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FINAL

Office of River Protection  
Tri-Party Agreement Report  
December<sup>1</sup> 2018



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<sup>1</sup> The narrative descriptions of progress in this report cover the period from November 1–30, 2018. 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 of October 1–31, 2018.

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## Acronyms and Abbreviations

CV	cost variance
Ecology	Washington State Department of Ecology
ETF	Effluent Treatment Facility
FY	fiscal year
IQRPE	independent qualified registered professional engineer
LERF	Liquid Effluent Retention Facility
ORP	U.S. Department of Energy, Office of River Protection
RCRA	<i>Resource Conservation and Recovery Act</i>
SST	single-shell tank
SV	schedule variance
TPA	Tri-Party Agreement
WMA	waste management area
WRPS	Washington River Protection Solutions LLC

**Administrative Items/Milestone Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
<b>Prior Years</b>				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	S.H. Pfaff	In Abeyance
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection	04/30/2015	S.H. Pfaff	In Abeyance
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones	04/30/2015	S.H. Pfaff	In Abeyance
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016	J.A. Diediker	In Abeyance
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016	J.A. Diediker	In Abeyance
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	S.H. Pfaff	In Abeyance
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements	04/30/2018	S.H. Pfaff	In Abeyance
<b>Fiscal Year 2019</b>				
M-062-01AL	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2019	B.R. Trimberger	On Schedule

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
M-062-01AM	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2019	B.R Trimberger	On Schedule
M-045-56O	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2019	J.B. Bovier	On Schedule
M-045-91E3	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2019	D.M. Stewart	On Schedule
M-045-59	Control Surface Water Infiltration Pathways as Needed	TBD <sup>1</sup>	J.B. Bovier	On Schedule
M-045-62	Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C	TBD <sup>1</sup>	J.B. Bovier	On Schedule
M-045-83	Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan	TBD <sup>1</sup>	J.B. Bovier	On Schedule
<b>Fiscal Year 2020</b>				
M-062-40G	Select a Minimum of 3 Scenarios	10/31/2019	K.W Burnett	On Schedule
M-045-92V	Complete Construction of Barriers 1 (North) and 2 (South) and Expansion Barrier in 241-SX Farm	10/31/2019	J.B. Bovier	On Schedule
M-045-92W	Submit to Ecology Design for Barrier 3 in 241-TX Farm	10/31/2019	J.B. Bovier	On Schedule

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>DOE PM</b>	<b>Status</b>
M-045-92AC	Submit to Ecology for Approval a Maintenance and Performance Monitoring Plan for Interim Barriers	10/31/2019	J.B. Bovier	On Schedule
M-045-92X	Barrier 3 in 241-TX Farm Design Approved by Ecology	01/31/2020	J. B. Bovier	On Schedule
M-062-01AN	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2020	B.R Trimberger	On Schedule
M-062-01AO	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2020	B.R Trimberger	On Schedule
M-045-56P	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2020	J.B. Bovier	On Schedule

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

CD-1/-2	= critical decision-1/-2.	PM	= project manager.
CMIP	= corrective measures implementation work plan.	RCRA	= <i>Resource Conservation and Recovery Act</i> .
CR	= change request.	SST	= single-shell tank.
DOE	= U.S. Department of Energy.	TBD	= to be determined.
Ecology	= Washington State Department of Ecology.	TPA	= Tri-Party Agreement.
IQRPE	= independent qualified registered professional engineer.	WTP	= Waste Treatment and Immobilization Plant.
Mod	= modification.	WMA-C	= C Tank Farm waste management area.

## **System Plan**

***One System Division Director:*** Joni Grindstaff  
***Federal Program Manager:*** Kaylin Burnett  
***Ecology Project Manager:*** Dan McDonald, Jeff Lyon

### **Significant Past Accomplishments**

- The U.S. Department of Energy (DOE), Office of River Protection (ORP); U.S. Environmental Protection Agency; and Washington State Department of Ecology (Ecology) have been in negotiations related to M-062-45 Milestone since September 2016. The parties have agreed on multiple occasions that it was prudent to extend the completion of the negotiations. DOE and Ecology met on October 30, 2018, to discuss, amongst other things, the M-062-45 Milestone and DOE's mark-up of Ecology's proposal. DOE and Ecology agreed to meet regularly to continue these discussions and agreed to a 90-day extension of the negotiations until February 15, 2019.

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

- Continue negotiations of the M-062-45 Milestone and related milestones with intent to use information from the ORP-11242, *River Protection Project System Plan*, Rev. 8.

### **Issues**

- None.

## Acquisition of New Facilities

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

The current status for all projects listed below is:

- In Abeyance. Decision document 2016-005, *Hanford Federal Facility Agreement and Consent Order Interagency Management Integration Team (IAMIT) Decision / Determination / Action Agreement*, signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

**M-047-07 CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology**

Due: March 31, 2016.

**M-090-13 CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY<sup>2</sup>**

Due: March 31, 2016.

**M-090-00 Acquire/Modify Facilities for Storage of First Two Years of IHLW<sup>3</sup> from the WTP<sup>4</sup> Operations**

Due: December 31, 2036.

**M-047-00 Completion of Work for Management of Secondary Waste from the WTP**

Due: To Be Determined.

## 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

- None.

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<sup>2</sup> ECY denotes Washington State Department of Ecology.

<sup>3</sup> IHLW denotes immobilized high-level waste.

<sup>4</sup> WTP denotes Waste Treatment and Immobilization Plant.

## Supplemental Treatment and Part B Permit Applications

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

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

- In Abeyance. Decision document 2016-005, *Hanford Federal Facility Agreement and Consent Order Interagency Management Integration Team (IAMIT) Decision / Determination / Action Agreement*, signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

**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 RCRA<sup>5</sup> 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.

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<sup>5</sup> RCRA denotes *Resource Conservation and Recovery Act*.

**M-062-34-T01 Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements**

Due: December 30, 2022.

**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 HLW<sup>6</sup> and LAW<sup>7</sup> Tank Wastes**

Due: December 31, 2047.

Status: At risk.

**Significant Past Accomplishments**

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

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

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

**Issues**

- None.

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<sup>6</sup> HLW denotes high-level waste.

<sup>7</sup> LAW denotes low-activity waste.

## **Tank-Side Cesium Removal**

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

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

### **Significant Past Accomplishments**

- The tank-side cesium removal 30 percent design reviews were completed September 25.

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

- The tank-side cesium removal 60 percent design review is projected to begin in January 2019.

### **Issues**

- None.

## 242-A Evaporator Status

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

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

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2019	EC-10	102-AW	102-AW	A cold run followed by a short hot run will be performed at 242-A Evaporator while efforts to install new slurry transfer lines from 242-A Evaporator to 241-AW Tank Farms progress. This along with drill and simulator efforts will ensure the 242-A Evaporator staff remains proficient and the 242-A Evaporator performs mission work to maintain readiness. This work effort is scheduled for June 2019.

### Significant Past Accomplishments

- Relocated spare PB-1 pump from the load-out room
- Installed tent assembly to allow rebuild of PB-1 recirculation pump.

### Significant Planned Actions in the Next Six Months

- Establish the future campaign and outage scheduling
- Procure parts to rebuild spare PB-1 pump
- Relocate the spare PB-1 pump back into 242-A Evaporator and begin rebuilding spare PB-1 pump
- Procure new PB-1 replacement pump.

### Issues

- PB-1 recirculation pump failed. Corrective actions in progress to procure a new PB-1 pump and to rebuild spare PB-1 pump for future evaporator campaigns.
- The slurry transfer line encasement for SL-167 from 242-A Evaporator to AW Tank Farm valve pit has not yet passed the encasement leak check due this year. Corrective actions are being pursued by the Tank Operations Contractor. New scope: 242-A Evaporator slurry line design will be initiated per baseline change request with an initial not-to-exceed value and cost proposal submitted for negotiation.

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

**Tank Farms Assistant Manager:** Rob Hastings  
**Federal Program Manager:** Richard Valle  
**Ecology Project Manager:** Stephanie Schleif

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

	242AL-42 (Basin 42)	242AL-43 (Basin 43)	242AL-44 (Basin 44)
<b>Total Volume (as of Nov. 28, 2018)</b>	~ 0 Mgal	~ 5.67 Mgal	~ 7.36 Mgal

<b>Waste Received</b>			
AZ-301 Condensate	-	~ 5,000 gal	-
MWT-31 and 34 Leachate	-	~ 7,000 gal	-
Other (SWLL Leachate)	-	~ 600 gal	-

gal = gallon.

Mgal = million gallons.

MWT = mixed waste trench.

SWLL = solid waste landfill lysimeter.

### Significant Past Accomplishments

- Total FY 2019 volume processed (as of November 28, 2018): Approximately 0 gallons
- Completed camera visual inspection of the second reverse osmosis tank
- Completed camera visual inspection of the effluent pH adjustment tank
- Completed camera visual inspection of the distillate flash tank
- Released RPP-PLAN-61349, *Effluent Treatment Facility Integrity Program Plan*
- Placed LERF Basin 42 back in service on November 14, 2018
- Began RCRA inspection of secondary waste receiving tank A.

### Significant Planned Actions in the Next Six Months

- Continue plant cleanout and corrective maintenance outage
- Perform remaining fieldwork activities in support of the Effluent Treatment Facility (ETF) integrity assessment project
- Perform annual RCRA tank inspections
- Perform the LERF Basin 44 to Basin 42 transfer in support of the Basin 44 cover replacement project

- The following activities, projects, and/or upgrades are planned to be performed in FY 2019:
  - Independent Qualified Registered Professional Engineer (IQRPE) integrity assessment of ETF
  - LERF basin cover 44 replacement
  - LERF basin leachate system upgrade
  - ETF brine stabilization design and permitting
  - ETF air compressor upgrade
  - ETF stairs and ladder upgrades
  - ETF life cycle study report
  - ETF chiller procurement
  - ETF dilute caustic tank procurement
  - ETF reverse osmosis pumps and valves redesign and procurements
  - ETF verification tank recoating
  - ETF peroxide decomposer vessel upgrade
  - TEDF pump station No. 2 generator upgrade
  - ETF vapor compressor procurement
  - Load-in drain system procurements
  - 310/311-PL Transfer Line upgrade
  - ETF ultraviolet light/oxidation design
  - ETF monitor and control system design
  - ETF uninterrupted power supply design
  - ETF cooling tower design
  - ETF evaporator valve upgrade
  - ETF rough filter/hoist refurbishment.

### **Issues**

- None.

## Tank System Update

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

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

### Double-Shell Tank and Single-Shell Tank Field Activities

#### *Significant Past Accomplishments*

- Waste disturbing activities:
  - None
- Major field activities FY 2018:
  - Completed three encasement checks
  - Completed Tank AZ-102 and Tank AW-103 pump and jumper replacements
  - Completed pit heater installation in 10 pits
  - Completed wireless instrumentation in AP Tank Farm and AN Tank Farm (9 pits)
  - Completed safety significant airflow instrumentation installation in AW Tank Farm and AY/AZ Tank Farm
  - Removed AP-02A jumper and re-built the connector head
- Major field activities FY 2019:
  - Conducted mock-up training with pump removal tools for AP-02D pump removal.

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

- Waste disturbing activities:
  - None
- Major field activities:
  - Fabricate new and replace AP-02A jumper
  - Remove AP-02D pump
  - Install in-pit heater at AP02A and AY01A
  - Install cross-site transfer line permanent power to 6241V
  - Conduct operational acceptance testing of AW Tank Farm and AY/AZ Tank Farm safety-significant airflow installations

- Conduct startup and turnover of tank farm wireless installations in AN Tank Farm and AP Tank Farm
- Conduct testing and readiness safety-significant airflow instrumentation.

### *Issues*

- None.

## **Double-Shell Tank Integrity**

### *Significant Past Accomplishments*

- Enhanced annulus visual inspections were completed for the below listed tanks in FY 2018. Engineering is currently reviewing the inspection videos and the reports will be updated with results
  - 241-AP-102
  - 241-AP-103
  - 241-AP-104
  - 241-AP-105
  - 241-AP-106
  - 241-AP-108
  - 241-AW-101
  - 241-AW-102
  - 241-AW-104.
- Ultrasonic testing inspections were completed for the following tank in FY 2019:
  - 241-AP-107.

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

- Continue annual comprehensive inspection of Tank AY-101 annulus. In January 2018, an enhanced annulus visual inspection was done. The next comprehensive inspection of Tank AY-101 is scheduled for 2019.
- Ultrasonic testing inspections planned for FY 2019:
  - 241-AP-108 (mobilizing)
  - 241-AP-102 (annulus floor only)
  - 241-AN-102
- Enhanced annulus visual inspections planned for 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
- Procure/Design annulus floor cleaning technology in FY 2019.

*Issues*

- None.

**Secondary Liner Integrity***Significant Past Accomplishments*

- Completed modeling potential water ingress routes into the annulus systems
- Completed a visual inspection of the Tank 241-AP-102 annulus floor.

*Significant Planned Actions in the Next Six Months*

- Perform laboratory testing of secondary liners for corrosion from moisture in the soil and for use of corrosion inhibitors. Both are methods that could be used to protect the secondary liner.
- Perform another ultrasonic test scan of the area in question and additional areas in all four quadrants of the Tank 241-AP-102 annulus; scheduled for FY 2019.<sup>8</sup>
- Investigate and develop nondestructive examination methods, in particular long-range, guided wave ultrasonic testing to support more comprehensive examination capability for double-shell tank bottoms. Field testing could begin as early as FY 2019.<sup>9</sup>

*Issues*

- None.

**Single-Shell Tank Integrity***Significant Past Accomplishments*

- FY 2019 single-shell tank (SST) visual inspections:
  - 241-B-102 (completed)
  - 241-B-103 (completed)
  - 241-BX-104 (completed).

*Significant Planned Actions in the Next Six Months*

- Perform 12 SST visual camera inspections in FY 2019:
 

– 241-B-110	– 241-U-106
– 241-B-111	– 241-U-109
– 241-B-112	– 241-SX-114
– 241-U-101	– B-102

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<sup>8</sup> May not occur in the next 6 months, included for information only.

<sup>9</sup> May not occur in the next 6 months, included for information only.

- B-103
- BX-104
- 241-T-108
- 241-T-202
- Perform three miscellaneous underground storage tank visual camera inspections in FY 2019
- Perform the following TFC-ENG-CHEM-D-42, *Tank Leak Assessment Process*:
  - 241-T-101 (ongoing)
  - 241-T-103.

### *Issues*

- None.

### **Independent Qualified Registered Professional Engineer Activities**

- Double-shell tank
  - RPP-RPT-58441, *Double-Shell Tank System Integrity Assessment Report (DSTAR)*, Rev. 1, was completed in 2016.
  - The next assessment will be in 2026.
- SST
  - 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 (2034).
- Evaporator
  - RPP-RPT-60098, *242-A Evaporator System Integrity Assessment Report*, Rev. 0 was completed in 2018.
  - The next assessment is yet to be scheduled.
- ETF
  - RPP-PLAN-61349, *Effluent Treatment Facility Integrity Program Plan*, Rev. 0, was released. The document will support the FY 2019 IQRPE ETF integrity assessment. Prospective IQRPE subcontractor questions were received, answers were compiled, and answers were communicated to support proposal development.
- 219-S
  - Washington River Protection Solutions LLC (WRPS) awarded the contract for the 219-S integrity assessment project to Meier Architecture Engineering.
  - As part of the 219-S assessment, the 24-hour static leak test was successfully performed on tanks 101 and 104 on September 13, 2018, and September 5, 2018, respectively. Tank 102 is next to be leak tested (forecasted for January 2019). Work

packages for the internal and external visual inspections of the tanks and associated piping has been drafted and is under review.

- Planning for ultrasonic testing (UT) of the tanks in 219-S has been deferred until results from the visual inspection have been completed.

## In-Tank Characterization and Summary

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

### Significant Past Accomplishments

#### *Reports Completed or Released*

For November 2018, the following reports were completed (internal access only) or released (external access):

- Completed:
  - RPP-PLAN-62708, *Tank 241-AP-107 Phase I Grab Sampling for Large Volume Testing at Pacific Northwest National Laboratory (PNNL)*, Rev. 0
  - RPP-PLAN-62709, *Tank 241-AP-107 Phase II Grab Sampling for Large Volume Testing at Pacific Northwest National Laboratory (PNNL)*, Rev. 0
  - RPP-PLAN-62774, *Tank 241-SY-101 Grab Sampling and Analysis Plan in Support of Test Bed Initiative – Phase 2*, Rev. 0
  - RPP-RPT-61165, *Final Analytical Report for Tank 241-AP-106 Archived Grab Samples Taken in Fiscal Year 2018*, Rev. 0
  - RPP-PLAN-60685, *Sampling and Analysis of 241-AP Stack Chemical Emissions*, Rev. 2
  - RPP-RPT-60934, *Boildown Test Final Report: 242-A Evaporator Campaign EC-09*, Rev. 0
  - RPP-SPEC-33590, *Data Quality Objectives for the Evaluation of Stack Chemical Emissions*, Rev. 4
- Released:
  - RPP-RPT-59896, *Derivation of Best-Basis Inventory for Tank 2414-U-102 as of October 1, 2018*, Rev. 1
  - RPP-RPT-58769, *Derivation of Best-Basis Inventory for Tank 2414-SX-113 as of October 1, 2018*, Rev. 1
  - RPP-RPT-46772, *Derivation of Best-Basis Inventory for Tank 2414-AN-107 as of October 1, 2018*, Rev. 4
  - RPP-RPT-59407, *Derivation of Best-Basis Inventory for Tank 241-TY-101 as of October 1, 2018*, Rev. 1
  - RPP-RPT-60474, *Derivation of Best-Basis Inventory for Tank 241-S-104 as of October 1, 2018*, Rev. 1

- RPP-RPT-44814, *Derivation of Best-Basis Inventory for Tank 241-AN-101 as of October 1, 2018*, Rev. 25
- RPP-RPT-61182, *Final Analytical Report for Tank 241-AZ-102 Grab Samples – Post-Recirculation*, Rev. 0
- HNF-EP-0182, *Waste Tank Summary Report for Month Ending September 30, 2018*, Rev. 369.

### *Tank Sampling*

For November 2018, the following tank sampling was conducted:

- Tank 241-AW-102 large volume sampling (completed)
- Tank 241-SY-101 grab sampling (completed)
- Completed tank 241-SY-101 liquid grab sampling November 15, 2018, six samples were received at the laboratory.

### *Best-Basis Inventory Updates*

Best-basis inventory updates for the following tanks were completed in November 2018:

- 241-AN-101
- 241-AN-107
- 241-S-104
- 241-SX-113
- 241-TY-101
- 241-U-102.

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

### *Tank Sampling*

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

- Tank 241-A-105 solids grab sampling is planned for December 2018.
- Tank 241-AP-107 large volume grab sampling is planned for December 2018.
- Tank 241-AZ-102 leak detector pit grab sampling is planned for December 2018.
- Tank 241-AW-103 grab sampling is planned for April 2019.
- Tank 241-AN-107 grab sampling is planned for May 2019.
- Tank 241-AZ-101 grab sampling is planned for June 2019.

### *Best-Basis Inventory Updates*

Best-basis inventory updates for the following tanks are currently planned to be completed in December 2018:

- 241-AP-102
- 241-AP-107
- 241-AW-102
- 241-AY-101
- 241-AY-102

- 241-C-105
- 241-TY-105.

**Issues**

- None.

## Single-Shell Tank Closure Program

**Tank Farms Assistant Manager:** Rob Hastings

**Federal Program Manager:** Jan Bovier

**Ecology Project Manager:** Jeff Lyon

### **M-045-59 Control Surface Water Infiltration Pathways as Needed**

**Due:** To Be Determined. Will be implemented if needed to control or significantly reduce the likelihood of migration of subsurface contamination to groundwater at the SST waste management areas (WMA) (pending the corrective measures study report, M-45-58 Milestone, and implementation of other interim corrective measures).

**Status:** On Schedule.

### **M-045-62 Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 Corrective Measures Implementation Work Plan (CMIP) for WMA-C**

**Due:** To Be Determined. To be established in accordance with the date identified in the M-45-82 Milestone Tier 2 closure plan.

**Status:** On Schedule.

### **M-045-83 Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan**

**Due:** To Be Determined. To be established in accordance with the date identified in the M-45-82 Milestone Tier 2 closure plan.

**Status:** On Schedule.

### **M-045-84 Initiate Negotiations to Establish HFFACO Interim Milestones for Closure of 2nd SST WMA**

**Due:** April 3, 2017.

**Status:** Completed (March 14, 2017). Negotiations initiated on March 14, 2017.

**Note:** Decision on location of next WMA to be closed needs to be finalized.

### **M-045-92V Complete Construction of Barriers 1 (South) and 2 (North) and Expansion Barrier in 241-SX Farm**

**Due:** October 31, 2019.

**Status:** On Schedule.

**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.
- M-045-92AD**   **Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities**  
Due:            October 31, 2020.  
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-045-92AB**   **Complete Construction of Barrier 4 in 241-U Farm**  
Due:            October 31, 2023.  
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**

- Ecology formally approved RPP-RPT-58339, *Phase 2 RCRA Facility Investigation Report for Waste Management Area C*, and RPP-RPT-59379, *Waste Management Area C Phase 2 Corrective Measures Study Report*, on June 11, 2018.
- Ecology provided its comments on RPP-RPT-59389, *Tier 2 Resource Conservation and Recovery Act (RCRA) Closure Action Plan for Waste Management Area C*, and RPP-RPT-59390, *Tier 3 Resource Conservation and Recovery Act (RCRA) Component Closure Action Plan for 241-C-200 Series Tanks*, on June 25, 2018. Ecology’s comments are being evaluated by WRPS and ORP.
- Completed construction of the SX Tank Farm Barrier 1 (south) and SX Tank Farm Barrier 2 (north).

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

- Begin resolution of Ecology’s comments on the RCRA tier 1, 2, and 3 closure plans
- Begin resolution of Ecology’s comments on the RPP-RPT-59389 and RPP-RPT-59390 closure action plan reports.

### **Issues**

- DOE/ORP-2014-02, *Clean Closure Practicality Demonstration for the Single-Shell Tanks*, Rev. 1 dated July 23, 2014. ORP received Ecology letter 15-NWP-149, “Department of Ecology’s Response Comments Regarding Review of the *Clean Closure Practicality Demonstration for the Single-Shell Tanks*, DOE/ORP-2014-02,” dated August 3, 2015. Ecology provided comments on the document and ORP met with Ecology in November 2017 to discuss path forward. In December, ORP expects to provide a revision to be included as an appendix to the report.
- Document RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*, was submitted to Ecology September 30, 2015. ORP received partial comments on April 11, 2016. ORP is meeting regularly with Ecology to discuss SST closure and permitting requirements. The “SSTs Closure Matrix,” dated October 16, 2018, represents the full suite of comments on plan RPP-RPT-58858 and will be addressed.

## Single-Shell Tank Retrieval Program

**Tank Farms Assistant Manager:** Rob Hastings

**Federal Program Manager:** Jeff Rambo

**Ecology Project Manager:** Jeff Lyon

**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: On Schedule. Sub-milestone M-045-86D; RPP-RPT-60956, *Retrieval Data Report for Single-Shell Tank 241-C-105*, Rev. 0.

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

Due: December 31, 2040.

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

### Significant Past Accomplishments

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

### Significant Planned Activities in the Next Six Months

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

### Issues

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

## Tank Operations Contract Overview

Earned Value Data: Fiscal Year 2019

October-18

Tank Farms ORP-0014 WBS 5 - River Protection Project (in \$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$38,412	\$35,485	\$37,730	(\$2,927)	(\$2,245)	0.92	0.94			
FYTD	\$38,412	\$35,485	\$37,730	(\$2,927)	(\$2,245)	0.92	0.94	\$642,865		
CTD	\$4,822,138	\$4,789,907	\$4,757,013	(\$32,231)	\$32,894	0.99	1.01	\$5,426,591	\$5,391,035	\$35,557

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 Tri-Party Agreement (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.

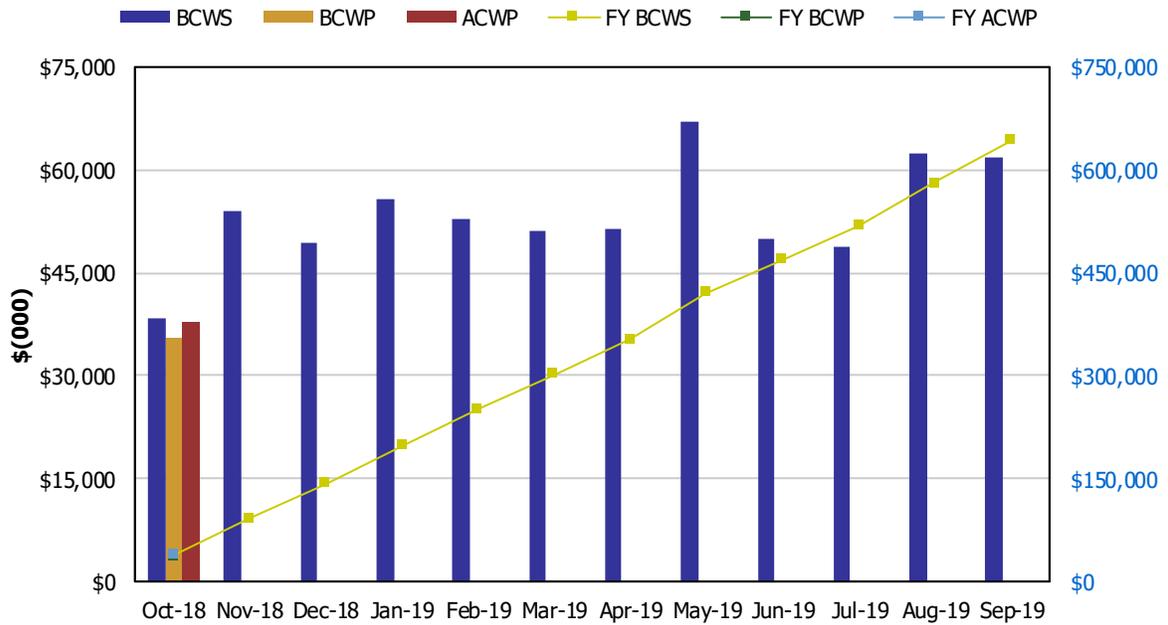
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 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, FY-to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the FY 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

October-18

**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	\$54,116					\$92,527				
Dec 2018	\$49,424					\$141,951				
Jan 2019	\$55,795					\$197,746				
Feb 2019	\$52,873					\$250,619				
Mar 2019	\$51,019					\$301,638				
Apr 2019	\$51,285					\$352,924				
May 2019	\$67,016					\$419,940				
Jun 2019	\$49,929					\$469,869				
Jul 2019	\$48,785					\$518,654				
Aug 2019	\$62,420					\$581,074				
Sep 2019	\$61,791					\$642,865				
CTD	\$4,822,138	\$4,789,907	\$4,757,013	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.

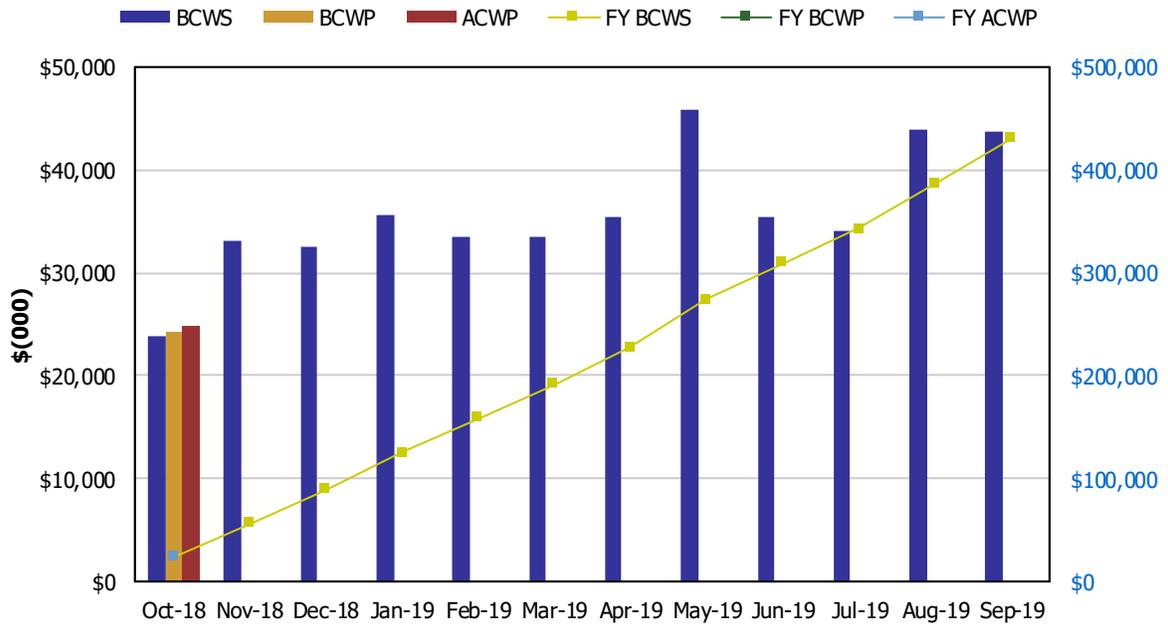
CM current month.  
 CTD contract to date.  
 FY fiscal year.  
 SPI schedule performance index.

Earned Value Data: Fiscal Year 2019

October-18

**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	\$33,060					\$56,874				
Dec 2018	\$32,480					\$89,354				
Jan 2019	\$35,575					\$124,929				
Feb 2019	\$33,414					\$158,343				
Mar 2019	\$33,574					\$191,918				
Apr 2019	\$35,497					\$227,415				
May 2019	\$45,863					\$273,278				
Jun 2019	\$35,475					\$308,753				
Jul 2019	\$33,973					\$342,726				
Aug 2019	\$43,866					\$386,592				
Sep 2019	\$43,800					\$430,392				
CTD	\$3,200,468	\$3,186,905	\$3,140,334	1.00	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  
***Federal Project Director:*** Steve Pfaff

### **5.01 – Base Operations**

The October 2018 variances below do not impact TPA milestones.

The **favorable** SV of \$473,100 is primarily due to:

- Schedule recovery for the double-shell tank AP-102A Jumper Repair fieldwork for the waste transfer jumper repair.
- Schedule recovery related to the receipt of the structural steel for the AW Tank Farm stack extension project. The structural steel for the support of the stack was initially planned to arrive in May 2018.

The **unfavorable** CV of (\$519,300) is primarily due to:

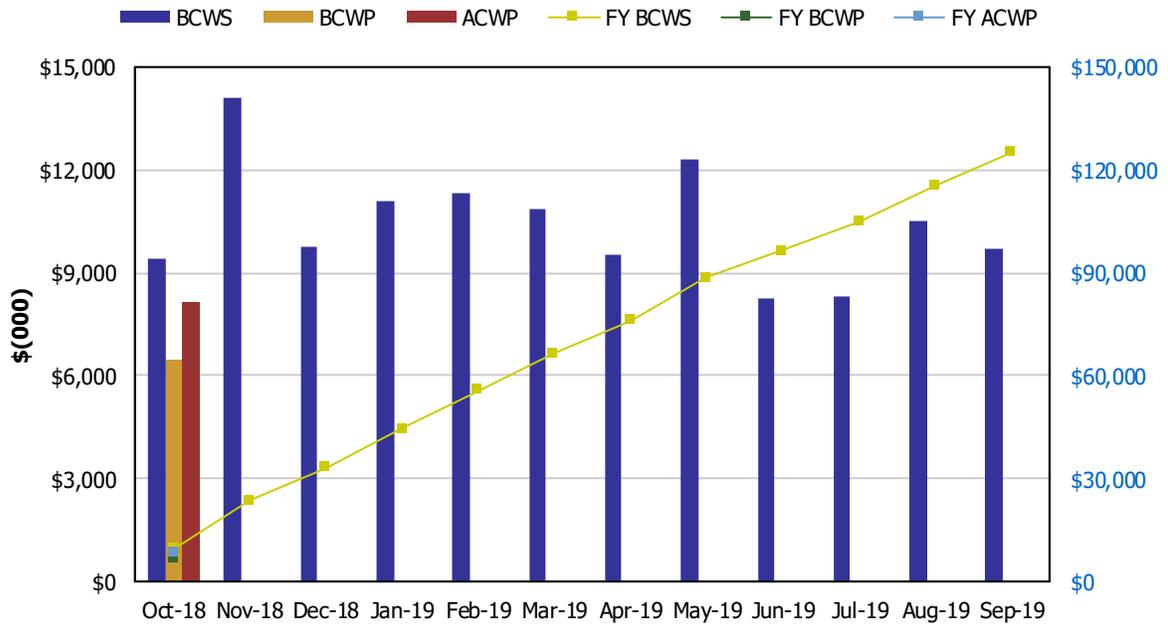
- The current unfavorable cost variance is due in part to additional resources required to support the ETF. Specifically the tank integrity assessments, RCRA tank inspections, and maintenance of systems.
- Additional costs incurred to complete installation of a new 10 wide trailer that will be used to support the industrial hygiene vapor program by providing appropriate office/work space for industrial hygiene technicians.

Earned Value Data: Fiscal Year 2019

October-18

**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	\$14,083					\$23,485				
Dec 2018	\$9,783					\$33,268				
Jan 2019	\$11,115					\$44,383				
Feb 2019	\$11,301					\$55,683				
Mar 2019	\$10,833					\$66,516				
Apr 2019	\$9,511					\$76,027				
May 2019	\$12,320					\$88,347				
Jun 2019	\$8,272					\$96,619				
Jul 2019	\$8,315					\$104,934				
Aug 2019	\$10,533					\$115,467				
Sep 2019	\$9,694					\$125,161				
CTD	\$950,141	\$937,178	\$986,622	0.99	0.95					

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

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

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

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

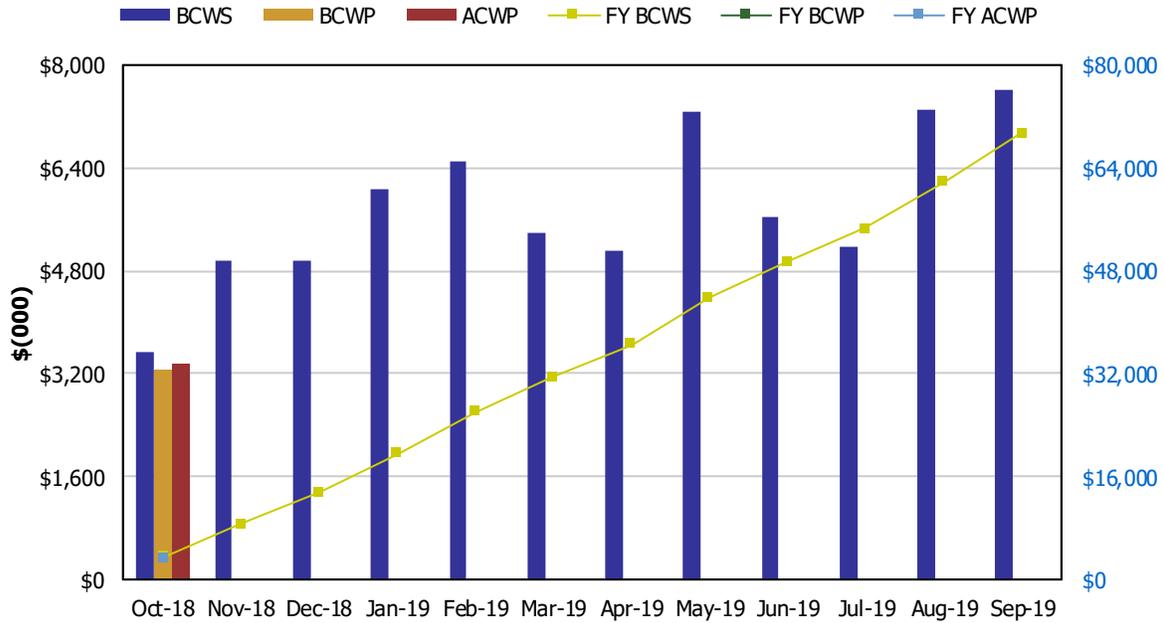
For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2019

October-18

**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	\$4,955					\$8,485				
Dec 2018	\$4,952					\$13,437				
Jan 2019	\$6,058					\$19,495				
Feb 2019	\$6,496					\$25,991				
Mar 2019	\$5,390					\$31,381				
Apr 2019	\$5,097					\$36,478				
May 2019	\$7,257					\$43,735				
Jun 2019	\$5,622					\$49,357				
Jul 2019	\$5,166					\$54,523				
Aug 2019	\$7,298					\$61,821				
Sep 2019	\$7,620					\$69,441				
CTD	\$503,114	\$499,216	\$458,111	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.

***One System Division Director:*** Joni Grindstaff  
***Federal Program Manager:*** Kaylin Burnett

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

The October 2018 variances below do not impact TPA milestones.

The **unfavorable** SV of (\$262,000) was primarily due to:

- The direct-feed low-activity waste rad waste test platform project experienced a 1-month delay on receiving a sample from Tank AP-107.
- The 2,000-gallon test bed initiative was stopped. ORP directed WRPS to ramp-down the project. WRPS will perform a budget change request to remove project budget from the baseline, deleting this variance.

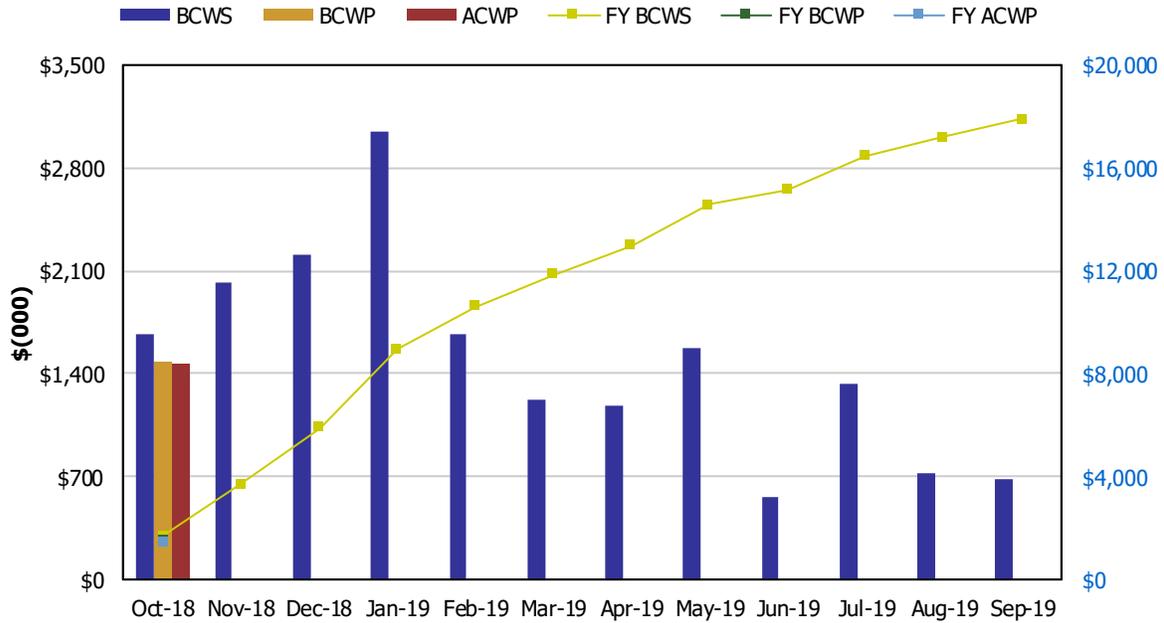
The **unfavorable** CV of (68,200) does not exceed the threshold required to provide a variance narrative.

Earned Value Data: Fiscal Year 2019

October-18

**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	\$2,017					\$3,683				
Dec 2018	\$2,209					\$5,893				
Jan 2019	\$3,047					\$8,940				
Feb 2019	\$1,662					\$10,602				
Mar 2019	\$1,222					\$11,824				
Apr 2019	\$1,180					\$13,003				
May 2019	\$1,576					\$14,579				
Jun 2019	\$561					\$15,140				
Jul 2019	\$1,332					\$16,472				
Aug 2019	\$722					\$17,194				
Sep 2019	\$676					\$17,870				
<b>CTD</b>	<b>\$148,305</b>	<b>\$146,499</b>	<b>\$152,779</b>	<b>0.99</b>	<b>0.96</b>					

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:* Janet Diediker

### **5.05 – Treat Waste**

The October 2018 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$184,116) is due to:

- The architect engineer's delayed progress on the 30 percent design of the waste transfer line modifications needed to support both tank-side cesium removal operations and direct-feed low-activity waste.

The current month **favorable** CV of \$17,656 is due to:

- The variance is below the reporting threshold.