-108
  - 241-TY-106
- Perform TFC-ENG-CHEM-D-42, *Tank Leak Assessment Process*, on the following tanks in FY 2019:
  - 241-T-101 (completed)
  - 241-T-103 (ongoing).

### Issue

- None.

### Independent Qualified Registered Professional Engineer Activities

- DST system:
  - RPP-RPT-58441, *Double-Shell Tank System Integrity Assessment Report (DSTAR)*, Rev. 1, was completed in 2016.

- The independent, qualified, registered, professional engineer (IQRPE) recommended the next DST system integrity assessment report be completed in 10 years.
- SST system:
  - Completed M-045-9II Milestone report RPP-IQRPE-50028, *Single-Shell Tank System Structural Integrity Assessment Report*, in 2018.
  - The IQRPE recommended the next SST structural integrity assessment be completed in 16 years. Ecology transmitted letter 19-NWP-009, “Single-Shell Tank Structural Integrity Assessment, RPP-IQRPE-50028,” on January 16, 2019. The letter noted Ecology’s agreement with the IQRPE’s 16 year recommendation. DOE is reviewing a TPA change control form to establish new milestones based on recommendations from the IQRPE and Ecology.
- 242-A Evaporator:
  - Completed RPP-RPT-60098, *242-A Evaporator System Integrity Assessment Report*, Rev. 0 in 2018.
  - The IQRPE recommended the next 242-A Evaporator system integrity assessment be completed in 15 years. Ecology transmitted letter 18-NWP-114, “Department of Ecology’s (Ecology’s) Comment on the 242-A Evaporator System Integrity Assessment Report, RPP-RPT-60098, Revision 0,” on July 19, 2018. The letter noted Ecology’s disagreement with the IQRPE’s 15 year recommendation. The Hanford Sitewide Permit, Rev. 8C currently provides for 242-A Evaporator system integrity assessments on a frequency of 10 years, and ORP will continue to comply with the permit condition.
- ETF:
  - The IQRPE provided a Rev. B draft of report RPP-IQRPE-50043, *Effluent Treatment Facility IQRPE Integrity Assessment*, to WRPS. WRPS and ORP personnel provided comments on the draft to Meier Architecture Engineering on July 31, 2019.
- 219-S Tank System:
  - WRPS awarded the contract for the 219-S integrity assessment project to Meier Architecture Engineering.
  - As part of the 219-S assessment, the 24-hour static leak test was successfully performed on tanks 101 and 104 on September 13, 2018, and September 5, 2018, respectively. Tank 102 was successfully leak tested on May 7, 2019, completing the leak testing work needed for the assessment.
  - Visual inspections of the sample gallery and 2B hood 16 were completed on July 17, 2019. Both areas inspected appeared to be clean with little sign of corrosion or degradation.
  - Work package 350279, for the internal and external visual inspections of the tanks and associated piping, has been drafted and is under review.

## In-Tank Characterization and Summary

***Tank Farms Assistant Manager:*** Rob Hastings  
***Federal Program Manager:*** Dustin Stewart  
***Ecology Project Manager:*** Jeff Lyon

### Reports Completed or Released

For July 2019, the following reports were completed (internal access only) or released (external access):

- Completed:
  - RPP-PLAN-63293, *AN-102 TSAP*, Rev. 0
  - RPP-PLAN-61706, *Tank 241-SY-102 Grab Sampling and Analysis Plan*, Rev. 1
  - RPP-PLAN-62073, *Tank 241-AW-105 Grab Sampling and Analysis Plan for Fiscal Year 2018*, Rev. 1
  - RPP-PLAN-55317, *Sampling and Analysis Plan for Tank AZ-301 Liquid*, Rev. 6
  - RPP-RPT-61306, *Tank Core Profile Report for 241-AZ Tank Farm*, Rev. 0
  - RPP-RPT-61055, *Tank Core Profile Report for 241-AW Tank Farm*, Rev. 0
  - RPP-RPT-61237, *Final Analytical Report for Tank 241-AW-105 Grab Sampling in Support of Waste Characterization in Fiscal Year 2018*, Rev. 3
  - RPP-RPT-61614, *Final Analytical Report for Tank 241-SY-102 Grab Samples 2019-03*, Rev. 1
  - RPP-RPT-61104, *Final Analytical Report for Tank 241-AW-102 Grab Samples in Support of Test Bed Initiative Phase 2*, Rev. 1
  - RPP-RPT-61303, *Final Analytical Report for Tank 241-SY-101 TBI Grab Sampling 2018*, Rev. 3
- Released:
  - RPP-PLAN-63172, *Tank 241-A-104 Grab Sampling and Analysis Plan - Fiscal Year 2019*, Rev. 0
  - RPP-PLAN-63150, *Catch Tank 241-C-301 Sampling and Analysis Plan*, Rev. 0
  - HNF-EP-0182, *Waste Tank Summary Report for Month Ending June 30, 2019*, Rev. 378.

## **Tank Sampling**

### **Significant Past Accomplishments**

For July 2019, the following tank sampling was conducted:

- Tank 241-AW-102 grab sampling was completed July 9, 2019. Twelve samples were received at the laboratory
- Tank 241-AN-102 grab sampling was completed July 24, 2019. Seven samples were received at the laboratory.

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

Future tank sampling is scheduled to be performed as identified below:

- Tank 241-AY-101 core sampling is planned for August 2019.
- Tank 241-A-104 sampling is planned for September 2019.  
(Note: Uses the off riser sampling system.)
- Tank 241-C-301 catch tank grab sampling is planned for October 2019.

### **Issues**

- None.

## **Best-Basis Inventory Updates**

### **Significant Past Accomplishments**

- None.

### **Significant Planned Actions in the Next Month**

- Best-basis inventory updates for the following tanks are currently planned to be completed in August 2019:
  - 241-AW-103
  - 241-AX-102
  - 241-TX-118
  - 241-U-103.

### **Issues**

- None.

## Single-Shell Tank Closure Program

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Program Manager:** Rod Lobos/Vanessa Turner<sup>10</sup>  
**Ecology Project Manager:** Jeff Lyon

- M-045-59 Control Surface Water Infiltration Pathways as Needed**  
 Due: To Be Determined. Will be implemented if needed to control or significantly reduce the likelihood of migration of subsurface contamination to groundwater at the SST waste management areas (WMA) (pending the corrective measures study report, M-45-58 Milestone, and implementation of other interim corrective measures).  
 Status: On Schedule.
- M-045-62 Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 Corrective Measures Implementation Work Plan (CMIP) for WMA-C<sup>11</sup>**  
 Due: To Be Determined. To be established in accordance with the date identified in the M-45-82 Milestone Tier 2 closure plan.  
 Status: On Schedule.
- M-045-83 Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan**  
 Due: To Be Determined. To be established in accordance with the date identified in the M-45-82 Milestone Tier 2 closure plan.  
 Status: On Schedule.
- M-045-84 Initiate Negotiations to Establish HFFACO<sup>12</sup> Interim Milestones for Closure of 2nd SST WMA**  
 Due: April 3, 2017.  
 Status: Completed (March 14, 2017). Negotiations initiated on March 14, 2017.  
 Note: Change Control Form M-45-19-04 signed July 24, 2019, concluded the negotiations for this milestone.
- M-045-92V Complete Construction of Barriers 1 (South) and 2 (North) and Expansion Barrier in 241-SX Farm**  
 Due: October 31, 2019.  
 Status: Completed in May 2019.  
 Note: This includes the construction of the SX Tank Farm expansion barrier as well.

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<sup>10</sup> Vanessa Turner is identified as the PM V.A Turner where applicable

<sup>11</sup> WMA-C denotes C Tank Farm waste management area.

<sup>12</sup> HFFACO denotes *Hanford Federal Facility Agreement and Consent Order* (HFFACO and the Tri-Party Agreement [TPA] are used interchangeably throughout this report).

- M-045-92W**      **Submit to Ecology Design for Barrier 3 in 241-TX Farm**  
Due:            October 31, 2019.  
Status:        On Schedule.
- M-045-92AC**    **Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers**  
Due:            October 31, 2019.  
Status:        On Schedule.
- M-045-92X**      **Barrier 3 in 241-TX Farm Design Approved by Ecology**  
Due:            January 31, 2020.  
Status:        On Schedule.
- M-045-99**        **Submit to Ecology the Preliminary Performance Assessment/Closure Analysis**  
Due:            September 30, 2020.  
Status:        On Schedule.  
PM:            V.A. Turner  
Note:          Change Control Form M-45-19-04 signed July 25, 2019, added this milestone to the TPA.
- M-045-92AD**    **Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities**  
Due:            October 31, 2020.  
Status:        On Schedule.
- M-045-97**        **Submit to Ecology as a Primary Document a Waste Management Area Integration Study for WMA A/AX as described in HFFACO Appendix I.2.1.1**  
Due:            September 30, 2021.  
Status:        On Schedule.  
PM:            V.A. Turner  
Note:          Change Control Form M-45-19-04 signed July 25, 2019 added this milestone to the TPA.
- M-045-92Y**      **Complete Construction of Barrier 3 in 241-TX Farm**  
Due:            October 31, 2021.  
Status:        On Schedule.
- M-045-92Z**      **Submit to Ecology Design/Maintenance and Performance Monitoring Plan for Barrier 4 in 241-U Farm**  
Due:            October 31, 2021.  
Status:        On Schedule.
- M-045-92AA**    **Barrier 4 in 241-U Farm Design Approved by Ecology**  
Due:            January 31, 2022.  
Status:        On Schedule.

- M-045-85**      **Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs**  
Due: January 31, 2022.  
Status: On Schedule.
- M-045-98**      **Submit to Ecology as a Primary Document an RFI/CMS work plan for WMA A/AX including an implementation schedule in accordance with HFFACO Action Plan Section 11.6**  
Due: September 30, 2022.  
Status: On Schedule.  
PM: V.A. Turner.  
Note: Change Control Form M-45-19-04 signed July 25, 2019, added this milestone to the TPA.
- M-045-102**      **Submit to Ecology a Performance Assessment (PA) Maintenance Plan for WMA A/AX PA**  
Due: September 30, 2022.  
Status: On Schedule.  
PM: V.A. Turner.  
Note: Change Control Form M-45-19-04 signed July 25, 2019, added this milestone to the TPA.
- M-045-92AB**      **Complete Construction of Barrier 4 in 241-U Farm**  
Due: October 31, 2023.  
Status: On Schedule.
- M-045-103**      **Submit to Ecology a PMR with Tier 2 RCRA Closure Plan for WMA A/AX and Schedule for Tier 3 Schedule**  
Due: September 30, 2026.  
Status: On Schedule.  
PM: V.A. Turner.  
Note: Change Control Form M-45-19-04 signed July 25, 2019, added this milestone to the TPA.
- M-045-104**      **Submit to Ecology as a PMR the Post-Closure Plan for WMA A/AX**  
Due: September 30, 2028.  
Status: On Schedule.  
PM: V.A. Turner.  
Note: Change Control Form M-45-19-04 signed July 25, 2019, added this milestone to the TPA.
- M-045-00**      **Complete Closure of All SST Farms**  
Due: January 31, 2043.



Status: At Risk. Decision document 2016-005 signed August 22, 2016, requires this milestone to be addressed with the negotiations supporting M-062-45 Milestone. See the “System Plan” section above for updates related to the M-062-45 Milestone negotiations.

### Significant Past Accomplishments

- Completed construction of the SX Tank Farm Barrier 1 (south) and SX Tank Farm Barrier 2 (north).
- Completed construction of the SX Tank Farm expansion barrier (May 2019).
- Submitted revisions and comment responses to Ecology for RPP-RPT-59389, *Tier 2 Resource Conservation and Recovery Act (RCRA) Closure Action Plan for Waste Management Area C*; RPP-RPT-59390, *Tier 3 Resource Conservation and Recovery Act (RCRA) Component Closure Activity Plan for 241-C-200 Series Tanks*; and RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*.
- Continued permitting workshops with Ecology for the SST closure plans in the Hanford Sitewide permit.
- DOE/ORP-2014-02, *Clean Closure Practicality Demonstration for the Single-Shell Tanks*, with supplemental information DOE/ORP-201-4-02-SUPP-1 was approved via letter 19-NWP-090, “Transmittal of Supplemental Information to the *Clean Closure Practicality Demonstration for the Single-Shell Tanks*, DOE/ORP-2014-02-SUPP1, Revision 0,” by Ecology on June 12, 2019.

### Significant Planned Activities in the Next Six Months

- Resolve Ecology’s comments on RPP-RPT-59389, RPP-RPT-59390, and RPP-RPT-58858
- Submit design for Barrier 3 in 241-TX Tank Farm to Ecology
- Submit the maintenance and performance monitoring plan for interim barriers to Ecology.

### Issues

- ORP formally initiated the TPA dispute resolution process with Ecology over Ecology’s “Denial of Request for Waiver for TPA Waste Retrieval Criteria for SST 241-C-106” (C-106). This dispute was extended at the TPA Interagency Management Integration Team level until June 12, 2019. A Director’s Determination by the Director of Ecology was made on June 26, 2019 (19-NWP-101). ORP appealed the Director of Ecology’s determination to the Pollution Control Hearings Board on July 26, 2019.

## Single-Shell Tank Retrieval Program

**Tank Farms Assistant Manager:** Rob Hastings

**Federal Program Manager:** Jeff Rambo

**Ecology Project Manager:** Jeff Lyon

**M-045-93 Submit Report for Description, Analysis and Technology for Removing Drainable Liquids from SSTs**

Due: June 30, 2020.

Status: On Schedule.

Note: Change Control Form M-45-19-01 signed July 11, 2019, added this milestone to the TPA.

**M-045-86 Submit Retrieval Data Report (RDR) To Ecology for 19 Tanks Retrieved Under Consent Decree**

Due: To Be Determined (12 months after retrieval certification).

Status: No retrieval data reports are currently underway. The next planned retrieval is Tank 241-AX-102.

**M-045-70 Complete Waste Retrieval from All Remaining Single Shell Tanks (SSTs)**

Due: December 31, 2040.

Status: At Risk. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. See the "System Plan" section above for updates related to the M-062-45 Milestone negotiations.

### Significant Past Accomplishments

- Refer to the Consent Decree monthly report for retrieval accomplishments.

### Significant Planned Activities in the Next Six Months

- Refer to the Consent Decree monthly report for planned activities.

### Issues

- Refer to the Consent Decree monthly report for retrieval issues.

## Tank Operations Contract Overview

Earned Value Data: Fiscal Year 2019

June-19

Tank Farms ORP-0014 WBS 5 - River Protection Project (in \$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$59,357	\$53,949	\$54,599	(\$5,409)	(\$650)	0.91	0.99			
FYTD	\$503,983	\$476,270	\$475,294	(\$27,713)	\$975	0.95	1.00	\$738,518		
CTD	\$5,287,709	\$5,230,692	\$5,194,577	(\$57,018)	\$36,115	0.99	1.01	\$5,522,244	\$5,495,261	\$26,983

ACWP actual cost of work performed.

BAC budget at completion.

BCWP budgeted cost of work performed.

BCWS budgeted cost of work scheduled.

CM current month.

CPI cost performance index.

CTD contract to date.

CV cost variance.

EAC estimate at completion.

FYTD fiscal year to date.

SPI schedule performance index.

SV schedule variance.

VAC variance at completion.

The Earned Value Management System is intended to provide a status of how the contractor is progressing against its monthly planned work (i.e., schedule), and whether it is costing more or less to complete the work than planned. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

The project plan is measured by expressing the schedule in terms of dollars spread over the anticipated project duration, and then for each month, determining how much of the planned work was accomplished or “earned,” as measured in equivalent dollars. If more work is accomplished than planned, then the project is ahead of schedule and has a favorable schedule variance (SV). Similarly, if less work is accomplished, the project is behind schedule and has an unfavorable SV. Accomplished work is reported in the month it was completed, which may not be when it was planned. For example, work completed in a month earlier than planned would be reported as a favorable SV for the month in which it was completed, but would be reported as an unfavorable SV in the month it was planned. The end result would be a net zero overall cumulative SV over these months. Likewise, work completed late will recover an earlier reported unfavorable SV.

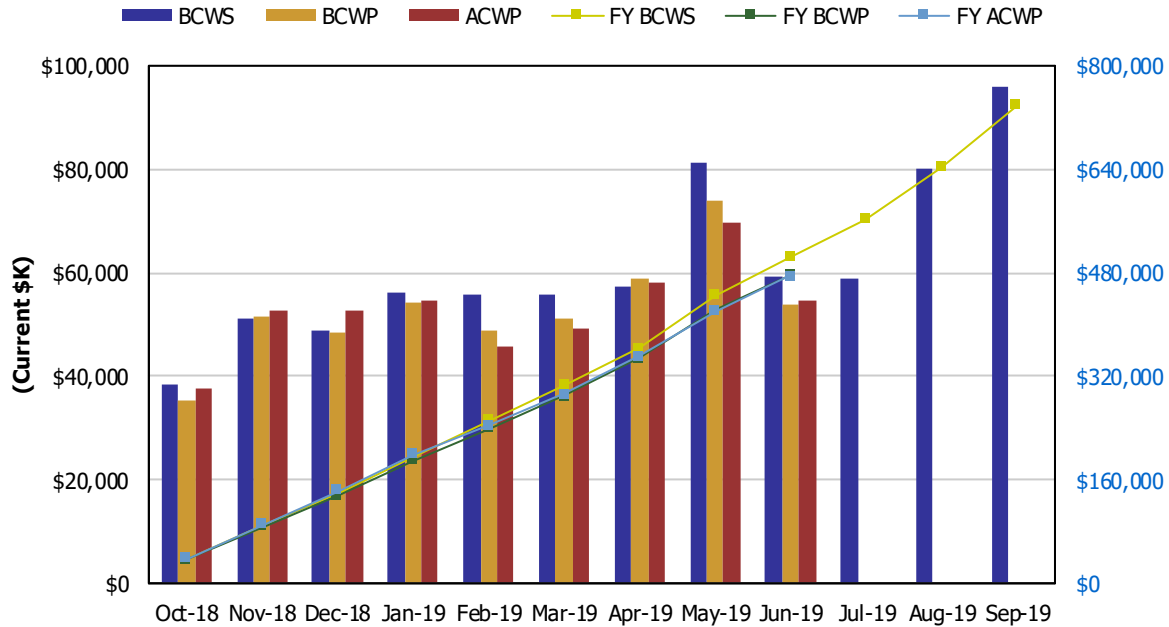
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 behind schedule [a negative or unfavorable SV: \$8,000–\$10,000 = (\$2,000)], and has cost \$1,000 more [a negative or unfavorable CV: \$8,000–\$9,000 = (\$1,000)] than was planned for completing that work scope. Likewise, a favorable or positive CV would be reported if it cost less to complete the work than the performed dollar value of the work. The SV and CV are reported for each monthly period, fiscal-year-to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the fiscal year or contract-to-date report provides a better indicator of the overall project completion status and can give a reasonable projection of how the project will finish, based on the progress-to-date.

Earned Value Data: Fiscal Year 2019

June-19

**Tank Farms ORP-0014**  
**WBS 5 - River Protection Project**

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2018	\$38,412	\$35,485	\$37,730	0.92	0.94	\$38,412	\$35,485	\$37,730	0.92	0.94
Nov 2018	\$51,217	\$51,557	\$52,805	1.01	0.98	\$89,629	\$87,042	\$90,536	0.97	0.96
Dec 2018	\$48,948	\$48,478	\$52,703	0.99	0.92	\$138,577	\$135,520	\$143,239	0.98	0.95
Jan 2019	\$56,114	\$54,183	\$54,445	0.97	1.00	\$194,691	\$189,703	\$197,684	0.97	0.96
Feb 2019	\$55,780	\$48,760	\$45,820	0.87	1.06	\$250,471	\$238,463	\$243,503	0.95	0.98
Mar 2019	\$55,648	\$51,235	\$49,340	0.92	1.04	\$306,120	\$289,697	\$292,843	0.95	0.99
Apr 2019	\$57,293	\$58,896	\$58,059	1.03	1.01	\$363,412	\$348,593	\$350,903	0.96	0.99
May 2019	\$81,214	\$73,728	\$69,793	0.91	1.06	\$444,626	\$422,321	\$420,695	0.95	1.00
Jun 2019	\$59,357	\$53,949	\$54,599	0.91	0.99	\$503,983	\$476,270	\$475,294	0.95	1.00
Jul 2019	\$58,875					\$562,858				
Aug 2019	\$79,900					\$642,758				
Sep 2019	\$95,759					\$738,518				
CTD	\$5,287,709	\$5,230,692	\$5,194,577	0.99	1.01					

ACWP actual cost of work performed.  
 BCWP budgeted cost of work performed.  
 BCWS budgeted cost of work scheduled.  
 CPI cost performance index.

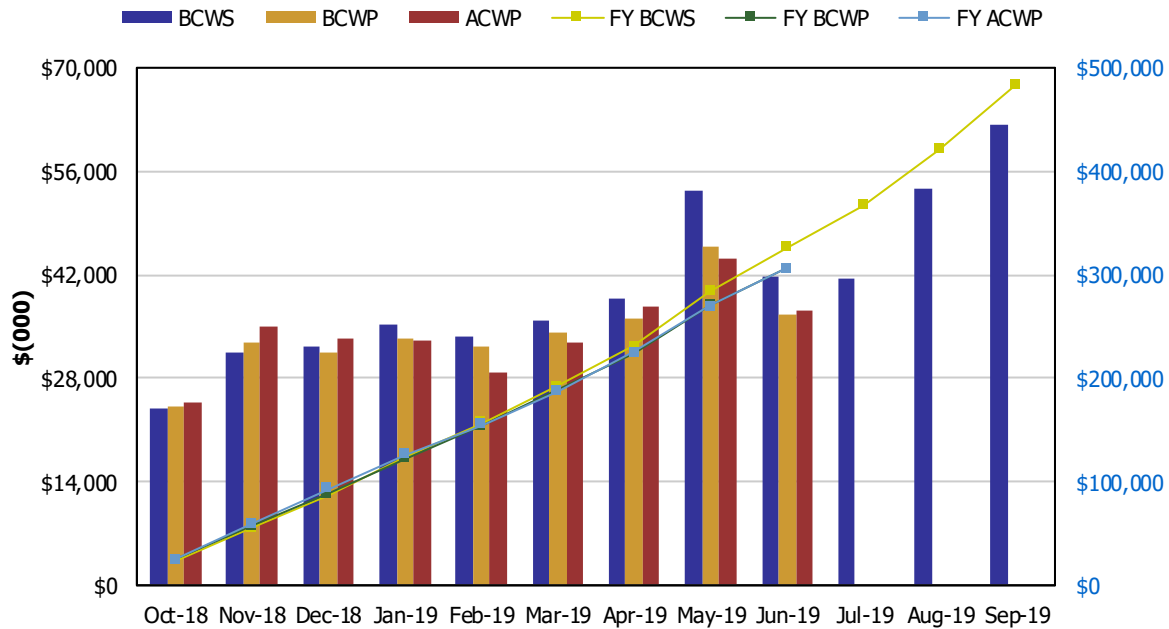
CM current month.  
 CTD contract to date.  
 FY fiscal year.  
 SPI schedule performance index.

Earned Value Data: Fiscal Year 2019

June-19

**Tank Farms ORP-0014**  
**WBS 5.1 - Base Operations**

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2018	\$23,815	\$24,288	\$24,807	1.02	0.98	\$23,815	\$24,288	\$24,807	1.02	0.98
Nov 2018	\$31,462	\$32,868	\$34,951	1.04	0.94	\$55,276	\$57,155	\$59,758	1.03	0.96
Dec 2018	\$32,379	\$31,352	\$33,247	0.97	0.94	\$87,655	\$88,507	\$93,005	1.01	0.95
Jan 2019	\$35,182	\$33,427	\$33,218	0.95	1.01	\$122,837	\$121,934	\$126,224	0.99	0.97
Feb 2019	\$33,669	\$32,157	\$28,838	0.96	1.12	\$156,506	\$154,092	\$155,062	0.98	0.99
Mar 2019	\$35,881	\$34,287	\$32,784	0.96	1.05	\$192,387	\$188,379	\$187,845	0.98	1.00
Apr 2019	\$38,897	\$36,077	\$37,624	0.93	0.96	\$231,284	\$224,456	\$225,469	0.97	1.00
May 2019	\$53,231	\$45,760	\$44,092	0.86	1.04	\$284,515	\$270,216	\$269,562	0.95	1.00
Jun 2019	\$41,610	\$36,524	\$37,259	0.88	0.98	\$326,125	\$306,740	\$306,820	0.94	1.00
Jul 2019	\$41,478					\$367,603				
Aug 2019	\$53,696					\$421,299				
Sep 2019	\$62,290					\$483,588				
CTD	\$3,502,778	\$3,469,357	\$3,422,347	0.99	1.01					

ACWP	actual cost of work performed.	CM	current month.
BCWP	budgeted cost of work performed.	CTD	contract to date.
BCWS	budgeted cost of work scheduled.	FY	fiscal year.
CPI	cost performance index.	SPI	schedule performance index.

*Tank Farms Assistant Manager:* Rob Hastings  
*Federal Project Director:* Ricky Bang

### 5.01 – Base Operations

The June 2019 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$5,086,068) was primarily due to:

- The LERF Basin 44 cover replacement project experienced unanticipated delays due to piping repairs and the need for extra analytical sample data to assess radiological levels in the basin. The additional time to complete this work delayed cover removal, which was the predominant driver for work scheduled in June.
- The AY02-A through line project experienced delays during start of the field activities to remove the cover plates and shielding and perform laser measurements in the pit. Planning activities were delayed due to unforeseen changes in field conditions. Also windy conditions shut down the field work crane operations.

The current month **unfavorable** CV of (\$734,774) was primarily due to:

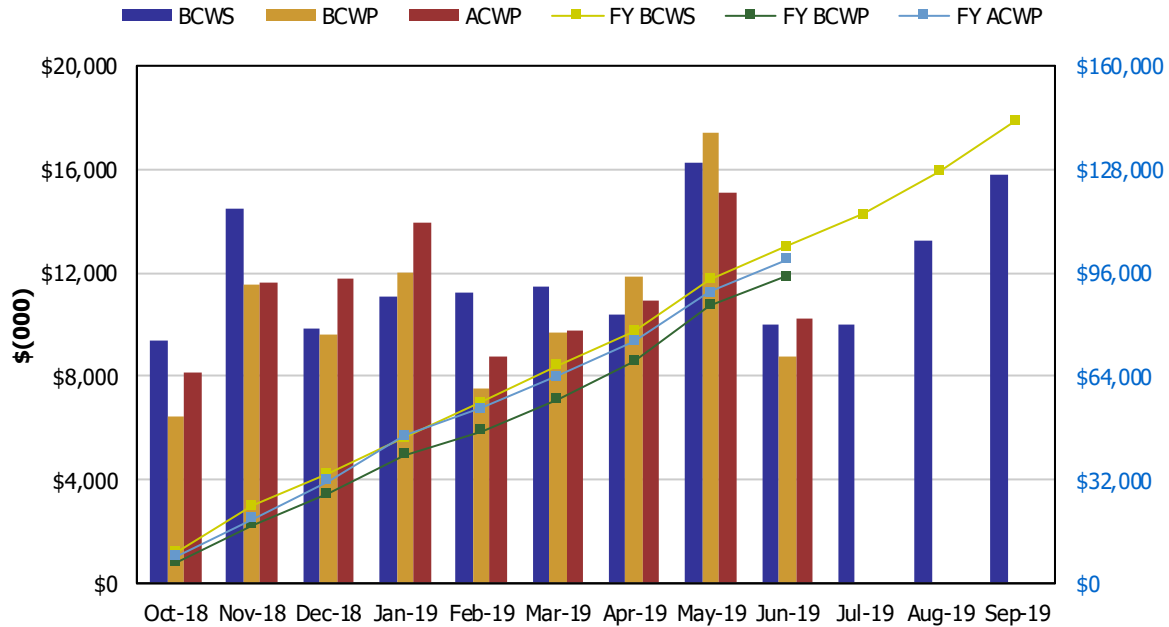
- The AY02-A through line project increased cost due to the project declaring that a larger than originally planned crane is required. An increase in resources were required to support AY-02A through line installation.

Earned Value Data: Fiscal Year 2019

June-19

**Tank Farms ORP-0014**  
**WBS 5.2 - Retrieve and Close SSTs**

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2018	\$9,402	\$6,448	\$8,124	0.69	0.79	\$9,402	\$6,448	\$8,124	0.69	0.79
Nov 2018	\$14,501	\$11,516	\$11,634	0.79	0.99	\$23,902	\$17,964	\$19,757	0.75	0.91
Dec 2018	\$9,824	\$9,620	\$11,762	0.98	0.82	\$33,726	\$27,585	\$31,519	0.82	0.88
Jan 2019	\$11,060	\$12,034	\$13,959	1.09	0.86	\$44,786	\$39,618	\$45,479	0.88	0.87
Feb 2019	\$11,259	\$7,545	\$8,742	0.67	0.86	\$56,046	\$47,163	\$54,221	0.84	0.87
Mar 2019	\$11,437	\$9,672	\$9,801	0.85	0.99	\$67,483	\$56,836	\$64,022	0.84	0.89
Apr 2019	\$10,391	\$11,841	\$10,948	1.14	1.08	\$77,874	\$68,677	\$74,969	0.88	0.92
May 2019	\$16,243	\$17,411	\$15,108	1.07	1.15	\$94,117	\$86,088	\$90,077	0.91	0.96
Jun 2019	\$9,975	\$8,740	\$10,257	0.88	0.85	\$104,092	\$94,828	\$100,335	0.91	0.95
Jul 2019	\$9,988					\$114,080				
Aug 2019	\$13,271					\$127,350				
Sep 2019	\$15,814					\$143,164				
CTD	\$1,044,831	\$1,025,558	\$1,078,833	0.98	0.95					

ACWP actual cost of work performed.  
 BCWP budgeted cost of work performed.  
 BCWS budgeted cost of work scheduled.  
 CPI cost performance index.

CM current month.  
 CTD contract to date.  
 FY fiscal year.  
 SPI schedule performance index.

*Tank Farms Assistant Manager:* Rob Hastings  
*Federal Program Manager:* Jeff Rambo

### **5.02 – Retrieve and Close Single-Shell Tanks**

For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

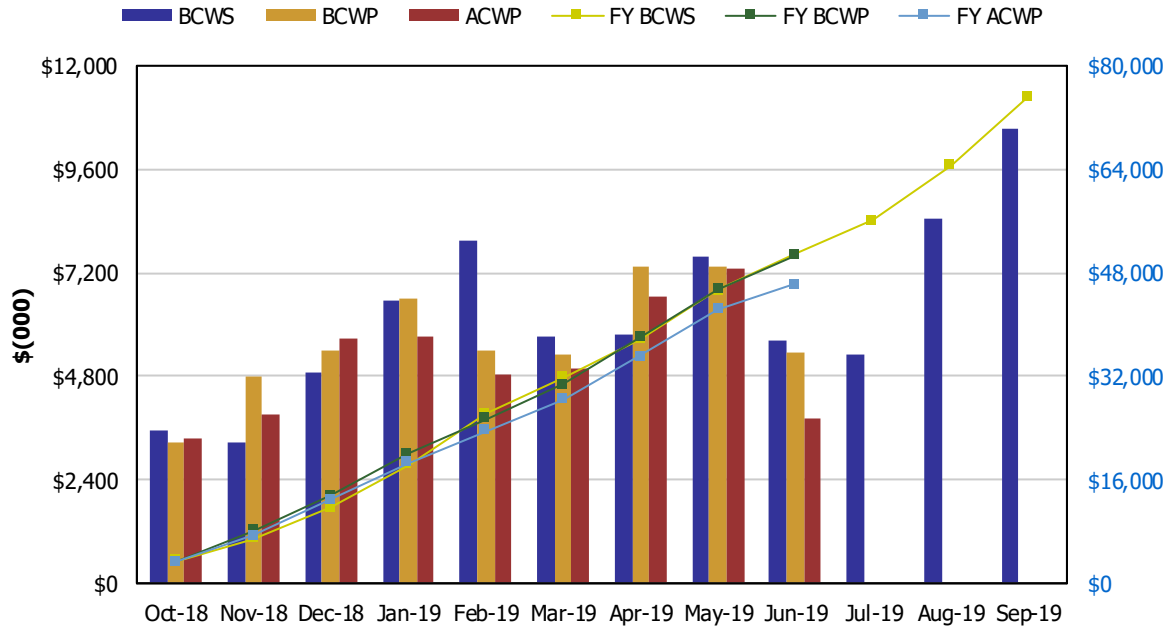


Earned Value Data: Fiscal Year 2019

June-19

**Tank Farms ORP-0014**  
**WBS 5.3 - WFD/Treatment Plng/DST Retrieval/Closure**

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2018	\$3,529	\$3,267	\$3,336	0.93	0.98	\$3,529	\$3,267	\$3,336	0.93	0.98
Nov 2018	\$3,269	\$4,771	\$3,923	1.46	1.22	\$6,798	\$8,039	\$7,259	1.18	1.11
Dec 2018	\$4,868	\$5,392	\$5,695	1.11	0.95	\$11,666	\$13,431	\$12,954	1.15	1.04
Jan 2019	\$6,572	\$6,604	\$5,699	1.00	1.16	\$18,238	\$20,035	\$18,653	1.10	1.07
Feb 2019	\$7,962	\$5,389	\$4,829	0.68	1.12	\$26,200	\$25,425	\$23,482	0.97	1.08
Mar 2019	\$5,716	\$5,326	\$4,994	0.93	1.07	\$31,917	\$30,750	\$28,476	0.96	1.08
Apr 2019	\$5,766	\$7,335	\$6,627	1.27	1.11	\$37,683	\$38,086	\$35,102	1.01	1.08
May 2019	\$7,556	\$7,329	\$7,272	0.97	1.01	\$45,239	\$45,415	\$42,374	1.00	1.07
Jun 2019	\$5,635	\$5,332	\$3,807	0.95	1.40	\$50,874	\$50,747	\$46,181	1.00	1.10
Jul 2019	\$5,293					\$56,167				
Aug 2019	\$8,454					\$64,621				
Sep 2019	\$10,543					\$75,165				
CTD	\$550,459	\$546,695	\$500,957	0.99	1.09					

ACWP actual cost of work performed.  
 BCWP budgeted cost of work performed.  
 BCWS budgeted cost of work scheduled.  
 CPI cost performance index.

CM current month.  
 CTD contract to date.  
 FY fiscal year.  
 SPI schedule performance index.

*Tank Farms Assistant Manager:* Rob Hastings  
*Federal Program Manager:* Brian Harkins

### **5.03 – Waste Feed Delivery/Treatment**

The June 2019 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$302,300) was primarily due to:

- Delays in evaluation of the low-activity waste bubbler proposals and final award of the bubbler subcontract.

The current month **favorable** CV of \$1,525,800 was primarily due to:

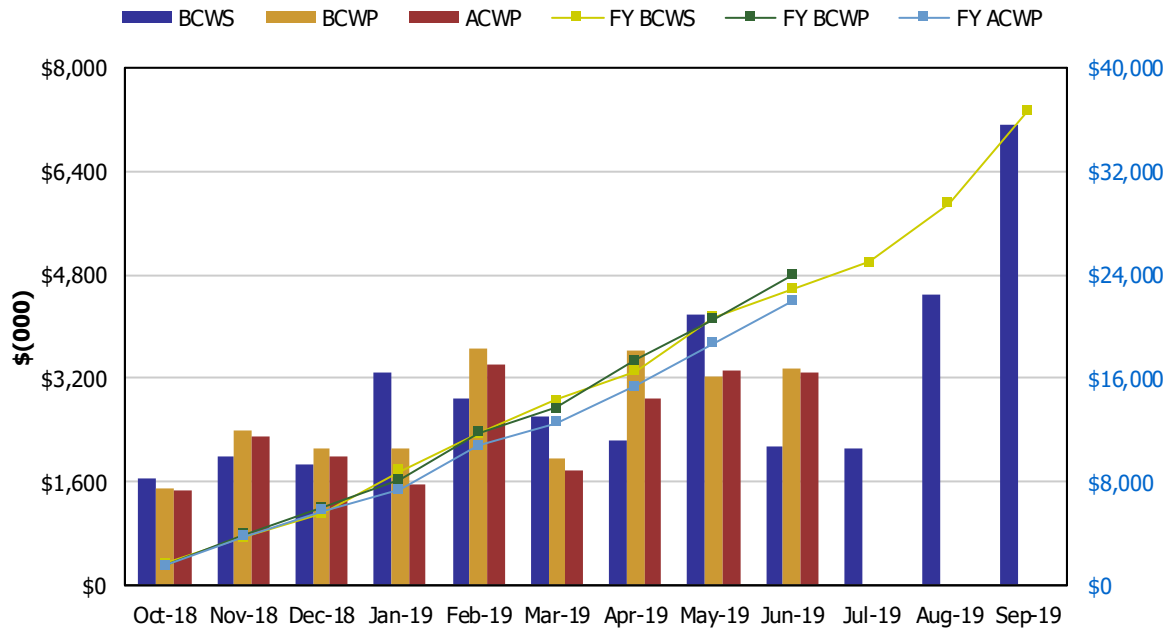
- Savannah River National Laboratory subcontract efficiencies associated with waste form testing work plan development and data gathering of the secondary waste inventories.

Earned Value Data: Fiscal Year 2019

June-19

**Tank Farms ORP-0014  
WBS 5.5 - Treat Waste**

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2018	\$1,666	\$1,482	\$1,464	0.89	1.01	\$1,666	\$1,482	\$1,464	0.89	1.01
Nov 2018	\$1,986	\$2,402	\$2,297	1.21	1.05	\$3,652	\$3,884	\$3,761	1.06	1.03
Dec 2018	\$1,877	\$2,114	\$2,001	1.13	1.06	\$5,529	\$5,997	\$5,762	1.08	1.04
Jan 2019	\$3,301	\$2,118	\$1,568	0.64	1.35	\$8,830	\$8,115	\$7,330	0.92	1.11
Feb 2019	\$2,890	\$3,668	\$3,411	1.27	1.08	\$11,720	\$11,783	\$10,741	1.01	1.10
Mar 2019	\$2,614	\$1,950	\$1,761	0.75	1.11	\$14,333	\$13,733	\$12,502	0.96	1.10
Apr 2019	\$2,239	\$3,642	\$2,895	1.63	1.26	\$16,572	\$17,374	\$15,397	1.05	1.13
May 2019	\$4,183	\$3,228	\$3,321	0.77	0.97	\$20,755	\$20,603	\$18,718	0.99	1.10
Jun 2019	\$2,137	\$3,352	\$3,276	1.57	1.02	\$22,892	\$23,954	\$21,994	1.05	1.09
Jul 2019	\$2,116					\$25,009				
Aug 2019	\$4,479					\$29,488				
Sep 2019	\$7,113					\$36,601				
CTD	\$169,531	\$168,971	\$173,310	1.00	0.97					

ACWP actual cost of work performed.  
 BCWP budgeted cost of work performed.  
 BCWS budgeted cost of work scheduled.  
 CPI cost performance index.

CM current month.  
 CTD contract to date.  
 FY fiscal year.  
 SPI schedule performance index.

*Tank Farms Assistant Manager:* Rob Hastings  
*Deputy Federal Project Director:* Sahid Smith

### **5.05 – Treat Waste**

The June 2019 variances below do not impact TPA milestones.

The **favorable** SV of \$1,214,800 was primarily due to:

- Completion of the 90-percent design package in June 2019, which resulted in a recovery of the unfavorable SV realized in the previous reporting periods. The delay was a result of the structural calculations taking longer than anticipated, mostly as a result of vendor resource limitations.

The **favorable** CV of \$75,600 was:

- Below the reporting threshold.