

Office of River Protection



Monthly Reporting Period **October 1–October 31, 2019¹**

¹ 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 September 2019.

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Acronyms and Abbreviations

CV	cost variance
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

Milestone	Title	Due Date	DOE PM	Status
Prior Years				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	B.A. Harkins	In Dispute
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection	04/30/2015	B.A. Harkins	In Dispute
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones	04/30/2015	B.A. Harkins	In Dispute
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	B.A. Harkins	In Dispute
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements	04/30/2018	B.A. Harkins	In Dispute
Fiscal Year 2020 (October 1, 2019–September 30, 2020)				
M-062-40G	Select a Minimum of 3 Scenarios	10/31/2019	B.A. Harkins	Completed
M-045-92V	Complete Construction of Barriers 1 (North) and 2 (South) and Expansion Barrier in 241-SX Farm	10/31/2019	B.A. Harkins	Completed
M-045-92W	Submit to Ecology Design for Barrier 3 in 241-TX Farm	10/31/2019	B.A. Harkins	Completed
M-045-92AC	Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers	10/31/2019	B.A. Harkins	Completed
M-045-92X	Barrier 3 in 241-TX Farm Design Approved by Ecology	01/31/2020	B.A. Harkins	Completed
M-062-01AN	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2020	B.A. Harkins	On Schedule
M-045-93	Submit Report for Description, Analysis and Technology for Removing Drainable Liquids from SSTs	06/30/2020	B.A. Harkins	On Schedule

Milestone	Title	Due Date	DOE PM	Status
M-062-54A	Submit Permit Application for AP Tank Farm Mods and Operation Necessary to Support TSCR	07/15/2020	B.A. Harkins	On Schedule
M-062-01AO	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2020	B.A. Harkins	On Schedule
M-045-56P	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2020	B.A. Harkins	On Schedule
M-045-99	Submit to Ecology the Preliminary Performance Assessment/Closure Analysis	09/30/2020	B.A. Harkins	On Schedule
M-045-59	Control Surface Water Infiltration Pathways as Needed	TBD ¹	B.A. Harkins	On Schedule
M-045-62	Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C	TBD ¹	B.A. Harkins	On Schedule
M-045-83	Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan	TBD ¹	B.A. Harkins	On Schedule
Fiscal Year 2021 (October 1, 2020 – September 30, 2021)				
M-045-92AD	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities	10/31/2020	B.A. Harkins	On Schedule
M-062-40H	Submit System Plan to Ecology	10/31/2020	J.F. Grindstaff	On Schedule
M-062-50	Submit to Ecology as a Secondary Document, a Mass Balance Flow	01/30/2021	B.A. Harkins	On Schedule
M-062-01AP	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2021	B.A. Harkins	On Schedule
M-090-14	Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW	3/31/2021	B.A. Harkins	On Schedule
M-062-45-A	Complete Negotiations 6-Months After Last Issuance of System Plan	4/30/2021	B.A. Harkins	On Schedule
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements	4/30/2021	B.A. Harkins	In Dispute

Milestone	Title	Due Date	DOE PM	Status
M-062-01AQ	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2021	B.A. Harkins	On Schedule
M-045-56Q	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2021	B.A. Harkins	On Schedule
M-045-91E4	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2021	B.A. Harkins	On Schedule
M-045-97	Submit to Ecology a WMA Integration Study for WMA A/AX as a Primary Document	09/30/2021	B.A. Harkins	On Schedule

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

CD = critical decision.

CMIP = corrective measures implementation work plan.

DFLAW = direct-feed low-activity waste.

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.

TSCR = tank-side cesium removal.

WTP = Waste Treatment and Immobilization Plant.

WMA-C = C Tank Farm waste management area.

System Plan

Responsible Assistant Manager: Joni Grindstaff
Technical Lead: Kaylin Burnett
Ecology Project Manager: Dan McDonald, Jeff Lyon

M-062-40H **Submit System Plan to Ecology**
 Due: October 31, 2020
 Status: On Schedule.

M-062-45-A **Complete Negotiations 6-Months after Last Issuance of System Plan**
 Due: April 30, 2021
 Status: On Schedule.

Significant Past Accomplishments

The selected scenarios for the *River Protection System Plan* (System Plan), Rev. 9 were agreed upon by U.S. Department of Energy, Office of River Protection (ORP) and Washington State Department of Ecology (Ecology). ORP documented the agreement and transmitted letter 19-MIO-0020, "Request for Concurrence on Selected Scenarios for the River Protection Project System Plan, Revision 9," dated September 25, 2019, to Ecology for concurrence. Ecology concurred on October 2, 2019, via letter 19-NWP-158, "Re: Transmittal of Signed Concurrence for *Selected Scenarios for the River Protection Project System Plan, Revision 9*, RPP-RPT-61707, Rev. 0."

Significant Planned Actions in the Next Six Months

- Discuss disputes with regard to milestone M-062-45 and its associated milestones during holistic negotiations.
- Ecology and ORP will continue discussions in support of System Plan, Rev. 9 development, due October 31, 2020.

Issues

- None.

Acquisition of New Facilities

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: Janet Diediker
Ecology Project Manager: Dan McDonald, Jeff Lyon

- M-090-14** **Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW²**
 Due: March 31, 2021.
 Status: On Schedule.
- M-090-13** **CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY³**
 Due: September 30, 2025.
 Status: On Schedule.
- M-090-00** **Acquire/Modify Facilities for Storage of First Two Years of IHLW⁴ from the WTP⁵ 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 (“Complete Negotiations 6-months After Last Issuance of System Plan”).

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.

² DFLAW denotes direct-feed low-activity waste.

³ ECY denotes Washington State Department of Ecology.

⁴ IHLW denotes immobilized high-level waste.

⁵ WTP denotes Waste Treatment and Immobilization Plant.

Supplemental Treatment and RCRA Part B Permit Applications

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: 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 ORP 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.”

M-062-45-T01	Complete Negotiations 6-Months after Last Issuance of System Plan
Due:	April 30, 2015.
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection
Due:	April 30, 2015.
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones
Due:	April 30, 2015.
M-062-31-T01	Complete Final Design and Submit RCRA⁶ Part B Permit Modification Request for Enhanced WTP & Supplemental Treatment
Due:	April 30, 2016.
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements
Due:	April 30, 2018.
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
Due:	April 30, 2021.
M-062-45-XX	Complete Negotiations to Resolve Future Disputes M-062-45, Paragraphs 4 and 5
Due:	December 31, 2021.
Status:	On Schedule.
M-062-34-T01	Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
Due:	December 30, 2022.

⁶ RCRA denotes *Resource Conservation and Recovery Act*.

M-062-21 Annually Submit Data Which Demonstrates Operation of the WTP at a Rate Sufficient to Meet M-062-00

Due: February 28, 2023.
Status: At risk.

M-062-00 Complete Pretreatment Processing and Vitrification of HLW⁷ and LAW⁸ 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.

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.

⁷ HLW denotes high-level waste.

⁸ LAW denotes low-activity waste.

Low-Activity Waste Pretreatment System

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: 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.

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
Technical Lead: Sahid Smith
Ecology Project Manager: Dan McDonald

This “Tank-Side Cesium Removal System” (TSCR) 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.

M-062-54A Submit Permit Application for AP Tank Farm Mods and Operation Necessary to Support TSCR

Due: July 15, 2020.
Status: On Schedule.

Significant Past Accomplishments

- Waste feed delivery final design was released in August 2019.
- TSCR system, tank farm upgrades, and TSCR spent ion exchange pad final designs were completed in September 2019.
- TSCR technology testing for batch contact was completed in September 2019.

Significant Planned Actions in the Next Six Months

- TSCR system fabrication is projected to be completed in 2019.
- TSCR system factory acceptance testing is projected to begin in 2019.

Issues

- Since April 2018, ORP and Ecology have been engaged in discussions about regulatory framework related to TSCR emissions. Ecology has expressed concern about issuing a permit for 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 the TSCR emissions vented to the AP Tank Farm.
- On December 3, 2018, Ecology sent ORP and the U.S. Department of Energy, Richland Operations Office letter 18-NWP-177, “Hanford Site Ambient Air Boundary Concerns,” regarding the Hanford Site ambient air boundary. In it, Ecology expressed its belief that the ambient air boundary appears to have changed as a result of increased public access to parts of the Hanford Site. ORP, 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
Technical Lead: Paul Hernandez
Ecology Project Manager: Jeff Lyon

The 242-A Evaporator campaign strategy for fiscal year (FY) 2020 is in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2020	EC-11	N/A	N/A	A cold run will be initiated prior to June 25, 2020, at the 242-A Evaporator. This run will occur while fieldwork activities for the new transfer lines from 242-A Evaporator to 241-AW Tank Farm are in progress. This run will maintain 242-A Evaporator readiness, staff proficiency, and cycle idle equipment.

N/A = not applicable.

Significant Past Accomplishments

- Completed annual electrical preventive maintenance activities
- Awarded fabrication contract for PB-1 spare pump
- Awarded fabrication contract for PB-2 spare pump
- Completed design for replacement of 242-A Evaporator instrument air dryer
- Received new instrument air dryer
- Completed 60 percent design for 242-A Evaporator transfer line replacement.

Significant Planned Actions in the Next Six Months

- Procure new PB-1 and PB-2 replacement pumps
- Install 242-A Evaporator instrument air dryer upgrade
- Complete 100 percent design for 242-A Evaporator transfer line replacement
- Replace the sock filter assembly on the filtered raw water system
- Initiate 242-A Evaporator safe systems upgrades engineering design.

Issues

- None.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: Richard Valle
Ecology Project Manager: John Temple, 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.

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.

M-062-51 Achieve Substantial Completion of LERF/ETF Construction Upgrades Necessary for LAW Hot Commissioning

Due: April 15, 2023.
Status: On Schedule.

Significant Past Accomplishments

- Total FY 2020 processing volume: approximately 1 million gallons
- Initiated Effluent Treatment Facility (ETF) cleanout activities at the completion of Liquid Effluent Retention Facility (LERF) Basin 42 processing.

Significant Planned Actions in the Next Six Months

- Continue ETF cleanout activities for the completion of LERF Basin 42 processing.
- Commissioning of the new ETF peroxide decomposer vessel and media system will continue through December 2019.
- Complete the replacement of select facility stairs and ladders to improve personnel safety and ergonomics.
- Begin upgrade of ETF reverse osmosis system to replace leak prone valves and obsolete system pumps.
- Begin upgrade of the ETF cooling tower system, which is subject to shut down due to the degraded condition.
- Begin replacement of the leak-prone ETF evaporator drain valve.
- Begin replacement of the ETF uninterruptible power supply due to age and the occurrence of faults.
- Begin replacement of the ETF rough filter system to reduce processing down time.

- Begin replacement of the ETF chiller to improve reliability and reduce system maintenance.
- Begin replacement of the ETF dilute caustic tank with a tank of compatible material to the system piping.
- Continue engineering design for LERF Basin 41 with subcontractor, Sargent & Lundy. A 30-percent design review is scheduled for November 5, 2019.
- Begin conceptual design for ETF supplemental organic treatment. Design will include the treatment system, as well as the necessary infrastructure modifications.

Issue

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

LERF Volumes

LERF liquid levels, inventory, and received waste are shown in the table below. Volumes in the table are estimated⁹. 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	+ 3,500	-	-
Mixed Waste Trench 31 and 34	+ 25,500	-	-
Other (325 RPS)	-	+ 1,800	-
Processing Campaign(s)	- 1,002,000	-	-
Total Volume	2,610,000	6,441,000	630,000

Data Date: October 31, 2019.
Values shown in gallons.

RPS = retention process sewer.

⁹ The volume in each Liquid Effluent Retention Facility basin is calculated from liquid level sensor readings. Therefore, based on sensor fluctuations and/or environmental effects (e.g., precipitation, temperature), values for basin volumes may vary slightly from the net inputs and/or outputs shown for the basin.

Tank System Update

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: Dustin Stewart
Ecology Project Manager: Jeff Lyon, Nina Menard

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

M-045-91E4 Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology

Due: September 30, 2021.
 Status: On Schedule.

M-045-91K Complete Initial Baseline Visual Inspections of all SSTs

Due: September 30, 2023.
 Status: On Schedule.

M-045-91K-T01 Submit Report of the Initial Baseline Visual Inspection of all SSTs Remaining to be Inspected

Due: March 31, 2024.
 Status: On Schedule.

M-045-91L Obtain Assessment Reviewed/Certified by an IQRPE Attesting to SST Structural Integrity

Due: September 30, 2034.
 Status: On Schedule.

Double-Shell Tank Integrity

Significant Past Accomplishments

- Received an annulus floor cleaner to clean the annulus floor of Tank AY-101
- Received and installed a retractable corrosion monitoring probe in Tank AY-101
- 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-102 (annulus floor ultrasonic testing only; 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

- Complete the 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. The procurement contract to fabricate, test, and deliver this system will be awarded in FY 2020.
- Fabricate two retractable corrosion monitoring probes for installation in the following tanks:
 - 241-AW-104.
 - 241-AP-102.
- Award a competitive procurement contract to a vendor to design and fabricate a tertiary leak detection inspection tool for deployment beneath the secondary liner of a DST.
- Complete ultrasonic testing of the following tanks:
 - 241-AW-102.
 - 241-AW-101.
 - 241-AW-106.
- Complete enhanced annulus visual inspections in FY 2020
 - 241-SY-101.
 - 241-SY-102.
 - 241-SY-103.
 - 241-AW-101.
 - 241-AW-102.
 - 241-AW-103.
 - 241-AW-104.
 - 241-AW-105.
 - 241-AW-106.

Issues

- None.

Single-Shell Tank Integrity

Significant Past Accomplishments

- Visual inspections were completed for the following tanks in FY 2019:
 - 241-AX-102.
 - 241-B-102.
 - 241-B-103.
 - 241-B-110.
 - 241-B-111.
 - 241-B-112.
 - 241-BX-104.
 - 241-C-106.
 - 241-SX-114.
 - 241-SX-115.
 - 241-T-103.
 - 241-T-108.
 - 241-T-202.
 - 241-U-101.
 - 241-U-106.
 - 241-U-109.
 - 241-TY-106.
- RPP-RPT-55202, *Dome Survey Report for Hanford Single-Shell Tanks*, Rev. 3, was transmitted to Ecology in September satisfying TPA milestone M-045-91E3 via letter 19-TPD-0018, “Completion of Hanford Federal Facility Agreement and Consent Order Interim Milestone M-045-91E3 Deliverable,” dated September 5, 2019.
- Perform TFC-ENG-CHEM-D-42, *Tank Leak Assessment Process*, on the following tanks in FY 2020:
 - 241-T-101.
 - 241-T-103 (completed).

Significant Planned Actions in the Next Six Months

- Perform TFC-ENG-CHEM-D-42 on the following tanks in FY 2020:
 - 241-SX-104 (ongoing)
 - 241-T-109
 - 241-T-113
- Perform SST visual inspection in FY 2020 on the following tanks:
 - 241-B-107
 - 241-BX-105
 - 241-BX-108
 - 241-BX-109

- 241-BX-112
- 241-BY-107
- 241-S-103
- 242-S-110
- 241-SX-112
- 241-TX-101
- 241-TX-102
- 241-TX-104
- 241-TX-107
- 241-TX-110
- 241-TY-101
- 241-TY-104.

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.
- 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 at a frequency of 10 years, and ORP will continue to comply with the permit condition.

- ETF:
 - The IQRPE finalized and transmitted RPP-IQRPE-50043, *Effluent Treatment Facility (ETF) IQRPE Integrity Assessment*, to WRPS on September 12, 2019. The report is in the ORP clearance process with a public release date expected by December 2019.
- 219-S Tank System:
 - WRPS awarded the contract for the 219-S integrity assessment project to Meier Architecture Engineering (Meier).
 - As part of the 219-S assessment, the 24-hour static leak test was successfully performed on Tank TK-101 and Tank TK-104 on September 13, 2018, and September 5, 2018, respectively. Tank TK-102 was successfully leak tested on May 7, 2019, completing the leak testing work needed for the assessment. Visual inspections were completed at Tank TK-101, Tank TK-102, and Tank TK-104 waste receiver vessels in September 2019.
 - Visual inspections of the sample gallery and room 2B hood 16 were completed on July 17, 2019. Both areas inspected appeared to be clean with little sign of corrosion or degradation.
 - Internal and external visual inspections of the 219-S tank system and their secondary containment were completed on September 25, 2019. Visual inspection of the hot tunnels was completed on October 2, 2019. This activity completes the facility inspections necessary for the integrity assessment.
 - Meier submitted Revision A of RPP-IQRPE-50029, *219-S Integrity Assessment Report*, on October 11, 2019.

In-Tank Characterization and Summary

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: Dustin Stewart
Ecology Project Manager: Jeff Lyon

Reports Completed or Released

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

- Completed:
 - RPP-RPT-58618, *Derivation of Best-Basis Inventory for Tank 241-T-110 as of October 1, 2019*, Rev. 2
 - RPP-RPT-58771, *Derivation of Best-Basis Inventory for Tank 241-SX-115 as of October 1, 2019*, Rev. 1
 - RPP-PLAN-63574, *Tank 241-AN-101 Grab Sampling and Analysis Plan in Support of 241-AP-106 Repurposing - Step 4*, Rev. 0
 - RPP-PLAN-60361, *Tank 241-AP-107 Grab Sampling and Analysis Plan in FY2017*, Rev. 2
 - RPP-PLAN-63552, *Tank 241-AN-107 Core Sampling and Analysis Plan*, Rev. 0
 - RPP-RPT-61614, *Final Analytical Report for Tank 241-SY-102 Grab Samples 2019-03*, Rev. 2
- Released:
 - HNF-EP-0182, *Waste Tank Summary Report for Month Ending September 30, 2019*, Rev. 381.

Tank Sampling

Significant Past Accomplishments

For October 2019, the following tank sampling was conducted:

- Tank 241-AN-107 core sampling was performed October 10, 2019, through October 16, 2019 and is still in progress. Six samples were received at the laboratory.
- Tank 241-AP-106 repurposing step 3 grab sampling was performed October 24, 2019. Six samples were received at the laboratory.
- Tank 241-A-104 grab sampling (first of two risers) was performed October 29, 2019. Two 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-A-104 sampling will continue.
- Tank 241-AN-101 repurposing step 4 receiver tank grab sampling is planned for November 2019.
- Tank 241-AN-107 core sampling began in October and is forecasted for completion in November 2019.
- Tank 241-AP-102 repurposing receiver tank grab sampling is tentatively planned for February 2020.
- Tank 241-AP-105 phase one large volume grab sampling is planned for December 2019.
- Tank 241-AP-105 phase two large volume grab sampling is tentatively planned for March 2020.
- Tank 241-AP-106 repurposing step 6 grab sampling is planned for December 2019.
- Tank 241-AP-107 grab sampling is tentatively planned for September 2020
- Tank 241-AP-108 repurposing receiver tank grab sampling (if required) is tentatively planned for April 2020.
- Tank 241-AX-102 grab sampling is tentatively planned for June 2020
- Tank 241-C-301 catch tank grab sampling is tentatively planned for September 2020.

Issues

- None.

Best-Basis Inventory Updates

Significant Past Accomplishments

- Best-basis inventory updates for the following tanks were completed in October 2019:
 - 241-T-110
 - 241-SX-115.

Significant Planned Actions in the Next Month

- Best-basis inventory updates for the following tank is currently planned to be completed in November 2019:
 - 241-AX-102.

Issues

- None.

Single-Shell Tank Closure Program

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: Rod Lobos
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-C¹⁰**
 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-045-92V 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.
- M-045-92W Submit to Ecology Design for Barrier 3 in 241-TX Farm**
 Due: October 31, 2019.
 Status: Completed October 17, 2019.
- M-045-92AC Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers**
 Due: October 31, 2019.
 Status: Completed October 31, 2019.

¹⁰ WMA-C denotes C Tank Farm waste management area.

- 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.
- 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.
- 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/CMS¹¹ 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.

¹¹ Resource Conservation And Recovery Act Facility Investigation/Corrective Measure Study

- M-045-102** **Submit to Ecology a Performance Assessment (PA) Maintenance Plan for WMA A/AX PA**
 Due: September 30, 2022.
 Status: On Schedule.
- 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 PMR¹² with Tier 2 RCRA Closure Plan for WMA A/AX and Schedule for Tier 3 Schedule**
 Due: September 30, 2026.
 Status: On Schedule.
- M-045-104** **Submit to Ecology as a PMR the Post-Closure Plan for WMA A/AX**
 Due: September 30, 2028.
 Status: On Schedule.
- 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

- 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 Site-wide permit.
- Approved DOE/ORP-2014-02, *Clean Closure Practicality Demonstration for the Single-Shell Tanks*, with supplemental information DOE/ORP-2014-02-SUPP-1 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.
- Submitted design for Barrier 3 in 241-TX Tank Farm to Ecology. This action completes milestone M-045-92W as noted by Administrative Record documentation (AR-03145) signed October 17, 2019.

¹² Permit Modification Request

- Submitted the maintenance and performance monitoring plan for interim barriers to Ecology. This action completes milestone M-045-92AC. ORP letter 19-TPD-0027, “Completion of Maintenance Performance and Monitoring Plan Submittal to Meet Hanford Federal Facility Agreement and Consent Order Milestone M-045-92AC,” dated October 31, 2019, documented completion of this milestone. The letter states the *Maintenance and Performance Monitoring Plan* was hand delivered to Ecology for approval on October 10, 2019.

Significant Planned Activities in the Next Six Months

- Resolve Ecology’s comments on RPP-RPT-59389, RPP-RPT-59390, and RPP-RPT-58858.

Issues

- Interagency Management Integration Team decisions for the four issues on RPP-RPT-58329, *Baseline Risk Assessment for Waste Management Area C*, have been stalled since the February 21, 2019, meeting.
- ORP formally initiated the Tri-Party Agreement (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, “Director’s Determination on United States Department of Energy Request for a Waiver of Single-Shell Tank Retrieval Criteria”). ORP appealed the Director of Ecology’s determination to the Pollution Control Hearings Board on July 26, 2019. The parties participated in mediation on October 28, 2019. The parties were unable to successfully negotiate and resolve the appeal on October 28, but have agreed to one additional negotiation meeting in November. The important dates and litigation deadlines are set forth in the Pollution Control Hearings Board’s Second Amended Pre-hearing Order. The hearing in this appeal is scheduled for July 28, 2020.
- The U.S. Department of Energy received 47 additional comments on RPP-RPT-59389 and RPP-RPT-59390 via an email from Ecology on August 30, 2019. ORP is developing a path forward to resolve these additional comments.

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Rob Hastings

Technical Lead: 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 past retrieval accomplishments.

Significant Planned Activities in the Next Six Months

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

Issues

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

Tank Operations Contract Overview

Earned Value Data: Fiscal Year 2019

September-19

Tank Farms ORP-0014										
WBS 5 - River Protection Project										
(in \$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$97,929	\$89,157	\$86,758	(\$8,773)	\$2,398	0.91	1.03			
FYTD	\$738,871	\$698,196	\$699,821	(\$40,675)	(\$1,625)	0.94	1.00	\$738,871		
CTD	\$5,522,597	\$5,452,618	\$5,419,104	(\$69,979)	\$33,514	0.99	1.01	\$6,282,205	\$6,256,142	\$26,063

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.

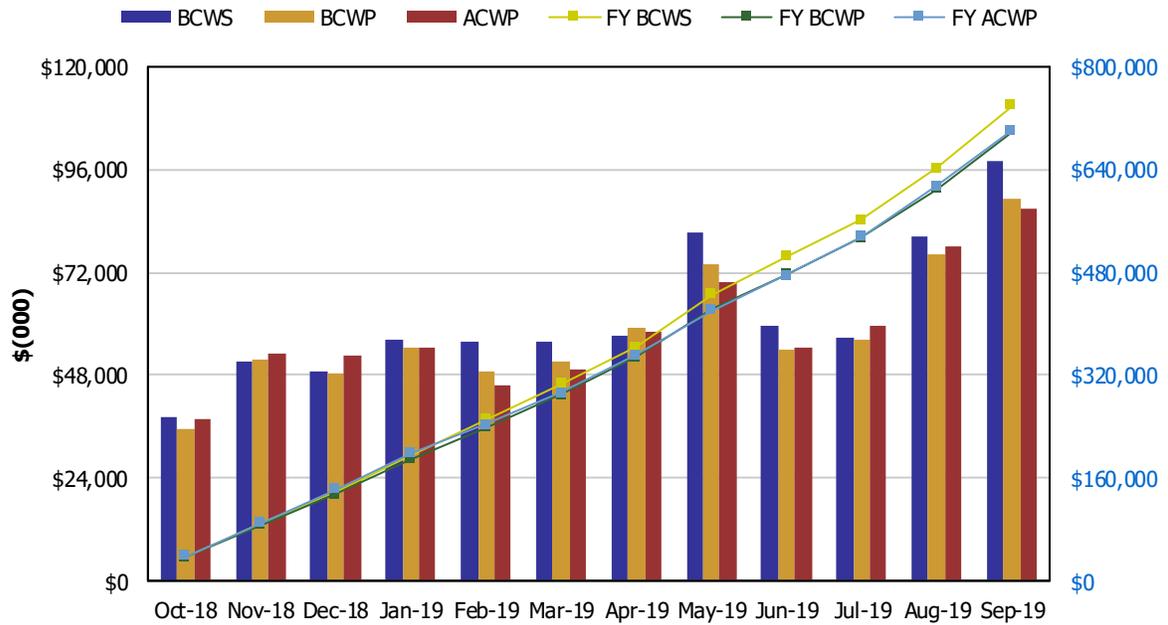
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 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

September-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	\$56,578	\$56,472	\$59,703	1.00	0.95	\$560,561	\$532,742	\$534,998	0.95	1.00
Aug 2019	\$80,381	\$76,298	\$78,065	0.95	0.98	\$640,941	\$609,039	\$613,063	0.95	0.99
Sep 2019	\$97,929	\$89,157	\$86,758	0.91	1.03	\$738,871	\$698,196	\$699,821	0.94	1.00

CTD	\$5,522,597	\$5,452,618	\$5,419,104	0.99	1.01
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ACWP actual cost of work performed.
 BCWP budgeted cost of work performed.
 BCWS budgeted cost of work scheduled.
 CPI cost performance index.

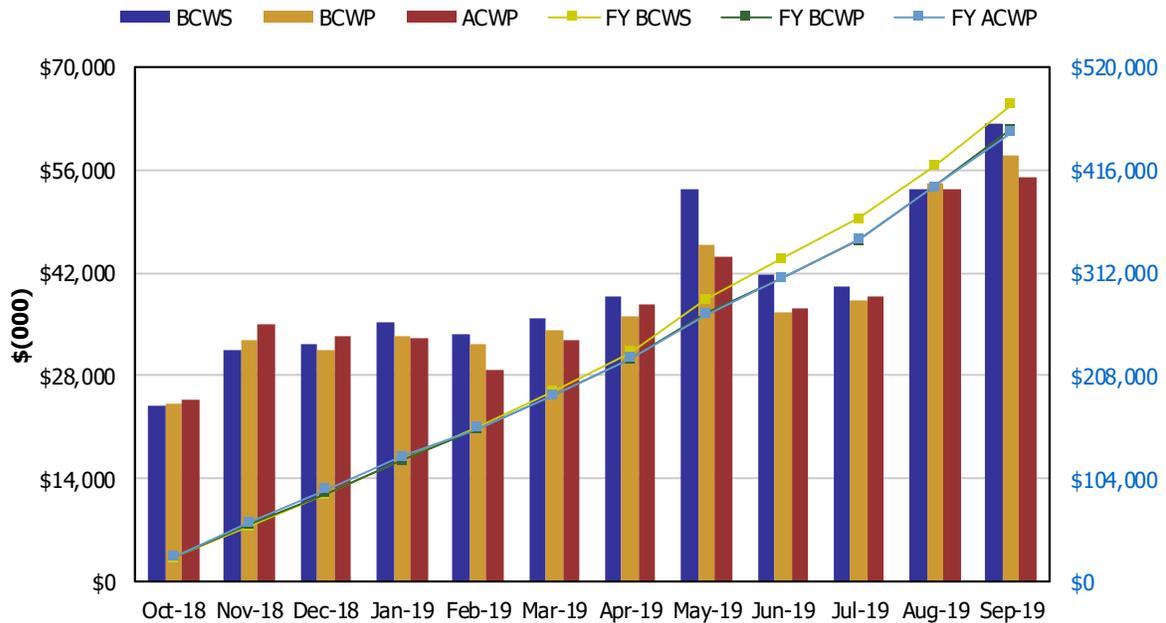
CM current month.
 CTD contract to date.
 FY fiscal year.
 SPI schedule performance index.

Earned Value Data: Fiscal Year 2019

September-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	\$40,195	\$38,223	\$38,670	0.95	0.99	\$366,320	\$344,963	\$345,490	0.94	1.00
Aug 2019	\$53,340	\$54,109	\$53,415	1.01	1.01	\$419,660	\$399,072	\$398,905	0.95	1.00
Sep 2019	\$62,337	\$57,889	\$54,995	0.93	1.05	\$481,997	\$456,961	\$453,900	0.95	1.01

CTD	\$3,658,650	\$3,619,578	\$3,569,428	0.99	1.01
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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
Technical Lead: Ricky Bang

5.01 – Base Operations

The September 2019 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$4,448,096) was primarily due to:

- Supporting the 242-A Evaporator spare PB-1 and PB-2 pump procurement. The current unfavorable SV is due to delay in procuring spare PB-2. This was caused by the failure of slurry lines at the 242-A Evaporator, which gave the project 2 years additional time to acquire this spare equipment. The project has since awarded the contracts for spare PB-1 and PB-2 pumps. There was no impact to key milestones or the critical path.
- The unfavorable SV for the ETF RO pump modification is due to parts and equipment having much longer lead times for delivery than originally anticipated. Procurement orders have been placed, and fabrication subcontracts have all been awarded and are working.

The current month **favorable** CV of \$2,893,559 was primarily due to:

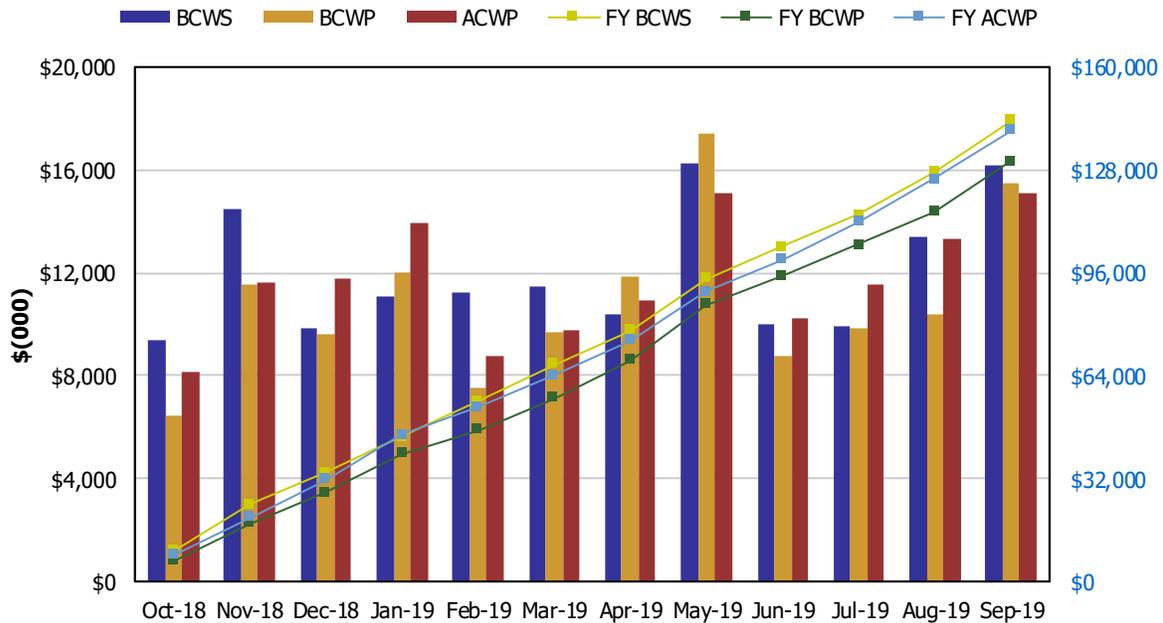
- The AW-104 DST pump replacement favorable CV is due to efficiencies in fieldwork activities related to the installation of the AW-104 pump. Field crews were able to utilize lessons learned from previous pump installations to complete fieldwork in less working days and utilizing fewer resources. Only closeout activities remain.

Earned Value Data: Fiscal Year 2019

September-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	\$9,931	\$9,859	\$11,507	0.99	0.86	\$114,023	\$104,687	\$111,841	0.92	0.94
Aug 2019	\$13,359	\$10,410	\$13,315	0.78	0.78	\$127,381	\$115,097	\$125,156	0.90	0.92
Sep 2019	\$16,142	\$15,515	\$15,129	0.96	1.03	\$143,523	\$130,611	\$140,285	0.91	0.93

CTD	\$1,084,262	\$1,061,342	\$1,118,783	0.98	0.95
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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
Technical Lead: Jeff Rambo

5.02 – Retrieve and Close Single-Shell Tanks

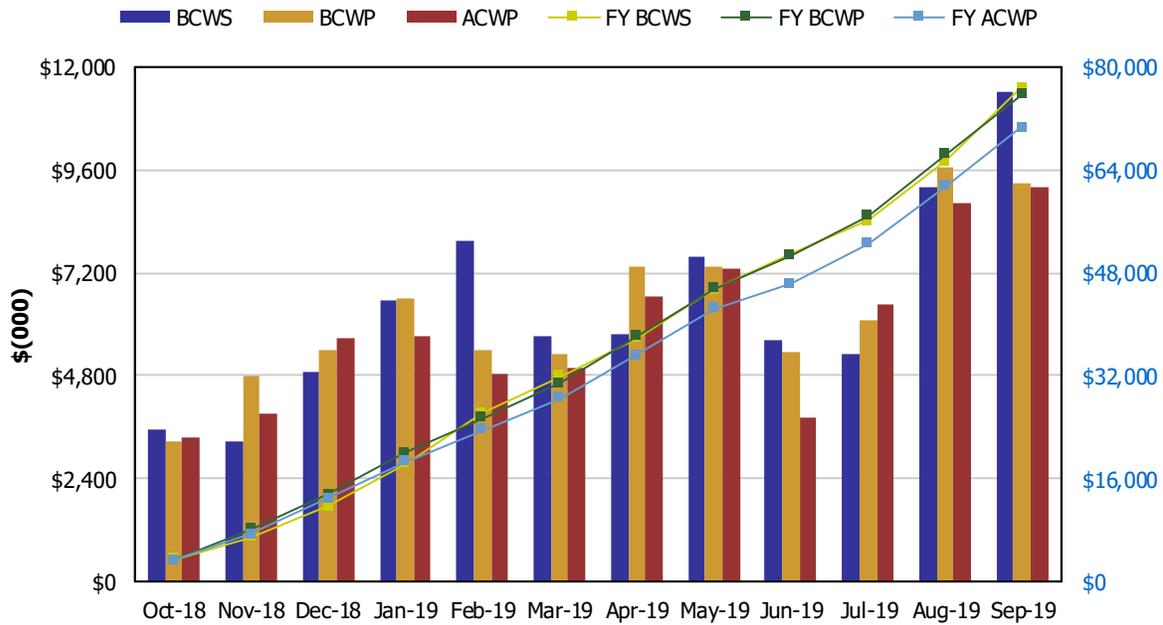
For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2019

September-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	\$6,068	\$6,448	1.15	0.94	\$56,167	\$56,816	\$52,629	1.01	1.08
Aug 2019	\$9,203	\$9,676	\$8,826	1.05	1.10	\$65,370	\$66,492	\$61,455	1.02	1.08
Sep 2019	\$11,423	\$9,286	\$9,196	0.81	1.01	\$76,793	\$75,778	\$70,650	0.99	1.07
CTD	\$576,378	\$571,726	\$525,426	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 September 2019 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$2,137,129) was primarily due to:

- In support of the WTP transition support, the unfavorable SV is due to the delay in procurement of the Low-Activity Waste Facility bubbler plug assembly. A redesign was required delaying the award of the design and the procurement.

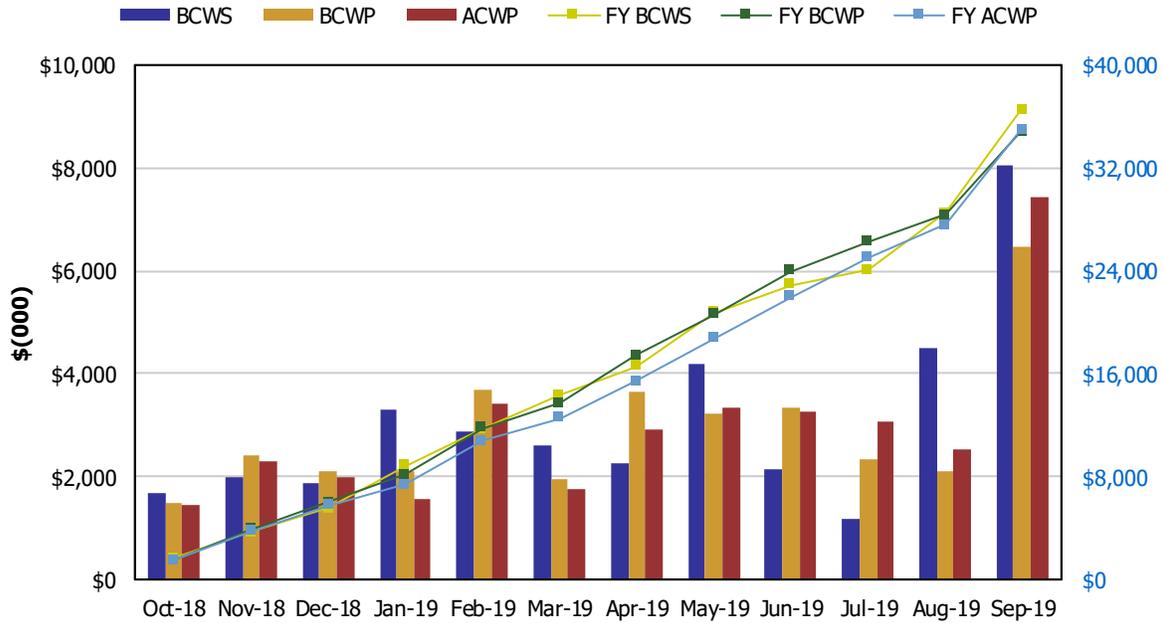
The current month **favorable** CV of \$90,656 was below reportable thresholds.

Earned Value Data: Fiscal Year 2019

September-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	\$1,158	\$2,321	\$3,079	2.00	0.75	\$24,051	\$26,276	\$25,073	1.09	1.05
Aug 2019	\$4,479	\$2,103	\$2,509	0.47	0.84	\$28,530	\$28,379	\$27,583	0.99	1.03
Sep 2019	\$8,028	\$6,467	\$7,439	0.81	0.87	\$36,558	\$34,846	\$35,021	0.95	1.00
CTD	\$183,197	\$179,863	\$186,336	0.98	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 September 2019 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$1,561,000) was primarily due to:

- Procurement of the rebar for the TSCR Balance of Facilities and ion exchange column storage pad and hose-in-hose transfer line assemblies necessary to support TSCR operation have been delayed. A management decision was made to hold off on rebar procurement until quantities can be evaluated from the final design packages in order to ensure correct quantities are ordered.
- Additionally, material procurement for the pipe-in-pipe transfer lines was originally planned to take place July through September 2019, but completed earlier than planned during July 2019. The unfavorable SV associated with this scope offsets a favorable SV from previous FY 2019 months.

The current month **unfavorable** CV of (\$971,400) was primarily due to:

- The unfavorable CV is due to rate adjustments received from AECOM's lower tier subcontractor, Atkins, under BMA 60635. Atkins updated their provisional billing rates from what was used on FY 2018 invoices and are now rebilling to reflect the current approved rates. The updated provisional billing rates have been approved by the Atkins Corporate Administrative Contracting Officer. Workscope associated with these rate adjustments was completed in FY 2018.
- The fabrication vendor's accrual for the current reporting period (September 2019) was overstated.