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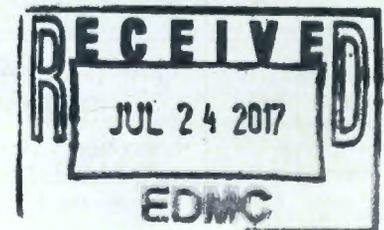
FINAL

Office of River Protection

Tri-Party Agreement

Report

July¹ 2017



¹ The narrative descriptions of progress in this report cover the period from June 1–30, 2017. Earned Value Management System data and descriptions cover the period of May 1–31, 2017.

Tri-Party Agreement (TPA) Milestone Review

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CD = Consent Decree.

Administrative Items/Milestone Status

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2015				
M-062-45-T01	Complete Negotiations 6-Mo After Last Issuance of System Plan	04/30/2015		In Abeyance
M-062-45-ZZ	Negotiate a One Time Supplemental Treatment Selection	04/30/2015		In Abeyance
M-062-45-ZZ-A	Convert the M-062-31-T01 Through M-062-34-T01 to Interim Milestones	04/30/2015		In Abeyance
Fiscal Year 2016				
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016		In Abeyance
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016		In Abeyance
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016		In Abeyance
Fiscal Year 2017				
M-045-82	Submit to Ecology the draft Tier 2 closure plan for WMA-C	05/15/2017	05/15/2017	Complete
M-045-82A	Submit to Ecology the draft Tier 3 closure plans for the C-200 tanks.	05/15/2017	05/15/2017	Complete

Milestone	Title	Due Date	Completion Date	Status
M-045-62	Submit to Ecology the draft Tier 3 closure plans to implement corrective measures.	To be established in accordance with the date identified in the M-045-82 Tier 2 closure plan		On Schedule
M-045-83	Complete the Closure of WMA-C	To be established in accordance with the date identified in the M-045-82 Tier 2 closure plan		On Schedule
M-045-56M	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2017		On Schedule
M-062-01AI	Submit Semi-Annual Project Compliance Report	07/31/2017		On Schedule
M-045-91E2	Provide SST Farms Dome Deflection Surveys Every Two Years	09/30/2017		On Schedule
M-045-92S	DOE and Ecology Will Agree On Locations For Barriers 3 And 4	09/30/2017		On Schedule
Fiscal Year 2018				
M-062-40F	Submit System Plan	10/31/2017		On Schedule
M-062-32-T01	Start Construction of Supplemental Vitrification Treatment Facility and/or WTP Enhancements	04/20/2018		In Abeyance
M-045-92O	Barrier 3 Design/Monitoring Plan Submitted to Ecology	06/30/2018		On Schedule

Milestone	Title	Due Date	Completion Date	Status
M-045-56N	Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July)	07/31/2018		On Schedule
M-045-91I	Provide IQRPE Certification of SSTs Structural Integrity	09/30/2018		On Schedule
M-045-92T	Barrier 3 Design/Monitoring Plan Approved by Ecology	09/30/2018		On Schedule

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

CR = change request.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

IQRPE = independent qualified registered professional engineer.

RCRA = *Resource Conservation and Recovery Act.*

SST = single-shell tank.

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

Significant Past Accomplishments:

- Draft *River Protection Project System Plan*, Rev. 8 (System Plan 8) document completed first full review cycle with the U.S. Department of Energy, Office of River Protection (ORP), Washington River Protection Solutions LLC (WRPS), Waste Treatment and Immobilization Plant (WTP), and Washington State Department of Ecology (Ecology). Comment resolution and incorporation has begun.

Significant Planned Actions in the Next Six Months:

- Continue negotiations of the M-062-45 milestones with intent to utilize information from System Plan 8 negotiations
- Resolve and incorporate review comments.

Issues:

- None.

Acquisition of New Facilities

Tank Farms Assistant Manager: Glyn Trenchard

Deputy Federal Project Director: Janet Diediker

- M-047-07** **Submit CD-1 for Secondary Liquid Waste Treatment and Change Request (CR) for CD-2 to Ecology**
Due: March 31, 2016
Status: In Abeyance. Decision document 2016-005, *Hanford Federal Facility Agreement and Consent Order Integrity Management Integration Team (IAMIT) Decision / Determination / Action Agreement*, signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.
- M-090-13** **Submit Critical Decision-1 for Interim Hanford Storage Project and TPA Change Request for CD-2 to Ecology**
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. Negotiations began on September 8, 2016.
- M-090-00** **Acquire/Modify Facilities for Storage of Immobilized High-Level Waste (IHLW)**
Due: December 31, 2019
Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.
- M-047-00** **Complete Work Necessary to Provide Facilities for Management of Secondary Waste from the Waste Treatment and Immobilization Plant (WTP)**
Due: December 31, 2022
Status: In Abeyance. Decision document 2016-005 signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

Significant Past Accomplishments:

- None.

Significant Planned Actions in the Next Six Months:

- None.

Issues:

- Negotiations on the items identified in the M-062-45 milestone began on September 8, 2016, in accordance with 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

- M-062-45-T01** **Every six years, within six months after last revision of the System Plan, negotiate tank waste retrieval sequencing**
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. Negotiations began on September 8, 2016.
- M-062-45-ZZ** **(designation for M-062-45 item 3), 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. 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. Negotiations began on September 8, 2016.
- M-062-31-T01** **Complete final design and submit Resource Conservation and Recovery Act Part B permit modification request**
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. Negotiations began on September 8, 2016.
- M-062-32-T01** **Start construction of supplemental vitrification treatment 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. Negotiations began on September 8, 2016.
- M-062-33-T01** **Complete construction of supplemental vitrification treatment 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. Negotiations began on September 8, 2016.

- M-062-45-XX** **No later than December 31, 2021, the DOE and Ecology shall complete negotiations to establish a mechanism that will apply to resolve future disputes regarding the determinations in M-062-45, paragraphs 4 and 5**
Due: December 31, 2021
Status: On schedule.
- M-062-34-T01** **Complete hot commissioning of supplemental vitrification treatment 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. Negotiations began on September 8, 2016.
- M-062-21** **Annually submit data that demonstrates operation of the WTP**
Due: February 28, 2023
Status: At risk.
- M-062-00** **Complete Pretreatment Processing and Vitrification of High-Level Waste and LAW Tank Wastes**
Due: December 31, 2047
Status: At risk.

Significant Past Accomplishments:

- None.

Significant Planned Actions in the Next Six Months:

- None.

Issues:

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

242-A Evaporator Status

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Paul Hernandez

The 242-A Evaporator campaign strategy for fiscal year (FY) 2017 and early FY 2018 is depicted in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
FY 2017	EC-06	AY-101	AP-104	Radiation monitor upgrades are completed. 242-A Evaporator campaign EC-06 preparations are underway and the campaign is expected to begin in early July.
FY 2017	EC-07	AW-106	AP-104	242-A Evaporator campaign EC-07 will follow EC-06, after the 106-AW pump is replaced.
FY 2018	EC-08	AP 106/107 Blend	AP-103	242-A Evaporator campaign EC-08 will require blending of waste in 102-AW, sampling, and sample analysis prior to campaign start. This cannot occur until campaign EC-07 is completed.

FY = fiscal year.

Significant Past Accomplishments:

- Completed installation and testing of new radiation monitors
- Completed installation and testing of vessel vent stack extension
- Completed phase 1 ammonia monitor upgrades
- Completed technical safety requirement calibrations
- Replaced PB-2 associated relief valves.

Significant Planned Actions in the Next Six Months:

- Future campaign and outage scheduling
- Continue integrity assessment on 242-A Evaporator components
- Dye penetrant testing on the reboiler will resume following EC-06 evaporator campaign because steam condensate samples were not secured prior to EC-06.

Issues:

- None.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Richard Valle

The Liquid Effluent Retention Facility (LERF) liquid levels, inventory, and received waste are shown in the table below. Volumes in this 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 29, 2017)	~ 6.46 Mgal	~ 0 Mgal ²	~ 7.26 Mgal

Waste Received			
AZ-301 Tanker Shipments	-	-	-
MWT-31 and 34 Leachate	~ 49,000 gal	-	-
Other (e.g., 325 Building Totes)	~ 3,900 gal	-	-
242-A Evaporator Campaigns	-	-	-

gal = gallon.
Mgal = million gallons.
MWT = mixed waste trench.

Significant Past Accomplishments:

- Total fiscal year (FY) 2017 volume processed (as of June 29, 2017): Approximately 3,508,000 gallons
- Completed removal of old LERF Basin 43 cover.

Significant Planned Actions in the Next Six Months:

- Continue maintenance outage at the Effluent Treatment Facility (ETF) to clean out plant
- Continue LERF Basin 43 cover replacement fieldwork
- Repair thin film dryer vessel and hopper knocker (see "Issues" below)

² Basin 43 was placed out-of-service on May 8, 2017.

- Initiate LERF Basin 42 waste processing through the ETF.

Issues:

- The thin film dryer concentrates waste into a powder form that then falls through a cone-shaped discharge hopper into waste drums. A knocker is used to prevent plugging and minimize product buildup in the hopper. The hopper knocker requires reattachment after the welds on the knocker bracket were found to have failed. Examination of the bracket installation location has revealed damage to the thin film dryer vessel wall that will require repair prior to reattachment of the knocker.

Tank System Update

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Dusty Stewart

Significant Past Accomplishments

Double-Shell Tank (DST) Integrity:

- RPP-ASMT-61313, *Tank Integrity Expert Panel Corrosion Subgroup August 2016 Meeting Outcomes*, was issued documenting expert panel review of the FY 2016 corrosion testing, and providing guidance for FY 2017 activities.

The Tank Integrity Expert Panel met on June 22 and 23. The panel was briefed on several subjects including the recent inspection of the bottom surface of the interior of the Tank AY-102 primary tank, the investigation of the source of radioactive contamination in the Tank AZ-101 annulus found during ultrasonic testing activities, and efforts to develop inspection capabilities for the primary tank bottom plates. The meeting was attended by WRPS technical and project staff and representatives from ORP, Ecology, State of Oregon, and the Defense Nuclear Facilities Safety Board. A report will be issued once the panel finalizes its comments.

Single-Shell Tank (SST) Integrity:

- None.

Significant Planned Actions in the Next Six Months:

DST Integrity:

- Continuing bi-weekly inspections of Tank AY-102 waste accumulation site
- Continuing bi-monthly comprehensive inspection of Tank AY-102 annulus
- Continuing annual comprehensive inspection of AY-101 annulus
- FY 2017 enhanced annulus visual inspections are in progress. The following tanks will be inspected in FY 2017:
 - 241-AN-102 (complete)
 - 241-AN-107 (complete)
 - 241-AP-101
 - 241-AP-107
 - 241-AW-105 (RPP-RPT-42147, *Double-Shell Tank Integrity Inspection Report for 241-AW Tank Farm*, Rev. 5 issued)
 - 241-AY-101 (complete, report in external clearance process)
 - 241-AZ-101 (complete, report in external clearance process)

- 241-AZ-102 (complete, report in external clearance process)
- Work planning and execution for FY 2017 ultrasonic testing inspections is ongoing. The following tanks will be inspected in FY 2017:
 - 241-AN-106 (complete; report in external clearance process)
 - 241-SY-101 (mobilizing in the field to examine secondary liner annulus floor)
 - 241-SY-102 (mobilizing in the field to examine secondary liner annulus floor)
 - 241-SY-103 (mobilizing in the field to examine secondary liner annulus floor)
 - 241-AZ-101 (field work halted due to annulus contamination event – delayed until FY 2018)
 - 241-AY-101 (delayed to early FY 2018)
- The corrosion sub-group (Tank Integrity Expert Panel) will be in Columbus, Ohio, on August 23 and 24 to further discuss integrity issues at Hanford.

SST Integrity:

- Report RPP-RPT-59272, *Fiscal Year 2016 Visual Inspection Report for Single-Shell Tanks* was cleared for public release on June 8, 2017.
- Work planning for FY 2017 in-tank video inspections has already begun. The following tanks will be inspected in FY 2017 (note that the list of video inspections has changed since the June Tri-Party Agreement (TPA) Monthly Report):

- 241-A-104	- 241-SX-110
- 241-A-105	- 241-T-104
- 241-BX-102	- 241-T-105
- 241-BX-107 (complete)	- 241-TX-106
- 241-BY-109 (complete)	- 241-TX-109
- 241-S-104 (complete)	- 241-U-107
- Intrusion mitigation (M-045-56):
 - The POR-006 exhauster remains out of service at Tank T-111. Parts were ordered to repair the malfunctioning instrument cabinet heater. Data collection and reporting software is still not working. The total volume of water evaporated from Tank T-111 since mid-July 2015 was roughly estimated at 7,100 gal.
 - The exhauster will continue operation as resource availability permits, but the evaporation is no longer being tracked. Periodic video inspections may be conducted to visually observe changes to the liquid pool in the tank if the exhauster is able to operate for a sufficiently long period.
 - RPP-RPT-59273, *Evaporation of Water from Single-Shell Tank 241-T-111 with 500 CFM Portable Exhauster POR06*, Rev. 0, was cleared for public release on April 13, 2017.

Independent Qualified Registered Professional Engineer (IQRPE) Activities

- Preparation of the IQRPE report for the 242-A Evaporator is ongoing. The C-A-1 vapor-liquid separator 24-hour static leak test was completed successfully. Remaining fieldwork includes the E-A-1 reboiler fluoresce in dye 24-hour leak test. The dye leak test is scheduled for completion prior to introducing Evaporator Campaign EC-06 feed to the facility.
- Work continues on RPP-RPT-61349, *Effluent Treatment Facility Integrity Program Plan*. The plan will support the FY 2019 IQRPE integrity assessment.
- Ultrasonic thickness scanning of ETF tanks is in progress and initial corrosion testing on ETF materials and chemistries is ready to begin.
- Initial planning continues for the IQRPE report for the 219-S facility at the 222-S Laboratory. Review of the internal draft of the Integrity Assessment Plan was completed.
- The Integrity Assessment Plan for the 2018 SST IQRPE report was completed and approved by WRPS and is in routing for public release concurrence. The request for proposal package for the integrity assessment is in routing for approval internally at WRPS.

Issues:

DST Integrity:

- During removal of the nondestructive examination crawler from the Tank AZ-101 annulus, 300,000 disintegrations per minute of radiological contamination were found on its surfaces. The preliminary determination is that the source of contamination has been traced to an encasement, enclosing an out-of-service sidefill line. Planning is underway to confirm the source. There is no evidence the primary tank leaked.

SST Integrity:

- None.

Single-Shell Tank Integrity Assurance

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Dusty Stewart

M-045-911 **Provide to Ecology an Independent, Qualified, Registered Professional Engineer (IQRPE) certification of single-shell tanks (SST) structural integrity for the remainder of the mission, or for such time as the IQRPE believes he/she can reasonably certify.**

Due: September 30, 2018

Status: On schedule.

Significant Past Accomplishments:

- None.

Significant Planned Actions in the Next Six Months:

- The request for proposal package for the IQRPE 2018 SST Integrity Assessment is in routing for approval internally at WRPS.
- Select IQRPE 2018 SST Integrity Assessment subcontractor and begin assessment.

Issues:

- None.

In-Tank Characterization and Summary

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Dusty Stewart

Accomplishments:

For the period from June 1 through June 30, the following reports were completed or released:

- Completed RPP-RPT-56866, *Derivation of Best-Basis Inventory for Tank 241-A-103 as of June 1, 2017*, Rev 2.
- Completed RPP-RPT-59767, *Derivation of Best-Basis Inventory for Tank 241-U-104 as of April 1, 2017*, Rev 0.
- Completed RPP-RPT-60167, *Derivation of Best-Basis Inventory for Tank 241-BY-112 as of June 1, 2017*, Rev 0.
- Completed RPP-RPT-54017, *Derivation of Best-Basis Inventory for Tank 241-AP-102 as of April 1, 2017*, Rev 4.
- Completed RPP-RPT-60106, *Derivation of Best-Basis Inventory for Tank 241-B-107 as of May 1, 2017*, Rev 0.
- Completed RPP-RPT-44814, *Derivation of Best-Basis Inventory for Tank 241-AN-101 as of May 1, 2017*, Rev 23.
- Completed RPP-RPT-58071, *Derivation of Best-Basis Inventory for Tank 241-C-105 as of May 1, 2017*, Rev 4.
- Completed RPP-RPT-48745, *Derivation of Best-Basis Inventory for Tank 241-C-107 as of May 1, 2017*, Rev 10.
- Completed RPP-RPT-60124, *Derivation of Best-Basis Inventory for Tank 241-C-106 as of May 1, 2017*, Rev 0.
- Completed RPP-RPT-43992, *Derivation of Best-Basis Inventory for Tank 241-AN-106 as of May 1, 2017*, Rev 18.
- Completed RPP-RPT-60075, *Derivation of Best-Basis Inventory for Tank 241-S-105 as of April 1, 2017*, Rev 0.
- Completed RPP-RPT-60009, *Derivation of Best-Basis Inventory for Tank 241-BX-106 as of May 1, 2017*, Rev 0.
- Completed RPP-RPT-59959, *Derivation of Best-Basis Inventory for Tank 241-TX-116 as of April 1, 2017*, Rev 0.
- Completed RPP-RPT-46792, *Derivation of Best-Basis Inventory for Tank 241-AW-102 as of May 1, 2017*, Rev 11
- Completed RPP-PLAN-57535, *Sampling and Analysis Plan for 242-A Evaporator Process Condensate*, Rev 4.

- Completed HNF-EP-0182, *Waste Tank Summary Report for Month Ending April 30, 2017*, Rev 352.
- Completed HNF-EP-0182, *Waste Tank Summary Report for Month Ending May 31, 2017*, Rev 353.
- Completed RPP-CALC-61540, Tank 241-AN-106 FY17 Q3 Supernatant Process Knowledge Vector Concentration Calculation, Rev. 0
- Completed RPP-CALC-60939, Tank 241-AP-102 FY17 Q3 Process Knowledge Vector Concentration Calculations, Rev. 2
- Completed RPP-CALC-60804, *242-A Evaporator Campaign EC-06 Process Control Plan Calculations*, Rev. 2.
- Completed RPP-RPT-59982, *Tank 241-C-105 Hard Heel Retrieval Data Quality Objectives*, Rev 0.
- Released RPP-RPT-60129, *Final Report for 241-AZ-101 Leak Detection Pit*, Rev 0.
- Completed 241-AW-104 liquid grab sampling on June 5, 2017. Nine samples were received at the laboratory.

Planned Action within the Next Six Months:

Tank sampling:

- Tank 241-AP-107 grab sampling is planned for July 2017.
- Tank 241-AY-102 solids grab sampling is planned for August 2017.
- Tank 241-AN-107 grab sampling is planned for August 2017.
- Tank 241-C-105 grab sampling is planned for August 2017.

Best-Basis Inventory updates:

Best-basis inventory updates for the following tanks were completed in June 2017:

- | | |
|--------------|--------------|
| • 241-A-103 | • 241-BY-112 |
| • 241-AN-101 | • 241-C-105 |
| • 241-AN-106 | • 241-C-106 |
| • 241-AP-102 | • 241-C-107 |
| • 241-AW-102 | • 241-S-105 |
| • 241-B-107 | • 241-TX-116 |
| • 241-BX-106 | • 241-U-104 |

Best-basis inventory updates for the following tanks are currently planned to be completed in July 2017:

- 241-T-111

Data Quality Objectives updates:

- Completed RPP-RPT-59982, *Tank 241-C-105 Hard Heel Retrieval Data Quality Objectives*, Rev. 0, and cleared for public release on June 15, 2017.

Issues:

- None.

Single-Shell Tank Closure Program

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Jan Bovier

- M-045-59** **Control surface water infiltration pathways as 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, Milestone M-45-58, and implementation of other interim corrective measures)**
Due: To be determined.
Status: To be determined.
- M-045-62** **Submit to Ecology for review, in accordance with HFFACO Action Section 9.2.2, the draft Tier 3 closure plan to implement corrective measures identified in the approved Phase 2 Corrective Measures Implementation Work Plan (CMIP) for WMA-C.**
Due: To be established in accordance with the date identified in the M-45-82 Tier 2 closure plan.
Status: On schedule.
- M-045-83** **Complete the Closure of WMA-C - by completing all closure activities specified in the Tier 2 closure plan not including activities specifically described in the Tier 2 closure plan as requiring integration with closure of other WMAs**
Due: To be established in accordance with the date identified in the M-45-82 Tier 2 closure plan.
Status: On Schedule
- M-045-56M** **Complete Implementation of Agreed to Interim Measures**
Due: July 28, 2017
Status: On schedule. The annual meeting between ORP and Ecology to discuss the prior FY accomplishments and the next FY proposed interim measures has been scheduled for July 11. A pre-meeting among ORP, Ecology, and WRPS was held on June 13 to reach agreement on the subjects to be addressed in the July 11 meeting.
- M-045-92S** **DOE and Ecology agree on locations for Barriers 3 and 4**
Due: September 30, 2017
Status: On schedule.
- M-045-92O** **Barrier 3 Design and Monitoring Plan submitted to Ecology**
Due: June 30, 2018
Status: On schedule.

- M-045-92T** **Barrier 3 Design and Monitoring Plan approved by Ecology**
Due: September 30, 2018
Status: On schedule.
- M-045-92N** **Complete construction of Barriers 1 and 2 in SX Farm**
Due: October 31, 2018
Status: On schedule.
- M-045-92Q** **Barrier 4 Design and Monitoring Plan submitted to Ecology**
Due: June 30, 2019
Status: On schedule.
- M-045-92U** **Barrier 4 Design and Monitoring Plan approved by Ecology**
Due: September 30, 2019
Status: On schedule.
- M-045-92P** **Complete construction of Barrier 3**
Due: October 31, 2019
Status: On schedule.
- M-045-92R** **Complete construction of Barrier 4**
Due: October 31, 2020
Status: On schedule.
- M-045-85** **Initiate negotiations to establish HFFACO interim milestones for closure of remaining SST WMAs**
Due: January 31, 2022
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 be addressed with the negotiations supporting M-062-45. Negotiations began on September 8, 2016.

Significant Past Accomplishments:

- Working with Ecology on review of the C Tank Farm waste management area (WMA-C) performance assessment.
- Submitted 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*, to complete milestone M-045-61A.
- Submitted the draft Tier 2 Closure Plan for WMA-C, and a draft Tier 3 Closure Plan for the C-200 series tanks to Ecology for review to complete milestones M-045-82 and M-045-82A (via letter 17-TF-0046, "The U.S. Department of Energy, Office of River Protection Submits the *Tier 2 Resource Conservation and Recovery Act Closure Action Plan for Waste Management Area C*, in Completion of *Hanford Federal Facility*

Agreement and Consent Order Milestone M-045-82, and Tier 3 Resource Conservation and Recovery Act Component Closure Activity Plan for 241-C-200 Series Tanks in Completion of Hanford Federal Facility Agreement and Consent Order Milestone M-045-82A,” dated May 17, 2017).

Significant Planned Activities in the Next Six Months:

- Begin construction of the SX Tank Farm interim surface barriers
- Release the annual T Tank Farm and TY Tank Farm interim barrier monitoring report covering FY 2016 data
- Begin resolution of Ecology’s comments on the *Resource Conservation and Recovery Act* (RCRA) Tier 1, 2, and 3 closure plans
- Begin resolution of Ecology’s comments on the RCRA Facility Investigation Report and Corrective Measures Study report for WMA-C
- Complete discussions on locations for barriers 3 and 4.

Issues:

- Developing path forward for resolving Ecology’s comments on the RCRA Tier 1 Closure Plan was elevated to ORP and Nuclear Waste Program managers in March 2017.

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Jeff Rambo

M-045-86 **Submit retrieval data report (RDR) to Ecology for 19 tanks retrieved**
Due: To be determined (12 months after retrieval certification).
Status: Ongoing, retrieval data report submitted when completed.

M-045-70 **Complete waste retrieval from all remaining 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. Negotiations began on September 8, 2016

Significant Past Accomplishments:

- Refer to Consent Decree monthly report for ongoing retrieval activities.

Significant Planned Activities in the Next Six Months:

- The Tank C-111 retrieval data report is expected to be ready in September 2017.
- Refer to Consent Decree monthly report for ongoing retrieval activities.

Issues:

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

Tank Waste Retrieval Work Plan Status

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Jeff Rambo

Significant Accomplishments:

- Incorporated third retrieval technology into the C-105 Tank Waste Retrieval Work Plan.

Significant Planned Activities in the Next Six Months:

- Finalize AX Tank Farm tank retrieval work plans.

Issues:

- None.

Tank Operations Contract Overview

Project Performance:

The earned value performance reporting reflects the format, work breakdown structure reporting levels, and variance thresholds as agreed to with the Tank Operations Contractor for monthly performance reporting. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

May-17

Selected WBS: 5 - River Protection Project

	BCWS	BCWP	ACWP	SPI	CPI	BAC	EAC	VAC
CM	49,777	50,468	51,897	1.01	0.97	-	-	-
FYTD	392,494	375,996	371,852	0.96	1.01	621,227	643,916	(22,688)
CTD	3,848,443	3,811,131	3,780,716	0.99	1.01	4,781,917	4,808,803	(26,886)

ACWP	actual cost of work performed	CV	cost variance
BAC	budget at completion	EAC	estimate at completion
BCWP	budgeted cost of work performed	FYTD	fiscal year to date
BCWS	budgeted cost of work scheduled	SPI	schedule performance index
CM	current month	SV	schedule variance
CPI	cost performance index	VAC	variance at completion
CTD	contract to date		

The Earned Value Management System is intended to provide a status of how the contractor is progressing against its planned work (i.e., schedule), and whether it is costing more or less to complete the work than planned. 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 \$10K of work was planned to-date, \$8K was reported as being performed (earned), at an actual cost of \$9K. This work would be reported as being \$2K behind schedule [a negative or unfavorable SV: $\$8K - \$10K = (\$2K)$], and has cost \$1K more [a negative or unfavorable CV: $\$8K - \$9K = (\$1K)$] 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.

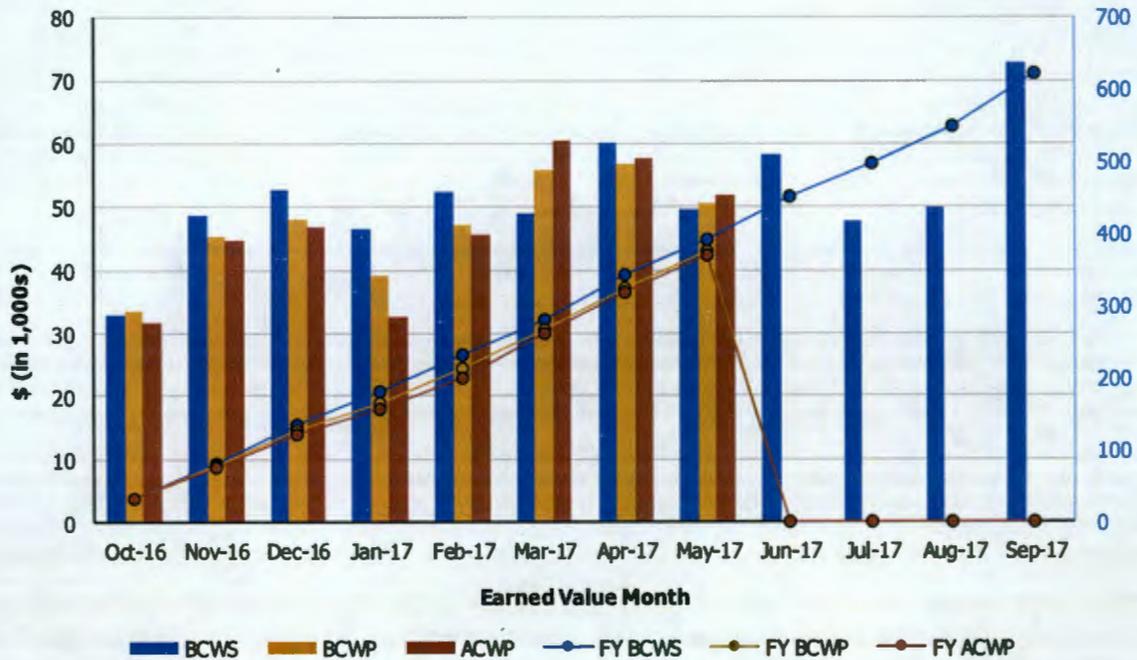
The SV and CV are reported for each monthly period, fiscal year to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the FY or contract-to-date report provides a better indicator of the overall project completion status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

Earned Value Data: Fiscal Year 2017

May-17

Tank Farms ORP-0014
Selected WBS: 5 - River Protection Project

EVMS Monthly and Fiscal Year Values



Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$33,051	\$33,502	\$31,798	1.01	1.05	\$33,051	\$33,502	\$31,798	1.01	1.05
Nov 2016	\$48,628	\$45,387	\$44,614	0.93	1.02	\$81,679	\$78,889	\$76,412	0.97	1.03
Dec 2016	\$52,841	\$47,972	\$46,833	0.91	1.02	\$134,520	\$126,860	\$123,245	0.94	1.03
Jan 2017	\$46,477	\$39,027	\$32,764	0.84	1.19	\$180,997	\$165,887	\$156,009	0.92	1.06
Feb 2017	\$52,366	\$47,088	\$45,690	0.90	1.03	\$233,363	\$212,975	\$201,699	0.91	1.06
Mar 2017	\$49,127	\$55,701	\$60,510	1.13	0.92	\$282,490	\$268,676	\$262,209	0.95	1.02
Apr 2017	\$60,228	\$56,852	\$57,746	0.94	0.98	\$342,718	\$325,528	\$319,955	0.95	1.02
May 2017	\$49,777	\$50,468	\$51,897	1.01	0.97	\$392,494	\$375,996	\$371,852	0.96	1.01
Jun 2017	\$58,407	\$0	\$0	0.00	0.00	\$450,901	\$0	\$0	0.00	0.00
Jul 2017	\$47,777	\$0	\$0	0.00	0.00	\$498,678	\$0	\$0	0.00	0.00
Aug 2017	\$49,862	\$0	\$0	0.00	0.00	\$548,540	\$0	\$0	0.00	0.00
Sep 2017	\$72,688	\$0	\$0	0.00	0.00	\$621,227	\$0	\$0	0.00	0.00

CTD	\$3,848,443	\$3,811,131	\$3,780,716	0.99	1.01
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ACWP actual cost of work performed
 BCWP budgeted cost of work performed
 BCWS budgeted cost of work scheduled
 CPI cost performance index

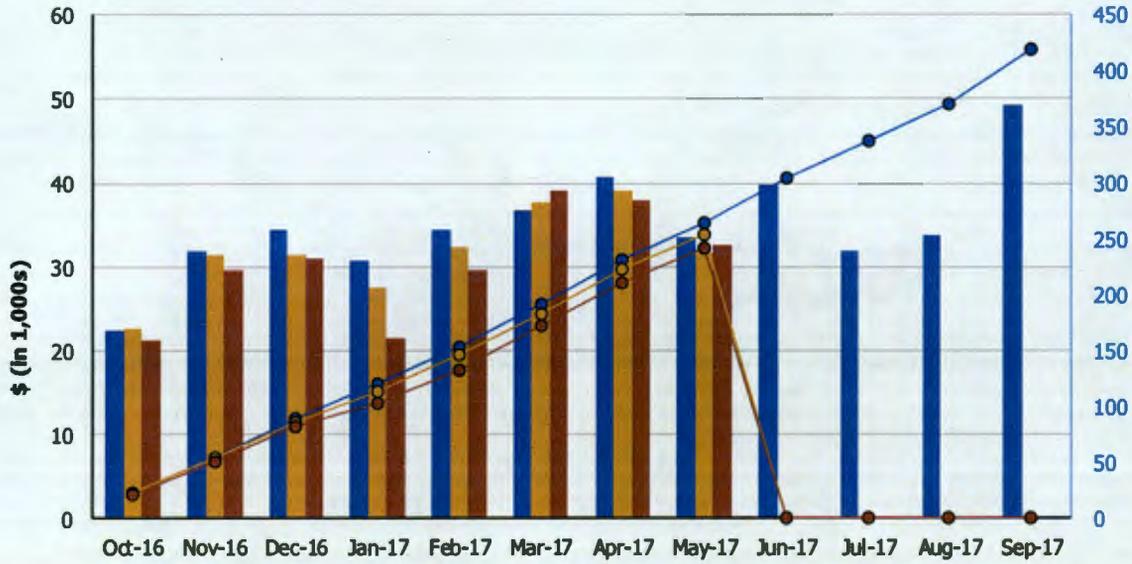
CTD contract to date
 EVMS Earned Value Management System
 FY fiscal year
 SPI schedule performance index

Earned Value Data: Fiscal Year 2017

May-17

Tank Farms ORP-0014
Selected WBS: 5.1 - Base Operations

EVMS Monthly and Fiscal Year Values



Earned Value Month

■ BCWS
 ■ BCWP
 ■ ACWP
 —●— FY BCWS
 —●— FY BCWP
 —●— FY ACWP

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$22,507	\$22,546	\$21,216	1.00	1.06	\$22,507	\$22,546	\$21,216	1.00	1.06
Nov 2016	\$31,885	\$31,496	\$29,527	0.99	1.07	\$54,392	\$54,043	\$50,743	0.99	1.07
Dec 2016	\$34,394	\$31,547	\$31,032	0.92	1.02	\$88,786	\$85,590	\$81,775	0.96	1.05
Jan 2017	\$30,657	\$27,462	\$21,370	0.90	1.29	\$119,443	\$113,051	\$103,146	0.95	1.10
Feb 2017	\$34,475	\$32,418	\$29,588	0.94	1.10	\$153,918	\$145,469	\$132,733	0.95	1.10
Mar 2017	\$36,780	\$37,769	\$39,127	1.03	0.97	\$190,698	\$183,238	\$171,861	0.96	1.07
Apr 2017	\$40,813	\$38,964	\$38,001	0.95	1.03	\$231,511	\$222,202	\$209,861	0.96	1.06
May 2017	\$33,508	\$31,770	\$32,519	0.95	0.98	\$265,020	\$253,971	\$242,380	0.96	1.05
Jun 2017	\$39,769	\$0	\$0	0.00	0.00	\$304,789	\$0	\$0	0.00	0.00
Jul 2017	\$31,794	\$0	\$0	0.00	0.00	\$336,582	\$0	\$0	0.00	0.00
Aug 2017	\$33,765	\$0	\$0	0.00	0.00	\$370,347	\$0	\$0	0.00	0.00
Sep 2017	\$49,311	\$0	\$0	0.00	0.00	\$419,657	\$0	\$0	0.00	0.00

CTD	\$2,563,698	\$2,546,294	\$2,509,806	0.99	1.01
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ACWP actual cost of work performed
 BCWP budgeted cost of work performed
 BCWS budgeted cost of work scheduled
 CPI cost performance index

CTD contract to date
 EVMS Earned Value Management System
 FY fiscal year
 SPI schedule performance index

Tank Farms Assistant Manager: Glyn Trenchard

Federal Project Director: Jeremy Johnson

Base Operations and Tank Farm Projects (5.01)

The May 2017 variances below do not impact or delay TPA milestones.

The **unfavorable** SV of (\$1,739K) is primarily due to:

- Schedule delay of the Tank AW-106 pump replacement due to the Plutonium Uranium Extraction (PUREX) tunnel incident. Work in the AW Tank Farm was put on hold and restrictions were imposed causing significant delays to the AW-106 pump replacement.

The **unfavorable** CV of (\$749K) is primarily due to:

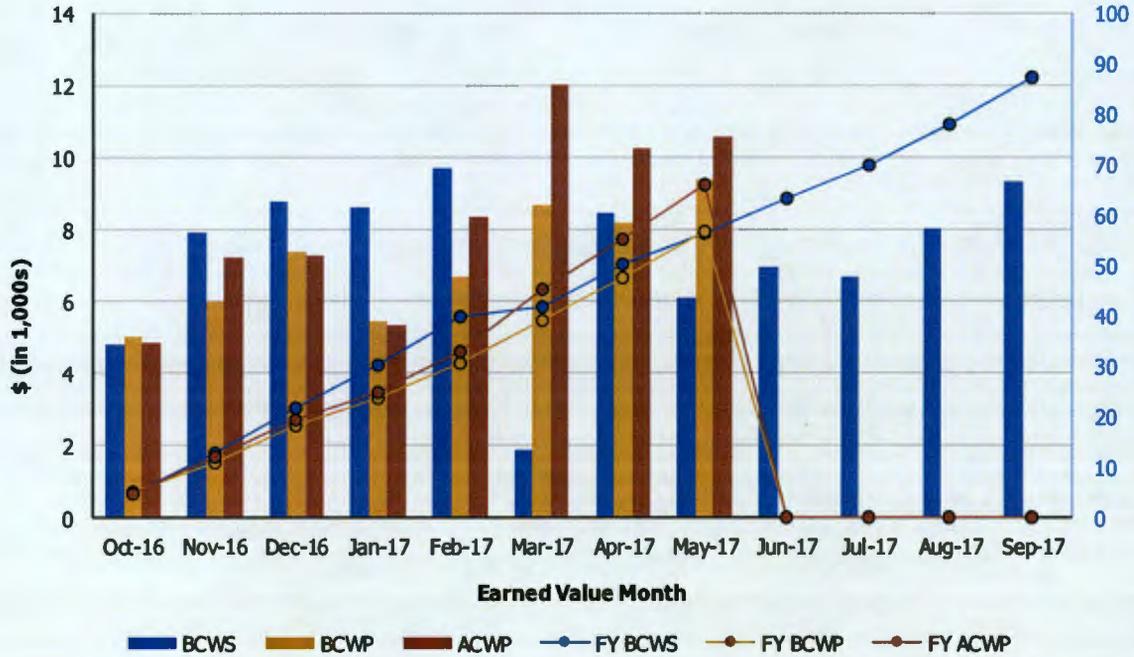
- Replacement of the ETF basin covers required larger crews and additional radiological protection equipment as a result of a change in project methodology for the removal of the covers.
- New vapor detection technologies pilot scale test project has required additional subcontractor support due to technical issues regarding placement of vapor monitoring detection system equipment for waste-disturbing activities.

Earned Value Data: Fiscal Year 2017

May-17

Tank Farms ORP-0014
Selected WBS: 5.2 - Retrieve and Close SSTs

EVMS Monthly and Fiscal Year Values



Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$4,816	\$4,996	\$4,822	1.04	1.04	\$4,816	\$4,996	\$4,822	1.04	1.04
Nov 2016	\$7,924	\$5,969	\$7,241	0.75	0.82	\$12,740	\$10,965	\$12,063	0.86	0.91
Dec 2016	\$8,772	\$7,401	\$7,262	0.84	1.02	\$21,512	\$18,365	\$19,325	0.85	0.95
Jan 2017	\$8,646	\$5,422	\$5,360	0.63	1.01	\$30,158	\$23,787	\$24,685	0.79	0.96
Feb 2017	\$9,716	\$6,707	\$8,341	0.69	0.80	\$39,874	\$30,495	\$33,026	0.76	0.92
Mar 2017	\$1,903	\$8,675	\$12,056	4.56	0.72	\$41,777	\$39,170	\$45,082	0.94	0.87
Apr 2017	\$8,477	\$8,214	\$10,268	0.97	0.80	\$50,254	\$47,384	\$55,350	0.94	0.86
May 2017	\$6,110	\$9,406	\$10,604	1.54	0.89	\$56,364	\$56,790	\$65,954	1.01	0.86
Jun 2017	\$6,982	\$0	\$0	0.00	0.00	\$63,345	\$0	\$0	0.00	0.00
Jul 2017	\$6,664	\$0	\$0	0.00	0.00	\$70,010	\$0	\$0	0.00	0.00
Aug 2017	\$8,015	\$0	\$0	0.00	0.00	\$78,025	\$0	\$0	0.00	0.00
Sep 2017	\$9,314	\$0	\$0	0.00	0.00	\$87,339	\$0	\$0	0.00	0.00
CTD	\$765,531	\$754,839	\$786,627	0.99	0.96					

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

CTD contract to date
 EVMS Earned Value Management System
 FY fiscal year
 SPI schedule performance index

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Jeff Rambo

Retrieve and Close Single-Shell Tanks (5.02)

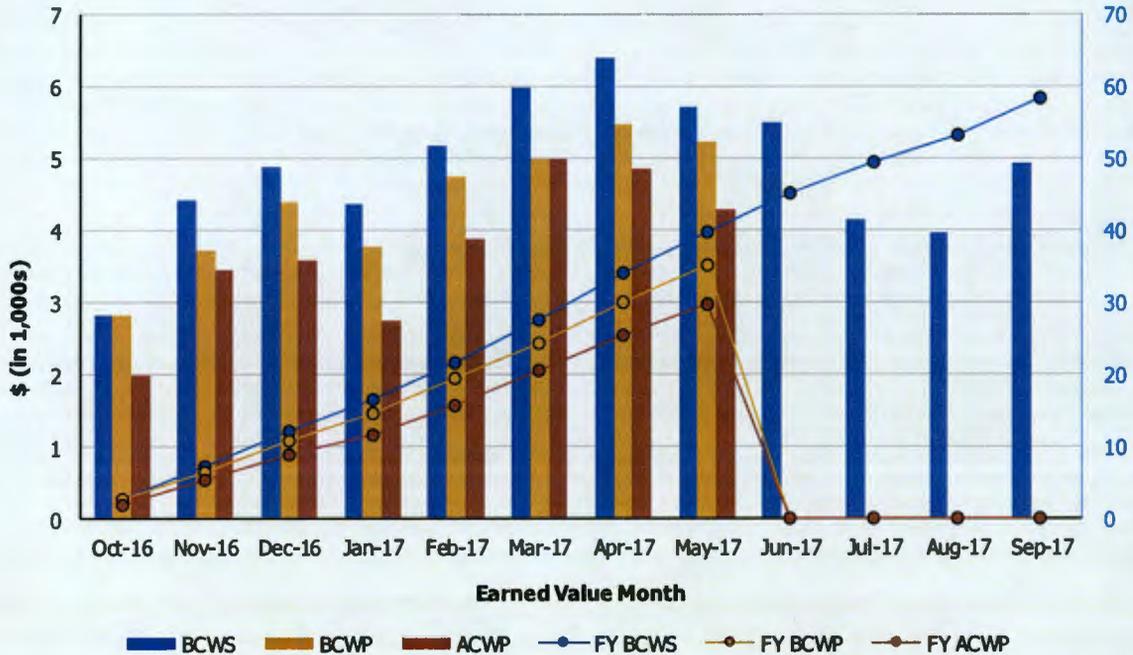
Refer to the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2017

May-17

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

EVMS Monthly and Fiscal Year Values



Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$2,840	\$2,829	\$1,990	1.00	1.42	\$2,840	\$2,829	\$1,990	1.00	1.42
Nov 2016	\$4,428	\$3,728	\$3,446	0.84	1.08	\$7,267	\$6,557	\$5,436	0.90	1.21
Dec 2016	\$4,878	\$4,404	\$3,589	0.90	1.23	\$12,146	\$10,961	\$9,025	0.90	1.21
Jan 2017	\$4,371	\$3,773	\$2,737	0.86	1.38	\$16,516	\$14,734	\$11,762	0.89	1.25
Feb 2017	\$5,176	\$4,743	\$3,893	0.92	1.22	\$21,692	\$19,477	\$15,655	0.90	1.24
Mar 2017	\$5,981	\$4,992	\$4,999	0.83	1.00	\$27,673	\$24,469	\$20,654	0.88	1.18
Apr 2017	\$6,391	\$5,473	\$4,858	0.86	1.13	\$34,064	\$29,942	\$25,512	0.88	1.17
May 2017	\$5,713	\$5,236	\$4,285	0.92	1.22	\$39,776	\$35,178	\$29,797	0.88	1.18
Jun 2017	\$5,506	\$0	\$0	0.00	0.00	\$45,282	\$0	\$0	0.00	0.00
Jul 2017	\$4,160	\$0	\$0	0.00	0.00	\$49,441	\$0	\$0	0.00	0.00
Aug 2017	\$3,960	\$0	\$0	0.00	0.00	\$53,401	\$0	\$0	0.00	0.00
Sep 2017	\$4,929	\$0	\$0	0.00	0.00	\$58,330	\$0	\$0	0.00	0.00
CTD	\$412,161	\$406,197	\$374,652	0.99	1.08					

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

CTD contract to date
 EVMS Earned Value Management System
 FY fiscal year
 SPI schedule performance index

One System Division Director: Jon Peschong

Federal Program Manager: Kaylin Burnett

Waste Feed Delivery/Treatment (5.03)

The May 2017 variances below have no impacts on the TPA milestones.

The **unfavorable** SV of (\$477K) is primarily due to:

- Liquid secondary waste melter tests 1, 2, and 3 were completed in advance (February through April) of the original baseline date of June 2017. The testing utilized the WRPS approved feed formulations and will continue to improve the schedule as the year progresses.
- The single pass flow-through (SPFT) testing being performed by the Vitreous State Lab is making less progress than planned. The original plan assumed that the testing for Glass No. 1 and Glass No. 2 would run concurrently; however, tests will now be run in series with the testing of Glass No. 2 expected to be completed at the end of the FY. The testing will be completed approximately 3 months later than originally planned; however, the draft report will commence in early July. This will allow for the majority of the report to be written prior to the completion of the second SPFT test. Currently, the report is still expected to be issued by the end of the FY and the overall impact to its delivery is one week.
- The SPFT testing being performed by the Pacific Northwest National Laboratory started approximately 3 months later than planned, in mid-April, due to delayed glass selection at the beginning of the FY as well as prolonged test setup and glass preparation. The testing is expected to be completed approximately one month later than planned. The draft report is expected to be completed in early November of FY 2018. This does not impact any downstream critical activities.

The **favorable** CV of \$951K is primarily due to:

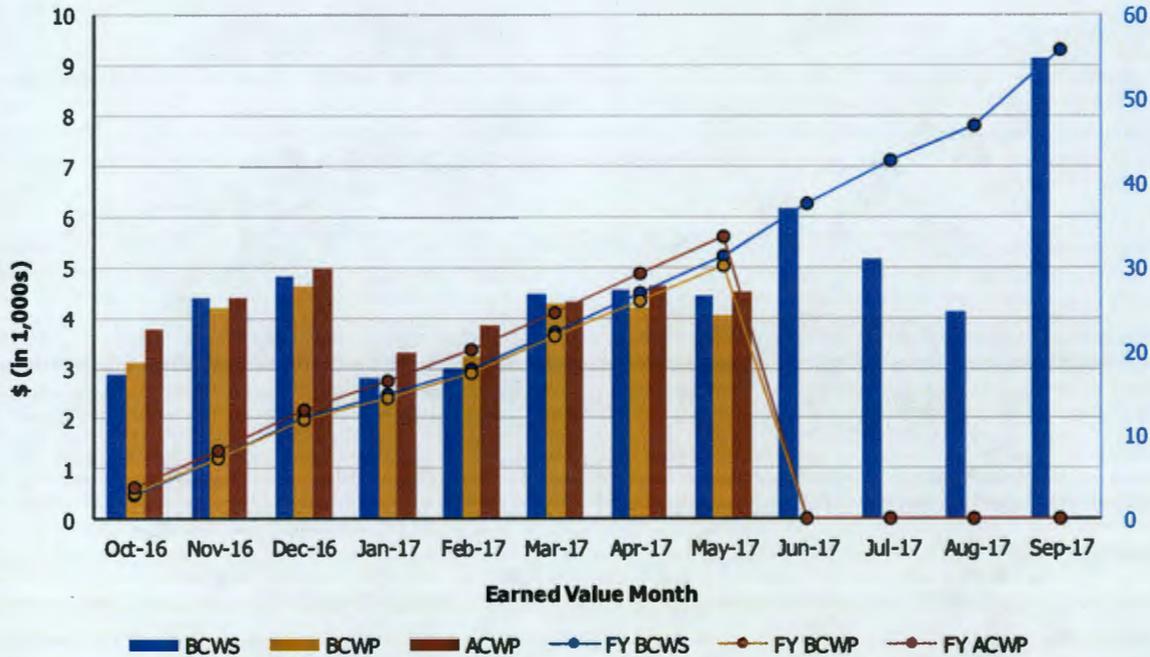
- Labor efficiencies:
 - In labor for the mission analysis account.
 - In liquid secondary waste – Effluent Management Facility simulant evaporation runs were completed for less labor cost than had been estimated.
 - The IX simulant run cost less than planned for the direct-feed low-activity waste rad waste test bed project. In addition, melter equipment procurement costs to support lab-scale testing were less than originally estimated.
 - The procurement and installation of the hot cell greenhouse cost less than expected. Fewer contractor labor resources were required to accomplish the work scope by utilizing experienced personnel with historical knowledge of the work scope.

Earned Value Data: Fiscal Year 2017

May-17

Tank Farms ORP-0014
Selected WBS: 5.5 - Treat Waste

EVMS Monthly and Fiscal Year Values



Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$2,889	\$3,131	\$3,770	1.08	0.83	\$2,889	\$3,131	\$3,770	1.08	0.83
Nov 2016	\$4,391	\$4,193	\$4,400	0.96	0.95	\$7,280	\$7,324	\$8,170	1.01	0.90
Dec 2016	\$4,796	\$4,620	\$4,950	0.96	0.93	\$12,076	\$11,944	\$13,120	0.99	0.91
Jan 2017	\$2,804	\$2,370	\$3,297	0.85	0.72	\$14,880	\$14,314	\$16,417	0.96	0.87
Feb 2017	\$2,999	\$3,220	\$3,867	1.07	0.83	\$17,879	\$17,534	\$20,284	0.98	0.86
Mar 2017	\$4,462	\$4,265	\$4,328	0.96	0.99	\$22,342	\$21,799	\$24,612	0.98	0.89
Apr 2017	\$4,547	\$4,201	\$4,620	0.92	0.91	\$26,889	\$26,000	\$29,232	0.97	0.89
May 2017	\$4,446	\$4,056	\$4,490	0.91	0.90	\$31,335	\$30,057	\$33,721	0.96	0.89
Jun 2017	\$6,151	\$0	\$0	0.00	0.00	\$37,485	\$0	\$0	0.00	0.00
Jul 2017	\$5,159	\$0	\$0	0.00	0.00	\$42,644	\$0	\$0	0.00	0.00
Aug 2017	\$4,122	\$0	\$0	0.00	0.00	\$46,767	\$0	\$0	0.00	0.00
Sep 2017	\$9,135	\$0	\$0	0.00	0.00	\$55,902	\$0	\$0	0.00	0.00

CTD	\$86,943	\$83,690	\$90,469	0.96	0.93
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ACWP	actual cost of work performed	CTD	contract to date
BCWP	budgeted cost of work performed	EVMS	Earned Value Management System
BCWS	budgeted cost of work scheduled	FY	fiscal year
CPI	cost performance index	SPI	schedule performance index

Tank Farms Assistant Manager: Glyn Trenchard

Deputy Federal Project Director: Janet Diediker

Treat Waste (5.5)

The May 2017 variances below have no impacts on TPA milestones.

The **unfavorable** SV of (\$390K) is primarily due to:

- Completion of the Safety Integrity Level (SIL) calculations has delayed a portion of the safety design description (SDD) documents. The SIL calculations are required to be complete prior to completion of additional system documents containing requirements defined in the SDDs. Therefore, to avoid unnecessary rework, the affected SDDs were delayed until completion of the SIL calculations.

The **unfavorable** CV of (\$433K) is primarily due to:

- There were more comments from the 60 percent design review than originally expected. As a result, comment resolution has required significant additional effort. The piping specification and drawing effort has required more subcontract resources than planned. This is due to the complexity of the specifications and an increased number of drawings over what was planned. Additional effort was required by Electrical Engineering to address additional drawing counts, rework, design modifications, and multiple specification iterations. There were also more drawings required for the raceway plans than were assumed in the baseline plan. Unplanned rework was necessary to incorporate changes in equipment locations and modifications to the cable tray routing in the model. Additionally, the electrical specifications for construction have undergone several unplanned iterations in the preparation/checking cycle to finalize the document. There was also additional work required for architectural modeling and associated drawings to capture changes to the north annex and improve access/egress to and from the personnel change facility, stairway access to the main bridge crane from the crane control platform (replaces the previous catwalk, which was removed by request of the crane vendor), and generation of design proposals for stairway access to the lag storage building roof and north annex roof.
- Unplanned revisions were required prior to WRPS acceptance of the final geotechnical analysis report.