

Office of River Protection



Monthly Reporting Period

April 1–April 30, 2021¹

¹ The narrative descriptions of progress in this report cover the reporting period. Information outside the reporting period may also be included for purposes of providing continuity or useful context. Information may be repeated in multiple sections of this report for continuity and clarity. Earned Value Management System data and descriptions cover the period through March 2021.

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Acronyms and Abbreviations

CD	critical decision
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act</i>
COVID-19	coronavirus disease 2019
CMIP	corrective measures implementation work plan
CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
DST	double-shell tank
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ETF	Effluent Treatment Facility
FY	fiscal year
HFFACO	<i>Hanford Federal Facility Agreement and Consent Order</i> (HFFACO and TPA are used interchangeably throughout this report)
IQRPE	independent, qualified, registered, professional engineer
LERF	Liquid Effluent Retention Facility
MCS	Monitoring and Control System
ORP	U.S. Department of Energy, Office of River Protection
PMR	Permit Modification Request
RCRA	<i>Resource Conservation and Recovery Act</i>
SST	single-shell tank
SV	schedule variance
TPA	Tri-Party Agreement
TSCR	Tank-Side Cesium Removal
UV/OX	Ultraviolet/Oxidation
WMA	waste management area
WTP	Waste Treatment and Immobilization Plant

Administrative Items/Milestone Status

Milestone	Title	Due Date	DOE PM	Status
Prior Years				
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan	04/30/2015	B. Harkins	In Dispute
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection	04/30/2015	B. Harkins	In Dispute
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones	04/30/2015	B. Harkins	In Dispute
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment	04/30/2016	B. Harkins	In Dispute
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements	04/30/2018	B. Harkins	In Dispute
M-045-59	Control Surface Water Infiltration Pathways as Needed	TBD ^a	B. Harkins	On Schedule
M-045-62	Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C	TBD ^a	B. Harkins	On Schedule
M-045-83	Complete the Closure of WMA-C by Completing Closure Activities Specified in the Tier 2 Closure Plan	TBD ^a	B. Harkins	On Schedule
Fiscal Year 2021 (October 1, 2020 – September 30, 2021)				
M-045-92AD	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities	10/31/2020	B. Harkins	Complete
M-062-40H	Submit System Plan to Ecology	11/13/2020 ^b	M. Irwin	Complete
M-062-50	Submit to Ecology as a Secondary Document, a Mass Balance Flow	01/30/2021	B. Harkins	Complete

Milestone	Title	Due Date	DOE PM	Status
M-062-01AP	Submit Semi-Annual Project Compliance Report to Ecology	01/31/2021	G. Trenchard	Complete
M-090-14	Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW	3/31/2021	B. Harkins	Complete
M-062-45-A	Complete Negotiations 6-Months After Last Issuance of System Plan	4/30/2021	B. Harkins	In Dispute
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements	4/30/2021	B. Harkins	In Dispute
M-062-01AQ	Submit Semi-Annual Project Compliance Report to Ecology	07/31/2021	G. Trenchard	On Schedule
M-045-56Q	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	07/31/2021	B. Harkins	On Schedule
M-045-91E4	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology	09/30/2021	B. Harkins	On Schedule
M-045-97	Submit to Ecology a WMA Integration Study for WMA A/AX as a Primary Document	09/30/2021	B. Harkins	On Schedule
Fiscal Year 2022 (October 1, 2021 – September 30, 2022)				
M-045-92Y	Complete Construction of Barrier 3 in 241-TX Farm	10/31/2021	B. Harkins	On Schedule
M-045-92Z	Submit to Ecology Design for Barrier 4 in 241-U Farm	10/31/2021	B. Harkins	On Schedule
M-045-92AE	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities	10/31/2021	B. Harkins	On Schedule
M-062-45-XX	Complete Negotiations to Resolve Future Disputes M-062-45 Paragraphs 4 & 5	12/31/2021	B. Harkins	On Schedule
M-062-51-T01	Submit to Ecology, as a Primary Document, a Secondary Liquid Waste Disposition Work Plan	12/31/2021	B. Harkins	On Schedule

Milestone	Title	Due Date	DOE PM	Status
M-062-52-T01	Submit to Ecology, as a Primary Document, a Secondary Solid Waste Disposition Work Plan	12/31/2021	B. Harkins	On Schedule
M-045-85	Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs	1/31/2022	B. Harkins	On Schedule
M-045-92AA	Barrier 4 Design Approved by Ecology	1/31/2022	B. Harkins	On Schedule
M-062-01AR	Submit Semi-Annual Project Compliance Report to Ecology	1/31/2022	B. Trimberger	On Schedule
M-062-53A	Achieve Substantial Completion of EMF Construction	4/30/2022	W. Abdul	On Schedule
M-062-51-T02	Submit to Ecology, PMR for Redesign Upgrades and Ops to Support Volumes of Waste Types	5/15/2022	B. Harkins	On Schedule
M-062-52-T02	Submit to Ecology, PMR for Ancillary Facilities/Capabilities to Support Treatment of Secondary Waste	5/15/2022	B. Harkins	On Schedule
M-045-56R	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)	7/31/2022	B. Harkins	On Schedule
M-062-01AS	Submit Semi-Annual Project Compliance Report to Ecology	7/31/2022	B. Trimberger	On Schedule
M-045-15	Completion of Tank A-103 SST Waste Retrieval	9/30/2022	B. Harkins	On Schedule
M-045-98	Submit to Ecology a RFI/CMS Work Plan for WMA A/AX as a Primary Document	9/30/2022	B. Harkins	On Schedule
M-045-102	Submit to Ecology a Performance Assessment Maintenance Plan for the WMA A/AX PA	9/30/2022	B. Harkins	On Schedule
M-045-15A	Submit a Retrieval Data Report Pursuant to Agreement Appendix I	9/30/2022	B. Harkins	On Schedule

Milestone	Title	Due Date	DOE PM	Status
M-045-15D	Submit, if appropriate, an exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H	9/30/2022	B. Harkins	On Schedule

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

^b DOE and Ecology agreed to an extension until November 13, 2020, for submission of System Plan Rev. 9.

CD = critical decision

CMIP = corrective measures implementation work plan

DFLAW = direct-feed low-activity waste

DOE = U.S. Department of Energy

Ecology = Washington State Department of Ecology

HFFACO = *Hanford Federal Facility Agreement and Consent Order*

Mod = modification

PM = project manager

RCRA = *Resource Conservation and Recovery Act*

SST = single-shell tank

TBD = to be determined

TSCR = Tank-Side Cesium Removal

WMA = waste management area

WTP = Waste Treatment and Immobilization Plant

System Plan

Responsible Assistant Manager: Mat Irwin
Technical Lead: Kaylin Burnett
Ecology Project Manager: Dan McDonald, Jeff Lyon

M-062-40H Submit System Plan to Ecology

Due: November 13, 2020²
 Status: Complete

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

Due: April 30, 2021
 Status: In Dispute

Significant Past Accomplishments

- The U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), and Washington State Department of Ecology (Ecology) met in the first mediated session of the “Holistic Negotiations” on June 25, 2020. There were weekly negotiation sessions held in April 2021.
- On January 27, 2021, DOE submitted signed change package M-62-21-01 to Ecology for evaluation to extend the M-62-45 Milestone date 90 days due to “Holistic Negotiations” progress. This change package was not concurred on by Ecology within the 14-day period and therefore went into dispute on February 10, 2021.

Significant Planned Actions in the Next Six Months

- Discuss disputes with regard to Milestone M-062-45 and its associated milestones during “Holistic Negotiations.”

Issues

- Ecology and DOE Office of River Protection (ORP) have ended negotiations related to the M-062-45 Milestone and have initiated dispute. “Holistic Negotiation” mediated sessions began in June 2020 to resolve these disputes.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing Coronavirus Disease 2019 (COVID-19) concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical

² DOE and Ecology agreed to an extension until November 13, 2020, for submission of System Plan, Rev. 9.

operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the Tri-Party Agreement (TPA), and if other actions may be necessary.

Acquisition of New Facilities

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Janet Diediker
Ecology Project Manager: Dan McDonald, Jeff Lyon

M-090-13	CD-1³ for Interim Hanford Storage Project and CR for CD-2 to ECY⁴
Due:	September 30, 2025
Status:	On schedule
M-090-00	Acquire/Modify Facilities for Storage of First Two Years of IHLW⁵ from the WTP⁶ Operations
Due:	December 31, 2036
Status:	On schedule
M-047-00	Completion of Work for Management of Secondary Waste from the WTP
Due:	To be determined
Status:	On schedule

Significant Past Accomplishments

- Completed M-090-14 Milestone, “Submit CD-1 for Facility to Store Spent Ion Exchange Columns Prior to DFLAW⁷.” ORP transmitted letter 20-ECD-0050, “Submittal of CD-1 for Facility to Store Spent Ion Exchange Columns Prior to Direct Feed Low-Activity Waste Tri-Party Agreement Milestone M-090-14,” on October 23, 2020, to Ecology.

Significant Planned Actions in the Next Six Months

- None.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as

³ CD denotes critical decision.

⁴ ECY denotes Washington State Department of Ecology.

⁵ IHLW denotes immobilized high-level waste.

⁶ WTP denotes Waste Treatment and Immobilization Plant.

⁷ DFLAW denotes direct-feed low-activity waste.

implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Supplemental Treatment and Resource Conservation and Recovery Act Part B Permit Applications

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Ricky Bang
Ecology Project Manager: Dan McDonald

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

In Dispute. Ecology and ORP have ended negotiations related to the M-062-45 Milestone and have initiated dispute. Therefore, the status of the milestones below has changed to “In Dispute.”

M-062-45-T01 Complete Negotiations 6-Months after Last Issuance of System Plan
 Due: April 30, 2015

M-062-45-ZZ Negotiate a One-Time Supplemental Treatment Selection
 Due: April 30, 2015

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

M-062-31-T01 Complete Final Design and Submit RCRA⁸ Part B Permit Modification Request for Enhanced WTP & Supplemental Treatment
 Due: April 30, 2016

M-062-32-T01 Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements
 Due: April 30, 2018

M-062-33-T01 Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
 Due: April 30, 2021

M-062-45-XX Complete Negotiations to Resolve Future Disputes M-062-45, Paragraphs 4 and 5
 Due: December 31, 2021
 Status: On schedule

M-062-34-T01 Complete Hot Commissioning of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
 Due: December 30, 2022

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

⁸ RCRA denotes *Resource Conservation and Recovery Act*.

M-062-00 Complete Pretreatment Processing and Vitrification of HLW⁹ and LAW¹⁰ Tank Wastes

Due: December 31, 2047

Status: At risk

Significant Past Accomplishments

- None.

Significant Planned Actions in the Next Six Months

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

Issues

- Ecology and ORP have ended negotiations related to the M-062-45 Milestone and have initiated dispute. “Holistic Negotiation” mediated sessions began in June 2020 to resolve these disputes.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

⁹ HLW denotes high-level waste.

¹⁰ LAW denotes low-activity waste.

Low-Activity Waste Pretreatment System

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Janet Diediker
Ecology Project Manager: Dan McDonald

Significant Past Accomplishments

- Completed M-062-50 Milestone, “Submit to Ecology as a Secondary Document, a Mass Balance Flow.” ORP transmitted letter 20-ECD-0057, “Completion of Tri-Party Agreement Milestone M-062-50,” on December 4, 2020, to Ecology.

Significant Planned Actions in the Next Six Months

- None.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Tank-Side Cesium Removal System

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Janet Diediker
Ecology Project Manager: Dan McDonald

This section only covers the Tank Farms Project scope of the DFLAW mission. Please refer to the Consent Decree monthly report for the WTP project scope pertaining to DFLAW.

Significant Past Accomplishments

- ORP approved the Documented Safety Analysis (DSA) addendum Technical Safety Requirements.
- Completed water run operations with the four rotating shifts.
- Received the initial LAW Pretreatment System RCRA permit from Ecology to support final construction activities. Submitted a follow-up RCRA permit modification to reflect changes to the facility configuration and provided requested facility documentation in preparation for facility startup.
- Completed backfill for SN-637/700 near ICD-30/31. Completed electrical tie-ins for the Tank-Side Cesium Removal (TSCR) enclosures.
- Completed the TSCR shield wall installation.
- Installed two filter units and three Ion Exchange Columns (IXCs) into the TSCR Enclosure in preparation for water runs.
- IXC base plates were installed for the first 20 spent IXCs.

Significant Planned Actions in the Next Six Months

- Receive Ecology approval of the RCRA permit.
- Complete TSCR construction operations within AP Tank Farm.
- Complete TSCR Operational Acceptance Test.
- A focused emergency management exercise will be performed in June as part of TSCR Readiness activities. Members of Mission Support Alliance, LLC; the contractor; and the DOE Readiness Assessment will observe the exercise.
- Washington River Protection Solutions, LLC will perform the Management Self-Assessment, and Amentum will perform the Contractor Readiness Assessment.
- DOE will conduct the Readiness Assessment of the contractor.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers

reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.

- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

242-A Evaporator Status

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Paul Hernandez
Ecology Project Manager: Jeff Lyon

The 242-A Evaporator campaign strategy is identified in the following table:

Fiscal Year	Campaign No.	Feed Source	Slurry Tank	Comments
TBD	EC-11	N/A	N/A	Per DOE direction, cold runs will not be used to maintain 242-A Evaporator readiness, staff proficiency, and cycle idle equipment while transfer lines are being replaced.

DOE = U.S. Department of Energy
 N/A = not applicable

TBD = to be determined

Significant Past Accomplishments

- Completed work on the resolution of the universal joint potential inadequacy in the Safety Analysis. Universal joint testing was completed, and the vendor has incorporated the new universal joints into the calculations, engineering change notices, and drawings.
- Completed 242-A safety significant air filter drain valve replacement. Completed 242-A Process Crane Electrical inspections. Completed 242-A steam condensate collection tank cleaning.
- Completed development of the 100 percent engineering design revisions for the 242-A Evaporator DSA upgrades.
- Completed wall nozzle fabrication for the 242-A Evaporator slurry and feed transfer line replacement.
- Completed AW-02A pump pit jumper removal for the 242-A Evaporator slurry and feed transfer line replacement.

Significant Planned Actions in the Next Six Months

- Procure new PB-1 and PB-2 replacement pumps.
- Receive 242-A DSA Safety System upgrades procurements.
- Initiate 242-A DSA Safety System upgrades construction phase.
- Initiate 242-A Ventilation Control System upgrades.
- Install new wall nozzle in the AW-02A pit in support of the new 242-A Evaporator slurry line and feed transfer lines.

- Mobilize AW Tank Farm transfer line excavation for the 242-A Evaporator slurry and feed transfer line replacement.
- Install new wall nozzles in the evaporator pump room to support the new 242-A Evaporator slurry and feed transfer lines.
- Remove the old 242-A Evaporator feed pump and install a new one in the AW-02E pit.
- Begin excavation between the AW-02A and AW-B pits for the 242-A Evaporator slurry and feed transfer line replacement.

Issues

- Initial testing revealed an issue with the original universal joints on the actuators used to drive the tank farm double isolation valves. A potential inadequacy in the Safety Analysis was written. Testing of different universal joints was completed, and the vendor has incorporated the new universal joints into the calculations, engineering change notices, and drawings.
- Following universal joint determination, 92 universal joints/actuators will need to be replaced. Project team and facility operations personnel are initiating phased planning of replacement to support tank transfer operations.
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Richard Valle
Ecology Project Manager: John Temple, Dan McDonald (for milestones)

M-062-51-T01 Submit to Ecology, as a Primary Document for Approval a Secondary Liquid Waste Disposition Work Plan

Due: December 31, 2021
 Status: On schedule

M-062-51-T02 Submit Permit Modification Request for Redesign Upgrades And Operations to Support Volumes of Waste Types Expected

Due: May 15, 2022
 Status: On schedule

M-062-51 Achieve Substantial Completion of LERF¹¹/ETF¹² Construction Upgrades Necessary for LAW Hot Commissioning

Due: April 15, 2023
 Status: On schedule

Significant Past Accomplishments

- Total fiscal year (FY) 2021 processing volume: approximately 3.2 million gallons.
- Completed LERF Basin 44 cover cleaning activities in support of Basin 44 cover replacement.
- Continued fieldwork for the ETF Monitoring and Control System (MCS) upgrade.
- Continued fieldwork for the ETF Ultraviolet/Oxidation (UV/OX) upgrade.
- Continued site mobilization of the construction subcontractor for the LERF Basin 41 installation.
- Began conceptual design of the ETF modular grout system.
- Completed conceptual design of the ETF brine storage tanks.
- Completed preliminary design of the ETF carbon dioxide membrane contactors.
- Completed preliminary design of the ETF motor control center upgrade.
- Completed preliminary design of the ETF freeze protection upgrade.
- Completed preliminary design of the ETF chiller addition.
- Completed conceptual design of the ETF instrument air system.

¹¹ LERF denotes Liquid Effluent Retention Facility.

¹² ETF denotes Effluent Treatment Facility.

Significant Planned Actions in the Next Six Months

- Complete replacement of the LERF Basin 44 cover to address the degraded condition.
- Complete the FY 2021 portion of the ETF MCS upgrade, as it is currently operating on outdated systems. This includes the ETF main treatment train, secondary treatment train, and local control units 15 and 17.
- Complete the ETF UV/OX upgrade, as the current system is no longer supported by the manufacturer.
- Complete LERF Basin 41 site preparation activities and begin construction fieldwork.
- Complete procurement and continue fabrications of the ETF supplemental organic treatment (i.e. steam stripping) system to provide the capability to treat the WTP DFLAW effluent.
- Complete design of the ETF modular grout system to provide the onsite capability to stabilize the WTP DFLAW effluent.
- Complete design of the ETF brine storage tanks to provide added capacity to manage the WTP DFLAW effluent.
- Complete design of the ETF carbon dioxide membrane upgrade to provide the capability to treat the WTP DFLAW effluent.
- Complete design of the ETF motor control center upgrade to address the deficient condition and provide additional capability for ongoing upgrade projects.
- Complete design of the ETF freeze protection upgrade, as systems have become degraded and many replacement parts are considered obsolete.
- Complete design of the ETF instrument air upgrade to provide added capability to manage the WTP DFLAW effluent.
- Complete design of the ETF Chiller addition to provide added capability to manage the WTP DFLAW effluent.
- Continue procurements and fabrications for the ETF MCS, UV/OX, redundant filtration, carbon dioxide membrane, freeze protection, instrument air, vessel off-gas system, 2025ED Load-In Station expansion, and chiller addition upgrade projects.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as

implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.

- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Liquid Effluent Retention Facility Volumes

LERF liquid levels, inventory, and received waste are shown in the table below. Volumes in the table are estimated.¹³

Description	242AL-42 (Basin 42)	242AL-43 (Basin 43)	242AL-44 ^b (Basin 44)
AZ-301 Condensate	-	+ 2,700	-
Mixed Waste Trench 31 and 34	+ 12,100	-	-
Other ^a		-	-
Total Volume	1,162,000	6,526,000	0 ^c

^a [placeholder]

^b LERF Basin 44 was placed out-of-service on January 14, 2021.

^c LERF Basin 44 was emptied to allow for radiological surveys to support cover replacement.

Data Date: May 03, 2021.

Values shown in gallons.

¹³ The volume in each LERF basin is calculated from liquid level sensor readings. Therefore, based on sensor fluctuations and/or environmental effects (e.g., precipitation, temperature), values for basin volumes may vary slightly from the net inputs and outputs shown for the basin.

Tank System Update

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Erik Nelson
Ecology Project Manager: Jeff Lyon, Nina Menard

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

M-045-91E4 Provide SST¹⁴ Farms Dome Deflection Surveys Every 2 Years to Ecology

Due: September 30, 2021
 Status: On schedule

M-045-91K Complete Initial Baseline Visual Inspections of all SSTs

Due: September 30, 2023
 Status: On schedule

M-045-91K-T01 Submit Report of the Initial Baseline Visual Inspection of all SSTs Remaining to be Inspected

Due: March 31, 2024
 Status: On schedule

M-045-91L Obtain Assessment Reviewed/Certified by an IQRPE¹⁵ Attesting to SST Structural Integrity

Due: September 30, 2034
 Status: On schedule

Double-Shell Tank Integrity

Significant Past Accomplishments

- Released RPP-RPT-34311, *Double-Shell Tank Integrity Inspection Report for 241-AY Tank Farm*, in December 2020.
- Completed fieldwork for nine of nine enhanced annulus visual inspections for the following double-shell tanks (DSTs):
 - Tank 241-AP-101.
 - Tank 241-AP-102.
 - Tank 241-AP-103.
 - Tank 241-AP-104.
 - Tank 241-AP-105.
 - Tank 241-AP-106.
 - Tank 241-AP-107.

¹⁴ SST denotes single-shell tank.

¹⁵ IQRPE denotes Independent Qualified Registered Professional Engineer.

- Tank 241-AP-108.
- Tank 241-AY-101.
- Completed ultrasonic testing inspections at Tank 241-AW-105.
- Completed ultrasonic testing inspections at Tank 241-AW-104.
- Completed ultrasonic testing field work at Tank 241-AP-103.
- Completed additional air-slot inspections at Tank 241-AW-104.
- Completed Liquid Air Interface scans at Tank 241-AZ-102.
- Completed Tank 241-AW-106 ultrasonic testing report.
- Completed Tank 241-AW-105 ultrasonic testing report.

Significant Planned Actions in the Next Six Months

- Complete Liquid Air Interface and secondary floor liner scans at Tank 241-AY-101.
- Complete limited ultrasonic testing inspection scans at Tank 241-AP-106.
- Draft ultrasonic testing inspection reports for Tanks 241-AZ-102, 241-AY-101, and 241-AP-106.
- Complete report development for the nine DST annulus visual inspections performed in FY 2021.
- Receive and test Southwest Research Institute Guided Wave inspection system at Pacific Northwest National Laboratory.

Ultrasonic Testing Report Status

- Tank 241-AW-106 ultrasonic testing report was released as RPP-RPT-62764, *Ultrasonic Inspection and Air Slot Visual Inspection Results for Double Shell Tank 241-AW-106 FY 2020*, on February 17, 2021.
- Tank 241-AW-105 ultrasonic testing report was released as RPP-RPT-62939, *Ultrasonic Inspection and Air Slot Visual Inspection Results for Double Shell Tank 241-AW-105 FY 2020*, on March 8, 2021.
- Tank 241-AW-104 ultrasonic testing report draft is complete and is in the review and release process with an expected release by the end of May 2021.
- Tank 241-AP-103 ultrasonic testing report is in the drafting phase with an expected release by June 2021.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers

reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.

- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.
- Two of the annulus Enrafs in Tank 241-AY-102 began giving erratic readings in early 2021. The erratic readings were initially thought to be caused by the Enraf plummets coming into contact with wetted solids, as the liquid in the annulus has been slowly evaporating. The Enrafs were flushed on January 29, 2021, after which the readings resumed normal behavior. A visual inspection of the annulus was performed after the flushing operations, which did not indicate that either Enraf plummet was in contact with wetted solids. As water evaporates from the annulus waste, the waste and inhibiting chemicals are becoming more concentrated. It is assumed that as the waste becomes more concentrated, the rate at which solid waste builds up on the Enraf plummets during operation increases.
- One of the annulus Enrafs in Tank 241-AN-105 alarmed high on February 13, 2021. The indicated level reached approximately 0.77 inches for several hours. The readings then took several more hours to return to their prior level. A visual inspection was performed in the annulus on February 18, 2021, which confirmed the presence of liquid in the annulus under the Enraf that had alarmed. Neither the annulus visual inspection nor a radiation survey of the Enraf plummet suggested that any waste was present in the annulus. It is currently suspected that snowmelt entered the annulus space through an unused pump pit. Investigation into the cause of the intrusion is ongoing. RPP-TE-58709, *Technical Evaluation of the February 2021 AN-105 Annulus Liquid Intrusion*, is being released to document the event and findings.

Single-Shell Tank Integrity

Significant Past Accomplishments

- Performed TFC-ENG-CHEM-P-57, *Intrusion Notification and Tank Leak Assessment Process*, on Tank 241-TX-113.
- Visual inspections were completed for the following single-shell tanks (SSTs):
 - Tank 241-B-106 (completed November 2020).

- Tank 241-B-108 (completed December 2020).
 - Tank 241-BY-112 (completed December 2020).
 - Tank 241-BY-104 (completed January 2021).
 - Tank 241-BY-108 (completed January 2021).
 - Tank 241-AX-104 (completed January 2021).
 - Tank 241-BY-103 (completed February 2021).
 - Tank 241-U-108 (completed March 2021).
 - Tank 241-U-110 (completed March 2021).
 - Tank 241-U-112 (completed March 2021).
 - Tank 241-U-202 (completed March 2021).
 - Tank 241-U-203 (completed March 2021).
 - Tank 241-U-204 (completed March 2021).
 - Tank 241-U-201 (completed April 2021).
 - Tank 241-S-112 (completed April 2021).
- Completed Tank 241-B-109 drywell monitoring and visual inspection in support of the leak assessment.

Significant Planned Actions in the Next Six Months

- Complete report development for the SST integrity visual inspections performed in FY 2021.
- Complete development and release of final Tank SX-112 Extent of Condition report.
- Perform TFC-ENG-CHEM-P-57 on Tank 241-B-109 (in progress).

Issues

- Tank 241-SX-112 was inspected visually in late February 2020. The concrete dome was inspected fully, and there were three spots of spalled concrete in the dome. While there have been past inspections of the tank, they did not include the full dome and this was the first inspection to reflect the spalling. There was no evidence of structural issues; however, the dome loading is being limited to current levels until further analysis is complete. The full analysis may take several months to complete, but a structural analysis contract is in place with Pacific Northwest National Laboratory. Tank 241-SX-112 was inspected visually again in late July. The inspection did not identify any changes in the condition of the spalled locations. Concrete was noted on the waste surface under the spalled locations, suggesting that the spalling took place after 1969 when the tank was pumped and taken out of service. On August 17, 2020, a laser scan of Tank 241-SX-112 was performed to assist with analysis of dome spalling. Tank 241-SX-112 analysis is ongoing.
- Tank 241-SX-109 was inspected visually in late July 2020. Spalled concrete was identified in the northeast portion of the tank dome next to a rectangular construction

manhole. Additional small/shallow spalling locations, similar to those in Tank 241-SX-112, were noted on the tank dome. Concrete was noted on the waste surface, and, comparing to past visual inspections, suggests that the spalling occurred post-1996. In September 2020, a laser scan of Tank 241-SX-109 was also performed to assist with analysis of dome spalling. Tank 241-SX-109 analysis is ongoing.

- Tank 241-SX-108 was inspected visually in early August 2020. Minor spalled concrete was identified on the tank dome.
- Tank 241-SX-111 was inspected visually in mid-August 2020. Spalled/Cracked concrete was identified in various locations on the tank dome. Concrete was noted on the waste surface and, when compared to past visual inspections, suggests that the spalling occurred post-1987. On September 1, 2020, a laser scan of Tank 241-SX-111 was performed. Review of the laser scan results identified a new spalling location since the visual inspection.
- Tank 241-B-109 was visually inspected on February 5, 2021 to support the ongoing Tank 241-B-109 leak assessment. Visual inspection images with interstitial-liquid level data were reviewed by the leak assessment team. Elicitation forms to determine the probability that Tank 241-B-109 has a leak are complete. Drywell monitoring was completed to aid the leak assessment. The visual inspection of Tank 241-S-102 was rescheduled for FY 2022 to accommodate the drywell monitoring. The leak assessment results and recommendation were presented to the Executive Safety Review Board on April 29, 2021. The Executive Safety Review Board concurred with the recommendation to change Tank 241-B-109's status from "sound" to "assumed/active leaker."
- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Independent Qualified Registered Professional Engineer Activities

DST System:

- RPP-RPT-58441, *Double-Shell Tank System Integrity Assessment Report (DSTAR)*, Rev. 1, was completed in 2016.
- The IQRPE recommended the next DST system integrity assessment report be completed in 10 years.

SST System:

- Completed M-045-9II Milestone report RPP-IQRPE-50028, *Single-Shell Tank System Structural Integrity Assessment Report*, in 2018.
- The IQRPE recommended the next SST structural integrity assessment be completed in 16 years. Ecology transmitted letter 19-NWP-009, “*Single-Shell Tank Structural Integrity Assessment, RPP-IQRPE-50028*,” on January 16, 2019. The letter noted Ecology’s agreement with the IQRPE’s 16-year recommendation.

242-A Evaporator:

- Completed RPP-RPT-60098, *242-A Evaporator System Integrity Assessment Report*, Rev. 0, in 2018.
- The IQRPE recommended the next 242-A Evaporator system integrity assessment be completed in 15 years. Ecology transmitted letter 18-NWP-114, “Department of Ecology’s (Ecology’s) Comments on the *242-A Evaporator System Integrity Assessment Report, RPP-RPT-60098, Revision 0*,” on July 19, 2018. The letter noted Ecology’s disagreement with the IQRPE’s 15-year recommendation. The Hanford Sitewide permit, Rev. 8C, currently provides for 242-A Evaporator system integrity assessments at a frequency of 10 years. ORP will continue to comply with the permit condition.

ETF:

- Completed RPP-IQRPE-50043, *Effluent Treatment Facility (ETF) IQRPE Integrity Assessment*, in 2019.
- The IQRPE recommended the next ETF integrity assessment be completed in 10 years.

219-S Tank System:

- Completed RPP-IQRPE-50029, *219-S Integrity Assessment Report*, in February 2020.
- The IQRPE recommended the next 219-S Tank system integrity assessment be completed in 20 years.

In-Tank Characterization and Summary

Tank Farms Assistant Manager: Delmar Noyes

Technical Lead: Erik Nelson

Ecology Project Manager: Jeff Lyon

Reports Completed or Released

For April 2021, the following reports were completed (internal access only) or released (external access):

- Completed:
 - RPP-RPT-60410, *Derivation of Best-Basis Inventory for Tank 241-SX-101 as of April 1, 2021*, Rev. 2.
 - RPP-RPT-58937, *Derivation of Best-Basis Inventory for Tank 241-S-108 as of April 1, 2021*, Rev. 1.
 - RPP-RPT-59461, *Derivation of Best-Basis Inventory for Tank 241-T-102 as of April 1, 2021*, Rev. 1.
 - RPP-PLAN-6460, *Tank 241-AN-101 Grab Sampling and Analysis Plan – Fiscal Year 2021*, Rev. 0.
 - RPP-RPT-62040, *Tank 241-AN-102 Grab Sampling 2019 Final Report*, Rev. 1.
 - HNF-SD-WM-DQO-001, *Data Quality Objectives for Tank Farm Waste Compatibility Program*, Rev. 26.
- Released:
 - HNF-EP-0182, *Waste Tank Summary Report for Month Ending February 28, 2021*, Rev. 398.

Tank Sampling

Significant Past Accomplishments

For April 2021, the following tank sampling was conducted:

- Catch Tank C-301 liquid and solids grab sampling began April 12 and was completed April 20, 2021. Thirteen samples were received at the 222-S Laboratory.
- Completed Tank 241-AN-101 core sampling equipment set-up.

Significant Planned Actions in the Next Six Months

- Complete Tank 241-AX-104 grab sampling in July 2021.
- Complete Tank 241-AN-101 core sampling in July 2021.
- Complete Tank 241-AN-101 grab sampling in July 2021.
- Complete Tank 241-AZ-102 grab sampling in August 2021.

- Complete Tank 241-AY-102A grab sampling in September 2021.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Best-Basis Inventory Updates

Significant Past Accomplishments

- Best-basis inventory updates for the following tanks were completed in April 2021:
 - Tank 241-S-108.
 - Tank 241-SX-101.
 - Tank 241-T-102.

Significant Planned Actions in the Next Month

- Best-basis inventory updates for the following tanks are currently planned to be completed in May 2021:
 - Tank 241-AP-102.
 - Tank 241-AP-105.
 - Tank 241-SX-105.

Issues

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority

of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition, protective of the community, the region, and the environment.

- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Single-Shell Tank Closure Program

Tank Farms Assistant Manager: Delmar Noyes

Technical Lead: Rod Lobos

Ecology Project Manager: Jeff Lyon

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

Due: To be determined. Will be implemented if needed to control or significantly reduce the likelihood of migration of subsurface contamination to groundwater at the SST waste management areas (WMAs) (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 CMIP¹⁶ for WMA-C¹⁷

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-045-92AD Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities

Due: October 31, 2020

Status: Completed October 7, 2020

M-045-97 Submit to Ecology as a Primary Document a Waste Management Area Integration Study for WMA A/AX, as described in HFFACO¹⁸ Appendix I.2.1.1

Due: September 30, 2021

Status: On schedule

M-045-92Y Complete Construction of Barrier 3 in 241-TX Farm

Due: October 31, 2021

Status: On schedule

¹⁶ CMIP denotes corrective measures implementation work plan.

¹⁷ WMA-C denotes C Tank Farm waste management area.

¹⁸ HFFACO denotes *Hanford Federal Facility Agreement and Consent Order*.

- M-045-92Z** **Submit to Ecology Design for Barrier 4 in 241-U Farm**
Due: October 31, 2021
Status: On schedule
- M-045-92AA** **Barrier 4 in 241-U Farm Design Approved by Ecology**
Due: January 31, 2022
Status: On schedule
- M-045-85** **Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs**
Due: January 31, 2022
Status: On schedule
- M-045-98** **Submit to Ecology as a Primary Document an RFI/CMS¹⁹ work plan for WMA A/AX including an implementation schedule in accordance with HFFACO Action Plan Section 11.6**
Due: September 30, 2022
Status: On schedule
- M-045-102** **Submit to Ecology a Performance Assessment Maintenance Plan for WMA A/AX PA**
Due: September 30, 2022
Status: On schedule
- M-045-92AB** **Complete Construction of Barrier 4 in 241-U Farm**
Due: October 31, 2023
Status: On schedule
- M-045-103** **Submit to Ecology a PMR²⁰ with Tier 2 RCRA Closure Plan for WMA A/AX and Schedule for Tier 3 Schedule**
Due: September 30, 2026
Status: On schedule
- M-045-104** **Submit to Ecology as a PMR the Post-Closure Plan for WMA A/AX**
Due: September 30, 2028
Status: On schedule
- M-045-00** **Complete Closure of All SST Farms**
Due: January 31, 2043
Status: At risk. Decision document 2016-005 signed August 22, 2016, requires this milestone to be addressed with the negotiations supporting M-062-45 Milestone.

¹⁹ RFI/CMS denotes *Resource Conservation and Recovery Act* Facility Investigation/Corrective Measure Study.

²⁰ PMR denotes Permit Modification Request.

Significant Past Accomplishments

- Submitted RPP-RPT-62684, *FY 2019 Annual Interim Surface Barrier Monitoring Report*, Rev. 0, to Ecology via letter 20-TF-0095, “The U.S. Department of Energy, Office of River Protection, Transmittal of RPP-RPT-62684, *Fiscal Year 2019 Annual Interim Surface Barrier Monitoring Report*, Rev. 0, to Meet Hanford Federal Facility Agreement and Consent Order Milestone M-045-92AD” on October 7, 2020. This completed the M-045-92AD Milestone.
- Responded to Ecology comments on RPP-RPT-62684 via letter 21-TF-000239, “Response to 20-NWP-199 from the Washington State Department of Ecology,” dated January 20, 2021. Ecology comments had been received via letter 20-NWP-199, “Department of Ecology’s (Ecology) Review Comment Record on the United States Department of Energy – Office of River Protection’s FY2019 Annual Interim Surface Barrier Monitoring Report, RPP-RPT-62684, Revision 0,” dated December 23, 2020.
- Submitted revisions and comment responses to Ecology for RPP-RPT-59389, *Tier 2 Resource Conservation and Recovery Act (RCRA) Closure Action Plan for Waste Management Area C*; RPP-RPT-59390, *Tier 3 Resource Conservation and Recovery Act (RCRA) Component Closure Activity Plan for 241-C-200 Series Tanks*; and RPP-RPT-58858, *Tier 1 Closure Plan Single-Shell Tank System*.
- Continued permitting workshops with Ecology for the SST closure plans in the Hanford Site-wide permit. The workshops are currently being conducted as teleconferences.
- Submitted RPP-ENV-61497, *Preliminary Performance Assessment of Waste Management Area A-AX*, and RPP-ENV-62206, *Analysis of Post-Closure Groundwater Impacts From Hazardous Chemicals in Residual Wastes in Tanks and Ancillary Equipment at Waste Management Area A-AX*, on September 29, 2020, to meet the M-045-99 Milestone.
- Held a data quality objective meeting for defining the WMA A/AX boundary with Ecology and EPA, September 1, 2020. Held two follow-up meetings for defining the WMA A/AX boundary with Ecology on September 16 and November 3, 2020.
- Held a data quality objective sampling meeting for WMA A/AX with Ecology on September 29, 2020.
- Completed liner installation on the TX Evapotranspiration Basin on August 31, 2020.
- Completed the storm water drainage system and stabilization of the Waste Isolation Division site for the TX Evapotranspiration Basin on November 17, 2020.
- Completed hydro seed application for the TX Evapotranspiration Basin on November 18, 2020.
- Issued limited notice to proceed to construction subcontractor for TX Tank Farm Barrier construction on December 15, 2020.
- Began hiring and personnel training for TX Tank Farm Barrier construction on January 4, 2021.

- Completed hiring and personnel training for TX Tank Farm Barrier construction on April 15, 2021.
- Began installation of the change and break trailers for TX Tank Farm Barrier construction on January 20, 2021.
- Completed installation of change and break trailers installations, as well as construction mobilization for TX Tank Farm Barrier construction on March 11, 2021.
- Initiated subgrade modifications for TX Tank Farm Barrier construction on March 10, 2021.
- Completed subgrade modifications on Tanks TX-105 and TX-106 for the TX Tank Farm Barrier construction.
- Began subgrade modifications on Tank TX-109 and grading of slope wall on the east side of the TX Tank Farm.
- Continued fabrication of corrugated metal pipe protective structures.
- Report RPP-RPT-61684, *Maintenance and Performance Monitoring Plan for the Interim Barriers Program*, Rev. 00B, was delivered to Ecology on October 10, 2019, to complete the M-045-92AC Milestone. Submitted RPP-RPT-61684 Rev. 1, to Ecology via letter 20-TF-0069, “The U.S. Department of Energy, Office of River Protection, Transmittal of RPP-RPT-61684, *Maintenance and Performance Monitoring Plan for the Interim Barriers Program*, Rev. 1,” on July 23, 2020. Ecology extended its review of the document until September 18, 2020 (20-NWP-137, “Extension of the Department of Ecology’s [Ecology] Comment Review Period for the *Maintenance and Performance Monitoring Plan*, RPP-RPT-61684, Revision 1, for the Interim Barriers Program”). ORP received Ecology comments on the document on September 18, 2020 (20-NWP-159, “Department of Ecology’s [Ecology] Comments on the United States Department of Energy – Office of River Protection’s [USDOE-ORP] *Maintenance and Performance Monitoring Plan for the Interim Barriers Program* [RPP-RPT-61684, Rev. 1]”). On October 8, 2020, ORP requested an additional 60 days past October 18, 2020, to provide responses to Ecology’s comments on the primary document (20-TF-0101, “Response to 20-NWP-159 from the Washington State Department of Ecology”). On October 9, 2020, Ecology approved ORP’s request for a 60-day extension (20-NWP-164, “Approval of the United States Department of Energy’s 60-day Extension Request for Comment Response on the *Maintenance and Performance Monitoring Plan for the Interim Barriers Program*, RPP-RPT-61684, Rev.1”). On December 1, 2020, DOE submitted to Ecology the updated document via letter 20-TF-0106, “Reissue – The U.S. Department of Energy, Office of River Protection, Transmittal of RPP-RPT-61684, *Maintenance and Performance Monitoring Plan for the Interim Barriers Program*, Rev. 2.” In the Ecology letter dated December 21, 2020 (20-NWP-202, “Extension of the Department of Ecology’s [Ecology] Comment Review Period for the *Maintenance and Performance Monitoring Plan for the Interim Barriers Program*, Revision 2”), Ecology extended their comment review period to February 15, 2020. Ecology approved the document via letter 21-NWP-021, “Approval of *Maintenance and Performance Monitoring Plan for the Interim Barriers Program*, RPP-RPT-61684, Revision 2,” on February 3, 2021.

- Completed direct push activities for WMA A/AX Focus Area 2.

Significant Planned Activities in the Next Six Months

- Resolve Ecology's comments on RPP-RPT-59389, RPP-RPT-59390, and RPP-RPT-58858.
- Release updated TPA Appendix I Performance Assessment documents, incorporating Ecology comments as appropriate for WMA-C.
- Begin direct push activities at T Tank Farm for the T-102 and T-105 Investigation.
- Submit WMA A/AX Integration Study to meet Milestone M-045-97, "Submit to Ecology as a Primary Document, a Waste Management Area Integration Study for WMA A/AX, as described in HFFACO Appendix I.2.1.1."
- Planning meeting for WMA A/AX Data Quality Objective Key Stakeholder meeting scheduled with Ecology for May 10, 2021.
- Complete southeast, southwest, and north subgrade modifications for TX Tank Farm Barrier construction.
- Complete TX Tank Farm Barrier protective structure installation and initiate barrier placement for TX Tank Farm Barrier construction.

Issues

- The boundary of WMA A/AX must be defined in order to complete Milestones M-045-97 and M-045-98. In September 2020, Ecology proposed adding three areas to WMA A/AX: 1) the 244-AR Vault and 241-AR-151 diversion box; 2) the soil in the area around DST AY-102; and 3) an area outside the east of Tank Farm A fence line. Meetings about the boundary for WMA A/AX continued through October 2020 and into November 2020. Work necessary to meet these two milestones has fallen behind schedule as the scope is unresolved and resources are being used to support the evaluation of Ecology's requests. As discussions continue regarding the boundary, the DOE's ability to complete these milestones is impacted. Additionally, if discussions yield the need to add additional areas to the WMA A/AX boundary, the milestones' dates will also be impacted. These impacts will be addressed by DOE proposing new dates for these milestones through a TPA Change Control Form. DOE sent letter 21-TF-000513, "Waste Management Area A-AX Boundary," to Ecology on February 18, 2021, which identified the path forward for the WMA A/AX Boundary.
- The content of the WMA Integration Study was negotiated and agreed upon by DOE, EPA, and the State of Washington, and is captured in Section 2.1.1 of Appendix I of the HFFACO Action Plan. This content had been agreed upon prior to establishment of Milestone M-045-97. Following establishment of Milestone M-045-97, Ecology submitted a five-page annotated outline to DOE for the WMA A/AX Integration Study via letter on September 10, 2020 (20-NWP-154, "Re: Waste Management Area (WMA) A/AX Integration Study Outline"). Although the transmittal letter says the "...outline provides a detailed description of the elements necessary to meet Hanford Facility

Agreement and Consent Order Appendix I requirements,” the outline includes many elements not required under Section 2.1.1 of Appendix I of the HFFACO Action Plan. Some of the elements of Ecology’s annotated outline will not be completed for years. DOE is reviewing Ecology’s annotated outline to determine the schedule impacts that could result if all of the elements were included in the WMA A/AX Integration Study. DOE responded to 20-NWP-154 via letter on February 5, 2021 (21-TF-000357, “U.S. Department of Energy, Office of River Protection Response to Letter 20-NWP-154, “RE: Waste Management Area A/AX Integration Study Outline”) identifying DOE’s path forward to meet Milestone M-045-97.

- Ecology proposed (via an email from Mr. Jeff Lyon on June 17, 2020) to remove the milestone (i.e. M-045-62, “Submit the Draft Tier 3 Closure Plan with Corrective Measures in Phase 2 CMIP for WMA-C”) for submittal of the CMIP, with the intent to install a final closure cap, rather than implement the planned interim barrier. Ecology’s proposal to install the final closure cap before most of the closure activities would be completed at Tank Farms 241-A, 241-AN, 241-AP, 241-AW, 241-AX, 241-AY, and 241-AZ is an issue for the following reasons:
 - Could impact retrievals and tank structural stability.
 - Could cause runoff issues for adjacent tank farms.
 - Is not consistent with the approach analyzed in DOE/EIS-0391, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington*; the record of decision (78 FR 75918, “Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington”); and captured in the approved RPP-RPT-59379, *Waste Management Area C Phase 2 Corrective Measures Study Report*.

DOE plans to develop the CMIP to submit to Ecology and has followed this path since RPP-RPT-59379 was approved in June 2018. DOE understands that the CMIP is the vehicle that Ecology will use to meet its TPA/HFFACO obligations in its role as lead agency, as set forth in paragraph 54 of the HFFACO legal agreement. Paragraph 54 of the HFFACO states:

DOE shall develop and submit its proposed remedial action (or corrective action) alternative following completion and approval of a Remedial Investigation and Feasibility Study (or RCRA Facility Investigation and Corrective Measures Study), in accordance with the requirements and schedules set forth in the Action Plan. If Ecology is the lead regulatory agency, it will recommend the CERCLA²¹ remedial action(s) it deems appropriate to EPA. The EPA Administrator, in consultation with the DOE and Ecology, shall make final selection of the CERCLA remedial action(s), which shall not be subject to dispute.

Notwithstanding Ecology’s forthcoming recommendations and whether they also indicate Ecology’s position that corrective actions are not needed for the dangerous waste constituents, the EPA Administrator has sole authority to make the CERCLA remedial

²¹ CERCLA denotes the *Comprehensive Environmental Response, Compensation, and Liability Act*, 42 USC § 9601 *et seq.*

action decisions. DOE has not received a clearly articulated rationale for any Ecology-proposed change or the process Ecology plans to use to recommend any remedial action(s) to the EPA and to obtain the EPA's selection of remedial action(s). Ecology submitted a revised Change Control Form to establish WMA-C closure milestones to DOE on January 28, 2021 (21-NWP-018, "Re: Waste Management Area C (WMA C) Closure Milestones"). DOE is evaluating Ecology's proposal and developing a response to 21-NWP-018.

- On March 24, 2020, the Hanford Site moved to an essential mission-critical operations posture in recognition of increasing COVID-19 concerns. During this time, the majority of the Hanford Site workforce transitioned to telework, and a limited number of workers reported to the site to perform activities necessary to maintain the site in a safe condition.
- On May 20, 2020, DOE authorized the Hanford Site to move to Phase 1. Hanford Site operations began Phase 1 on May 26, 2020. During Phase 1, essential mission-critical operations were continued and targeted mobilization and low-risk workscope, such as implementation of COVID-19 protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities were added.
- The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that has been performing portable work via telework will generally continue to telework. The majority of the workforce performing nonportable work will return to the site to progress work activities, leveraging established COVID-19 controls.
- DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information, COVID-19 potential impacts on the TPA, and if other actions may be necessary.

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Becky Blackwell
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: No retrieval data reports are currently underway. The next planned retrieval is Tank 241-AX-102.

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

Due: December 31, 2040
Status: At risk. Decision document 2016-005, signed August 22, 2016, requires this milestone be addressed with the negotiations supporting M-062-45 Milestone.

Significant Past Accomplishments

- Refer to the Consent Decree monthly report.

Significant Planned Activities in the Next Six Months

- Refer to the Consent Decree monthly report.

Issues

- Refer to the Consent Decree monthly report.

Tank Operations Contract Overview

Earned Value Data: Fiscal Year 2021

March-2021

Tank Farms ORP-0014 WBS 5 - River Protection Project (in \$000s)										
	BCWS	BCWP	ACWP	SV	CV	SPI	CPI	BAC	EAC	VAC
CM	\$60,039	\$64,476	\$64,635	\$4,436	(\$159)	1.07	1.00			
FYTD	\$265,048	\$323,749	\$327,507	\$58,701	(\$3,758)	1.22	0.99	\$697,358		
CTD	\$6,584,863	\$6,530,646	\$6,463,735	(\$54,217)	\$66,911	0.99	1.01	\$7,017,172	\$6,959,335	\$57,838

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	WBS	=	work breakdown structure

The Earned Value Management System is intended to provide a status of how the contractor is progressing against its monthly planned work (i.e., schedule), and whether it is costing more or less to complete the work than planned. The earned value analysis is not intended to be a measurement of performance against existing TPA milestones.

The project plan is measured by expressing the schedule in terms of dollars spread over the anticipated project duration, and then for each month, determining how much of the planned work was accomplished or “earned,” as measured in equivalent dollars. If more work is accomplished than planned, then the project is ahead of schedule and has a favorable schedule variance (SV). Similarly, if less work is accomplished, the project is behind schedule and has an unfavorable SV. Accomplished work is reported in the month it was completed, which may not be when it was planned. For example, work completed in a month earlier than planned would be reported as a favorable SV for the month in which it was completed, but would be reported as an unfavorable SV in the month it was planned. The end result would be a net zero overall cumulative SV over these months. Likewise, work completed late will recover an earlier reported unfavorable SV.

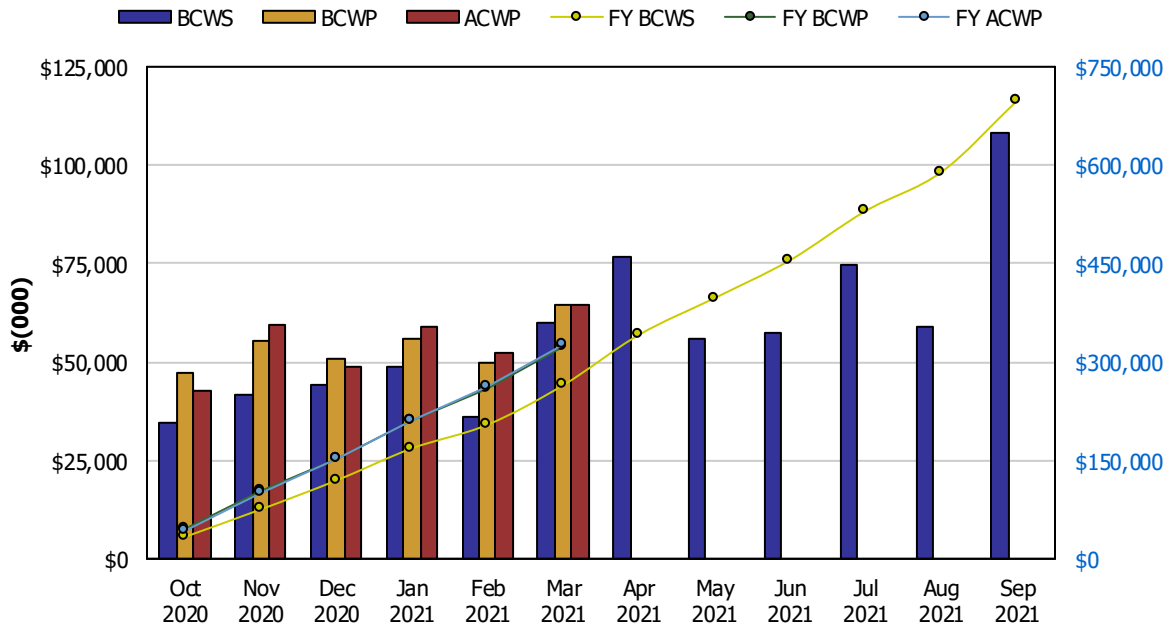
The cost variance (CV) measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 behind schedule [a negative or unfavorable SV: $\$8,000 - \$10,000 = (\$2,000)$], and has cost \$1,000 more [a negative or unfavorable CV: $\$8,000 - \$9,000 = (\$1,000)$] than was planned for completing that work scope. Likewise, a favorable or positive CV would be reported if it cost less to complete the work than the performed dollar value of the work. The SV and CV are reported for each monthly period, fiscal-year-to-date, as well as for the contract-to-date value. The monthly variances can fluctuate significantly (for reasons noted earlier), so the 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 2021

March-2021

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 2020	\$34,722	\$47,321	\$42,535	1.36	1.11	\$34,722	\$47,321	\$42,535	1.36	1.11
Nov 2020	\$41,528	\$55,244	\$59,604	1.33	0.93	\$76,250	\$102,565	\$102,139	1.35	1.00
Dec 2020	\$44,063	\$50,761	\$49,044	1.15	1.04	\$120,313	\$153,326	\$151,183	1.27	1.01
Jan 2021	\$48,724	\$55,964	\$59,102	1.15	0.95	\$169,037	\$209,291	\$210,285	1.24	1.00
Feb 2021	\$35,972	\$49,983	\$52,587	1.39	0.95	\$205,009	\$259,273	\$262,872	1.26	0.99
Mar 2021	\$60,039	\$64,476	\$64,635	1.07	1.00	\$265,048	\$323,749	\$327,507	1.22	0.99
Apr 2021	\$76,576					\$341,624				
May 2021	\$55,936					\$397,560				
Jun 2021	\$57,606					\$455,166				
Jul 2021	\$74,922					\$530,088				
Aug 2021	\$58,959					\$589,046				
Sep 2021	\$108,311					\$697,358				

CTD	\$6,584,863	\$6,530,646	\$6,463,735	0.99	1.01
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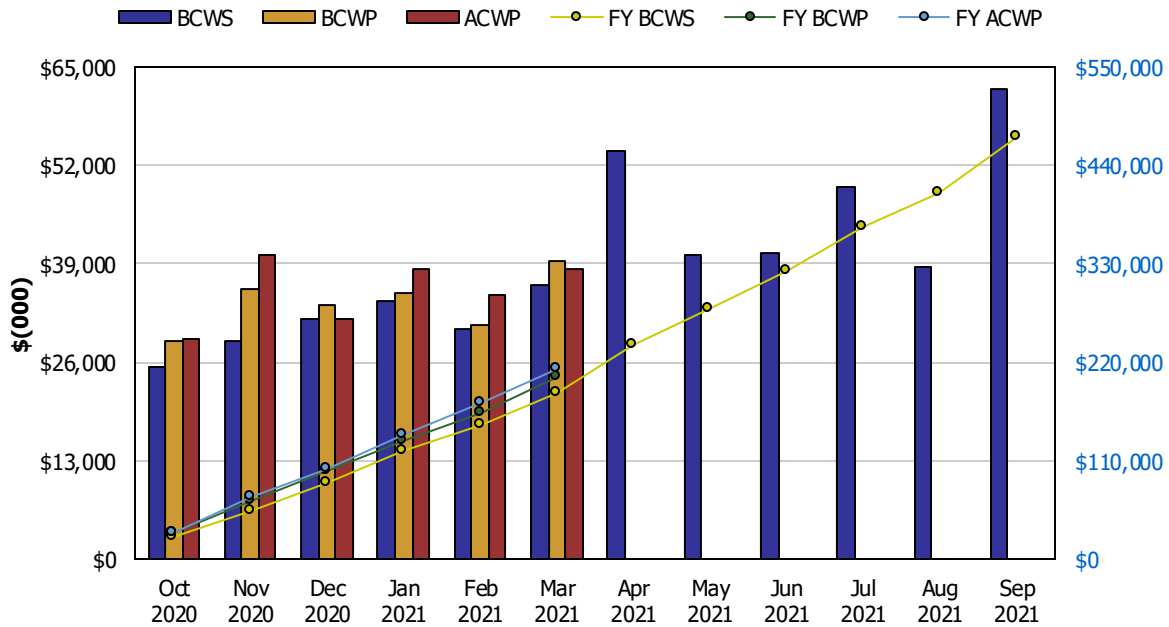
- ACWP = actual cost of work performed
- BCWP = budgeted cost of work performed
- BCWS = budgeted cost of work scheduled
- CPI = cost performance index
- CM = current month
- CTD = contract to date
- FY = fiscal year
- SPI = schedule performance index

Earned Value Data: Fiscal Year 2021

March-2021

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 2020	\$25,298	\$28,696	\$29,098	1.13	0.99	\$25,298	\$28,696	\$29,098	1.13	0.99
Nov 2020	\$28,824	\$35,687	\$40,259	1.24	0.89	\$54,123	\$64,383	\$69,358	1.19	0.93
Dec 2020	\$31,608	\$33,430	\$31,814	1.06	1.05	\$85,730	\$97,813	\$101,172	1.14	0.97
Jan 2021	\$34,177	\$35,141	\$38,270	1.03	0.92	\$119,907	\$132,954	\$139,442	1.11	0.95
Feb 2021	\$30,283	\$30,790	\$34,840	1.02	0.88	\$150,190	\$163,744	\$174,282	1.09	0.94
Mar 2021	\$36,185	\$39,317	\$38,385	1.09	1.02	\$186,375	\$203,061	\$212,667	1.09	0.95
Apr 2021	\$53,989					\$240,364				
May 2021	\$40,189					\$280,552				
Jun 2021	\$40,532					\$321,085				
Jul 2021	\$49,219					\$370,304				
Aug 2021	\$38,682					\$408,986				
Sep 2021	\$61,998					\$470,984				

CTD	\$4,372,154	\$4,339,166	\$4,267,539	0.99	1.02
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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
- CM = current month
- CTD = contract to date
- FY = fiscal year
- SPI = schedule performance index

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Ricky Bang

5.01 – Base Operations

The March 2021 variances below do not impact TPA milestones.

The current month **favorable** SV of \$3,131,832 was primarily due to:

- Schedule recovery related to the 242-A transfer line replacement; specifically, the removal of equipment and the installation of the AW-B, 242-A, and AW-02E wall nozzles. Field crews were able to complete pit work that was previously scheduled to be completed in prior periods.
- Schedule recovery related to the TSCR IXC Procurement. Also, the vendor continued schedule recovery with progress of the final data package scope that was planned to be completed in a previous period.

The current month **favorable** CV of \$931,683 was primarily due to:

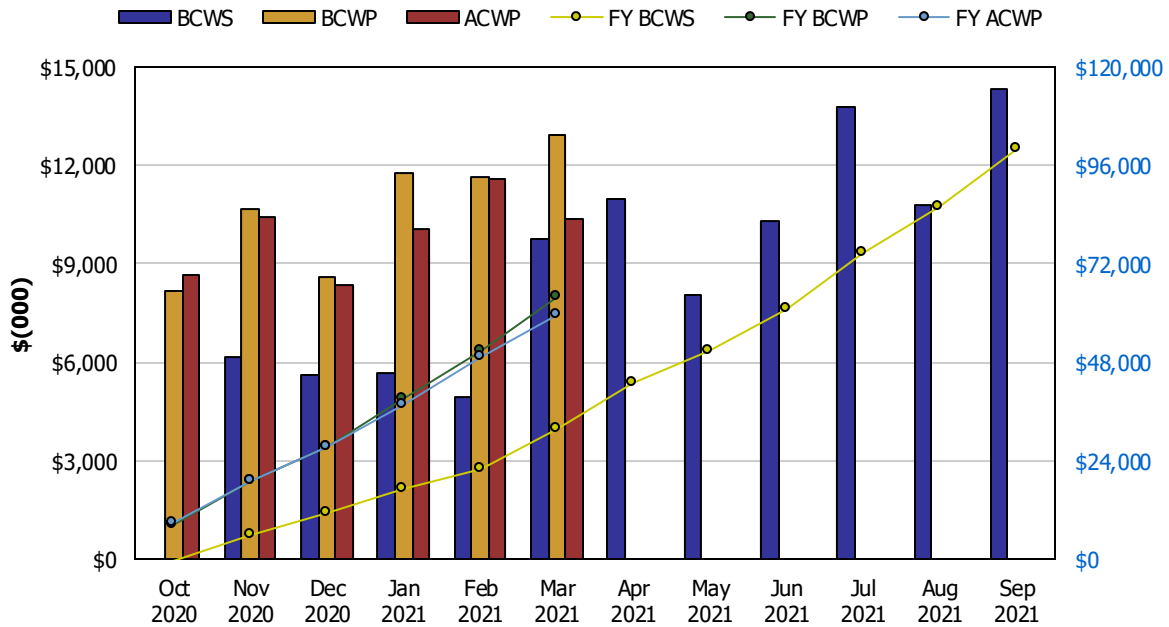
- For the WTP Support, the positive CV was due to invoices not being costed when expected. It was expected that the previous two period invoices would cost at the end of this period, but they did not. As a result, the two previous periods' accrual amounts were not re-accrued. The next period will reflect the costing from the earlier period invoices.
- A positive CV to this level of effort account was due to less waste processing during the period than originally planned. Less resources and material were required during the current period.
- Offsetting the period with a negative CV were design changes supporting the Multi-Craft Maintenance Facility.

Earned Value Data: Fiscal Year 2021

March-2021

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 2020	(\$362)	\$8,176	\$8,653	-22.56	0.94	(\$362)	\$8,176	\$8,653	-22.56	0.94
Nov 2020	\$6,177	\$10,692	\$10,435	1.73	1.02	\$5,815	\$18,867	\$19,088	3.24	0.99
Dec 2020	\$5,605	\$8,581	\$8,335	1.53	1.03	\$11,419	\$27,448	\$27,423	2.40	1.00
Jan 2021	\$5,647	\$11,788	\$10,078	2.09	1.17	\$17,066	\$39,236	\$37,501	2.30	1.05
Feb 2021	\$4,925	\$11,619	\$11,594	2.36	1.00	\$21,991	\$50,855	\$49,094	2.31	1.04
Mar 2021	\$9,764	\$12,911	\$10,381	1.32	1.24	\$31,755	\$63,766	\$59,475	2.01	1.07
Apr 2021	\$10,948					\$42,702				
May 2021	\$8,075					\$50,777				
Jun 2021	\$10,290					\$61,066				
Jul 2021	\$13,753					\$74,819				
Aug 2021	\$10,813					\$85,632				
Sep 2021	\$14,338					\$99,970				

CTD	\$1,249,565	\$1,239,973	\$1,290,737	0.99	0.96
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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
- CM = current month
- CTD = contract to date
- FY = fiscal year
- SPI = schedule performance index

Tank Farms Assistant Manager: Delmar Noyes
Technical Lead: Becky Blackwell

5.02 – Retrieve and Close Single-Shell Tanks

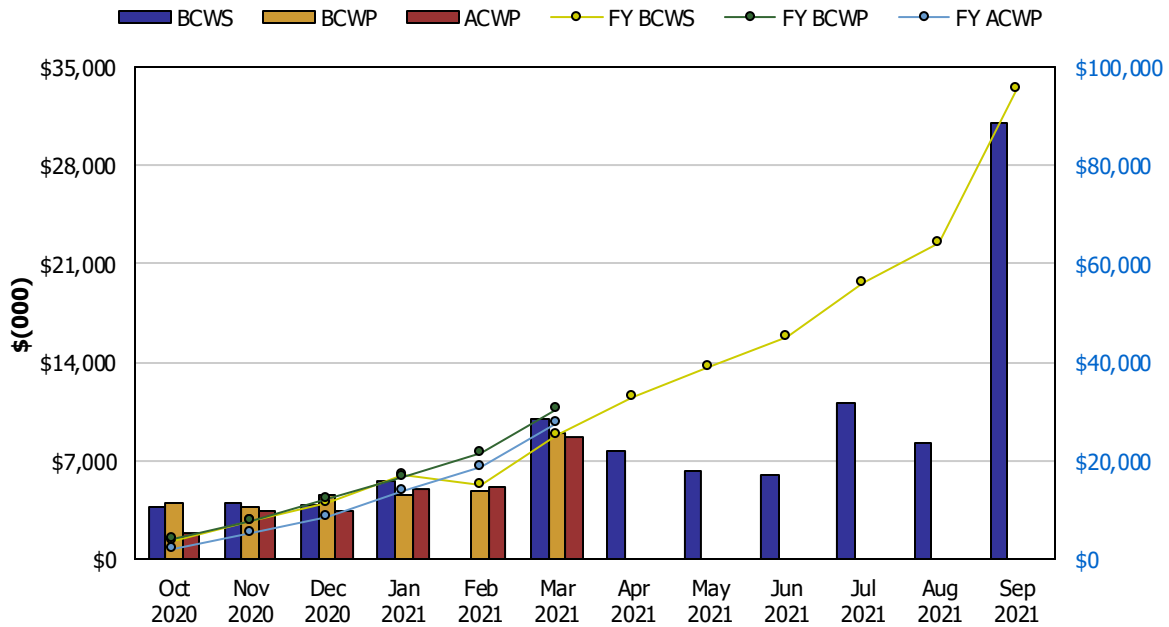
For the retrieval portion, see the Consent Decree monthly report for cost and schedule status.

Earned Value Data: Fiscal Year 2021

March-2021

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

EVMS Monthly and Fiscal Year Values



Earned Value Month

Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2020	\$3,681	\$3,941	\$1,894	1.07	2.08	\$3,681	\$3,941	\$1,894	1.07	2.08
Nov 2020	\$4,020	\$3,738	\$3,418	0.93	1.09	\$7,701	\$7,679	\$5,312	1.00	1.45
Dec 2020	\$3,905	\$4,496	\$3,380	1.15	1.33	\$11,606	\$12,175	\$8,692	1.05	1.40
Jan 2021	\$5,597	\$4,594	\$4,988	0.82	0.92	\$17,202	\$16,769	\$13,680	0.97	1.23
Feb 2021	(\$2,139)	\$4,822	\$5,144	-2.25	0.94	\$15,063	\$21,590	\$18,824	1.43	1.15
Mar 2021	\$9,994	\$8,998	\$8,723	0.90	1.03	\$25,057	\$30,588	\$27,547	1.22	1.11
Apr 2021	\$7,756					\$32,813				
May 2021	\$6,220					\$39,033				
Jun 2021	\$6,000					\$45,033				
Jul 2021	\$11,087					\$56,121				
Aug 2021	\$8,297					\$64,418				
Sep 2021	\$31,046					\$95,464				

CTD	\$679,931	\$674,841	\$624,386	0.99	1.08
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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
- CM = current month
- CTD = contract to date
- FY = fiscal year
- SPI = schedule performance index

Tank Farms Assistant Manager: Delmar Noyes
Federal Program Manager: Brian Harkins

5.03 – Waste Feed Delivery/Treatment

The March 2021 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$995,814) was primarily due to:

- Supporting Waste Feed Delivery technology, the negative SV was due to delays in the contract awards. The delays were due to changes to the statement of work and the restructuring of the contract deliverables.

The current month **favorable** CV of \$274,742 was primarily due to:

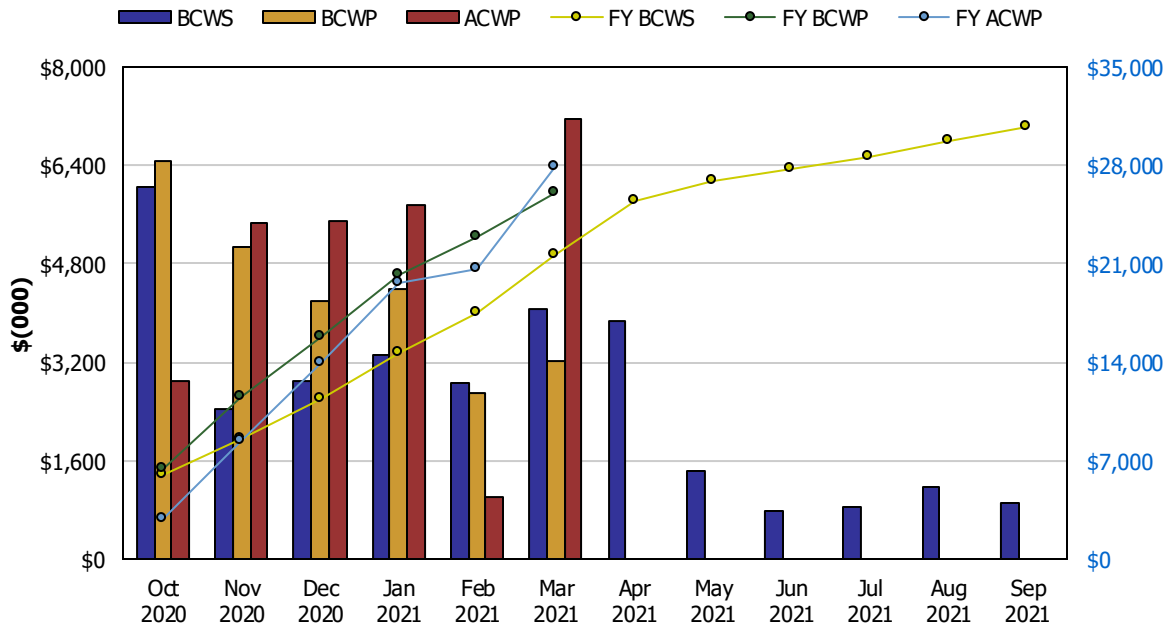
- Supporting the Solid Secondary Waste Stream Technology Material (related to DFLAW), a positive CV was due to a reversal of an incorrect accrual from the previous period.
- In support of the Integrated Disposal Facility Glass Testing, a negative CV was due to higher subcontract usage related to the modeling development of analysis results, simulation runs, and calculation packages associated with the Immobilized LAW Glass Testing scope.

Earned Value Data: Fiscal Year 2021

March-2021

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 2020	\$6,053	\$6,465	\$2,900	1.07	2.23	\$6,053	\$6,465	\$2,900	1.07	2.23
Nov 2020	\$2,441	\$5,073	\$5,471	2.08	0.93	\$8,494	\$11,538	\$8,371	1.36	1.38
Dec 2020	\$2,890	\$4,207	\$5,511	1.46	0.76	\$11,384	\$15,745	\$13,882	1.38	1.13
Jan 2021	\$3,313	\$4,391	\$5,762	1.33	0.76	\$14,697	\$20,136	\$19,645	1.37	1.03
Feb 2021	\$2,851	\$2,710	\$1,003	0.95	2.70	\$17,548	\$22,845	\$20,648	1.30	1.11
Mar 2021	\$4,079	\$3,221	\$7,163	0.79	0.45	\$21,628	\$26,066	\$27,811	1.21	0.94
Apr 2021	\$3,874					\$25,502				
May 2021	\$1,446					\$26,947				
Jun 2021	\$777					\$27,725				
Jul 2021	\$854					\$28,579				
Aug 2021	\$1,159					\$29,738				
Sep 2021	\$918					\$30,655				

CTD	\$259,552	\$253,064	\$259,510	0.98	0.98
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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
- CM = current month
- CTD = contract to date
- FY = fiscal year
- SPI = schedule performance index

Tank Farms Assistant Manager: Delmar Noyes
Federal Program Manager: Brian Harkins

5.05 – Treat Waste

The March 2021 variances below do not impact TPA milestones.

The current month **unfavorable** SV of (\$858,600) was primarily due to:

- Installations of the SN-637 secondary clamshells at the AP Tank Farm, planned for March, were delayed by unexpected field conditions that required design modifications before work could be completed.
- Delays experienced with the initiation of the Operational Acceptance Test and Operational Acceptance Test operator proficiency demonstration activities that were planned in March.

The current month **unfavorable** CV of (\$3,942,000) was primarily due to:

- Accrual correction of subcontract costs, that were missed in February accruals, for COVID-19 cost impacts incurred by the construction subcontractor in FY 2020.
- Project Support (i.e., Project Management, Project Controls, Administrative, etc.) exceeded the levels planned and budgeted for due to COVID-19 impacts.

Table 1 Administrative Record Metadata

Milestone Number or Facility Identification	Title
M-045-102	Submit to Ecology a Performance Assessment Maintenance Plan for the WMA A/AX PA
M-045-15	Completion of Tank A-103 SST Waste Retrieval
M-045-15A	Submit a Retrieval Data Report Pursuant to Agreement Appendix I
M-045-15D	Exception to Waste Retrieval Criteria Pursuant to Agreement Appendix H
M-045-56Q	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)
M-045-56R	Ecology and DOE Agree, at a Minimum, to Meet Yearly (by July)
M-045-85	Initiate Negotiations of HFFACO Interim Milestones for Closure of Remaining WMAs
M-045-91E4	Provide SST Farms Dome Deflection Surveys Every 2 Years to Ecology
M-045-92AA	Barrier 4 Design Approved by Ecology
M-045-92AE	Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities
M-045-92Y	Complete Construction of Barrier 3 in 241-TX Farm
M-045-92Z	Submit to Ecology Design for Barrier 4 in 241-U Farm
M-045-97	Submit to Ecology a WMA Integration Study for WMA A/AX as a Primary Document
M-045-98	Submit to Ecology a RFI/CMS Work Plan for WMA A/AX as a Primary Document
M-062-01AQ	Submit Semi-Annual Project Compliance Report to Ecology
M-062-31-T01	Complete Final Design & Submit RCRA Part B Permit Mod Request for Enhanced WTP & Supplemental Treatment
M-062-32-T01	Start Construction of Supplemental Vitrification Facility and/or WTP Enhancements
M-062-33-T01	Complete Construction of Supplemental Treatment Vitrification Facility and/or WTP Enhancements
M-062-45	Complete Negotiations 6-Months After Last Issuance of System Plan
M-062-45-A	Complete Negotiations 6-Months After Last Issuance of System Plan
M-062-45-T01	Complete Negotiations 6-Months After Last Issuance of System Plan
M-062-45-XX	Complete Negotiations to Resolve Future Disputes M-062-45 Paragraphs 4 & 5
M-062-45-ZZ	Negotiate a One-Time Supplemental Treatment Selection
M-062-45-ZZ-A	Convert M-062-31-T01 through M-062-34-T01 to Interim Milestones

Milestone Number or Facility Identification	Title
M-062-51-T01	Submit to Ecology, as a Primary Document, a Secondary Liquid Waste Disposition Work Plan
M-062-51-T02	Submit to Ecology, PMR for Redesign Upgrades and Ops to Support Volumes of Waste Types
M-062-52-T01	Submit to Ecology, a Secondary Solid Waste Disposition Work Plan as a Primary Document
M-062-52-T02	Submit to Ecology, PMR for Ancillary Facilities/Capabilities to Support Treatment of Secondary Waste
M-062-53A	Achieve Substantial Completion of EMF Construction
S-2-3	Double-Shell Tank System (DST)
S-2-4	Single-Shell Tank System (SST)
S-2-8	Liquid Effluent Retention Facility (LERF)
T-2-6	242-A Evaporator
T-2-8	Effluent Treatment Facility (ETF)
TS-2-8	Low-Activity Waste Pretreatment System (LAWPS)

CD	=	critical decision	PMR	=	Permit Modification Request
DFLAW	=	direct-feed low-activity waste	RCRA	=	<i>Resource Conservation and Recovery Act</i>
DOE	=	U.S. Department of Energy			
Ecology	=	Washington State Department of Ecology	SST	=	single-shell tank
EMF	=	Effluent Management Facility	TSCR	=	tank-side cesium removal
HFFACO	=	<i>Hanford Federal Facility Agreement and Consent Order</i>	WMA	=	waste management area
			WTP	=	Waste Treatment and Immobilization Plant