
FINAL

Office of River Protection

Tri-Party Agreement

Monthly Report

May 2016



Office of River Protection (ORP)
Tri-Party Agreement (TPA) Milestone Review
Project Earned Value Management System reflects March 2016 information

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Administrative Items/Milestone Status
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Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2015				
M-062-45-T01	Comp. Neg's 6-Mo After Last Issuance of System Plan	04/30/2015		In Dispute
M-062-45-ZZ	Negotiate a One Time Supplemental Treatment Selection	04/30/2015		In Dispute
M-062-45-ZZ-A	Convert M-062-31-T01 Thru M-062-34-T01 to Interim Milestones	04/30/2015		In Dispute
M-045-92	Barrier 3 Design/Monitoring Approval From Ecology	06/30/2015		In Dispute
M-045-82	Submit Comp. Permit Modification Request for Tiers 1,2,3	09/30/2015		In Dispute
M-045-91E1	Provide SST Farms Dome Deflection Surveys Every Two Years.	09/30/2015	9/21/15	Complete
Fiscal Year 2016				
M-045-92N	Construct Barriers 1 and 2 in 241-SX Farm	10/31/2015		In Dispute
M-062-01AF	Submit Semi-Annual Project Compliance Report	01/31/2016	01/29/2016	Complete
M-047-07	CD-1 for Secondary Liquid Waste Treatment and CR for CD-2 to Ecology	03/31/2016		In Dispute
M-090-13	CD-1 for Interim Hanford Storage Project and CR for CD-2 to Ecology	03/31/2016		In Dispute
M-062-31-T01	Comp. Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016		In Dispute
M-045-92Q	Submit Barrier 4 Design/Monitoring Plan	06/30/2016		In Dispute
M-062-01AG	Submit Semi-Annual Project Compliance Report	07/31/2016		On Schedule
M-045-56L	Ecology And DOE Agree, At A Minimum, To Meet Yearly (By July)	07/31/2016		On Schedule
Fiscal Year 2017				
M-045-92P	Barrier 3 Construction Complete	10/31/2016		In Dispute
M-062-40E	Select a Minimum of Three Scenario's	10/31/2016		On Schedule
M-045-61A	Submit to Ecology a primary doc. Phase 2 CMS and Rev. O update to the RFI Report for WMA-C	12/31/2016		On Schedule
M-045-62	Phase 2 Corrective Measures Implementation Work Plan For WMA-C	Six months after CMS approval (M-045-61A)		On Schedule
M-045-84	Comp Neg's of HFFACO Interim Milestones for Closure of 2 nd SST WMA	01/31/2017		At Risk

Milestone	Title	Due Date	Completion Date	Status
M-062-01AH	Submit Semi-Annual Project Compliance Report	01/31/2017		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

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

CMD = current measuring device.

CMS = current measures study.

CR = change request.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

HFFACO = *Hanford Federal Facility Agreement and Consent Order.*

RCRA = *Resource Conservation and Recovery Act.*

RFI = RCRA Facility Investigation.

SST = single-shell tank.

TBD = to be determined.

WTP = Waste Treatment and Immobilization Plant.

WMA = Waste Management Area.

System Plan

Significant Past Accomplishments:

1. On October 24, 2013, Washington State Department of Ecology (Ecology) and U.S. Department of Energy (DOE), Office of River Protection (ORP) signed the Tri-Party Agreement (TPA) Change Control Form M-62-13-02, moving out the due date for this embedded milestone from October 31, 2013 to December 15, 2013, for selection of three, or more, scenarios to be modeled in the ORP-11242, *River Protection Project System Plan*, Rev. 7 (System Plan 7).
2. Ecology defined five scenarios to be analyzed in System Plan 7. Washington River Protection Solutions LLC (WRPS) included a description of each scenario in the *Selected Scenarios for the River Protection Project System Plan*, Rev. 7 document released to ORP on December 4, 2013. See joint ORP and Ecology letter 13-TPD-0070, "Completion of Hanford Federal Facility Agreement and Consent Order Milestone M-062-40C, to select a Minimum of Three Scenarios and Partial Completion of Milestone M-062-40," dated December 12, 2013, for completion and description of M-062-40C scenarios.
3. Detailed assumption review was completed and has been approved by Ecology.
4. On February 11, 2014, ORP transmitted a letter (14-TPD-0003, "Contract No. DE-AC27-08RV14800 – Approval to use Washington State Department of Ecology's Appendix B, "Key Assumptions and Success Criteria" for the ORP-11242, *River Protection Project System Plan*, Rev. 7") to WRPS in response to letter WRPS-1400313, "One System – Washington River Protection Solutions LLC Transmits to the U.S. Department of Energy, Office of River Protection for Approval, Appendix B Key Assumptions and Success Criteria for the River Protection Project System Plan, Revision 7, in Support of Contract Deliverable C.2.3.1 -1, River Protection Project System Plan," to approve the use of Ecology's Appendix B, "Key Assumptions and Success Criteria," for System Plan 7.
5. On February 13, 2014 Ecology presented the five selected scenarios to the Hanford Advisory Board Tank Waste Committee.
6. Ecology, ORP, and WRPS reviewed and provided comments for Sections 1.0 and 2.0 of System Plan 7 during the week of February 17, 2014.
7. Ecology, ORP and WRPS reviewed and provided comments for Section 3.0 of the System Plan 7 during the week of March 21, 2014.
8. Ecology, ORP and WRPS reviewed and provided comments for Appendix C, "Modeling Tools," of the System Plan 7 during the week of April 1, 2014.
9. During the week of April 28, 2014, WRPS and ORP facilitated meetings for Ecology to define detail spending assumptions for Case 5.
10. On July 29, 2014, WRPS case authors presented the results of the five cases to Ecology and ORP.
11. System Plan 7 was reviewed, all comments resolved, and comments incorporated into the document.

12. On October 31, 2014, ORP transmitted System Plan 7 to Ecology.
13. ORP received Ecology's January 14, 2015, transmitted letter 15-NWP-004, "Department of Ecology Review of the *River Protection Project System Plan*, ORP-11242, Revision 7," regarding Ecology's review of System Plan 7.
14. ORP met with Ecology at the Tank Farms TPA and Consent Decree (CD) monthly status meeting on February 25, 2015.
15. ORP transmitted letter 15-WSC-0027, "Washington State Department of Ecology Review of ORP-11242, *River Protection System Plan*, Rev. 7, 15-NWP-004, January 14, 2015," in response to Ecology's letter 15-NWP-004 to Ecology on June 2, 2015. ORP's letter provided clarification and several attachments of additional information requested in Ecology's January 14, 2015, letter.
16. Scenario selection discussions to support M-062-40E started between ORP and Ecology on April 25, 2016.

Significant Planned Actions in the Next Six Months:

- Scenario selection discussions will be conducted to support M-062-40E, Due: October 31, 2016

Issues: None.

Acquisition of New Facilities

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 dispute. Change control form M-90-15-01 was submitted by ORP to Ecology for approval on December 30, 2015. This dispute has been extended to May 20, 2016.

M-090-00, Acquire/Modify Facilities for Storage of Immobilized High-Level Waste (IHLW), Due: December 31, 2019, Status: On schedule.

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 dispute. Change control form M-47-15-01 was submitted by ORP to Ecology for approval on December 30, 2015. This dispute has been extended to May 20, 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: On schedule.

Significant Past Accomplishments: None.

Significant Planned Actions in the Next Six Months: None.

Issues: None.

Supplemental Treatment and Part B Permit Applications

M-062-45-ZZ (designation for M-062-45 item 3), Negotiate a one-time supplemental treatment selection, Due: April 30, 2015, Status: In dispute.

M-062-45-ZZ-A, Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones, Due: April 30, 2015, Status: In dispute.

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 dispute.

M-062-32-T01, Start construction of supplemental vitrification treatment facility and/or WTP enhancements, Due: April 30, 2018, Status: In dispute.

M-062-33-T01, Complete construction of supplemental vitrification treatment facility and/or WTP enhancements, Due: April 30, 2021, Status: In dispute.

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 Dispute.

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 dispute.

M-062-21, Annually submit data that demonstrates operation of the WTP, Due: February 28, 2023, Status: On schedule.

M-062-00, Complete Pretreatment Processing and Vitrification of High-Level Waste and LAW Tank Wastes, Due: December 31, 2047, Status: On schedule.

Significant Past Accomplishments:

*Per ORP letter 14-TF-0052, "Documentation of U.S. Department of Energy, Office of River Protection and Washington State Department of Ecology Agreement that the Office of River Protection will not Submit A One-Time Hanford Tank Waste Supplemental Treatment Technologies Report," signed by ORP on May 6, 2014, and provided to Ecology on May 7, 2014, ORP documented the ORP/Ecology discussions for the one-time *Hanford Tank Waste Supplemental Treatment Technologies Report* and that ORP does not intend to submit this report. ORP received Ecology's response letter, 14-NWP-110, "Acknowledgement that the U.S. Department of Energy, Office of River Protection Will Not Submit a One-Time Supplemental Treatment Technologies Report," on May 29, 2014. ORP letter 14-TF-0088, "Hanford Federal Facilities Agreement and Consent Order Class II Change Request for Deletion

of Tri-Party Agreement Milestone M-062-40ZZ, One-Time Hanford Tank Waste Supplemental Treatment Technologies Report,” dated and delivered to Ecology on July 31, 2014, submitted a signed TPA change package to delete the requirement of the *One-Time Hanford Tank Waste Supplemental Treatment Technologies Report* from TPA Milestone M-062-40. Ecology signed TPA Change Package M-62-14-01 deleting M-062-40ZZ on August 12, 2014.

Significant Planned Actions in the Next Six Months: None.

Issues:

On January 30, 2015, ORP provided Ecology Change Control Form M-62-14-02, which proposed adding language under TPA Milestone M-062-45 to defer negotiations required under M-062-45. Ecology did not respond with the 14-day review period that ended February 13, 2015 which is deemed disapproval in accordance with the TPA. In letter 15-TF-0014, “Initiation of Dispute Resolution Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-62-14-02,” dated February 20, 2015, ORP initiated a dispute resolution. Ecology provided a justification for their disapproval on March 12, 2015 via letter 15-NWP-036, “Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Package, Change Number M-62-14-02, dated 01/30/2015.” Ecology and ORP signed an extension of the dispute resolution period at the TPA project manager level until May 20, 2016.

242-A Evaporator Status

(previously reported under Milestone M-48, which has been closed out)

The 242-A Evaporator campaign strategy for fiscal year (FY) 2015 through fourth quarter of FY 2016 depicted in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
FY 2015	EC-01	AP-103 AP-104	AP-107	Completed June 21, 2015. WVR = 381 kgal
FY 2015	EC-02	AZ-102	AP-103	Completed July 21, 2015. WVR = 384 kgal
FY 2015	EC-03	AZ-102	AP-103	Completed September 25, 2015. WVR = 375 kgal
FY 2016	EC-04	AP-104	AP-103	Completed April 15, 2016. WVR = 258 kgal
FY 2016	EC-05	AP-104	AP-104	Completed April 21, 2016. WVR = 46 kgal
FY 2016	EC-06	AY-101	AP-104	Estimated to begin fourth quarter FY 2016.

FY = fiscal year
 kgal = thousand gallons
 WVR = waste volume reduction

Significant Planned Actions in the Next Six Months:

- Future campaign and outage scheduling
- Electrical preventative maintenance activities in 241-AW and 242-A
- Control room upgrades at 242-A Evaporator
- Replacement of the P-B-2 pump variable frequency drive

Issues: None.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Status:

The Liquid Effluent Retention Facility (LERF) liquid levels, inventory, and received waste is shown in the table below.

Note: 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)
Volume (as of 04/30/16)	~5.35 Mgal	~7.20 Mgal	~6.76 Mgal
AZ-301 Tanker Shipments	-	-	-
MWBT-31 and 34 Leachate	-	-	~49,000 gal
Perched Water Tanker Shipments	-	-	-
ERDF Leachate Transfers	-	47,000 gal	-
ERDF Leachate Tanker Shipments			
Other (325 Building Totes)	-		~1700 gal
242-A Campaigns (EC-04 & 05)	~ 416,000 gal		

ERDF = Environmental Restoration Disposal Facility.

Gal = gallon.

Mgal = million gallons.

MWBT = mixed waste burial trench.

Significant Planned Actions in the Next Six Months:

- Staff training, component and system testing, and readiness activities for Effluent Treatment Facility (ETF) are ongoing and expected to be completed in third quarter of FY 2016.
- Berm special protective coating of specific areas at ETF and LERF are ongoing and expected to be completed in third quarter of FY 2016.
- Hanford Dangerous Waste Permit 8C, Operation Unit Group -3, class 1 prime modifications package submittal in third quarter.
- Processing waste from LERF through ETF scheduled for third and fourth quarters of FY 2016.

Issues: None.

Tank System Update

Significant Planned Actions in FY 2016:

~~Strikethrough~~ means completed to date

Double Shell Tank (DST) Integrity

- Enhanced annulus video inspection:
 - ~~241-AN-101~~ (complete)
 - 241-AN-103
 - 241-AN-104
 - 241-AN-105
 - 241-AN-106
 - ~~241-AW-103~~ (complete)
 - ~~241-AW-106~~ (complete)
 - 241-SY-101
 - 241-SY-102
 - 241-SY-103
- Ultrasonic testing (UT) inspections (two risers for primary wall/welds, one riser for secondary floor):
 - 241-AN-105 (field work complete, in close-out)
 - 241-AW-103 (preparations underway)
- Continuing bi-weekly inspections of AY-102 waste accumulation site
- Continuing bi-monthly comprehensive inspection of AY-102 annulus
- Revise and update RPP-7574, *Double-Shell Tank Integrity Project Plan*
- Released the DST independent qualified registered professional engineer (IQRPE) integrity assessment report (RPP-RPT-58441) per WAC 173-303-640(2), “Tank systems”.

Single Shell Tanks (SST) Integrity

- In-tank video inspections:
 - ~~241-T-107~~ (complete)
 - ~~241-T-110~~ (complete)
 - 241-TX-103
 - 241-TX-111
 - 241-TX-113
 - 241-TX-116
 - ~~241-B-101~~ (complete)
 - ~~241-B-201~~ (complete)
 - 241-BY-105
 - 241-U-102
 - 241-U-105
 - 241-U-107. (no free riser, replaced with 241-S-105)
- Intrusions mitigation (M-045-56):

- Complete 241-T-111. Evaporation of 241-T-111 continues, a report will be issued when evaporation is considered complete.
- Work is initiated on subsequent tank 241-T-112

Single-Shell Tank Integrity Assurance

M-045-91I, 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:

- Continue planning for the SST integrity assessment by an IQRPE (M-045-91I).

Issues: None.

In Tank Characterization and Summary

For the period from April 1 through April 30, 2016:

Accomplishments:

- Completed RPP-RPT-58236, *Derivation of Best-Basis Inventory for Tank 241-S-111 as of April 1, 2016*, Rev 1
- Completed RPP-RPT-52180, *Derivation of Best-Basis Inventory for Tank 241-SX-106 as of April 1, 2016*, Rev 2.
- Completed RPP-RPT-43992, *Derivation of Best-Basis Inventory for Tank 241-AN-106 as of April 1, 2016*, Rev 16.
- Completed RPP-PLAN-60724, *Tank 241-AP-102 Grab Sampling and Analysis Plan during 241-AY-102 Retrieval*, Rev 0.
- Completed RPP-PLAN-60361, *Tank 241-AP-107 Grab Sampling and Analysis Plan in FY2016*, Rev 0.
- RPP-RPT-59267, *Final Report for Tank 241-C-111 Liquid Samples in Support of Hard Heel Retrieval for Fiscal Year 2016*, Rev 0, was released.
- RPP-RPT-59294, *Final Report for 241-AN-101 Floating Organic Check Samples in Support of C-111 Retrieval in Fiscal Year 2016*, Rev 0, was released.

- Completed HNF-EP-0182, *Waste Tank Summary Report for Month Ending February 29, 2016*, Rev 338.
- Completed evaporator slurry grab sampling for the combined EC-04/EC-05 Evaporator campaign on April 7, 2016. Two samples were received at the laboratory.
- Completed 241-AP-102 grab sampling April 12, 2016. Nine samples were received at the laboratory.
- Completed 241-AN-101 grab sampling April 25, 2016. Nine samples were received at the laboratory.

Planned Action within the Next Six Months:**Tank sampling:**

- Tank 241-AP-107 core sampling is planned to begin May 2016.
- Tank 241-AP-107 grab sampling is planned to begin May 2016
- Tank 241-C-111 closure grab sampling is planned to begin May 2016.
- Tank 241-AW-103 grab sampling is planned for August 2016.

Best-Basis Inventory (BBI) updates:

BBI updates for the following tanks were completed in April 2016:

- 241-AN-106
- 241-S-111
- 241-SX-106

BBI updates for the following tanks currently are planned to be completed in May 2016:

- 241-A-104
- 241-AP-107
- 241-C-111
- 241-A-106
- 241-AY-102
- 241-AN-101
- 241-AZ-102

Data Quality Objectives (DQO):

- RPP-8532, *Double-Shell Tanks Chemistry Control Data Quality Objectives*, Rev 15, is in-process to identify additional analyses for corrosion mitigation and to simplify quality control parameters is planned to be released in **May** 2016.

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 (TOC) for monthly performance reporting. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

March-16										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	57,499	58,407	59,030	908	(623)	1.02	0.99			
FYTD	258,219	249,370	261,087	(8,848)	(11,717)	0.97	0.96	570,584		
CTD	3,109,354	3,080,623	3,085,766	(28,731)	(5,142)	0.99	1.00	3,448,365	3,464,612	(16,247)

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

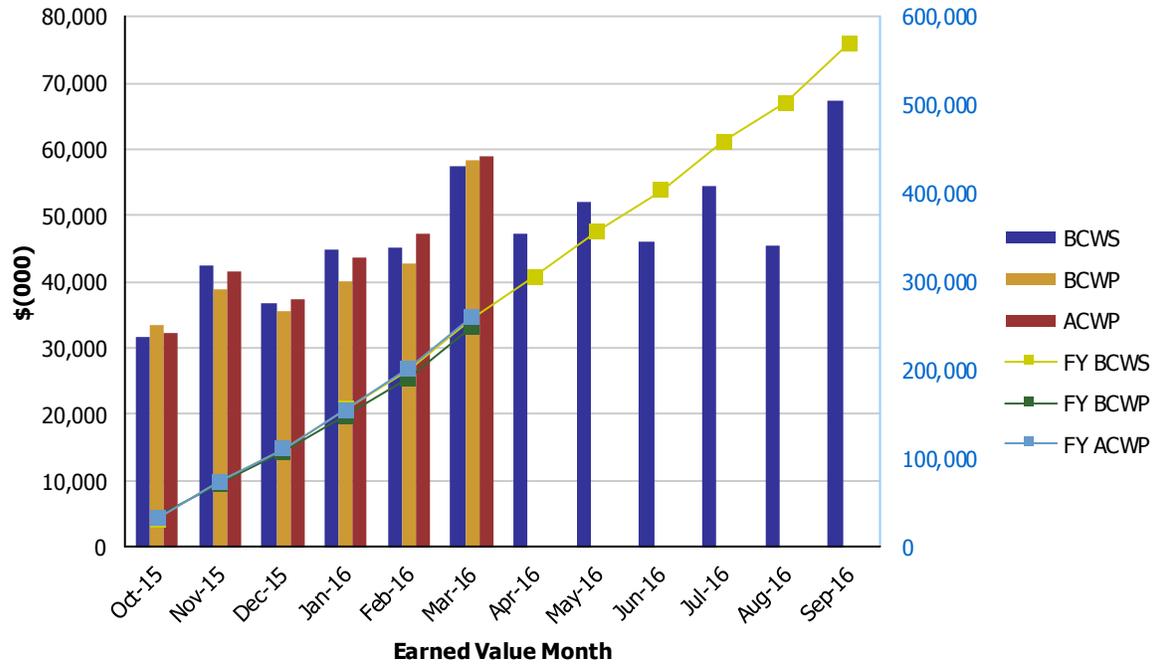
CV = cost variance.
 EAC = estimate at completion.
 FYTD = fiscal year to date
 SPI = schedule performance index.
 SV = schedule variance.
 VAC = variance at completion.

Earned Value Data: Fiscal Year 2016

March-16

Tank Farms ORP-0014

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$31,768	\$33,377	\$32,188	1.05	1.04	\$31,768	\$33,377	\$32,188	1.05	1.04
Nov 2015	\$42,365	\$38,998	\$41,461	0.92	0.94	\$74,133	\$72,376	\$73,649	0.98	0.98
Dec 2015	\$36,744	\$35,614	\$37,416	0.97	0.95	\$110,877	\$107,990	\$111,065	0.97	0.97
Jan 2016	\$44,800	\$40,183	\$43,604	0.90	0.92	\$155,677	\$148,173	\$154,669	0.95	0.96
Feb 2016	\$45,043	\$42,790	\$47,389	0.95	0.90	\$200,720	\$190,963	\$202,058	0.95	0.95
Mar 2016	\$57,499	\$58,407	\$59,030	1.02	0.99	\$258,219	\$249,370	\$261,088	0.97	0.96
Apr 2016	\$47,117					\$305,336				
May 2016	\$52,003					\$357,339				
Jun 2016	\$45,922					\$403,261				
Jul 2016	\$54,492					\$457,753				
Aug 2016	\$45,406					\$503,159				
Sep 2016	\$67,425					\$570,584				
CTD	\$3,109,354	\$3,080,623	\$3,085,766	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.

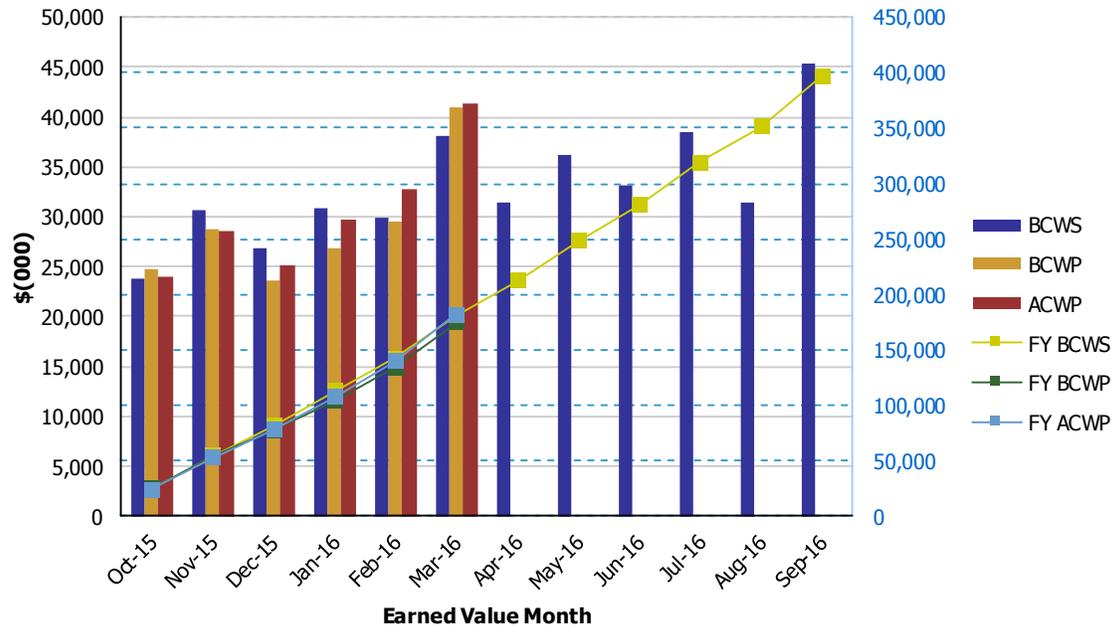
CTD = contract to date
 EVMS = Earned Value Management System.
 FY = fiscal year.
 SPI = schedule performance index

Earned Value Data: Fiscal Year 2016

March-16

**Tank Farms ORP-0014
Base Operations 5.01**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$23,768	\$24,839	\$24,025	1.05	1.03	\$23,768	\$24,839	\$24,025	1.05	1.03
Nov 2015	\$30,658	\$28,752	\$28,562	0.94	1.01	\$54,426	\$53,592	\$52,587	0.98	1.02
Dec 2015	\$26,911	\$23,637	\$25,173	0.88	0.94	\$81,336	\$77,229	\$77,760	0.95	0.99
Jan 2016	\$30,829	\$26,913	\$29,740	0.87	0.90	\$112,165	\$104,142	\$107,500	0.93	0.97
Feb 2016	\$29,963	\$29,524	\$32,689	0.99	0.90	\$142,128	\$133,666	\$140,189	0.94	0.95
Mar 2016	\$38,167	\$40,891	\$41,434	1.07	0.99	\$180,295	\$174,557	\$181,623	0.97	0.96
Apr 2016	\$31,455					\$211,750				
May 2016	\$36,155					\$247,905				
Jun 2016	\$33,109					\$281,014				
Jul 2016	\$38,524					\$319,537				
Aug 2016	\$31,425					\$350,962				
Sep 2016	\$45,389					\$396,351				
CTD	\$2,072,179	\$2,056,770	\$2,055,452	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.

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

Base Operations and Tank Farm Projects

The current month favorable schedule variance (SV) of \$2,724K is due to:

- AY-102 Washington River Protection Solutions LLC (WRPS) Readiness Support Schedule Recovery: Operations acceptance testing & readiness were originally planned to be completed in late February but were delayed due to incomplete waste retrieval system construction and construction acceptance testing. The delayed work scope has since been completed.
- Tank Vapor Assessment Team (TVAT) response Phase 1 Project - Schedule recovery on procurement receipt of the vacuum sampling system equipment used for head space sampling.

The current month unfavorable cost variance (CV) of (\$543K) is due to

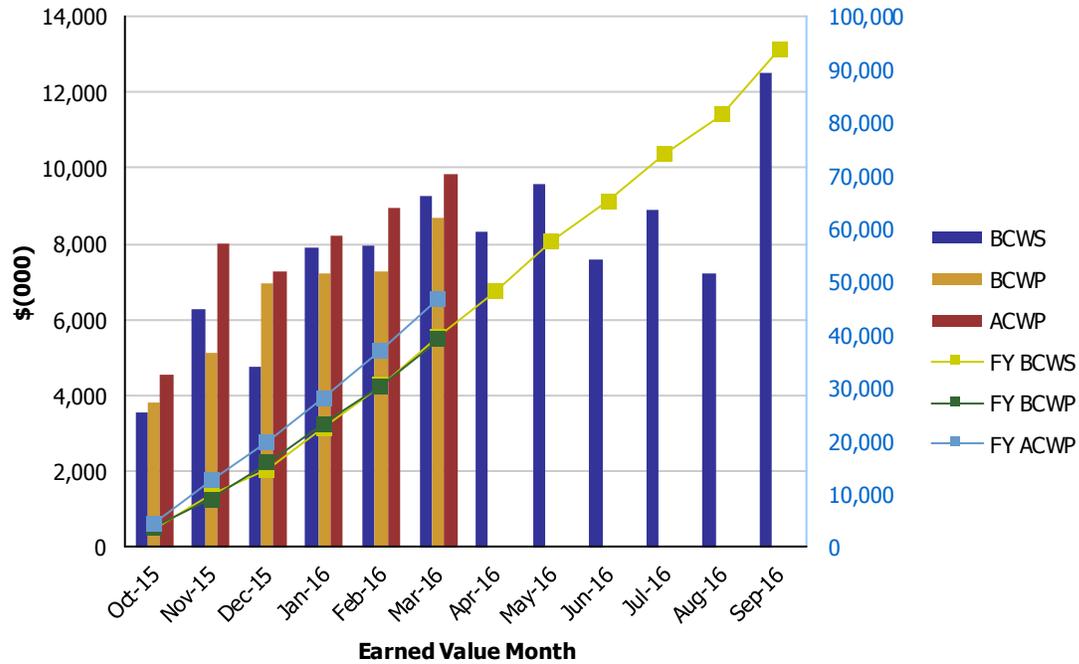
- Tank AY-102 and Tank AP-102 Equipment Installation: WRPS and American Electrical Inc. (AEI) continued to accelerate schedule recovery (at an increased cost) through overtime; weekend shifts; and allocating more resources to construction crews to complete testing, continue recirculation/ventilation upgrades, complete inter-farm lighting; and electrical transformer tie-ins to support Tank AY-102 retrieval efforts.
- Production Operations Support Services continues to have impacts associated with additional labor and subcontracts to support the mask issue stations.

Earned Value Data: Fiscal Year 2016

March-16

**Tank Farms ORP-0014
Retrieve and Close SST's 5.02**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$3,557	\$3,814	\$4,560	1.07	0.84	\$3,557	\$3,814	\$4,560	1.07	0.84
Nov 2015	\$6,282	\$5,131	\$8,006	0.82	0.64	\$9,839	\$8,946	\$12,566	0.91	0.71
Dec 2015	\$4,769	\$6,970	\$7,255	1.46	0.96	\$14,608	\$15,915	\$19,821	1.09	0.80
Jan 2016	\$7,914	\$7,214	\$8,233	0.91	0.88	\$22,522	\$23,130	\$28,053	1.03	0.82
Feb 2016	\$7,948	\$7,288	\$8,959	0.92	0.81	\$30,470	\$30,417	\$37,012	1.00	0.82
Mar 2016	\$9,249	\$8,693	\$9,857	0.94	0.88	\$39,719	\$39,111	\$46,869	0.98	0.83
Apr 2016	\$8,312					\$48,031				
May 2016	\$9,597					\$57,628				
Jun 2016	\$7,584					\$65,212				
Jul 2016	\$8,923					\$74,135				
Aug 2016	\$7,228					\$81,363				
Sep 2016	\$12,499					\$93,862				

CTD	\$632,197	\$624,338	\$656,842	0.99	0.95
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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 |

Retrieve and Close Single Shell Tanks

The current month unfavorable schedule variance (SV) of **(\$556K)** is due to:

- Multiple work stoppages related to self-contained breathing apparatus (SCBA) technical challenges limited work in single-shell tank farms (C-Farm & A/AX Farm) during March.

The current month unfavorable cost variance (CV) of **(\$1,159K)** is due to:

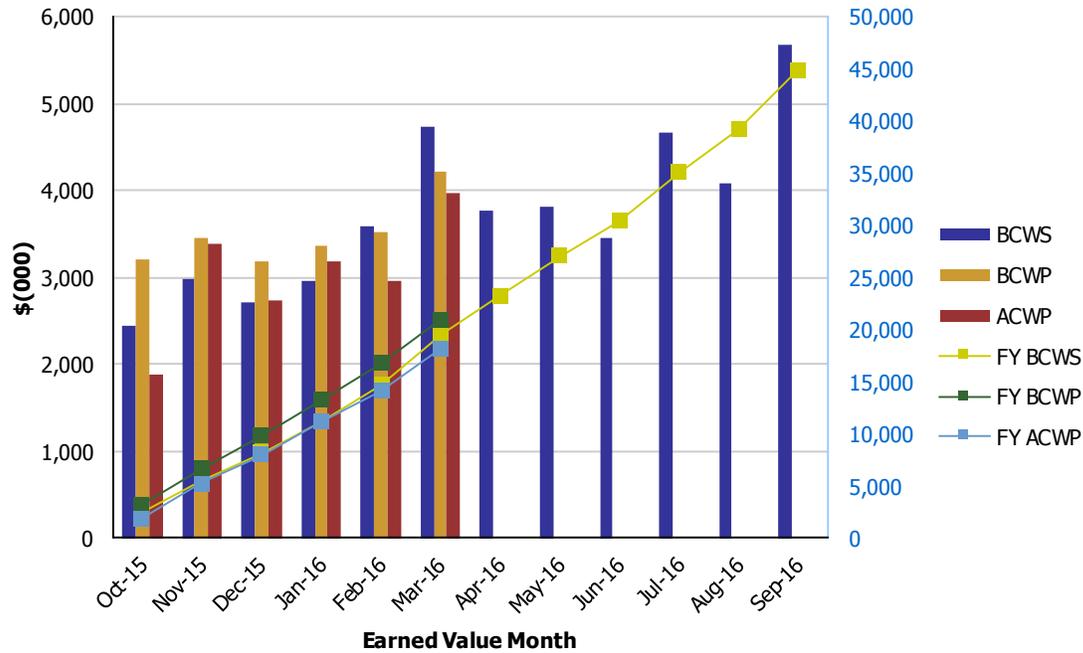
- Additional resources and duration have been required to support AX-Farm ventilation installation field activities due to SCBA requirements. As a result ventilation installation activities are being reevaluated by Engineering causing fieldwork to delay resulting in inefficiency of crews.

Earned Value Data: Fiscal Year 2016

March-16

Tank Farms ORP-0014
Waste Feed Delivery/Treatment/Double-Shell Tank Retrieval Closure 5.03

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$2,434	\$3,210	\$1,876	1.32	1.71	\$2,434	\$3,210	\$1,876	1.32	1.71
Nov 2015	\$2,987	\$3,446	\$3,379	1.15	1.02	\$5,421	\$6,656	\$5,255	1.23	1.27
Dec 2015	\$2,714	\$3,193	\$2,743	1.18	1.16	\$8,134	\$9,849	\$7,998	1.21	1.23
Jan 2016	\$2,966	\$3,366	\$3,180	1.13	1.06	\$11,101	\$13,215	\$11,178	1.19	1.18
Feb 2016	\$3,583	\$3,518	\$2,966	0.98	1.19	\$14,683	\$16,733	\$14,144	1.14	1.18
Mar 2016	\$4,740	\$4,210	\$3,979	0.89	1.06	\$19,424	\$20,943	\$18,124	1.08	1.16
Apr 2016	\$3,777					\$23,200				
May 2016	\$3,812					\$27,012				
Jun 2016	\$3,456					\$30,467				
Jul 2016	\$4,668					\$35,136				
Aug 2016	\$4,073					\$39,209				
Sep 2016	\$5,677					\$44,885				
CTD	\$348,096	\$347,219	\$323,206	1.00	1.07					

- | | |
|---|--|
| 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 |

Waste Feed Delivery/Treatment/Double-Shell Tank Retrieval Closure

The current month unfavorable schedule variance (SV) of **(\$530K)** is due to:

- Issuance of the plan for testing activities has been delay by 4 weeks due to Pacific Northwest National Laboratory resource limitations and multiple iterations of the draft. This work supports waste sample preparations.
- Delay to the pre-testing, which supports the start of glass testing.

The current month favorable cost variance (CV) of \$231K is due to:

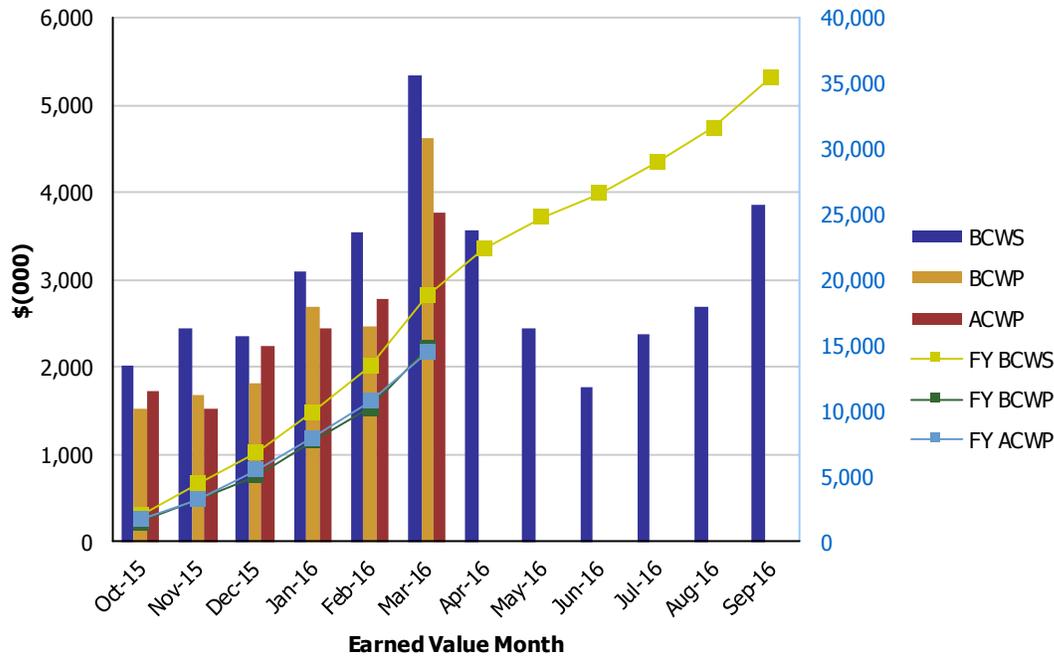
- Subcontract support, which was planned under one account, but was charged under a different account to which it had previously been assigned.

Earned Value Data: Fiscal Year 2016

March-16

**Tank Farms ORP-0014
Treat Waste 5.5**

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2015	\$2,008	\$1,513	\$1,735	0.75	0.87	\$2,008	\$1,513	\$1,735	0.75	0.87
Nov 2015	\$2,439	\$1,669	\$1,517	0.68	1.10	\$4,447	\$3,182	\$3,252	0.72	0.98
Dec 2015	\$2,351	\$1,814	\$2,245	0.77	0.81	\$6,798	\$4,996	\$5,497	0.73	0.91
Jan 2016	\$3,090	\$2,691	\$2,451	0.87	1.10	\$9,888	\$7,687	\$7,948	0.78	0.97
Feb 2016	\$3,550	\$2,460	\$2,775	0.69	0.89	\$13,438	\$10,147	\$10,723	0.76	0.95
Mar 2016	\$5,343	\$4,613	\$3,760	0.86	1.23	\$18,781	\$14,760	\$14,482	0.79	1.02
Apr 2016	\$3,573					\$22,354				
May 2016	\$2,440					\$24,794				
Jun 2016	\$1,773					\$26,568				
Jul 2016	\$2,377					\$28,945				
Aug 2016	\$2,681					\$31,626				
Sep 2016	\$3,860					\$35,486				
CTD	\$36,773	\$32,186	\$31,104	0.88	1.03					

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

Treat Waste

The current month unfavorable schedule variance (SV) of (\$730K) is due to:

- A current period adjustment that resulted from aligning the subcontractors' detailed schedule with the WRPS Performance Measurement Baseline during implementation of BCR-RPP-16-113.

The current month favorable cost variance (CV) of \$853K is due to:

- A current period adjustment that resulted from aligning the subcontractors' detailed schedule with the WRPS Performance Measurement Baseline during implementation of BCR RPP-16-113.

Single-Shell Tank Closure Program

M-045-00, Complete closure of all SST farms, Due: January 31, 2043, Status: On schedule.

M-045-56L, Complete Implementation of Agreed to Interim Measures, Due: July 28, 2016, Status: On Schedule. An annual meeting is held between ORP and Ecology to discuss the prior FY accomplishments and the next FY proposed interim measures. The last annual meeting was held July 15, 2015, and these meeting minutes were placed in the Administrative Record in this location: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0080444H>

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: On schedule.

M-045-61A, Submit to Ecology for review and approval as an Agreement primary document, document review process, a Phase 2 Corrective Measures Study, and Revision 0 update to the RFI Report for WMA-C), Due: December 31, 2016, Status: On Schedule. The RPP-RPT-58339, *Phase 2 RCRA Facility Investigation Report* Draft A for Waste Management Area C (WMA-C), was transmitted to Ecology on December 23, 2014, via letter 14-TF-0131. “The U.S. Department of Energy, Office of River Protection Submittal of the Draft Resource Conservation and Recovery Act Facility Investigation Report for Waste Management Area C in Completion of Milestone M-045-61.” This milestone was created by *Hanford Federal Facility Agreement and Consent Order* (HFFACO) change package M-045-14-03, signed October 1, 2014.

M-045-62, Submit to Ecology for review and approval as an agreement primary document a Phase 2 Corrective Measures Study Implementation Plan for WMA-C, Due: Six months after the approval of the corrective measures study (CMS) submitted under milestone M-045-61A. Status: On schedule. TPA change control form M-045-15-02 approved on April 14, 2015.

M-045-82, Submit complete permit mod requests for Tiers 1, 2, and 3 of the SST, Due: September 30, 2015, Status: In dispute. Please see issues.

M-045-83, Complete the closure of WMA-C, Due: June 30, 2019, Status: To be missed. Please see issues.

M-045-84, Complete negotiations of TPA interim milestones for closure of second WMA, Due: January 31, 2017, Status: At risk.

M-045-85, Complete negotiations of TPA interim milestones for closure of remaining WMAs, Due: January 31, 2022, Status: On schedule.

M-045-92 (N, O, P, Q, R) Complete Installation of Four (4) Additional Interim Barriers, Due: October 31, 2017, Status: In dispute. Please see issues.

Significant Past Accomplishments: None.

Significant Planned Activities in the Next Six Months:

- Continue data collection for T Farm and TY Farm interim surface barrier monitoring and develop the annual interim barrier monitoring report for FY 2015.
- Complete TPA/Resource Conservation and Recovery Act (RCRA) Tier 2 and Tier 3 Closure Plans
- Finalize/Issue Integrated Disposal Facility Performance Assessment (PA) summary analysis.
- Complete the waste management area (WMA) C Appendix I PA

Issues:

- **M-045-82, Submit complete permit mod requests for Tiers 1, 2, and 3 of the SST**
 - Change Control Form M-045-15-03 was submitted by ORP via letter 15-TF-0065, “The U.S. Department of Energy, Office of River Protection Transmittal of Hanford Federal Facility Agreement and Consent Order Change Control Form M-045-15-03 to Modify Milestone M-045-82 for Approval,” to Ecology for approval on June 30, 2015.
 - Ecology disapproved M-045-15-03 via letter 15-NWP-128, “Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Control Form, Change Number M-045-15-03, Dated June 25, 2015,” on July 14, 2015.
 - ORP initiated dispute resolution via letter 15-TF-0069, “Initiation of Dispute Resolution Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-045-15-03,” on July 16, 2015.
 - ORP submitted a closure schedule to Ecology on January 13, 2016.
 - This dispute has been extended to May 28, 2016 via letter 16-TF-0035. “Extension at the Project Manager Level for the Hanford Federal Facility Agreement and Consent Order Dispute Regarding Disapproval of Change Control Form M-045-15-03.”
- **M-045-92 (N, O, P, Q, R), Complete Installation of Four Additional Interim Barriers**
 - (N) Construct SX interim surface barriers (ISB) 1 and 2 by October 31, 2015
 - (O) Design ISB 3 by June 30, 2015
 - (P) Construct ISB 3 by October 31, 2016
 - (Q) Design ISB 4 by June 30, 2016
 - (R) Construct ISB 4 by October 31, 2017
 - Change control form M-045-15-01 was submitted by ORP via letter 15-TF-0027, “Transmittal for Approval of the Hanford Federal Facility Agreement and Consent

Order Change Control Form M-045-15-01 to Modify Milestone M-045-92 Due Dates,” to Ecology for approval on March 31, 2015.

- Ecology disapproved M-045-15-01 via letter 15-NWP-075, “Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Control Form, Change Number M-045-15-01, dated 03/26/15,” on April 17, 2015.
- ORP initiated dispute resolution via letter 15-TF-0042, “Initiation of Dispute Resolution Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-045-15-01,” on April 20, 2015.
- ORP elevated this matter to the Interagency Management Integration Team (IAMIT) for resolution via submission of a statement of dispute on February 16, 2016 (16-TF-0016, “Statement of Dispute Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order Change Control Form M-045-15-01”).
- ORP and Ecology have extended the deadline for resolution of the M-045-15-01 dispute at the IAMIT level the next regularly-scheduled IAMIT meeting (March 17, 2016) following the entry of a final order modifying the Consent Decree in State of Washington vs United States. Department of Energy, No. 08-5085-RMP.
- In accordance with Decision/Determination/Action Assignment Number 2016-002: The IAMIT has agreed that the dispute on change control form M-045-15-01 is extended at the IAMIT level until May 20, 2016.

Single-Shell Tank Retrieval Program

M-045-70, Complete waste retrieval from all remaining SSTs, Due: December 31, 2040,
Status: On schedule.

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

- M-045-86I: RDR for C-101 was due September 24, 2015, completed on September 24, 2015 with letter 15-TF-0099, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-101.”
- M-045-86C: RDR for C-104 was due March 21, 2014, completed on February 18, 2014 with letter 14-TF-0013, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-104.”
- M-045-86E: RDR for C-107 was due July 28, 2015, completed on September 15, 2015 with letter 15-TF-0086, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-107.”
- M-045-86F: RDR for C-108 was due May 1, 2014, completed on November 27, 2013 with letter 13-TF-0120, “Submittal of Retrieval Data Report for Single-Shell Tank 241-C-108, RPP-RPT-55896, Revision 1.”
- M-045-86G: RDR for C-109 was due June 4, 2014, completed on March 13, 2014 with letter 14-TF-0020, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-109.”
- M-045-86H: RDR for C-110 was due January 29, 2015, completed on August 6, 2014 with letter 14-TF-0086, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-110.”
- M-045-86K: RDR for C-112 was due September 30, 2015, completed on September 30, 2015 with letter 15-TF-0098, “The U.S. Department of Energy, Office of River Protection Submits the Retrieval Data Report for Tank 241-C-112.”

Significant Past Accomplishments:

- Completed post retrieval samples of Tank C-102.
- Obtained Tank 241-C-105 in-process sample.
- Started preparations for equipment removal of the Tank C-105 Mobile Arm Retrieval System – Vacuum (MARS-V),, to ready tank for modification to modified sluicing system (remaining volume of 67,300 gallons)
- Completed removal of ancillary equipment from Tank 241-C-105 pits A and C in preparation for modified sluicing system installation
- Completed three retrieval technologies at Tank 241-C-111.
- Procured sampling equipment for Tank 241-C-111 post retrieval samples

- Started preparations for post-retrieval sampling of Tank 241-C-111
- Completed Tank 241-AX-102 cover block removal
- Completed Tank 241-AX-104 cover block removal
- Completed pit cleanout of Tank 241-AX-102, 02A pit.
- Initiated pit cleanout of Tank 241-AX-104, 04D pit
- Completed removal of Building AX-80

Significant Planned Activities in the Next Six Months:

- Complete procurement of the water services building to support A/AX
- Complete AX ventilation installation and commence testing at portable exhauster POR-126
- Installation of permanent ingress/egress access trailers in support of A/AX
- Complete cleanout of Tank 241-AX-104 pits 04A, and 04D, and initiate debris removal from 04C
- Complete cleanout of Tank 241-AX-102 pits 02D, and 02B, and initiate debris removal from 02C
- Complete AX-2707 fencing and gate upgrades
- Complete building AX-2707 removal and disposal
- Complete A Farm ventilation design
- Obtain Tank Waste Retrieval Work Plan (TWRWP) modification approval for Tank C-105 third retrieval technology
- Negotiate contract proposal for installing and performing the third retrieval technology at Tank C-105
- Complete Tank C-105 MARS-V in tank equipment removal mockup
- Complete Tank C-105 MARS-V containment box disassembly
- Complete Tank C-105 modified sluicing system design
- Receive Tank C-105 extended reach sluicers
- Complete Tank C-111 post-retrieval sampling
- Issue Tank C-111 Retrieval Completion Certification
- Complete A/AX infrastructure (water and utilities) design.
- Complete Tank 241-AX-102 and 241-AX-104 Extended Reach Sluicing System (ERSS) procurement.

Issues: None.

Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
C-101	RPP-22520, Rev. 8	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	-
C-102	RPP-22393, Rev. 7	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	-
C-104	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0018	-
C-105	RPP-22520, Rev. 8	Third Technology	MARS-V	MARS-V-High Pressure Water Spray	TBD
C-107	RPP-22393, Rev. 7	Complete	MARS-S	MARS-S -High Pressure Water Spray	Water Dissolution
C-108	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0025	-
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0037	-
C-110	RPP-33116, Rev. 3	Complete	Modified Sluicing	Mechanical Waste Conditioning with an In-Tank Vehicle	High Pressure Water
C-111	RPP-37739, Rev. 2	Complete	Modified Sluicing	High pressure water using the ERSS	Chemical Dissolution Process with ERSS
C-112	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process	-

ERSS = Extended Reach Sluicing System
MARS = Mobile Arm Retrieval System
S = sluicing

TBD = To Be Determined
TWRWP = Tank Waste Retrieval Work Plan
V = vacuum

Significant Accomplishments: None.

Significant Planned Activities in the Next Six Months:

- Finalize AX Farm tank waste retrieval work plans.
- Modify RPP-22520, 241-C-101, and 241-C-105, *Tanks Waste Retrieval Work Plan*, (C-105 TWRWP) to include a third technology for C-105 retrieval — Draft TWRWP modification submitted to Ecology for review in April 2016.

Issues: None.

Tank in Appendix H, “Status - Single Shell Waste Retrieval Criteria”

Tank 241-C-106

Significant Past Accomplishments: None.

Significant Planned Activities in the Next Six Months:

- Continue U.S. Nuclear Regulatory Commission (NRC) review of the C-106 exception request. A request for additional information was received from the NRC in February 2009.

Issues:

- It has been discussed with the NRC that much of the additional information requested is dependent upon development of C Farm residual waste PA and, therefore, cannot be provided until the PA is published.

Tank Retrievals with Individual Milestones

Tank 241-A-103

M-045-15, Completion of Tank A-103 SST Waste Retrieval, Due: September 30, 2022, Status: On schedule. Change package M-045-11-04 replaced Tank S-102 with Tank A-103 and changed the milestone completion date for M-045-15 to September 30, 2022.

M-045-15A, Embedded Milestone, Submit a Retrieval Data Report Pursuant to Agreement Appendix I, Due: September 30, 2022, Status: On schedule. Updated with Tank A-103 and due date of September 30, 2022, per change package M-045-11-04.

M-045-15D, Embedded Milestone, if appropriate, DOE will request an exception to waste retrieval criteria pursuant to Agreement Appendix H, Due: September 30, 2022, Status: On schedule. Updated with Tank A-103 and due date of September 30, 2022, per change package M-045-11-04.

Significant Past Accomplishments:

- Change package M-045-11-04 was signed by ORP and Ecology on April 19, 2011.

No significant planned activities in the next six months and no issues for Tank 241-A-103.

Tank 241-S-112

M-045-13, Interim Completion of Tank S-112 SST Waste Retrieval and Closure Demonstration Project, Due: To be determined (in accordance with M-045-84 or M-045-85), Status: On schedule.

M-045-13E, Complete Negotiations for Interim Milestones for Closure of S-112, Due: To be determined, Status: On schedule as part of M-045-84 or M-045-85.

Significant Past Accomplishments:

- Ecology letter of January 7, 2008, concurred with ORP that retrieval of Tank S-112 is complete.

No significant planned activities in the next six months and no issues for Tank 241-S-112.