

Office of River Protection



Monthly Reporting Period

September 1–September 30, 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 August 2019.

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Acronyms and Abbreviations

| | |
|---------|---|
| CV | cost variance |
| DFLAW | direct-feed low-activity waste |
| 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 |
| 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 2019 | | | | |
| M-062-01AL | Submit Semi-Annual Project Compliance Report to Ecology | 01/31/2019 | B.A. Harkins | Complete |
| M-062-01AM | Submit Semi-Annual Project Compliance Report to Ecology | 07/31/2019 | B.A. Harkins | Complete |
| M-045-56O | Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July) | 07/31/2019 | B.A. Harkins | Complete |
| M-045-91E3 | Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology | 09/30/2019 | B.A. Harkins | Complete |
| M-045-91J ² | Submit Work Plan for the Activities Necessary to Obtain Future SST Structural Integrity Assessments | 09/30/2019 | B.A. Harkins | Complete |

| Milestone | Title | Due Date | DOE PM | Status |
|-------------------------|---|------------------|---------------|---------------|
| 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 2020 | | | | |
| M-062-40G | Select a Minimum of 3 Scenarios | 10/31/2019 | B.A. Harkins | On Schedule |
| 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 | On Schedule |
| M-045-92W | Submit to Ecology Design for Barrier 3 in 241-TX Farm | 10/31/2019 | B.A. Harkins | On Schedule |
| M-045-92AC | Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers | 10/31/2019 | B.A. Harkins | On Schedule |
| M-045-92X | Barrier 3 in 241-TX Farm Design Approved by Ecology | 01/31/2020 | B.A. Harkins | On Schedule |
| 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 Draggable Liquids from SSTs | 06/30/2020 | B.A. Harkins | On Schedule |

| Milestone | Title | Due Date | DOE PM | Status |
|------------------|---|-----------------|---------------|---------------|
| 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 |

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

² Change Control Form M-45-19-07 signed September 30, 2019, created this milestone.

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

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 (DOE), 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.

Significant Planned Actions in the Next Six Months

- Resolve dispute regarding milestone M-062-45 and associated milestones through ongoing 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-047-07 CD-1 for Secondary Liquid Waste Treatment and CR² for CD-2 to Ecology**
 Due: Deleted.
 Note: Change Control Form M-47-19-01 signed July 25, 2019, deleted this milestone from the Tri-Party Agreement (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 ECY³**
 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 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”) negotiations.

² Tri-Party Agreement change request.

³ ECY denotes Washington State Department of Ecology.

⁴ IHLW denotes immobilized high-level waste.

⁵ 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 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 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.

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.
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
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 (DFLAW) mission. Please refer to the Consent Decree monthly report for the Waste Treatment and Immobilization Plant Project scope pertaining to DFLAW.

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 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 the 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
Technical Lead: 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 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.
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: approximately 3.44 million gallons.
- Completed repair of the interior protective epoxy coating of the Effluent Treatment Facility (ETF) Verification Tank B for FY 2019. Each of the three verification tanks will be repaired over the next 3 years (one per fiscal year).
- Completed upgrade of the leachate pumps and level detection systems at each Liquid Effluent Retention Facility (LERF) basin.
- Completed fieldwork installation of the ETF peroxide decomposer vessel media and columns upgrade.
- Received the ETF chiller unit and cooling tower, which will be installed in FY 2020.

Significant Planned Actions in the Next Six Months

- Commissioning of the new ETF peroxide decomposer vessel and media system will continue through December 2019.
- Continue waste processing of LERF Basin 42 effluent through the ETF.

- Initiate ETF cleanout activities at the completion of LERF Basin 42 processing.
- Complete the replacement of select facility stairs and ladders to improve personnel safety and ergonomics.
- Complete the refurbishment of the ETF. Work has paused on the LERF Basin 44 cover replacement project while nuclear safety evaluations are performed by Washington River Protection Solutions LLC. 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 | + 7,100 | - | - |
| Mixed Waste Trench 31 and 34 | + 34,000 | - | - |
| Other (325 RPS) | - | + 1,200 | - |
| Processing Campaign(s) | - 222,000 | - | - |
| Total Volume | 3,740,000 | 6,440,000 | 670,000 |

Data Date: September 30, 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-045-91K Complete Initial Baseline Visual Inspections of all SSTs
 Due: September 30, 2023.
 Status: On Schedule.
 Note: Change Control Form M-45-19-07 signed September 30, 2019, created this milestone.

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.
 Note: Change Control Form M-45-19-07 signed September 30, 2019, created this milestone.

M-045-91L Obtain Assessment Reviewed/Certified by an IQRPE Attesting to SST Structural Integrity
 Due: September 30, 2034.
 Status: On Schedule.
 Note: Change Control Form M-45-19-07 signed September 30, 2019, created this milestone.

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.

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.

Significant Planned Actions in the Next Six Months

- Perform TFC-ENG-CHEM-D-42, *Tank Leak Assessment Process*, on the following tanks in FY 2019:
 - 241-T-101 (completed)
 - 41-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.
- 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 finalized and transmitted RPP-IQRPE-50043, *Effluent Treatment Facility (ETF) IQRPE Integrity Assessment*, to Washington River Protection Solutions LLC on September 12, 2019. The report is in ORP clearance process with a public release date expected by December 2019.

- 219-S Tank System:
 - Washington River Protection Solutions LLC 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 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. The 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 September 25, 2019. Visual inspection of the hot tunnels is scheduled to be completed the week of September 30, 2019. This activity will complete the facility inspections necessary for the integrity assessment.

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

- Completed:
 - RPP-RPT-46792, *Derivation of Best-Basis Inventory for Tank 241-AW-102 as of July 1, 2019*, Rev. 18
 - RPP-RPT-59356, *Derivation of Best-Basis Inventory for BX-102 as of August 1, 2019*, Rev. 2
 - RPP-RPT-44049, *Derivation of Best-Basis Inventory for Tank 241-AZ-102 as of July 1, 2019*, Rev. 14
 - RPP-RPT-43992, *Derivation of Best-Basis Inventory for Tank 241-AN-106 as of July 1, 2019*, Rev. 22
 - RPP-RPT-60380, *Derivation of Best-Basis Inventory for Tank 241-U-106 as of August 1, 2019*, Rev. 1
 - RPP-RPT-51226, *Derivation of Best-Basis Inventory for Tank 241-TX-109 as of August 1, 2019*, Rev. 2
 - RPP-RPT-59034, *Derivation of Best-Basis Inventory for Tank 241-B-104 as of August 1, 2019*, Rev. 1
 - RPP-RPT-44740, *Derivation of Best-Basis Inventory for Tank 241-AX-102 as of August 1, 2019*, Rev. 3
 - RPP-PLAN-63473, *Tank 241-AP-106 Repurposing Step 3 Sampling and Analysis Plan*, Rev 0
- Released:
 - HNF-EP-0182, *Waste Tank Summary Report for Month Ending August 31, 2019*, Rev. 380.

Tank Sampling

Significant Past Accomplishments

For September 2019, the following tank sampling was conducted:

- None.

Significant Planned Actions in the Next Six Months

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

- Tank 241-A-104 sampling is planned for October 2019.
- Tank 241-AN-107 core sampling is planned for October 2019.
- Tank 241-C-301 catch tank grab sampling is tentatively planned for October 2019.
- Tank 241-AP-106 repurposing grab sampling is tentatively planned for October 2019.
- Tank 241-AN-101 repurposing receiver tank grab sampling is tentatively planned for December 2019.
- Tank 241-AP-106 repurposing grab sampling is tentatively planned for December 2019.
- Tank 241-AP-108 repurposing receiver tank grab sampling (if required) is tentatively planned for January 2020.
- Tank 241-AP-102 repurposing receiver tank grab sampling, is tentatively planned for February 2020.
- Tank 241-AX-102 grab sampling is planned for February 2020.

Issues

- None.

Best-Basis Inventory Updates

Significant Past Accomplishments

- Best-basis inventory updates for the following tanks were completed in September 2019:
 - 241-AN-106
 - 241-AW-102
 - 241-AX-102
 - 241-AZ-102
 - 241-B-104
 - 241-BX-102
 - 241-TX-109
 - 241-U-106.

Significant Planned Actions in the Next Month

- Best-basis inventory updates for the following tanks are currently planned to be completed in October 2019:

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: 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.

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

- 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.
- M-045-102** **Submit to Ecology a Performance Assessment (PA) Maintenance Plan for WMA A/AX PA**
Due: September 30, 2022.
Status: On Schedule.

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

- 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 PMR¹² 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.
- 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.

¹² Permit Modification Request

Issues

- Interagency Management Integration Team (IAMIT) 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 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 Pollution Control Hearings Board issued an "Amended Prehearing Order" containing the legal issues to be decided in the appeal. The parties will participate in mediation on October 28, 2019, in Richland.
- DOE 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

August-19

| Tank Farms ORP-0014 WBS 5 - River Protection Project (in \$000s) | | | | | | | | | | |
|--|-------------|-------------|-------------|------------|-----------|------|------|-------------|-------------|----------|
| | BCWS | BCWP | ACWP | SV | CV | SPI | CPI | BAC | EAC | VAC |
| CM | \$80,381 | \$76,298 | \$78,065 | (\$4,083) | (\$1,768) | 0.95 | 0.98 | | | |
| FYTD | \$640,941 | \$609,039 | \$613,063 | (\$31,902) | (\$4,024) | 0.95 | 0.99 | \$738,959 | | |
| CTD | \$5,424,667 | \$5,363,461 | \$5,332,346 | (\$61,206) | \$31,116 | 0.99 | 1.01 | \$5,522,685 | \$5,498,199 | \$24,486 |

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.

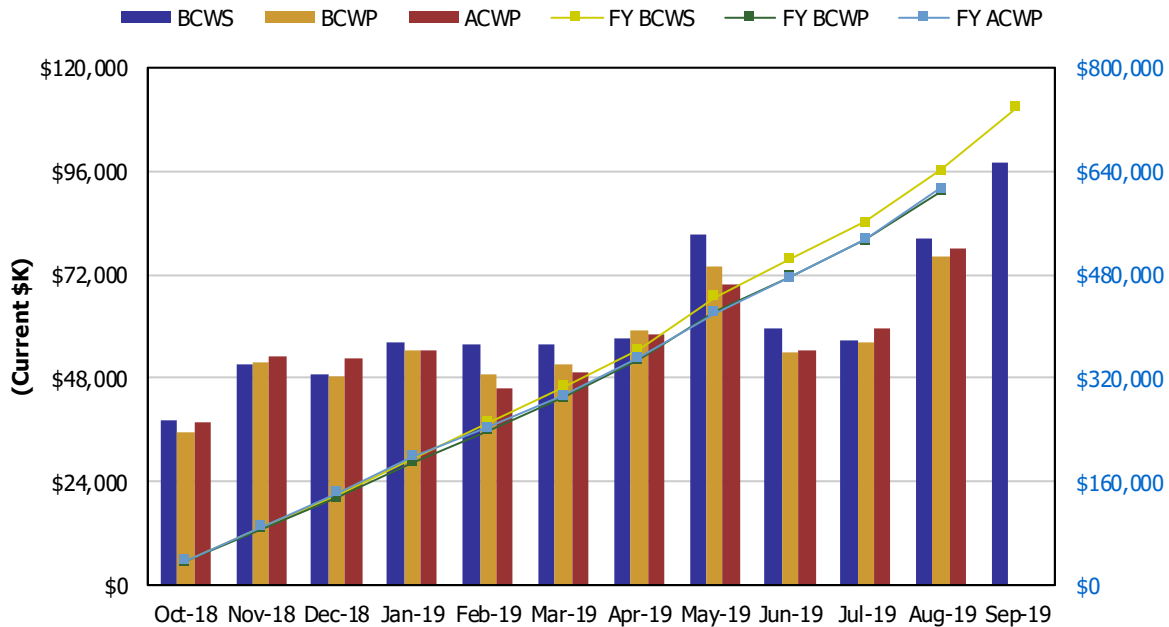
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000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

August-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 | \$98,018 | | | | | \$738,959 | | | | |

| | | | | | |
|-----|-------------|-------------|-------------|------|------|
| CTD | \$5,424,667 | \$5,363,461 | \$5,332,346 | 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.

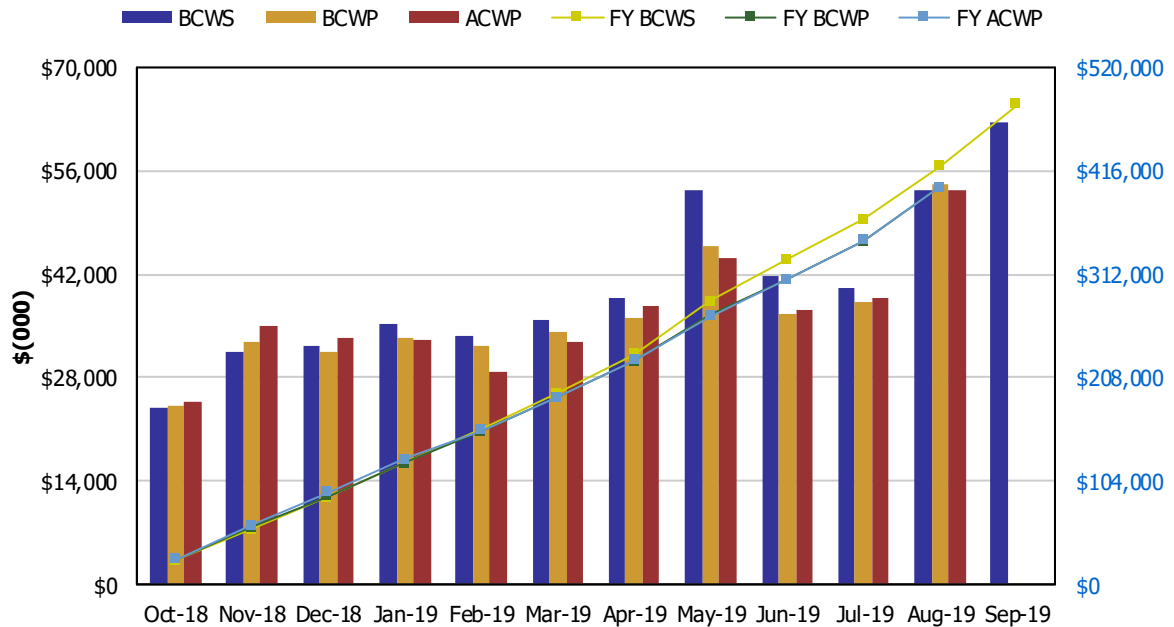
CM current month.
 CTD contract to date.
 FY fiscal year.
 SPI schedule performance index.

Earned Value Data: Fiscal Year 2019

August-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 | \$62,425 | | | | | \$482,085 | | | | |

| | | | | | |
|-----|-------------|-------------|-------------|------|------|
| CTD | \$3,596,313 | \$3,561,689 | \$3,514,433 | 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.

Tank Farms Assistant Manager: Rob Hastings
Technical Lead: Ricky Bang

5.01 – Base Operations

The August 2019 variances below do not impact TPA milestones.

The current month **favorable** SV of \$768,880 was primarily due to:

- Schedule recovery of the LERF processing liquid Campaigns 2 and 3. The campaigns reduced the inventory by 2,857,070 gallons cumulative.
- Schedule recovery as a result of completing removal of the Tank AW-104 transfer pump/salt well screen. Crews were able to recover from the failed salt well screen removal, remove the transfer pump, and begin installation fieldwork in August. Completion of pump installation and turnover to operations is expected to take place in September.

The current month **favorable** CV of \$693,430 was primarily due to:

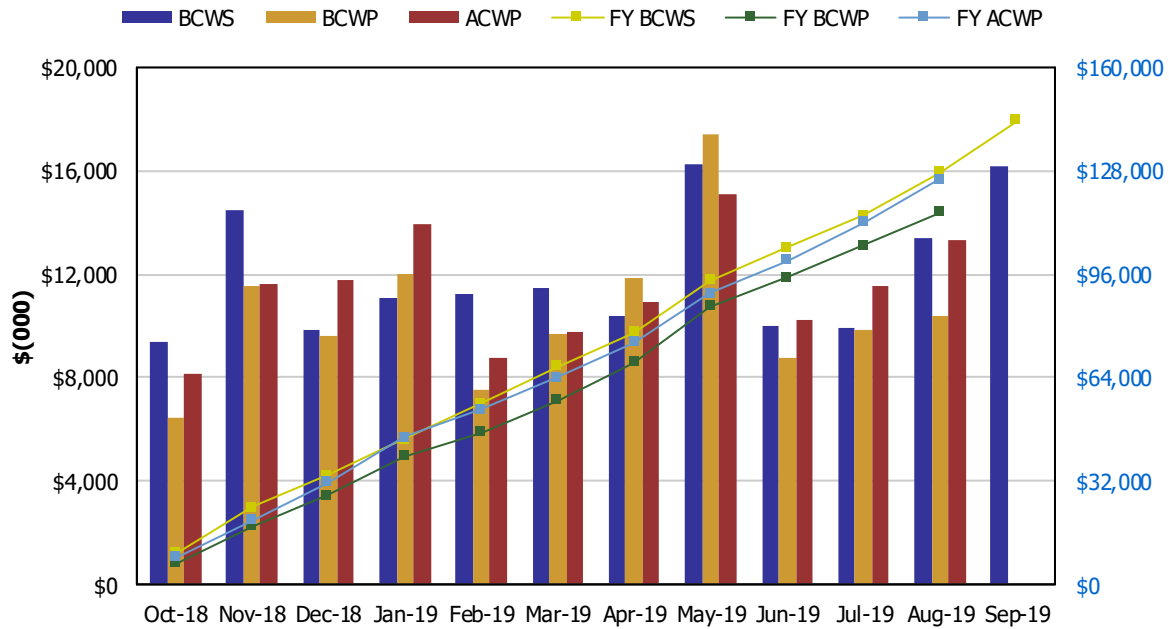
- Efficient LERF processing campaigns during the current period. The LERF was able to recover a significant portion of previously planned workscope along with large labor efficiencies during this work.

Earned Value Data: Fiscal Year 2019

August-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 | | | | | \$143,523 | | | | |

| | | | | | |
|-----|-------------|-------------|-------------|------|------|
| CTD | \$1,068,120 | \$1,045,827 | \$1,103,654 | 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
Technical Lead: Jeff Rambo

5.02 – Retrieve and Close Single-Shell Tanks

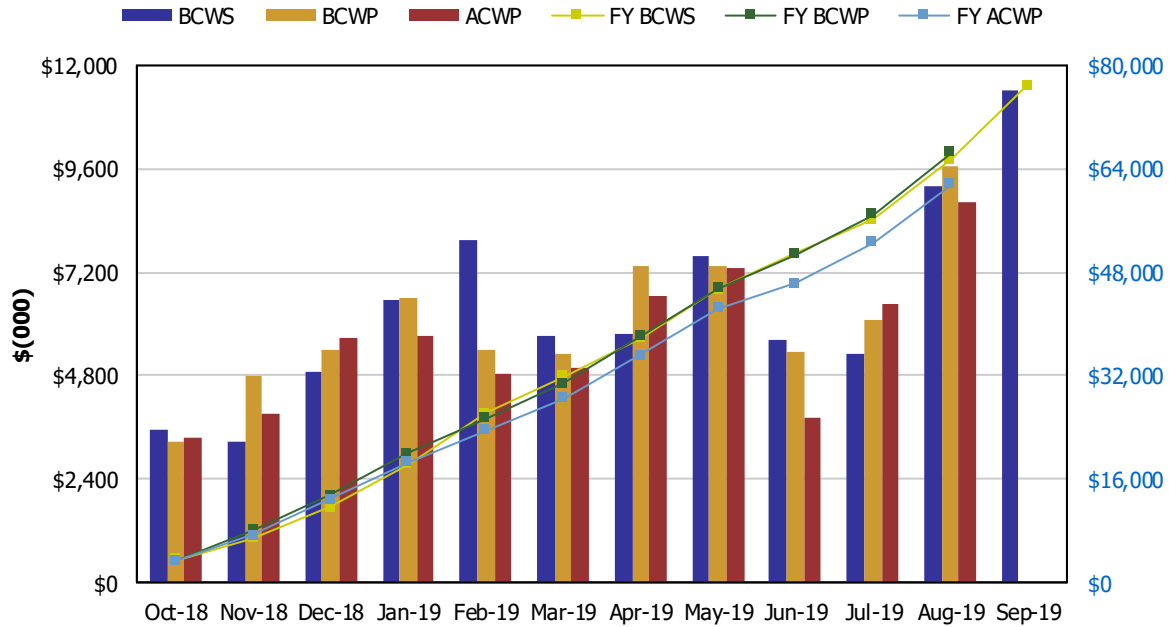
For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2019

August-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 | | | | | \$76,793 | | | | |
| CTD | \$564,955 | \$562,440 | \$516,231 | 1.00 | 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 August 2019 variances below do not impact TPA milestones.

The current month **favorable** SV of \$473,090 was primarily due to:

- Schedule recovery of DFLAW feed qualification maturation – sampling of Tank AP-107 and shipping the samples to the national laboratory.

The current month **favorable** CV of \$849,910 was primarily due to:

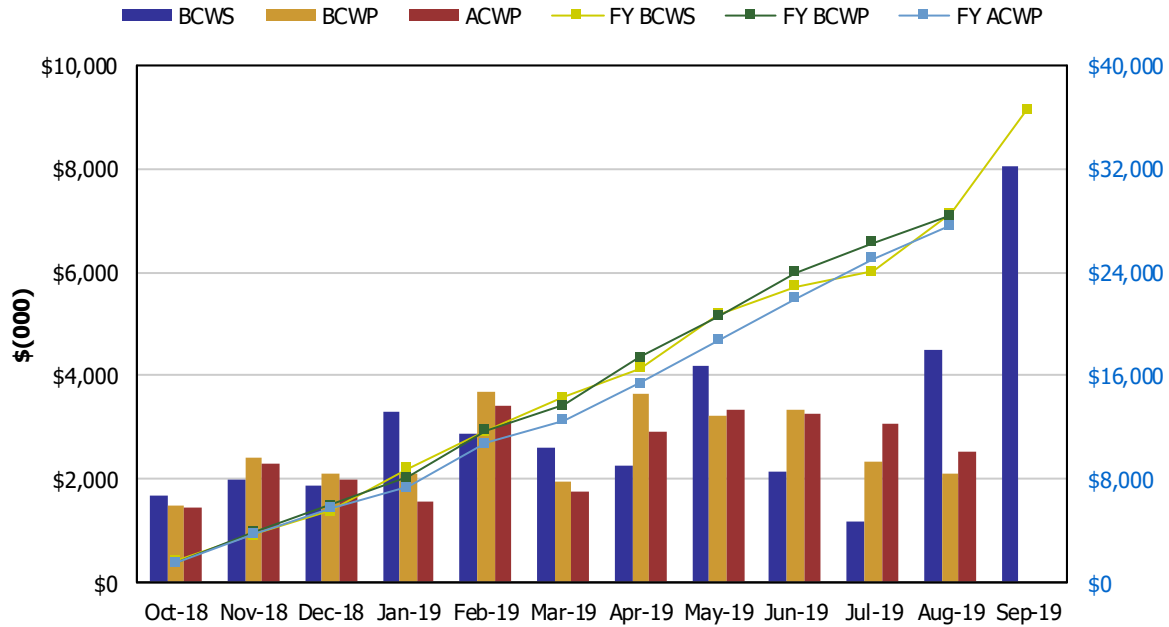
- Efficiencies in conducting VSL DM-10 melter system modifications and glass formulations (in support of the liquid secondary waste stream tech mat for DFLAW) due to historical knowledge. In addition, realized cost for liquid secondary waste – glass and simulant runs were lower than expected due to labor efficiencies resulting from historical experience on same/similar projects.

Earned Value Data: Fiscal Year 2019

August-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 | | | | | \$36,558 | | | | |

| | | | | | |
|-----|-----------|-----------|-----------|------|------|
| CTD | \$175,169 | \$173,396 | \$178,898 | 0.99 | 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 August 2019 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$2,375,890) was primarily due to:

- Delays in delivery of the control enclosure, heating/ventilation/air conditioning components, and final materials for the process enclosure. Additionally, material procurements for the pipe-in-pipe transfer lines were completed earlier than planned and the current period unfavorable SV offsets the previous period's favorable SV for this scope. Finally, some noncritical path fabrications have been delayed to allow vendor fabrication resources to prioritize critical path activities. These variances will not extend the critical path of the project and will be recovered as final fabrication is completed.

The current month **unfavorable** CV of (\$405,680) was primarily due to:

- Accrual for the previous reporting period was understated. The corrected value for the costs has been accrued this month, which results in a current-period CV due to final performance of the work being completed in fiscal month July.