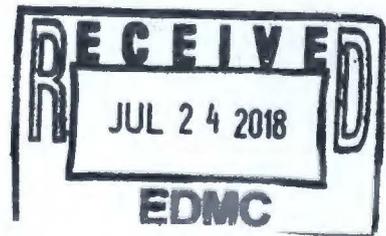


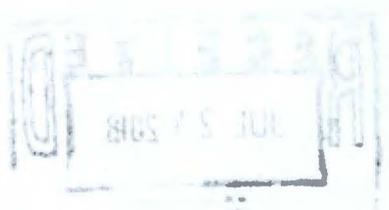
FINAL

Office of River Protection
Tri-Party Agreement
Report
July¹ 2018



¹ The narrative descriptions of progress in this report cover the period from June 1-30, 2018. Earned Value Management System data and descriptions cover the period of May 1-31, 2018.

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Acronyms and Abbreviations

CV	cost variance
DFLAW	direct-feed low-activity waste
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FY	fiscal year
IQRPE	independent qualified registered professional engineer
LAWPS	Low-Activity Waste Pretreatment System
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
WRPS	Washington River Protection Solutions LLC
WTP	Waste Treatment and Immobilization Plant

Administrative Items/Milestone Status

Milestone	Title	Due Date	TPA PM	Status
Prior Years				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	Pfaff, Stephen H	In Abeyance
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection	04/30/2015	Pfaff, Stephen H	In Abeyance
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones	04/30/2015	Pfaff, Stephen H	In Abeyance
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016	Diediker, Janet A	In Abeyance
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016	Diediker, Janet A	In Abeyance
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	Pfaff, Stephen H	In Abeyance
M-045-62	Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C	TBD ¹	Bovier, Jan B	On Schedule
M-045-83	Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan	TBD ¹	Bovier, Jan B	On Schedule
Fiscal Year 2018				
M-062-40F	Submit System Plan to Ecology	10/31/2017	Burnett, Kaylin W	Completed
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements	04/30/2018	Pfaff, Stephen H	In Abeyance

Milestone	Title	Due Date	TPA PM	Status
M-045-92O	Barrier 3 (TX Tank Farm) Design/Monitoring Plan Submitted to Ecology	06/30/2018	Bovier, Jan B	Deleted
M-045-56N	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2018	Bovier, Jan B	On Schedule
M-045-91I	Provide IQRPE Certification of SSTs Structural Integrity	09/30/2018	Stewart, Dustin M	On Schedule
M-045-92T	Barrier 3 (TX Tank Farm) Design/Monitoring Plan Approved by Ecology	09/30/2018	Bovier, Jan B	Deleted
Fiscal Year 2019				
M-045-92N	Complete Construction of Barriers 1 and 2 in 241-SX Farm	10/31/2018	Bovier, Jan B	Deleted
M-045-92Q	Barrier 4 (U Tank Farm) Design/Monitoring Plan Submitted to Ecology	06/30/2019	Bovier, Jan B	Deleted
M-045-56O	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2019	Bovier, Jan B	On Schedule
M-045-91E3	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2019	Stewart, Dustin M	On Schedule
M-045-92U	Barrier 4 (U Tank Farm) Design/Monitoring Plan Approved by Ecology	09/30/2019	Bovier, Jan B	Deleted

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

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

CMIP = corrective measures implementation work plan.

CR = change request.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

IQRPE = independent qualified registered professional engineer.

Mod = modification.

PM = project manager.

RCRA = *Resource Conservation and Recovery Act*.

SST = single-shell tank.

TBD = to be determined.

TPA = Tri-Party Agreement.

WTP = Waste Treatment and Immobilization Plant.

WMA-C = C Tank Farm waste management area.

System Plan

One System Division Director: Jon Peschong
Federal Program Manager: Kaylin Burnett
Ecology Project Manager: Dan McDonald, Jeff Lyon

Significant Past Accomplishments

- In May, the U.S. Department of Energy, Office of River Protection (ORP); U.S. Environmental Protection Agency (EPA); and Washington State Department of Ecology (Ecology) agreed to an extension of negotiations related to M-062-45 Milestone. In a document signed on May 29, 2018, the parties agreed that it was prudent to extend the completion of the negotiations in order to allow the parties to further develop proposals. The new date for concluding negotiations is August 15, 2018. To date the parties have exchanged proposals and started dialogue.

Significant Planned Actions in the Next Six Months

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

Issues

- Negotiations on the items identified in the M-062-45 Milestone began on September 8, 2016, in accordance with a decision by the Interagency Management Integration Team.

Acquisition of New Facilities

Tank Farms Assistant Manager: Glyn Trenchard
Deputy Federal Project Director: Janet Diediker
Ecology Project Manager: Dan McDonald, Jeff Lyon

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

Due: March 31, 2016.

Status: 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-090-13 CD-1 for Interim Hanford Storage Project and CR for CD-2 to ECY

Due: March 31, 2016.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

M-090-00 Acquire/Modify Facilities for Storage of First Two Years of Immobilized High-Level Waste (IHLW) from the Waste Treatment and Immobilization Plant (WTP) Operations

Due: December 31, 2036.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

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

Due: To Be Determined.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

Significant Past Accomplishments

- In May, ORP, EPA, and Ecology agreed to an extension of negotiations related to M-062-45 Milestone. In a document signed on May 29, 2018, the parties agreed that it was prudent to extend the completion of the negotiations in order to allow the parties to further develop proposals. The new date for concluding negotiations is August 15, 2018. To date the parties have exchanged proposals and started dialogue.

Significant Planned Actions in the Next Six Months

- Continue negotiations of the M-062-45 Milestone and related milestones.

Issues

- Negotiations on the items identified in the M-062-45 Milestone began on September 8, 2016, in accordance with a decision by the Interagency Management Integration Team.

Supplemental Treatment and Part B Permit Applications

Tank Farms Assistant Manager: Glyn Trenchard

Federal Project Director: Steve Pfaff

Ecology Project Manager: Dan McDonald

M-062-45-T01 Complete Negotiations 6-Months after Last Issuance of System Plan

Due: April 30, 2015.

Status: In Abeyance. Decision document 2016-005 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-ZZ Negotiate a One-Time Supplemental Treatment Selection

Due: April 30, 2015.

Status: In Abeyance. Decision document 2016-005 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-ZZ-A Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones

Due: April 30, 2015.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

M-062-31-T01 Complete Final Design and Submit Resource Conservation and Recovery Act (RCRA) Part B Permit Modification Request for Enhanced WTP & Supplemental Treatment

Due: April 30, 2016.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

M-062-32-T01 Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements

Due: April 30, 2018.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

M-062-33-T01 Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements

Due: April 30, 2021.

Status: In Abeyance. Decision document 2016-005 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-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.

Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone. Negotiations began on September 8, 2016.

M-062-21 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 High-Level Waste (HLW) and Low-Activity Waste (LAW) Tank Wastes

Due: December 31, 2047.

Status: At risk.

Significant Past Accomplishments

- In May, ORP, EPA, and Ecology agreed to an extension of negotiations related to M-062-45 Milestone. In a document signed on May 29, 2018, the parties agreed that it was prudent to extend the completion of the negotiations in order to allow the parties to further develop proposals. The new date for concluding negotiations August 15, 2018. To date the parties have exchanged proposals and started dialogue.

Significant Planned Actions in the Next Six Months

- Continue negotiations of the M-062-45 Milestone and related milestones.

Issues

- Negotiations on the items identified in the M-062-45 Milestone began on September 8, 2016, in accordance with a decision by the Interagency Management Integration Team.

Direct-Feed Low-Activity Waste Projects

<i>Tank Farms Assistant Manager:</i>	Glyn Trenchard
<i>LAWPS Federal Manager:</i>	Steve Pfaff
<i>TSCR Federal Manager:</i>	Sahid Smith
<i>Ecology Project Manager:</i>	Dan McDonald, Jeff Lyon

This 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 (WTP) Project scope pertaining to DFLAW.

Low-Activity Waste Pretreatment System:

Significant Past Accomplishments

- Washington River Protection Solutions LLC (WRPS) continued design, testing, environmental permitting, and nuclear safety and licensing activities.
- ORP obtained Critical Decision (CD) 3A, “Long Lead Procurement,” approval for the tank-side cesium removal (TSCR) from U.S. Department of Energy, Headquarters. This was the first step in transitioning the Low-Activity Waste Pretreatment System (LAWPS) project from design and construction of a permanent cesium removal capability to a two-phased approach of using TSCR for initial feed to WTP (Phase One) and reconsideration of the future cesium removal at a later date (Phase Two).

Significant Planned Actions in the Next Six Months

- ORP will direct WRPS to complete design development of the optimized LAWPS cesium removal capability with an informal 45 percent design review currently scheduled for the end of fiscal year (FY) 2018. The 45 percent design, along with applicable test reports will be maintained under configuration control pending future evaluation of the LAWPS cesium removal capability.
- WRPS to continue design development on all supporting systems to the TSCR system to supply liquid tank waste to TSCR, to store pretreated low-activity waste feed, and to transfer pretreated low-activity waste feed to WTP.

Issues

- The LAWPS path forward is under evaluation by ORP.

Tank-Side Cesium Removal:

Significant Past Accomplishments

- ORP obtained CD-3A approval for the TSCR system from Headquarters. The CD-3A approval initially authorizes use of capital funds for preliminary design (60 percent) of the TSCR system.

- WRPS completed the engineering procurement specification for the TSCR system and awarded a subcontract to AVANTech, Inc. on July 3, 2018.

Significant Planned Actions in the Next Six Months

- WRPS to conduct 30 percent design review in August 2018. The 60 percent design reviews will be conducted in FY 2019.

Issues

- None.

242-A Evaporator Status

Tank Farms Assistant Manager: Glyn Trenchard
Federal Program Manager: Paul Hernandez
Ecology Project Manager: Jeff Lyon

The 242-A Evaporator campaign strategy for FY 2018 is in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
2018	EC-08	Blend of AP-106 AP-107	AP-103	Campaign EC-08 was completed on May 4, 2018 with a waste volume reduction of 166,000 gallons.
2018	EC-09	Blend of AP-106 AP-108	AP-104	Campaign EC-09 began on June 22, 2018. Operations were suspended on June 25, 2018 due to a failure of the PB-1 recirculation pump. Engineering evaluation for pump replacement is in progress.

Significant Past Accomplishments

- Completed sample analysis at 222-S Laboratory in support of EC-09
- Completed replacement of control room air-conditioning units
- Completed campaign EC-08.

Significant Planned Actions in the Next Six Months

- Establish the future campaign and outage scheduling
- Replace fire alarm control panel at 242-A Evaporator.

Issues

- Campaign EC-09 operations were suspended in June when the PB-1 recirculation pump failed. Engineering evaluation is in progress.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Tank Farms Assistant Manager: Glyn Trenchard
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)
Total Volume (as of June 30, 2018)	~ 0 Mgal ¹	~ 6.50 Mgal	~ 7.40 Mgal

Waste Received			
AZ-301 Condensate	-	-	-
MWT-31 and 34 Leachate	-	~ 35,000 gal	-
Other (e.g., PNNL & SWLL totes)	-	~ 1,500 gal	-
242-A Evaporator Campaigns	-	~ 96,000 gal	-

¹ Basin 42 was placed out-of-service on June 1, 2018.

gal = gallon.

Mgal = million gallons

MWT = mixed waste trench.

PNNL = Pacific Northwest National Laboratory.

SWLL = solid waste landfill lysimeter.

Significant Past Accomplishments

- Total FY 2018 volume processed (as of June 30, 2018): Approximately 1,897,000 gallons.
- Completed dewatering of LERF Basin 42 into Basin 43. Placed LERF Basin 42 out-of-service on June 1, 2018.
- Began LERF Basin 42 cover removal activities in support of cover replacement project.

Significant Planned Actions in the Next Six Months

- Continue processing LERF Basin 43 waste at Effluent Treatment Facility
- Enter plant cleanout/outage for extended corrective maintenance
- Perform camera visual inspections in support of the Effluent Treatment Facility integrity assessment project
- Complete the LERF Basin 42 cover replacement project

- Complete design and commence installation of the new Effluent Treatment Facility air compressors.

Issues

- None.

Tank System Update

Tank Farms Assistant Manager: Glyn Trenchard
Federal Program Manager: Dusty Stewart
Ecology Project Manager: Jeff Lyon, Cheryl Whalen

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

Double-Shell Tank Integrity:

Significant Past Accomplishments

- Corrosion testing contracts with DNV-GL Laboratory and Savannah River National Laboratory are in place and ORP has received a test plan for FY 2018. Emphasis this year is on new specification development to accommodate DFLAW returns and secondary liner testing.
- The Tank Integrity Expert Panel met on June 27 and 28, 2018, to discuss tank integrity activities including recent inspection findings and chemistry control specifications.

Significant Planned Actions in the Next Six Months

- Enhanced annulus visual inspections are planned for the following tanks in FY 2018:

– 241-AP-102	– 241-AP-108	(completed)
– 241-AP-103	– 241-AW-101	(ongoing)
– 241-AP-104	– 241-AW-102	
– 241-AP-105	– 241-AW-104.	
– 241-AP-106		
- Ultrasonic testing inspections are planned for the following tanks in FY 2018:

– 241-AY-101	(completed)	– 241-AZ-102	(ongoing)
– 241-AZ-101	(completed)		
- In response to receipt of Ecology letter 18-NWP-015, “Transmittal of Fourth Mutual Letter of Agreement for 241-AY-102 for Signatures,” dated January 29, 2018, the settlement agreement driven video inspections of the Tank AY-102 annulus have been discontinued. Periodic monitoring of the waste accumulation in the annulus will continue on a schedule to be determined by WRPS Engineering.
- 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.
- Secondary liners:
 - 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.

- Continue modeling potential water ingress routes into the annulus systems.
- Perform a visual inspection of the Tank 241-AP-102 annulus floor; scheduled for FY 2018.
- 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 2019.²
- 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 2019.²

Issues

- None.

Single-Shell Tank Integrity:

Significant Past Accomplishments

- WRPS awarded the contract for the single-shell tank (SST) integrity assessment project as described in M-045-911 (assessment of structural integrity) to Meier Architecture Engineering. The integrity assessment activities are underway.
- Completed the CHEM-D-42 Leak Assessment for Tank S-104, as part of the ongoing evaluation of assumed leaking tanks. The leak assessment team concluded the tank had not leaked and the decades old contamination plume near Tank S-104 was attributed to an overflow of a spare inlet nozzle. The Executive Safety Review Board was briefed and concurred with the findings of the leak assessment team. The leak assessment document is in approval for release.
- Completed in-tank video inspections for tanks B-104, B-105, TX-105, TX-106, TX-109, TX-118, S-107, SX-101, SX-103, SX-105, SX-113, and U-103.
- Released RPP-RPT-60093, *Fiscal Year 2017 Visual Inspection Report for Single-Shell Tanks*, Rev. 0.

Significant Planned Actions in the Next Six Months

- Complete M-045-911 report RPP-IQRPE-50028, *Single-Shell Tank System Structural Integrity Assessment Report*
- Complete the FY 2018 SST visual inspection reports.

Issues

- None.

² Will not occur in the next 6 months, included for information only.

Independent Qualified Registered Professional Engineer Activities:**Significant Past Accomplishments**

- Released RPP-RPT-60479, *Ultrasonic Inspection Results for Effluent Treatment Facility – 2017*, Rev. 0, to the independent qualified registered professional engineer (IQRPE)
- WRPS awarded the contract for the 219-S integrity assessment project to Meier Architecture Engineering.

Significant Planned Actions in the Next Six Months

- Support IQRPE with continued development of the SST structural integrity assessment report.
- Complete M-045-911 report RPP-IQRPE-50028, *Single-Shell Tank System Structural Integrity Assessment Report*.
- Work will continue on document RPP-PLAN-61349, *Effluent Treatment Facility Integrity Program Plan*. The plan will support the FY 2019 IQRPE Effluent Treatment Facility integrity assessment.
- Continue planning for conducting visual, ultrasonic, and leak tests in the 219-S facility. Document RPP-PLAN-61634, *219-S Integrity Assessment Plan* will serve as a guide for conducting these inspections.

Issues

- None.

Single-Shell Tank Integrity Assurance

Tank Farms Assistant Manager: Glyn Trenchard
Federal Program Manager: Dusty Stewart
Ecology Project Manager: Jeff Lyon

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

M-045-91I Provide Independent, Qualified, Registered Professional Engineer (IQRPE) Certification of Single-Shell Tanks (SSTs) Structural Integrity

Due: September 30, 2018.

Status: On Schedule.

Significant Past Accomplishments

- Draft A of the 2018 SST IQRPE report was reviewed by WRPS and review comments were submitted to the IQRPE for consideration.

Significant Planned Actions in the Next Six Months

- Support IQRPE with continued development of the SST integrity assessment.
- Complete M-045-91I report RPP-IQRPE-50028, Single-Shell Tank System Structural Integrity Assessment Report.

Issues:

- None.

In-Tank Characterization and Summary

Tank Farms Assistant Manager: Glyn Trenchard
Federal Program Manager: Dusty Stewart
Ecology Project Manager: Jeff Lyon

Significant Past Accomplishments

For the period from June 1 through June 30, 2018, the following reports were completed (internal access only) or released (external access):

- Completed:
 - RPP-PLAN-60589, *Sampling and Analysis of 241-AY/AZ Combined Ventilation System Stack Chemical Emissions*, Rev. 01
 - RPP-RPT-60718, *Final Analytical Report for Tank 241-AW-106 Grab Samples in Support of Evaporator Campaign EC-09*, Rev. 1
 - RPP-RPT-60846, *Final Analytical Report for Tank 241-AZ-102 Grab Samples – Pre-Recirculation*, Rev. 0.
- Released:
 - HNF-EP-0182, *Waste Tank Summary Report for Month Ending May 31, 2018*, Rev. 365
 - RPP-RPT-59532, *Derivation of Best-Basis Inventory for Tank 241-T-109 as of April 1, 2018*, Rev. 1
 - RPP-RPT-44643, *Derivation of Best-Basis Inventory for Tank 241-SY-102 as of April 1, 2018*, Rev. 6
 - RPP-RPT-60410, *Derivation of Best-Basis Inventory for Tank 241-SX-101 as of June 1, 2018*, Rev. 1
 - RPP-RPT-44740, *Derivation of Best-Basis Inventory for Tank 241 AX-102 as of April 1, 2018*, Rev. 2
 - RPP-RPT-54017, *Derivation of Best-Basis Inventory for Tank 241-AP-102 as of May 1, 2018*, Rev. 7
 - RPP-RPT-46686, *Derivation of Best-Basis Inventory for Tank 241-AW-106 as of April 1, 2018*, Rev. 9
 - RPP-RPT-58697, *Derivation of Best-Basis Inventory for Tank 241-TX-106 as of May 1, 2018*, Rev. 1
 - RPP-RPT-60540, *Derivation of Best-Basis Inventory for Tank 241-SY-103 as of April 1, 2018*, Rev. 0.

For the period from June 1 through June 30, 2018, the following sampling was conducted:

- Completed Tank 241-AZ-102 post-recirculation liquid grab sampling June 6, 2018. Seven samples and a field blank were received at the laboratory.

Significant Planned Actions in the Next Six Months

Tank Sampling:

- Tank 241-AW-102 Test Bed Initiative liquid grab sampling is planned for July 2018.
- Tank 241-AZ-102 leak detector pit sampling is planned for July 2018.
- Tank 241-A-105 off-riser sampling system solids sampling is planned for August 2018.
- Tank 241-AW-105 liquid grab sampling is planned for October 2018.
- Tank 241-AY-102 solids grab sampling is planned for October 2018.

Issues

- None.

Best-Basis Inventory Updates

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

- 241-AT-109
- 241-SY-102
- 241-SX-101
- 241-AX-102
- 241-AP-102
- 241-BX-102
- 241-C-109
- 241-C-110.

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

- 241-BY-101
- 241-BY-108
- 241-S-102
- 241-AP-103
- 241-AW-106.

Data Quality Objectives Updates

- None.

Single-Shell Tank Closure Program

Tank Farms Assistant Manager: Glyn Trenchard

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-045-920 Barrier 3 (TX Tank Farm Barrier) Design/Monitoring Plan Submitted to Ecology

Due: June 30, 2018.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

M-045-92T Barrier 3 (TX Tank Farm Barrier) Design/Monitoring Plan Approved by Ecology

Due: September 30, 2018.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

M-045-92N Complete Construction of Barriers 1 and 2 in 241-SX Farm

Due: October 31, 2018.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

M-045-92Q Barrier 4 (U Tank Farm Barrier) Design/Monitoring Plan Submitted to Ecology

Due: June 30, 2019.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

M-045-92U Barrier 4 (U Tank Farm Barrier) Design/Monitoring Plan Approved by Ecology

Due: September 30, 2019.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

M-045-92P Complete Construction of Barrier 3 (TX Tank Farm Barrier)

Due: October 31, 2019.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

M-045-92R Complete Construction of Barrier 4 (U Tank Farm Barrier)

Due: October 31, 2020.

Status: This milestone was deleted. TPA Change Control Form M-45-18-03, signed on June 28, 2018, modified interim milestone M-045-92 by re-sequencing the schedule for design, construction and monitoring of tank farm surface barriers.

- M-045-92V Complete Construction of Barriers 1 and 2 (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/Maintenance and Performance Monitoring Plan 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-045-92Y 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. Negotiations began on September 8, 2016.

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 evapotranspiration basin. The SX Tank Farm barrier evapotranspiration basin will dispose of water collected on the SX Tank Farm interim surface barriers.
- On May 10, 2018, Ecology and ORP formally agreed upon the size of Barrier 3 at TX Tank Farm.
- Completed negotiations of near-term M-045-92 milestones through TPA Change Control Form M-45-18-03. Finalized on June 28, 2018.

Significant Planned Activities in the Next Six Months

- Begin resolution of Ecology's comments on the *Resource Conservation and Recovery Act* tier 1, 2, and 3 closure plans
- Begin resolution of Ecology's comments on the RPP-RPT-58389 and RPP-RPT-59390 closure action plan reports
- Complete construction of the SX south barrier (Barrier 1)
- Complete construction of the SX north barrier (Barrier 2).

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*

Practicability Demonstration for the Single-Shell Tanks, DOE/ORP-2014-02,” dated August 3, 2015. Ecology provided partial comments on the document, ORP met with Ecology in November 2017 to discuss path forward. Awaiting final Ecology comments.

- Document RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*, submitted to Ecology September 30, 2015. Received partial comments on April 11, 2016. Awaiting final Ecology comments.

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Glyn Trenchard
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. Retrieval data report submitted when completed.

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. Negotiations began on September 8, 2016.

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 2018

May-18

Tank Farms ORP-0014 WBS 5 - River Protection Project in (\$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$71,411	\$65,560	\$66,929	(\$5,851)	(\$1,369)	0.92	0.98			
FYTD	\$439,312	\$421,626	\$428,181	(\$17,685)	(\$6,554)	0.96	0.98	\$670,466		
CTD	\$4,532,102	\$4,490,289	\$4,471,983	(\$41,813)	\$18,306	0.99	1.00	\$4,763,256	\$4,755,264	\$7,992

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.

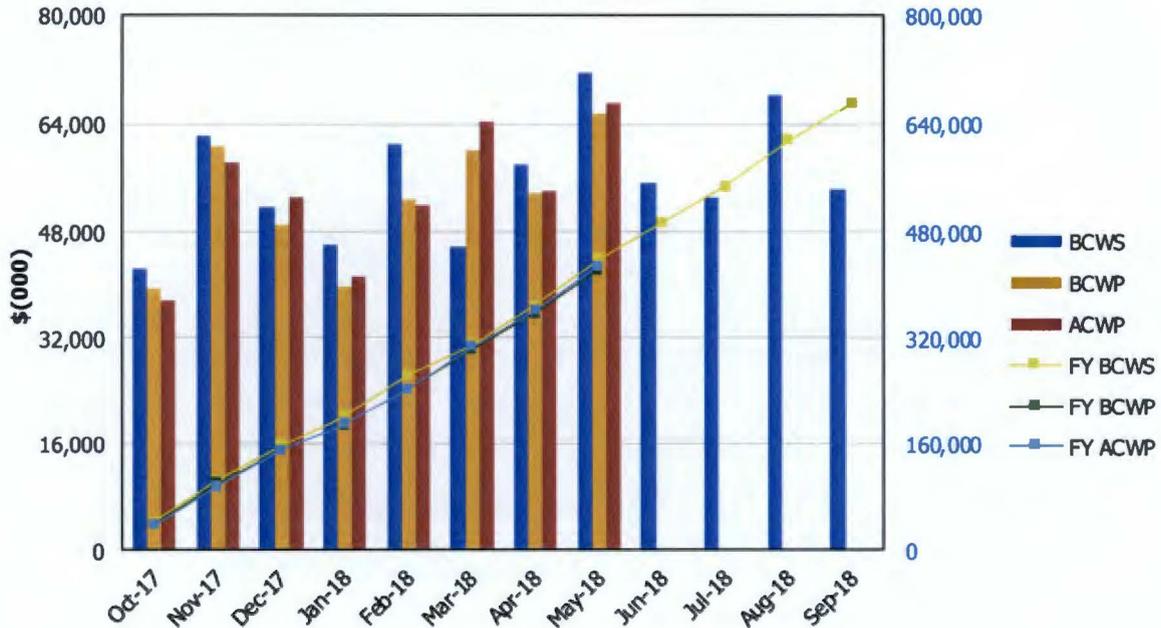
The SV and CV are reported for each monthly period, FY-to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the FY or contract-to-date report provides a better indicator of the overall project completion status and can give a reasonable projection of how the project will finish, based on the progress-to-date.

Earned Value Data: Fiscal Year 2018

May-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 2017	\$42,505	\$39,501	\$37,634	0.93	1.05	\$42,505	\$39,501	\$37,634	0.93	1.05
Nov 2017	\$62,362	\$60,635	\$58,396	0.97	1.04	\$104,867	\$100,136	\$96,029	0.95	1.04
Dec 2017	\$51,860	\$49,124	\$53,170	0.95	0.92	\$156,727	\$149,260	\$149,199	0.95	1.00
Jan 2018	\$46,168	\$39,864	\$41,402	0.86	0.96	\$202,896	\$189,124	\$190,601	0.93	0.99
Feb 2018	\$61,045	\$53,015	\$51,943	0.87	1.02	\$263,940	\$242,139	\$242,544	0.92	1.00
Mar 2018	\$45,861	\$59,989	\$64,439	1.31	0.93	\$309,802	\$302,128	\$306,983	0.98	0.98
Apr 2018	\$58,100	\$53,939	\$54,269	0.93	0.99	\$367,901	\$356,066	\$361,252	0.97	0.99
May 2018	\$71,411	\$65,560	\$66,929	0.92	0.98	\$439,312	\$421,626	\$428,181	0.96	0.98
Jun 2018	\$55,365					\$494,677				
Jul 2018	\$53,246					\$547,923				
Aug 2018	\$68,200					\$616,123				
Sep 2018	\$54,342					\$670,466				
CTD	\$4,532,102	\$4,490,289	\$4,471,983	0.99	1.00					

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

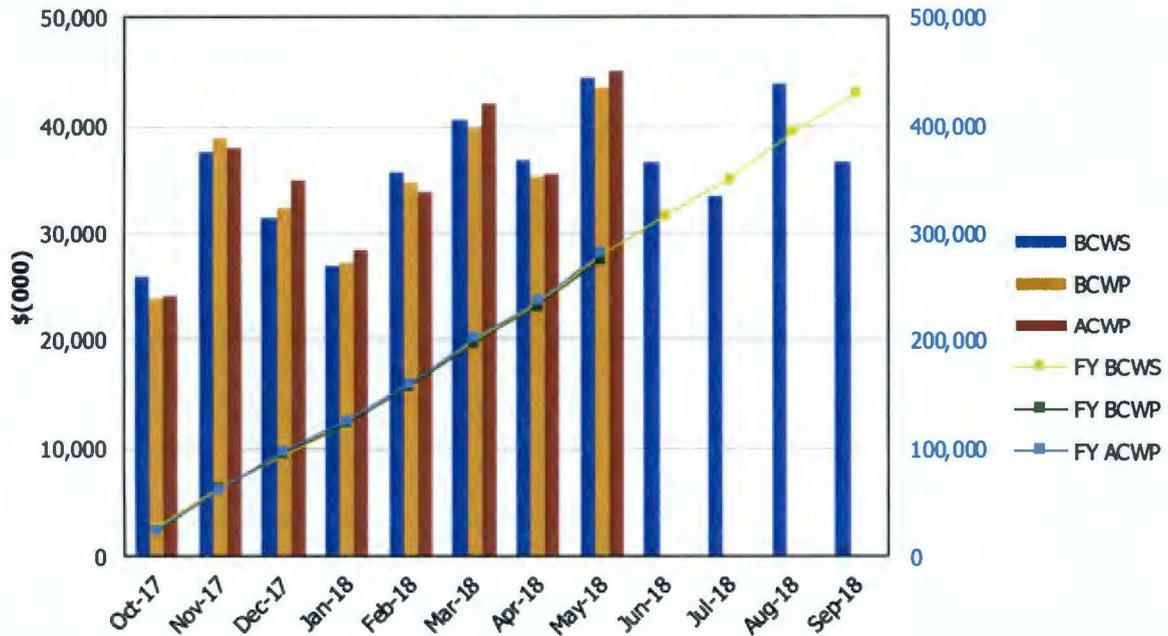
CM current month.
 CTD contract to date.
 FY fiscal year.
 SPI schedule performance index.

Earned Value Data: Fiscal Year 2018

May-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 2017	\$25,995	\$23,854	\$24,021	0.92	0.99	\$25,995	\$23,854	\$24,021	0.92	0.99
Nov 2017	\$37,542	\$38,850	\$37,961	1.03	1.02	\$63,537	\$62,704	\$61,982	0.99	1.01
Dec 2017	\$31,376	\$32,304	\$35,027	1.03	0.92	\$94,913	\$95,008	\$97,009	1.00	0.98
Jan 2018	\$26,992	\$27,266	\$28,456	1.01	0.96	\$121,905	\$122,274	\$125,465	1.00	0.97
Feb 2018	\$35,800	\$34,837	\$33,927	0.97	1.03	\$157,704	\$157,111	\$159,392	1.00	0.99
Mar 2018	\$40,641	\$39,755	\$42,150	0.98	0.94	\$198,346	\$196,865	\$201,541	0.99	0.98
Apr 2018	\$36,747	\$35,279	\$35,441	0.96	1.00	\$235,093	\$232,144	\$236,982	0.99	0.98
May 2018	\$44,456	\$43,494	\$45,066	0.98	0.97	\$279,549	\$275,638	\$282,047	0.99	0.98
Jun 2018	\$36,632					\$316,181				
Jul 2018	\$33,539					\$349,720				
Aug 2018	\$43,904					\$393,624				
Sep 2018	\$36,695					\$430,319				
CTD	\$3,004,753	\$2,982,384	\$2,956,432	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: Glyn Trenchard
Federal Project Director: Ellen Mattlin

5.01 – Base Operations

The May 2018 variances below do not impact TPA milestones.

The **unfavorable** SV of (\$961,600) is primarily due to:

- The Effluent Treatment Facility's main treatment train operation has been delayed and limited due to the failure of various plant equipment. The limited main treatment train operation has caused a delay to complete the first 1-million gallon processing campaign of LERF Basin 43. This delay has impacted the start of successive LERF processing campaigns.
- The ultrasonic testing equipment (robotic crawler) field deployment was delayed as a direct result of the Tank AZ-101 high annulus temperatures. This caused maintenance issues resulting in loss time to replace components and get the crawler back up and operating.

The **unfavorable** CV of (\$1,571,400) is primarily due to:

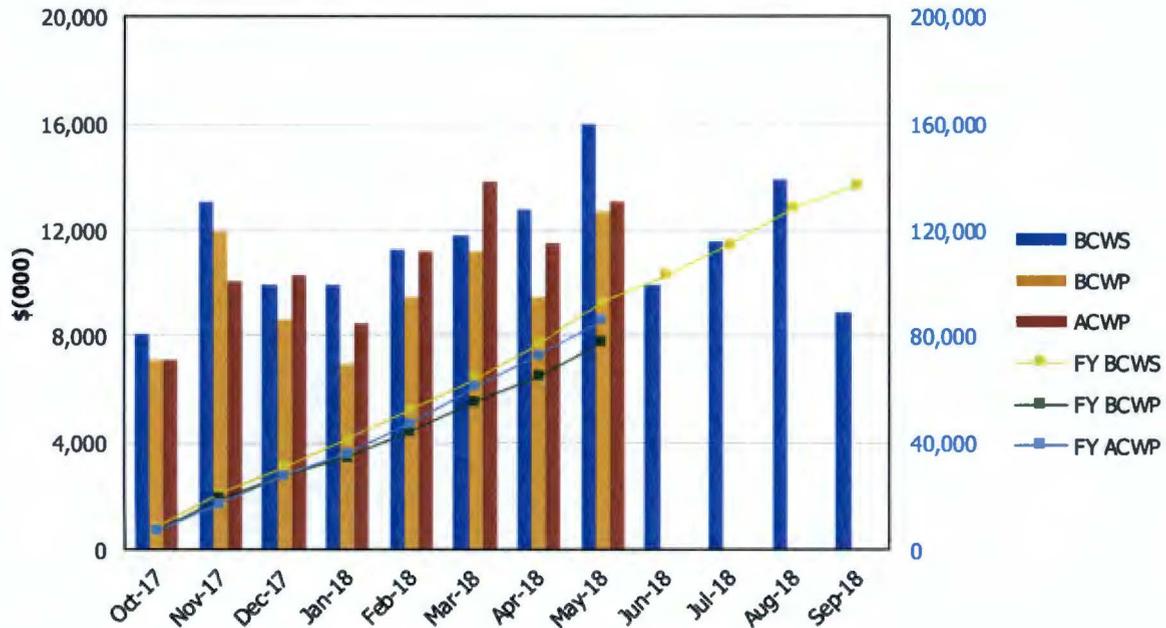
- Increased use of labor and material associated with troubleshooting facility issues and necessary repairs required to support restart of the Effluent Treatment Facility operations.
- Safety-significant air flow instrumentation installations in AY/AZ Tank Farms were delayed due to the additional engineering resources required to resolve an unforeseen required electrical power upgrade.

Earned Value Data: Fiscal Year 2018

May-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 2017	\$8,053	\$7,119	\$7,127	0.88	1.00	\$8,053	\$7,119	\$7,127	0.88	1.00
Nov 2017	\$13,058	\$11,996	\$10,119	0.92	1.19	\$21,111	\$19,115	\$17,246	0.91	1.11
Dec 2017	\$9,964	\$8,572	\$10,318	0.86	0.83	\$31,075	\$27,686	\$27,563	0.89	1.00
Jan 2018	\$9,940	\$6,911	\$8,464	0.70	0.82	\$41,015	\$34,597	\$36,027	0.84	0.96
Feb 2018	\$11,310	\$9,456	\$11,225	0.84	0.84	\$52,326	\$44,053	\$47,252	0.84	0.93
Mar 2018	\$11,787	\$11,248	\$13,799	0.95	0.82	\$64,113	\$55,301	\$61,051	0.86	0.91
Apr 2018	\$12,763	\$9,509	\$11,495	0.75	0.83	\$76,875	\$64,810	\$72,546	0.84	0.89
May 2018	\$15,972	\$12,694	\$13,076	0.79	0.97	\$92,848	\$77,504	\$85,622	0.83	0.91
Jun 2018	\$9,930					\$102,778				
Jul 2018	\$11,605					\$114,382				
Aug 2018	\$13,914					\$128,296				
Sep 2018	\$8,893					\$137,189				
CTD	\$896,419	\$882,167	\$924,174	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: Glyn Trenchard
Federal Program Manager: Jeff Rambo

5.02 – Retrieve and Close Single-Shell Tanks

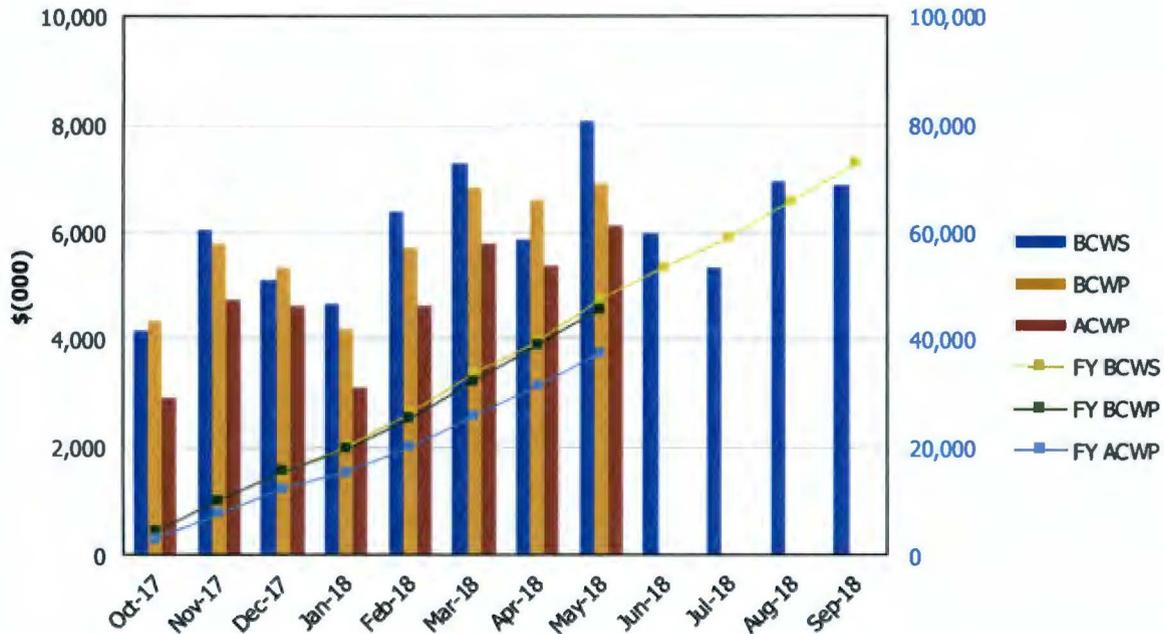
For the retrieval portion see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2018

May-18

Tank Farms ORP-0014
WBS 5.3 - WFD/Treatment Pmg/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 2017	\$4,163	\$4,326	\$2,909	1.04	1.49	\$4,163	\$4,326	\$2,909	1.04	1.49
Nov 2017	\$6,068	\$5,798	\$4,754	0.96	1.22	\$10,231	\$10,124	\$7,663	0.99	1.32
Dec 2017	\$5,132	\$5,334	\$4,651	1.04	1.15	\$15,363	\$15,458	\$12,314	1.01	1.26
Jan 2018	\$4,660	\$4,193	\$3,092	0.90	1.36	\$20,023	\$19,651	\$15,406	0.98	1.28
Feb 2018	\$6,383	\$5,712	\$4,641	0.89	1.23	\$26,406	\$25,363	\$20,047	0.96	1.27
Mar 2018	\$7,279	\$6,836	\$5,798	0.94	1.18	\$33,685	\$32,199	\$25,845	0.96	1.25
Apr 2018	\$5,875	\$6,634	\$5,394	1.13	1.23	\$39,560	\$38,833	\$31,238	0.98	1.24
May 2018	\$8,060	\$6,934	\$6,112	0.86	1.13	\$47,620	\$45,767	\$37,351	0.96	1.23
Jun 2018	\$5,983					\$53,603				
Jul 2018	\$5,363					\$58,966				
Aug 2018	\$6,939					\$65,905				
Sep 2018	\$6,868					\$72,772				
CTD	\$480,377	\$476,086	\$434,162	0.99	1.10					

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: Jon Peschong
Federal Program Manager: Kaylin Burnett

5.03 – Waste Feed Delivery/Treatment

The May 2018 variances below do not impact TPA milestones.

The **unfavorable** SV of (\$1,126,000) is primarily due to:

- The unfavorable SV is a result of accelerated performance taken in prior months on upgrades to Tank AP-105 in support of DFLAW relative to the current schedule.

The **favorable** CV of \$822,000 is primarily due to:

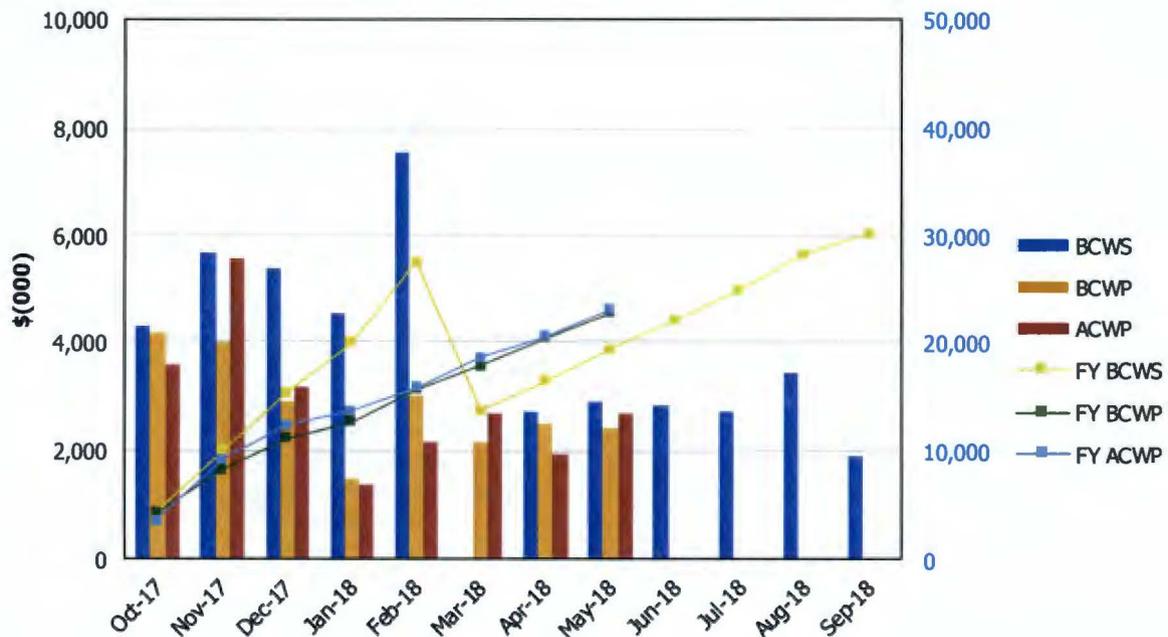
- The waste feed delivery technical baseline chemical engineers assigned include junior personnel resulting in a lower actual rate versus the planning rate creating a labor rate efficiency.
- The liquid secondary waste stream technology maturation subcontractor efficiencies in conducting VSL DM-10 melter system modifications and glass formulations due to historical knowledge.

Earned Value Data: Fiscal Year 2018

May-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 2017	\$4,294	\$4,202	\$3,576	0.98	1.17	\$4,294	\$4,202	\$3,576	0.98	1.17
Nov 2017	\$5,693	\$3,992	\$5,562	0.70	0.72	\$9,988	\$8,193	\$9,139	0.82	0.90
Dec 2017	\$5,389	\$2,914	\$3,174	0.54	0.92	\$15,377	\$11,108	\$12,313	0.72	0.90
Jan 2018	\$4,576	\$1,494	\$1,391	0.33	1.07	\$19,953	\$12,601	\$13,704	0.63	0.92
Feb 2018	\$7,552	\$3,010	\$2,150	0.40	1.40	\$27,504	\$15,612	\$15,854	0.57	0.98
Mar 2018	(\$13,846)	\$2,151	\$2,692	-0.16	0.80	\$13,658	\$17,762	\$18,546	1.30	0.96
Apr 2018	\$2,715	\$2,517	\$1,940	0.93	1.30	\$16,373	\$20,279	\$20,485	1.24	0.99
May 2018	\$2,922	\$2,437	\$2,675	0.83	0.91	\$19,295	\$22,716	\$23,160	1.18	0.98
Jun 2018	\$2,821					\$22,116				
Jul 2018	\$2,739					\$24,855				
Aug 2018	\$3,444					\$28,299				
Sep 2018	\$1,887					\$30,186				
CTD	\$130,444	\$129,542	\$138,054	0.99	0.94					

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: Glyn Trenchard
Deputy Federal Project Director: Janet Diediker

5.05 – Treat Waste

The May 2018 variances below do not impact the TPA milestones.

The current month **unfavorable** SV of (\$485,000) is due to:

- Architect Engineer resource prioritization to support the 45 percent design review deliverables and procurement specifications has delayed or otherwise extended some of the less critical activities. Those activities include additional mechanical calculations/studies; miscellaneous mechanical drawings; preliminary electrical deliverables; and heating, ventilation and air conditioning lists/datasheets/specifications.

The current month **unfavorable** CV of (\$237,700) is due to:

- Staffing levels were higher than planned in the current period due to near-term efforts to support the current transitional efforts, which include revising statements of work and supporting the engineering team in preparation for the 45 percent design review.