

Office of River Protection Consent Decree Monthly Report

Monthly Reporting Period February 1–February 29, 2020¹

Consent Decree, *State of Washington v. Dept. of Energy*,
No: 08-5085-FVS (October 25, 2010)

Amended Consent Decree, *State of Washington v. Dept. of Energy*,
No: 2:08-CV-5085-RMP (March 11, 2016)

Second Amended Consent Decree, *State of Washington v. Dept. of Energy*,
No: 2:08-CV-5085-RMP (April 12, 2016)

Third Amended Consent Decree, *State of Washington v. Dept. of Energy*,
No: 2:08-CV-5085-RMP (October 12, 2018)²

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 January 2020.

² The consent decrees listed above are between the State of Washington and U.S. Department of Energy. For the first three of these decrees, there are similar separate decrees with the State of Oregon.

<u>TOPIC</u>	<u>PAGE</u>
ACRONYMS AND ABBREVIATIONS	2
CONSENT DECREE MILESTONE STATISTICS/STATUS	3
CONSENT DECREE REPORTS/REVIEWS	5
SINGLE-SHELL TANK RETRIEVAL PROGRAM	6
TANK WASTE RETRIEVAL WORK PLAN STATUS.....	10
WASTE TREATMENT AND IMMOBILIZATION PLANT PROJECT	13
PRETREATMENT FACILITY	19
HIGH-LEVEL WASTE FACILITY.....	22
LOW-ACTIVITY WASTE FACILITY	25
BALANCE OF FACILITIES	28
ANALYTICAL LABORATORY	30
WASTE TREATMENT PLANT PROJECT PERCENT COMPLETE STATUS (TABLE)	32
TABLE 1 ADMINISTRATIVE RECORD METADATA.....	33

Acronyms and Abbreviations

AoA	analysis of alternatives
BNI	Bechtel National, Inc.
BOF	Balance of Facilities
CV	cost variance
DFLAW	direct-feed low-activity waste
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	Effluent Management Facility
FY	fiscal year
HLW	High-Level Waste (Facility)
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LBL	Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory
ORP	U.S. Department of Energy, Office of River Protection
PPR	Project Peer Review
PT	Pretreatment (Facility)
SV	schedule variance
WTP	Waste Treatment and Immobilization Plant

Consent Decree Milestone Statistics/Status

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2021				
D-00A-07 Interim	LAW Facility Construction Substantially Complete	12/31/2020		On Schedule
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least 5	06/30/2021 ¹		On Schedule
Fiscal Year 2023				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		On Schedule
Fiscal Year 2024				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		On Schedule
Fiscal Year 2026				
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106. AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly	09/30/2026 ¹		Under Analysis ²
Fiscal Year 2031				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		At Risk ³
Fiscal Year 2032				
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-O0001A/1B	12/31/2031		At Risk ³
D-00A-14 Interim	PT Facility Construction Substantially Complete	12/31/2031		At Risk ³
D-00A-19 Interim	Complete Elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2031		At Risk ³
D-00A-03 Interim	Start HLW Facility Cold Commissioning	06/30/2032		At Risk ³

Milestone	Title	Due Date	Completion Date	Status
D-00A-06 Interim	Complete Methods Validations	06/30/2032		On Schedule
Fiscal Year 2033				
D-00A-15 Interim	Start PT Facility Cold Commissioning	12/31/2032		At Risk ³
Fiscal Year 2034				
D-00A-04 Interim	HLW Facility Hot Commissioning Complete	12/31/2033		At Risk ³
D-00A-16 Interim	PT Facility Hot Commissioning Complete	12/31/2033		At Risk ³
D-00A-17	Hot Start of WTP	12/31/2033		At Risk ³
Fiscal Year 2037				
D-00A-01	Achieve Initial Plant Operations for the WTP	12/31/2036		At Risk ³

¹ Third Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (October 12, 2018).

² As discussed in the joint motion to amend the Consent Decree filed on October 1, 2018, DOE is engaged in ongoing analysis of non-vapors-related retrieval challenges and tank condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone). These issues are under analysis, and could require issuance of a “serious risk” notice or another request for amendment of the Consent Decree (including the B-2 Milestone). DOE met with Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of tanks A-104 and A-105. Since August 2018, DOE has had several discussions with Ecology on this topic.

³ 19-ORP-0007, 2019, “Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085).”

DOE = U.S. Department of Energy.

PT = pretreatment.

Ecology = Washington State Department of Ecology.

SST = single-shell tank.

HLW = high-level waste.

WTP = Waste Treatment and Immobilization Plant.

LAW = low-activity waste.

Consent Decree Reports/Reviews

D-16C-03 series, Submit to State of Washington and State of Oregon Quarterly Report

Due: Forty-five days following each calendar year quarter
(February 14, May 15, August 14, and November 14).

Status: On Schedule.

D-00C-02 series, Submit to State of Washington and State of Oregon Monthly Summary Reports

Due: End of each month.

Status: On Schedule.

D-006-00-B1, Provide State of Oregon notice of meetings in D-006-00-B, etc. no less than 30 days before they are scheduled

Due: See below.

Status: On Schedule.

D-006-00-B, Meet Approximately Every Three Years after Entry of Decree to review requirements of the Consent Decree

Due: Approximately 3 years from March 16, 2017.

Status: On Schedule.

D-16E-01, DOE must purchase by December 31, 2016 a spare E-A-1 reboiler for the 242-A Evaporator

Due: December 31, 2016.

Status: Complete (November 15, 2016).

D-16E-02, Have available spare E-A-1 reboiler for the 242-A Evaporator

Due: December 31, 2018.

Status: Complete (May 8, 2018).

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Rob Hastings

Technical Lead: Jeff Rambo

Milestone	Title	Due Date	Status
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least five	06/30/2021 ¹	On Schedule
D-16B-01	Complete retrieval of tank waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111	03/31/2024	Complete
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106, AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly	09/30/2026 ¹	Under Analysis ²

¹ Third Amended Consent Decree, *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (October 12, 2018).

² As discussed in the joint motion to amend the Consent Decree filed on October 1, 2018, DOE is engaged in ongoing analysis of non-vapors-related retrieval challenges and tank condition issues associated with Tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone). These issues are under analysis, and could require issuance of a “serious risk” notice or another request for amendment of the Consent Decree (including the B-2 Milestone). DOE met with Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of tanks A-104 and A-105. Since August 2018, DOE has had several discussions with Ecology on this topic.

DOE = U.S. Department of Energy.

SST = single-shell tank.

Ecology = Washington State Department of Ecology.

WMA-C = C Tank Farm waste management area.

Significant Accomplishments during the Prior Month:

Completed Accomplishments:

- Removed Tank AX-101 Pit B Riser 01B pump
- Removed Tank AX-101 Pit D Riser 24 pump
- Completed Tank AX-104 Pit B extended reach sluicer system mechanical and electrical system installation
- Completed lowering of Tank A-106 Riser 2 damaged (not removable) thermocouple section
- Secured Tank AX-102 high-resolution resistivity leak detection monitoring system and resumed moisture data logging every 6-weeks per RPP-RPT-58933, *241-AX-102 Tank Waste Retrieval Work Plan*, pending retrieval completion certification.

Ongoing Activities:

- Continue Tank AX-102 first and second technology retrieval completion report preparation.
- Continue the preparation of the practicability evaluation in support of the request to forego the third retrieval technology for Tank AX-102.
- Continue the procurement of the residual volume measurement system. The residual volume measurement system and camera/CAD modeling system will be deployed to calculate the Tank AX-102 residual waste volume.
- Continue Tank AX-104 installation and testing of waste retrieval equipment.
- Continue Tank AX-103 installation of electrical and support infrastructure.
 - Conduit installation, backfilling, compacting and wire pulling.
- Continue Tank AX-101 removal of long-length equipment.
- Installation of A Tank Farm ventilation system:
 - Install control systems for the exhauster.
 - Continue testing the ventilation system.
- Continue Tank A-101 cover block removals, pit cleaning, and removal of long-length equipment in preparation for future retrieval equipment installation.

Significant Planned Activities in the Next Month:

- Complete the Tank Sampling and Analysis Plan for Tank AX-102
- Complete Tank AX-102 first and second technology retrieval completion report
- Start Tank AX-102 post retrieval sampling activities
- Complete Tank AX-104 Pit A pump mechanical and electrical installation
- Remove Tank AX-101 Pit B Riser 01B saltwell screen
- Complete installation of A Tank Farm ventilation system duct riser assembly, inlet stations, and control systems
- Complete A Tank Farm ventilation system hot operations acceptance testing and begin readiness activities
- Remove Tank A-101 Riser 20 standard hydrogen monitoring system.

Issues:

- The U.S. Department of Energy (DOE) is engaged in ongoing analysis of retrieval challenges and condition issues associated with Tanks A-104 and A-105 (i.e., two of the

nine tanks currently specified for retrieval under the B-2 Milestone).³ These issues are under analysis and could require issuance of a “serious risk” notice or another request for amendment of the Consent Decree (including the B-2 Milestone).

- The as-found condition of existing abandoned equipment in AX and A Tank Farms has affected DOE’s ability to remove the equipment efficiently and is affecting the cost and schedule.
 - Removal of Tank A-103 Riser 2 thermocouple required a duration of 209 days to complete. The lower section of the thermocouple was damaged and could not be removed. Unique tooling was required to lower the remaining section to the tank bottom.
 - Removal of Tank A-101 Riser 2 thermocouple required the top sections to be removed in two sections and the remaining third section was lowered to the tank bottom.
 - Removal of Tank A-106 Riser 2 thermocouple was removed in sections, with the lower section left in the tank.
 - A stuck shield plug in Tank A-101 01C Pit required an alternative method (core drilling) to tie in the ventilation system.
 - A stuck shield plug in Tank AX-102 02B Pit prevented the installation of the planned third extended reach sluicer.
- On December 3, 2018, the Washington State Department of Ecology (Ecology) sent the DOE Office of River Protection (ORP) and Richland Operations Office a letter (18-NWP-177) regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed because of increased public access to parts of the Hanford Site. DOE, Ecology, and the Washington State Department of Health have met several times to attempt to develop a shared understanding of existing conditions and a path forward.
- On January 28, 2019, ORP received a Washington River Protection Solutions LLC letter (WRPS-1900243), outlining potential impacts to tank retrievals at A and AX Tank Farms, due to a lack of Ecology regulatory approval associated with exhausters in the 241-A and 241-AX Tank Farms. On March 4, 2019, DOE transmitted WRPS-1900243 to ensure Ecology was aware of potential impacts to A and AX Tank Farm retrievals and possibly associated Consent Decree milestones, if Ecology does not approve a pending notice of construction application in the near future. DOE is continuing to evaluate the information in the letter, as well as whether amendment of the Consent Decree (including potential invocation of “force majeure” provisions) or other actions may be necessary. Retrieval of Tank AX-102 began on August 31, 2019, with the exhausters running at 1,000 standard cubic feet per minute. DOE will continue to assess retrieval performance

³ The U.S. Department of Energy met with the Washington State Department of Ecology and attorneys from the Washington State Office of the Attorney General on August 30, 2018, to discuss the retrieval challenges and issues with the condition of Tanks A-104 and A-105. The U.S. Department of Energy has had several discussions with the Washington State Department of Ecology on this topic since August 2018.

at this airflow rate due to the potential for fogging at various stages of the retrieval process that may affect schedule.

- On April 18, 2019, Ecology provided a notice of incompleteness determination for the A and AX Tank Farms (19-NWP-063). ORP provided a response on May 14, 2019 (19-ECD-0038), which set forth how the original application met the regulations and asked Ecology to continue processing the application. ORP submitted a revised application on October 31, 2019 (19-ECD-0080), to provide supplemental information to address Ecology's comments.

Tank Waste Retrieval Work Plan Status

Tank Farms Assistant Manager: Rob Hastings

Federal Program Manager: Jeff Rambo

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
AX-101	RPP-RPT-58932, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-102	RPP-RPT-58933, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-103	RPP-RPT-58934, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-104	RPP-RPT-58935, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–

ERSS = extended reach sluicer system.

TWRWP = tank waste retrieval work plan.

Significant Accomplishments during the Prior Month:

- None.

Significant Planned Activities in the Next Month:

- None.

Issues:

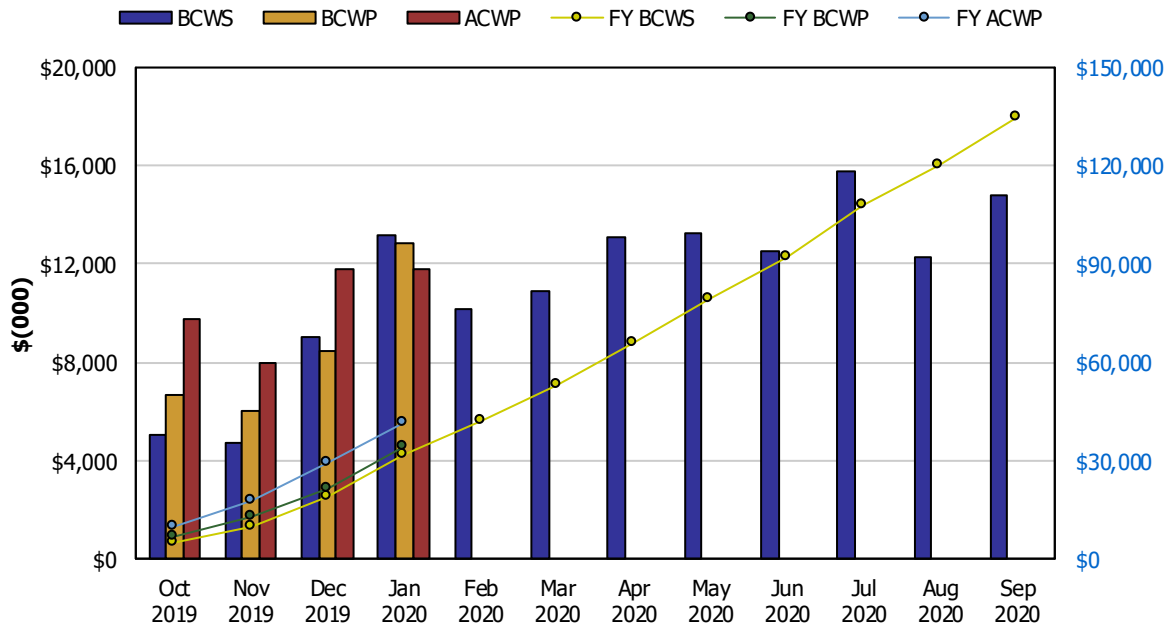
- None.

Earned Value Data: Fiscal Year 2020

January-20

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 2019	\$5,039	\$6,662	\$9,772	1.32	0.68	\$5,039	\$6,662	\$9,772	1.32	0.68
Nov 2019	\$4,722	\$6,050	\$7,940	1.28	0.76	\$9,761	\$12,712	\$17,711	1.30	0.72
Dec 2019	\$9,040	\$8,482	\$11,822	0.94	0.72	\$18,801	\$21,193	\$29,534	1.13	0.72
Jan 2020	\$13,201	\$12,877	\$11,828	0.98	1.09	\$32,003	\$34,070	\$41,362	1.06	0.82
Feb 2020	\$10,151			0.00	0.00	\$42,153			0.00	0.00
Mar 2020	\$10,855			0.00	0.00	\$53,008			0.00	0.00
Apr 2020	\$13,093			0.00	0.00	\$66,101			0.00	0.00
May 2020	\$13,247			0.00	0.00	\$79,348			0.00	0.00
Jun 2020	\$12,504			0.00	0.00	\$91,851			0.00	0.00
Jul 2020	\$15,784			0.00	0.00	\$107,636			0.00	0.00
Aug 2020	\$12,238			0.00	0.00	\$119,873			0.00	0.00
Sep 2020	\$14,791			0.00	0.00	\$134,665			0.00	0.00

CTD	\$1,116,264	\$1,095,412	\$1,160,145	0.98	0.94
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CTD = contract to date.
- EVMS = earned value management system.
- FY = fiscal year.
- SPI = schedule performance index.

Retrieve and Close Single-Shell Tanks (5.02)⁴

The January 2020 unfavorable schedule variance (SV) of (\$324,400) was primarily due to:

- Retrieval operations reaching the limits of technology for both the first and second retrieval technologies. ORP and Washington River Protection Solutions LLC have agreed that the third technology should be delayed while a practicability evaluation and request to forego the third technology is prepared. The delay in implementing the third technology is the primary contributor to the unfavorable SV.
- The SV was positively impacted by schedule recovery of prior months' scope that was completed in January. The recovered scope included completion of cold operations acceptance tests on the A Tank Farm portable exhausters and installation on tank ventilation equipment.
- The SV was positively impacted by schedule recovery related to receipt of Tanks AX-101 and AX-103 retrieval systems procurement items that had been delayed (pit shield boxes, riser adapter assemblies, and camera systems).

The January 2020 favorable cost variance (CV) of \$1,048,500 was primarily due to:

- On-dome electrical installation for Tank AX-103 being performed using air purifying respirators. This resulted in significant cost savings; the baseline plan had assumed using self-contained breathing air.
- The CV was negatively impacted by higher than expected costs for equipment removal in A Tank Farm. The long-length equipment removals proved difficult to remove, due to the corroded and damaged condition and high radiation levels. These removals involved Tank A-101 stuck shield plug core drilling, Tank A-106 thermocouple removal, and Tank A-103 saltwell screen removal. The actions required to complete the removals required mockups, training, and special equipment. The removals of the Tank A-103 saltwell screen required considerable rinsing, using long-length spray wands. The complications found in the field increased removal durations and costs.

⁴ "Closure" activities are expressly excluded from the Consent Decree. See 2010 Consent Decree, Appendix C, first paragraph: "Processes not covered by a TWRWP (e.g., tank closure) are not established under this Consent Decree."

Waste Treatment and Immobilization Plant Project

Federal Project Director: Tom Fletcher

Deputy Federal Project Director: Mat Irwin

Milestone	Title	Due Date	Status
D-00A-06	Complete Methods Validations	06/30/2032	On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033	At Risk ¹
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	At Risk ¹

¹ 19-ORP-0007, 2019, “Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085).”

WTP = Waste Treatment and Immobilization Plant.

The Waste Treatment and Immobilization Plant (WTP) Project continues to focus on completion of the Low-Activity Waste (LAW) Facility, Balance of Facilities (BOF), and Analytical Laboratory (LAB) (collectively known as LBL, including direct-feed low-activity waste [DFLAW] and LBL facility services).

As of January 2020, DFLAW modifications for the WTP Project were 87 percent complete, engineering design was 97 percent complete, procurement was 98 percent complete, and construction was 80 percent complete. As of January 2020, total LBL facilities were 82 percent complete, engineering design was 97 percent complete, procurement was 98 percent complete, construction was 95 percent complete, and startup and commissioning was 52 percent complete.

At the request of DOE, the U.S. Army Corps of Engineers conducted a parametric analysis of certain options and funding scenarios to evaluate the likelihood of achieving certain milestones established by the Amended Consent Decree for the High-Level Waste (HLW) and Pretreatment (PT) facilities. The analysis indicated there is a low probability that DOE can meet the milestones for constructing and commissioning these facilities established by the Amended Consent Decree under the current funding profile.

The DOE Office of Project Management conducted an independent assessment of the U.S. Army Corps of Engineers report. As noted previously, the Office of Project Management’s assessment concluded the U.S. Army Corps of Engineers’ analyses were generally accurate, although not sufficiently detailed for budget purposes, and they potentially understate the funding needed to complete the HLW and PT facilities on the schedule established by the Amended Consent Decree.

As previously noted, Ecology sent ORP and the Richland Operations Office a letter (18-NWP-177) on December 3, 2018, regarding the Hanford Site ambient air boundary. Ecology expressed its concern that the ambient air boundary appears to have changed because of increased public access to parts of the Hanford Site. DOE, Ecology, and the Washington State Department of Health have met several times to attempt to develop a shared understanding of existing conditions and a path forward.

ORP held initial meetings with the WTP HLW Treatment Analysis of Alternatives (AoA) contractor team in June 2019, with Ecology participation. The purpose of the AoA is to identify and evaluate a broad set of alternatives to meet the mission need; analyze the life-cycle cost, schedule, and risks associated with each alternative; and present the evaluation results to DOE leadership, pursuant to the requirements of DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

Membership on the DOE AoA Steering Committee was revised in July 2019 to include senior-level representation from DOE's Office of Project Management, Office of Cost Estimating and Program Evaluation, Office of the Chief Financial Officer, Office of Environmental Management, and Acquisition and Project Management for the National Nuclear Security Administration.

ORP approved the *Waste Treatment and Immobilization Plant High-Level Waste Treatment Analysis of Alternatives Study Plan* (Rev. 3). The study plan was updated to incorporate comments from new Steering Committee members to include the method, approach, and schedule to be used in conducting an independent AoA for the identified mission need.

On September 4, 2019, DOE notified Ecology that there is a serious risk DOE may be unable to meet milestones for the HLW and PT facilities in the Amended Consent Decree.⁵ The notification stated:

...it is appropriate, out of an abundance of caution, to provide this notice of serious risk as described in the Amended Consent Decree ... Specifically, the Department is providing notice of a "serious risk ... that DOE may be unable to meet" Milestones A-1 and A-17 (Waste Treatment Plant), Milestones A-2 to A-4 (HLW Facility), and A-13 to A-16 and A-19 (PT Facility) of that Decree. With respect to the "preliminary recovery plan" required by the Amended Consent Decree, completion of the AoA is the first and most critical aspect of that plan. The steps that follow the completion of the AoA will be determined based on the final report's conclusions and the Department's consultations with Ecology.⁶

Pursuant to Section IV-C-3(b) of the Amended Consent Decree⁷, as requested by Ecology in a letter dated September 25, 2019, DOE staff met with Ecology on October 16, 2019, to answer questions Ecology had concerning the serious risk as well as to discuss mitigation options, cooperative solutions, and problem-solving opportunities.

The Office of Project Management conducted a Project Peer Review (PPR) of the WTP Project in late November 2019. The PPR focused on DFLAW programs and projects for delivering waste from tanks, pretreating the waste to remove radioactive cesium and solids, vitrifying the

⁵ 19-ORP-0007, 2019, "Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085)."

⁶ Footnotes 3 and 4 were omitted from this quote.

⁷ *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016).

low-activity waste, treating effluent waste from the LAW Facility, and disposing of the treated effluent wastes. The PPR team also reviewed infrastructure projects needed to provide essential services to all facilities that will play a role in the DFLAW Program. The PPR team issued its final report to ORP in December 2019. ORP is still in the process of reviewing the recommendations included in the final report.

As of February 23, 2020, 76 percent of the WTP scoped systems supporting DFLAW have been turned over from the Construction organization to the Startup organization. In addition, Plant Management has accepted handover of 48 percent of the WTP scoped systems supporting DFLAW from the Startup organization.

Significant Accomplishments during the Prior Month:

- The AoA team held onsite working sessions February 11 through 13, 2020, and February 25 through 27, 2020. The AoA team worked to finalize alternative flowsheets, sketches, diagrams, and descriptions, which will be incorporated into the AoA report. The AoA team also received additional technical and cost modeling results from the modeling team. An Ecology observer attended.
- ORP participated in a Leadership Forum meeting with Ecology and the U.S. Environmental Protection Agency on February 21, 2020, to discuss the tank waste mission and high-level waste treatment approaches.
- Other significant accomplishments during the prior month are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Significant Planned Activities for the Next Month:

- ORP expects to continue the Leadership Forum meetings with Ecology and the U.S. Environmental Protection Agency to discuss the tank waste treatment mission and high-level waste treatment approaches.
- ORP expects to receive DOE Headquarters approval of the DOE AoA *Steering Committee Charter* (Rev. 2), modified to reflect changes to the Steering Committee membership. The charter describes the functions, responsibilities, and authorities of committee members responsible for providing oversight of the performance of the AoA team.
- Other significant planned activities in the next month are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

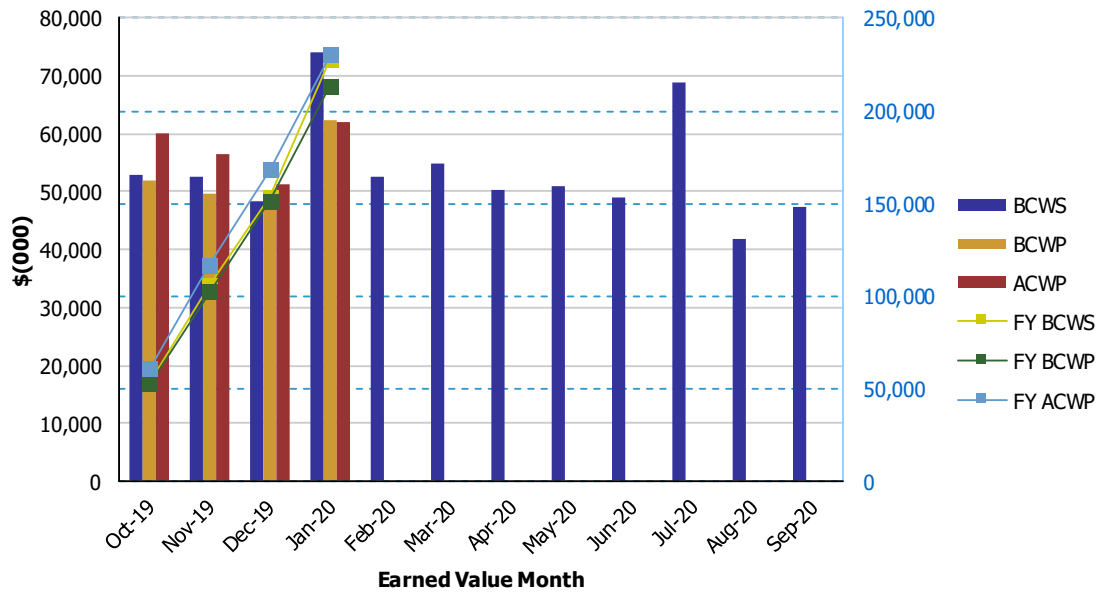
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: January 2020

**River Protection Project
Waste Treatment Plant (WTP) Project**

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 2019	\$52,863	\$52,079	\$60,216	0.99	0.86	\$52,863	\$52,079	\$60,216	0.99	0.86
Nov 2019	\$52,457	\$49,780	\$56,387	0.95	0.88	\$105,320	\$101,859	\$116,603	0.97	0.87
Dec 2019	\$48,219	\$49,369	\$51,429	1.02	0.96	\$153,538	\$151,228	\$168,032	0.98	0.90
Jan 2020	\$74,007	\$62,261	\$62,070	0.84	1.00	\$227,545	\$213,489	\$230,102	0.94	0.93
Feb 2020	\$52,505									
Mar 2020	\$54,816									
Apr 2020	\$50,178									
May 2020	\$50,884									
Jun 2020	\$49,108									
Jul 2020	\$68,787									
Aug 2020	\$41,913									
Sep 2020	\$47,470									

PTD	\$12,105,774	\$11,991,549	\$11,979,832	0.99	1.00
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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.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

Project Schedule and Cost Variance Performance (\$x1,000)

Performance Tracking	SV	CV
Current Period (January 2020)	(\$11,746)	\$191
Fiscal Year 2020 to-date	(\$14,057)	(\$16,613)
Cumulative (through January 2020)	(\$114,224)	\$11,717

CV = cost variance.

SV = schedule variance.

For the January 2020 Earned Value Management System reporting period, a net unfavorable SV of approximately (\$11.7 million) was reported, primarily due to the following:

- LAW Facility reported an unfavorable SV primarily due to late system turnovers, testing and handover completions. Other contributing factors included:
 - Change in training execution strategy from one large class to multiple smaller classes.
 - Delays in delivery of the spare melter motor control center, which is needed for testing and maintenance subcontract performance.
 - Lower than anticipated volumes of maintenance work package reviews.
 - Operations procedure reviews.
 - Implementation of communications electrical system testing scope from the Startup to Plant Engineering organizations.
- HLW Facility reported an unfavorable SV primarily due to the melter thermal and structural analysis model taking longer than planned, radiological shielding analysis assessments, document reviews delayed to resource availability, HLW Uniform Building Code calculations, and relocations.
- BOF reported an unfavorable SV due to less support to startup and commissioning activities than planned and overruns in system engineering labor supporting resolution of emergent issues during startup testing and initial system operation.
- LAB reported an unfavorable SV due to staffing limitations, which did not align with the approved deliverables based staffing plan. Efforts will be made to align staffing with the deliverables based staffing plan in the third quarter fiscal year (FY) 2020.

For the January 2020 Earned Value Management System reporting period, a net favorable CV of approximately \$0.2 million was reported, primarily due to the following:

- LAB Plant Management reported a favorable CV primarily due to misalignment of actual cost and performance and underruns in level of effort activities and maintenance training.
- LAB Engineering reported a favorable CV due to completion of several support activities to construction, startup, and commissioning where there were more punch lists planned than needed.

- HLW Facility and PT Facility Construction reported a favorable CV due to non-labor distributables, level of effort planned purchase of a 100-ton crane at the Material Handling Facility did not occur due to a delay in obtaining purchase approval by DOE.
- HLW Facility Engineering reported a favorable CV due to a favorable wage rate variance and rebill for 2018 and 2019.

The favorable CV was offset by the following unfavorable CVs:

- BOF Plant Management change in training requirements for commissioning technicians in BOF systems resulted in misalignment of actual costs and performance.
- DFLAW Construction support, overtime and weekend work.
- Reduced LBL Facility Services new hire training to support the Effluent Management Facility (EMF) and island completion and increased craft overtime/weekend work.

Pretreatment Facility

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-18	Complete Structural Steel Erection Below Elevation 56' in PT Facility	12/31/2009	Complete
D-00A-19	Complete Elevation 98' Concrete Floor Slab Placements in PT Facility	12/31/2031	At Risk ¹
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031	At Risk ¹
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	At Risk ¹
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	At Risk ¹
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	At Risk ¹

¹ 19-ORP-0007, 2019, "Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085)."

PT = pretreatment.

The PT Facility is intended to separate radioactive tank waste into high-level waste and low-activity waste fractions and transfer each waste type to the respective facility for immobilization. As of September 2012, the PT Facility was 56 percent complete overall, engineering design was 85 percent complete, procurement was 56 percent complete, construction was 43 percent complete, and startup and commissioning was 3 percent complete. The physical percent complete analysis for the PT Facility was frozen in September 2012, pending development of a revised baseline to address technical and design issues.

ORP and Bechtel National, Inc. (BNI) completed resolution of all the technical issues identified in the Third Order Regarding Motions to Modify Consent Decrees⁸.

In addition, ORP and BNI completed resolution of technical issues not included in the Third Order Regarding Motions to Modify Consent Decrees (i.e., T6 in relation to design redundancy and in-service inspection, and T7 in relation to seismic ground motion criteria changes in 2005).

⁸ *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) (ECF-221).

ORP notified BNI in July 2019 that it concurred with BNI's determination that the PT Facility's technical issues have been resolved.⁹

Significant Accomplishments during the Prior Month:

- BNI continued to manage suspended plant equipment purchase orders to reduce storage and suspension costs and evaluated ways to reduce project procurement liability.
- BNI continued to implement ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents were maintained.

Significant Planned Activities for the Next Month:

- BNI is expected to continue to manage suspended plant equipment purchase orders to reduce storage and suspension costs and evaluate ways to reduce project procurement liability.

BNI is expected to continue to implement ongoing asset maintenance at the PT Facility to protect equipment and structures and ensure design documents are maintained.

⁹ 19-WTP-0078, "Contract No. DE-AC27-01RV14136 – Concurrence on the Resolution of Technical Issues (T1 – T8) for the Waste Treatment and Immobilization Plant Pretreatment Facility," July 16, 2019.

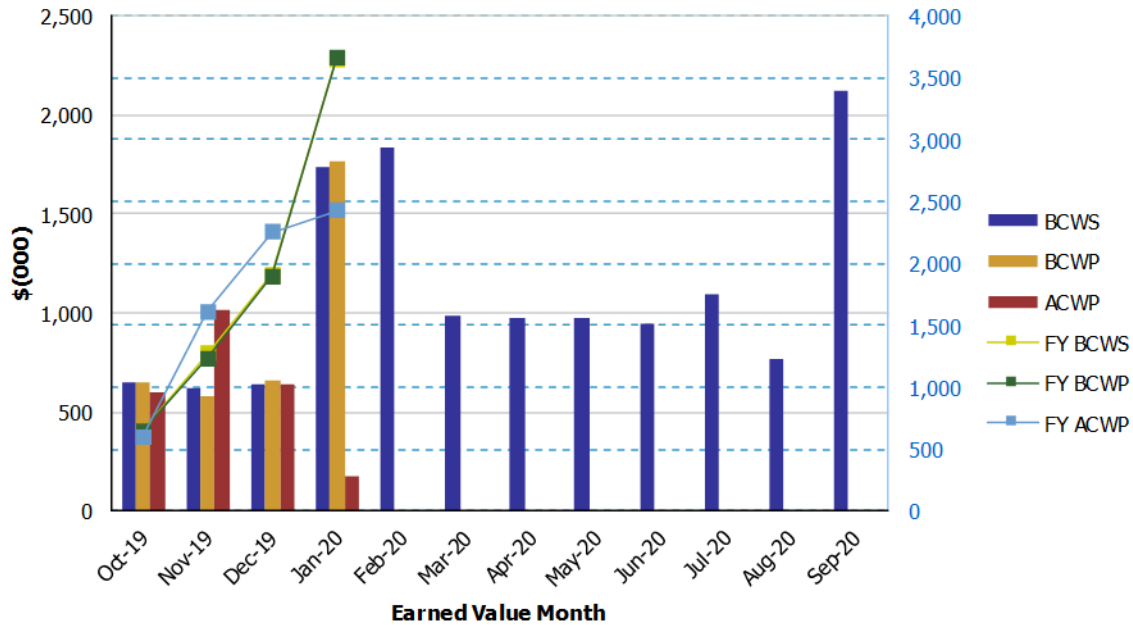
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: January 2020

**River Protection Project
Pretreatment Facility (WBS 1.01)**

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 2019	\$647	\$651	\$597	1.01	1.09	\$647	\$651	\$597	1.01	1.09
Nov 2019	\$622	\$584	\$1,015	0.94	0.58	\$1,270	\$1,235	\$1,612	0.97	0.77
Dec 2019	\$640	\$663	\$636	1.04	1.04	\$1,910	\$1,898	\$2,249	0.99	0.84
Jan 2020	\$1,739	\$1,763	\$179	1.01	9.87	\$3,648	\$3,661	\$2,427	1.00	1.51
Feb 2020	\$1,830									
Mar 2020	\$983									
Apr 2020	\$979									
May 2020	\$978									
Jun 2020	\$941									
Jul 2020	\$1,093									
Aug 2020	\$764									
Sep 2020	\$2,125									

PTD	\$3,516,729	\$3,514,801	\$3,450,332	1.00	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.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

High-Level Waste Facility

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-20	Complete Construction of Structural Steel to Elevation 14' in HLW Facility	12/31/2010	Complete
D-00A-21	Complete Construction of Structural Steel to Elevation 37' in HLW Facility	12/31/2012	Complete
D-00A-02	HLW Facility Construction Substantially Complete	12/31/2030	At Risk ¹
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	At Risk ¹
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	At Risk ¹

¹ 19-ORP-0007, 2019, "Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085)."

HLW = high-level waste.

The HLW Facility is intended to receive the separated high-level waste concentrate from the PT Facility. This concentrate would then be blended with glass formers, converted into molten glass in one of the two HLW Facility melters and then poured into cylindrical stainless steel canisters. After cooling, the canisters would then be sealed and decontaminated before shipping to interim storage.

As of September 2012, the HLW Facility was 62 percent complete overall, engineering design was 89 percent complete, procurement was 81 percent complete, construction was 43 percent complete, and startup and commissioning was 4 percent complete. The physical percent complete analysis for the HLW Facility was frozen in September 2012, pending development of a revised baseline to address technical and design issues.

Work on the HLW Facility is being performed in accordance with the FY 2017 through FY 2021 Interim Work Plan, which initially was for work primarily associated with asset maintenance and key ongoing procurement activities.

Engineering staff have been transitioning to HLW Facility design activities as they complete their DFLAW/LBL activities based on the availability of funds.

In March 2019, DOE awarded the AoA contract for the high-level waste treatment mission. The purpose of the AoA is to identify all viable options to meet mission needs and reduce risk, while providing decision-quality analysis and results to inform the acquisition authority and other stakeholders of all the alternatives to meet both Headquarters and DOE Office of Environmental

Management policy requirements. Additional information regarding the AoA process is included in the WTP section at the beginning of this report.

Significant Accomplishments during the Prior Month:

- BNI continued to manage suspended plant equipment purchase orders to reduce storage and suspension costs and evaluated ways to reduce project procurement liability.
- BNI continued to implement asset maintenance at the HLW Facility to protect equipment and structures and to ensure design documents were maintained.
- Fabrication is complete for radioactive liquid waste disposal system vessels 7 and 8 (i.e., RLD-7 and RLD-8). RLD-7 was delivered to the BNI Material Handling Facility on January 5, 2020. The vendor is finishing quality verification documents on RLD-8 and is now expected to ship RLD-8 by the end of March 2020. These vessels are to be installed in the wet process cell to allow concrete slab placement above the wet cell. This activity supports roof installation and building enclosure.

Significant Planned Activities in the Next Month:

- BNI is expected to continue to perform engineering design activities on key mechanical and process systems for the HLW Facility. Priority systems for FY 2020 include the design of the HLW Facility melter feed process and the primary offgas process systems.
- BNI is expected to continue to manage suspended plant equipment purchase orders to reduce storage and suspension costs and to evaluate ways to reduce project procurement liability.
- BNI is expected to continue to implement ongoing asset maintenance at the HLW Facility to protect equipment and structures and ensure design documents are maintained.

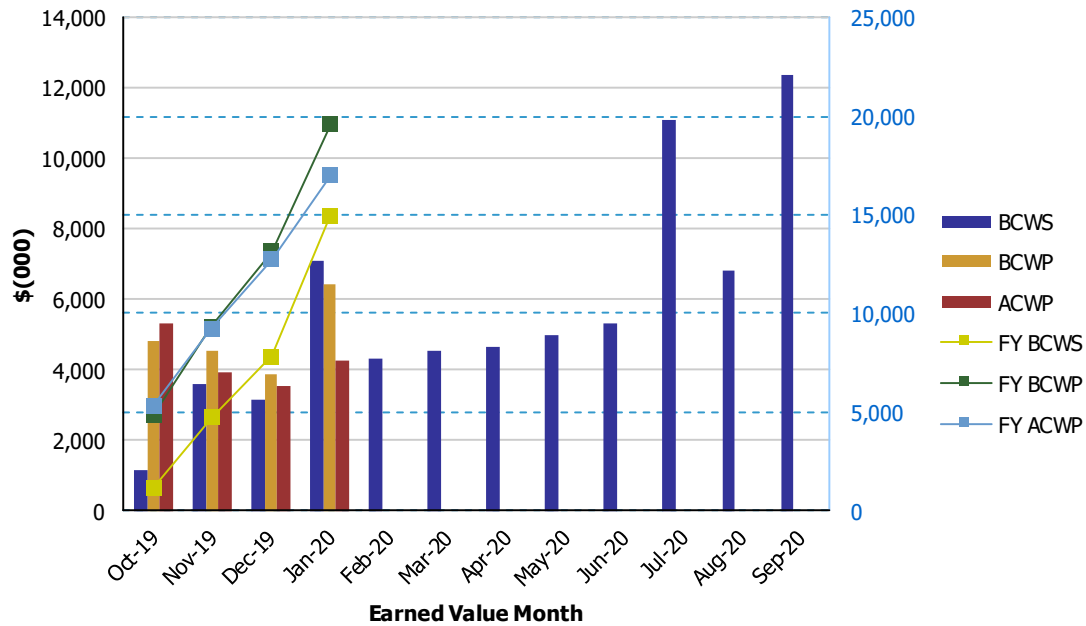
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: January 2020

**River Protection Project
High-Level Waste Facility (WBS 1.03)**

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 2019	\$1,158	\$4,792	\$5,293	4.14	0.91	\$1,158	\$4,792	\$5,293	4.14	0.91
Nov 2019	\$3,569	\$4,519	\$3,943	1.27	1.15	\$4,727	\$9,311	\$9,236	1.97	1.01
Dec 2019	\$3,124	\$3,852	\$3,521	1.23	1.09	\$7,851	\$13,163	\$12,757	1.68	1.03
Jan 2020	\$7,103	\$6,418	\$4,276	0.90	1.50	\$14,954	\$19,581	\$17,033	1.31	1.15
Feb 2020	\$4,294									
Mar 2020	\$4,542									
Apr 2020	\$4,628									
May 2020	\$4,986									
Jun 2020	\$5,294									
Jul 2020	\$11,108									
Aug 2020	\$6,826									
Sep 2020	\$12,383									

PTD	\$2,518,704	\$2,518,003	\$2,464,834	1.00	1.02
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- ACWP = actual cost of work performed.
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- PTD = project to date.
- SPI = schedule performance index.

Low-Activity Waste Facility¹⁰

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Wahed Abdul

Milestone	Title	Due Date	Status
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2020	On Schedule
D-00A-08	Start LAW Facility Cold Commissioning	12/31/2022	On Schedule
D-00A-09	LAW Facility Hot Commissioning Complete	12/31/2023	On Schedule

LAW = low-activity waste.

The LAW Facility will process concentrated low-activity waste, which will be mixed with silica and other glass-forming materials. The mixture will be fed into the LAW Facility's two melters at a design capacity of 30 metric tons per day, heated to 2,100°F, and vitrified into glass. The 300-ton melters are approximately 20 feet by 30 feet and 16 feet high. The glass mixture will then be poured into stainless steel containers, which are 4 feet in diameter, 7 feet tall, and weigh more than 7 tons. These containers are anticipated to be disposed of on the Hanford Site in the Integrated Disposal Facility.

As of January 2020, the LAW Facility was 83 percent complete overall, engineering design was 97 percent complete, procurement was 100 percent complete, construction was 99 percent complete, and startup and commissioning was 38 percent complete.

Recent BNI efforts at the LAW Facility have focused on implementing design changes against the approved safety basis and completion of procurement and construction activities. Additionally, Construction is walking down completed systems with the Startup organization in support of turnover for testing and subsequent handover to the Plant Management organization for facility commissioning.

To date, 94 percent of LAW Facility systems have been turned over from Construction to the Startup organization. In addition, Plant Management has accepted handover of 38 percent of the LAW Facility systems from the Startup organization.

¹⁰ Discussions about the related Low-Activity Waste Pretreatment System and tank-side cesium removal are included in the monthly reports submitted under the *Hanford Federal Facility Agreement and Consent Order* (also known as the Tri-Party Agreement or TPA). Prior discussions are in reports archived in the Administrative Record.

Significant Accomplishments during the Prior Month:

- BNI Construction continued completion activities for LAW Facility systems.
- BNI's Startup organization continued testing of LAW Facility systems.
- BNI Plant Management continued operability preparations for LAW Facility systems.

Significant Planned Activities in the Next Month:

- BNI Construction expects to continue completing walkdowns on various systems in support of turning those systems over to the Startup organization.
- BNI's Startup organization expects to continue handing over LAW Facility systems to Plant Management.

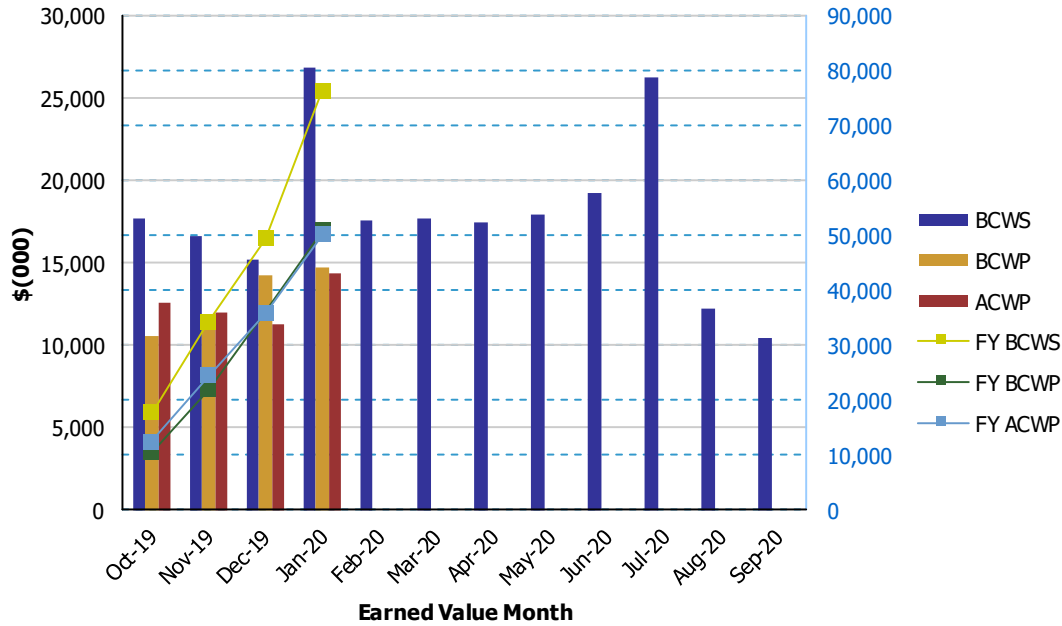
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: January 2020

**River Protection Project
Low-Activity Waste Facility (WBS 1.02)**

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 2019	\$17,656	\$10,507	\$12,532	0.60	0.84	\$17,656	\$10,507	\$12,532	0.60	0.84
Nov 2019	\$16,594	\$11,356	\$11,977	0.68	0.95	\$34,250	\$21,863	\$24,509	0.64	0.89
Dec 2019	\$15,259	\$14,260	\$11,290	0.93	1.26	\$49,509	\$36,123	\$35,799	0.73	1.01
Jan 2020	\$26,877	\$14,761	\$14,331	0.55	1.03	\$76,386	\$50,884	\$50,130	0.67	1.02
Feb 2020	\$17,564									
Mar 2020	\$17,714									
Apr 2020	\$17,433									
May 2020	\$17,939									
Jun 2020	\$19,224									
Jul 2020	\$26,218									
Aug 2020	\$12,231									
Sep 2020	\$10,476									

PTD	\$2,361,051	\$2,292,699	\$2,293,163	0.97	1.00
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| ACWP = actual cost of work performed. | EVMS = earned value management system. |
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| BCWS = budgeted cost of work scheduled. | PTD = project to date. |
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Balance of Facilities

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete

BOF will provide services and utilities to support operation of the main production facilities: PT, HLW, LAW, and LAB. As of January 2020, BOF was 89 percent complete overall, engineering design was 97 percent complete, procurement was 100 percent complete, construction was 94 percent complete, and startup and commissioning was 77 percent complete. Design of EMF was 100 percent complete.

BNI Engineering efforts were focused on supporting EMF construction and providing field support for BOF startup activities. Construction efforts were focused on the installation of EMF siding, piping, and electrical commodities. Startup testing continued for systems in the steam plant and the standby diesel generator.

All BOF utility and process systems, excluding EMF, have been turned over from Construction to the Startup organization. In addition, 91 percent of the BOF systems have been handed over from the Startup organization to Plant Management. BNI is working to complete construction activities and turn over the scoped systems in EMF to support early startup testing activities.

Significant Accomplishments during the Prior Month:

- BNI continued testing and tuning of the steam plant boilers.
- BNI continued the glass former system testing.
- BNI continued installation of siding, piping, and electrical commodities at EMF.
- BNI continued to pull the cables between the powerhouse and EMF.
- BNI continued excavating around the EMF for installation of transfer piping.

Significant Planned Activities in the Next Month:

- BNI is expected to continue the glass former system dry runs.
- BNI is expected to continue installation of process piping and electrical commodities in EMF.
- BNI's Startup and Plant Management organizations are expected to continue to focus on ensuring BOF air, water, and power systems are ready for operations.

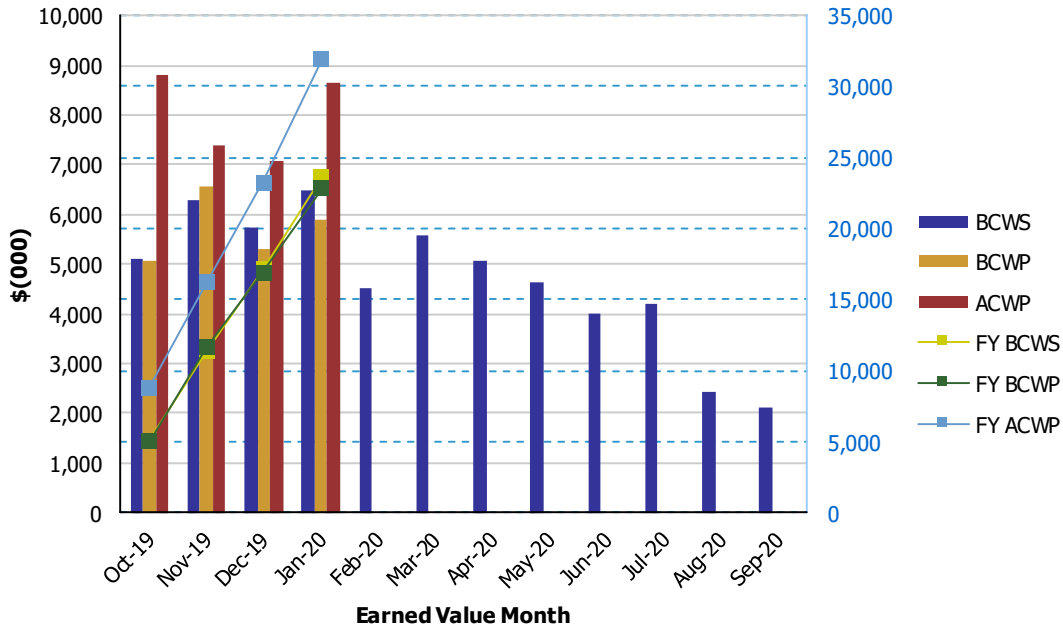
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: January 2020

**River Protection Project
Balance of Facilities (WBS 1.05)**

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 2019	\$5,103	\$5,056	\$8,817	0.99	0.57	\$5,103	\$5,056	\$8,817	0.99	0.57
Nov 2019	\$6,296	\$6,582	\$7,383	1.05	0.89	\$11,399	\$11,638	\$16,200	1.02	0.72
Dec 2019	\$5,729	\$5,305	\$7,071	0.93	0.75	\$17,128	\$16,943	\$23,271	0.99	0.73
Jan 2020	\$6,470	\$5,888	\$8,630	0.91	0.68	\$23,598	\$22,831	\$31,901	0.97	0.72
Feb 2020	\$4,503									
Mar 2020	\$5,578									
Apr 2020	\$5,084									
May 2020	\$4,634									
Jun 2020	\$4,006									
Jul 2020	\$4,220									
Aug 2020	\$2,449									
Sep 2020	\$2,108									

PTD	\$938,587	\$925,763	\$968,414	0.99	0.96
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Analytical Laboratory

Federal Project Director: Tom Fletcher

Facility Federal Project Director: Jason Young

Milestone	Title	Due Date	Status
D-00A-05	LAB Construction Substantially Complete	12/31/2012	Complete

LAB = analytical laboratory.

The LAB will support WTP operations by analyzing feed, vitrified waste, and effluent streams. As of January 2020, the LAB was 86 percent complete overall, engineering design was 99 percent complete, procurement was 100 percent complete, construction was 100 percent complete, and startup and commissioning was 60 percent complete.

To date, all of the LAB systems have been handed over from the Startup organization to Plant Management organization. Activities in the LAB were focused on operational testing of LAB systems. BNI continued to install and tune analytical equipment in the LAB.

Significant Accomplishments during the Prior Month:

- BNI continued installation of analytical equipment and tuning of equipment enclosure ventilation systems.
- BNI initiated LAB methods validation.
- BNI's Plant Management organization completed filling and pressurizing the high-purity gas systems to support commissioning activities.
- BNI initiated commissioning of the high purity gas systems.
- BNI Plant Management continued maintenance and operation of LAB systems.
- BNI performed multiple system operability reviews in preparation for integrated system operations.
- BNI continued shutting down offsite method validation activities in preparation for a permanent move to the LAB.

Significant Planned Activities in the Next Month:

- BNI is expected to continue operational testing of LAB systems.

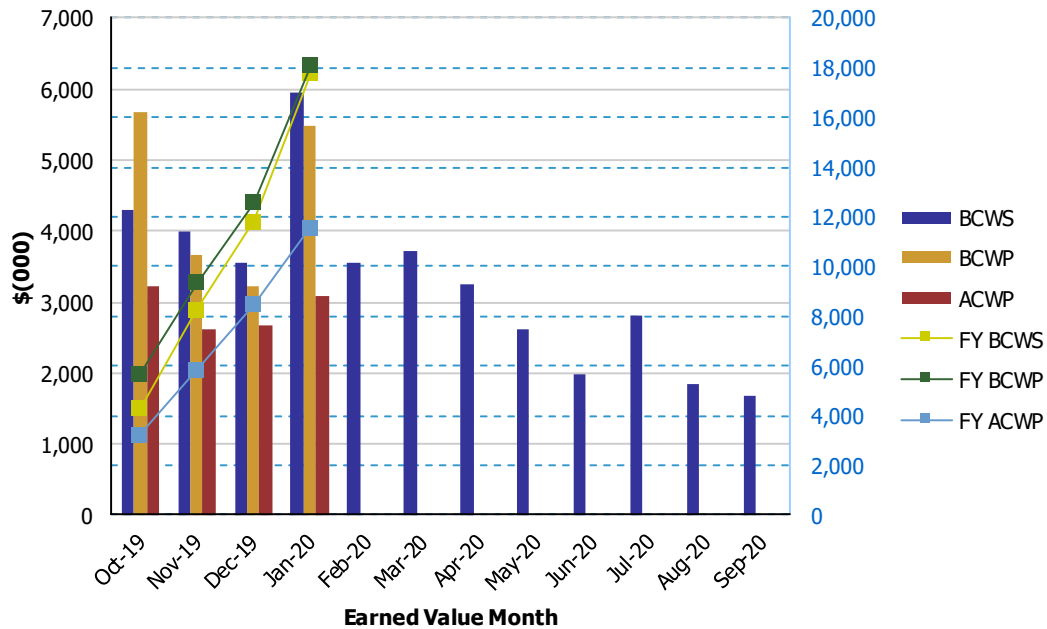
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: January 2020

**River Protection Project
Analytical Laboratory (WBS 1.06)**

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 2019	\$4,297	\$5,683	\$3,222	1.32	1.76	\$4,297	\$5,683	\$3,222	1.32	1.76
Nov 2019	\$3,984	\$3,669	\$2,604	0.92	1.41	\$8,281	\$9,352	\$5,826	1.13	1.61
Dec 2019	\$3,549	\$3,228	\$2,666	0.91	1.21	\$11,830	\$12,580	\$8,492	1.06	1.48
Jan 2020	\$5,947	\$5,495	\$3,081	0.92	1.78	\$17,778	\$18,076	\$11,573	1.02	1.56
Feb 2020	\$3,550									
Mar 2020	\$3,730									
Apr 2020	\$3,256									
May 2020	\$2,614									
Jun 2020	\$1,981									
Jul 2020	\$2,819									
Aug 2020	\$1,835									
Sep 2020	\$1,683									

PTD	\$461,630	\$453,489	\$435,014	0.98	1.04
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Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status
Through January 2020

(Dollars - Millions)	Overall Facility Percent Complete Unallocated Dollars			Design/Engineering Unallocated Dollars			Procurement Unallocated Dollars			Construction Unallocated Dollars			Startup & Plant Operations Unallocated Dollars			Project Management & Shared Services Unallocated Dollars		
	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete
Facilities																		
Low-Activity Waste	2,262.8	1,876.8	83%	590.9	574.2	97%	342.9	342.2	100%	753.3	743.2	99%	564.7	212.4	38%	11.1	4.6	42%
Balance of Facilities	776.3	694.5	89%	157.3	152.2	97%	60.8	60.8	100%	304.9	286.9	94%	252.9	194.2	77%	0.5	0.5	100%
Analytical Lab	472.8	409.0	86%	94.7	93.4	99%	60.5	60.4	100%	166.1	165.7	100%	148.6	88.5	60%	2.9	0.9	30%
Direct Feed LAW	432.7	378.4	87%	110.7	107.6	97%	72.4	71.0	98%	240.0	192.6	80%	0.0	0.0	0%	9.6	7.2	75%
LBL Facility Services	779.2	526.7	68%	0.0	0.0	0%	71.1	58.3	82%	106.1	104.9	99%	345.7	188.8	55%	256.3	174.7	68%
Total LBL	4,723.9	3,885.4	82%	953.6	927.5	97%	607.6	592.8	98%	1,570.3	1,493.3	95%	1,312.0	683.9	52%	280.5	187.9	67%
Project Services	908.1	716.2	79%	92.5	88.7	96%	63.5	54.3	86%	101.0	91.4	90%	7.5	4.0	53%	643.6	477.8	74%
Total Project Services	908.1	716.2	79%	92.5	88.7	96%	63.5	54.3	86%	101.0	91.4	90%	7.5	4.0	53%	643.6	477.8	74%
Total LBL, DFLAW & Project Services	5,632.0	4,601.5	82%	1,046.0	1,016.2	97%	671.1	647.1	96%	1,671.3	1,584.7	95%	1,319.5	687.9	52%	924.1	665.7	72%
PT/HLW/SS Percent Complete Status Frozen as of September 2012 (due to project rebaselining efforts)																		
High-Level Waste	1,478.6	922.1	62%	364.4	325.2	89%	433.9	349.4	81%	561.1	243.2	43%	119.2	4.4	4%	n/a	n/a	n/a
Pretreatment	2,517.3	1,410.5	56%	761.7	645.8	85%	679.9	380.4	56%	890.0	378.6	43%	185.8	5.6	3%	n/a	n/a	n/a
Shared Services	4,726.9	3,632.6	77%	1,047.0	977.9	93%	451.7	395.0	87%	1,436.5	1,143.0	80%	453.5	133.2	29%	1,338.1	983.5	73%
Total HLWPT/SS	8,722.8	5,965.2	68%	2,173.1	1,948.9	90%	1,565.5	1,124.8	72%	2,887.6	1,764.8	61%	758.5	143.2	19%	1,338.1	983.5	73%
Undistributed Budget	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total WTP	14,354.8	10,566.7	74%	3,219.1	2,965.1	92%	2,236.6	1,771.9	79%	4,558.9	3,349.5	73%	2,078.0	831.1	40%	2,262.2	1,649.2	73%

Source: Preliminary WTP Contract Performance Report - Format 1, Data for January 2020

Note: In September 2012, the LBL Replan was incorporated into the project OTB baseline resulting in increases/decreases to the LBL facility budgets, which correspondingly increased/decreased the facility function to-date percent complete values. In October 2012, the PT/HLW/SS Interim Work Plan was incorporated into the project OTB baseline resulting in decreases to the PT/HLW/SS facility budgets, this was due to a work scope shift from the Distributed budget to UB. Percent Complete Values shown for PT, HLW and SS have been frozen with the September 2012 values due to the Interim Work Plan and budgets being moved into UB. UB value for the project for PT/HLW/SS is \$2,014M. The percent complete values for the Total WTP are the current total LBL BCWP added to the frozen HLW/PT/SS BCWP values. In March 2014, Project Controls and Project Management work scope was moved out of Shared Services control accounts into the facilities with new control accounts being set up in the facilities. These will now be seen under Project Management/Shared Services by facility. The Shared Services PMB value has not been changed to reflect this change due to the freeze on HLW/PT and SS and the budgets remaining in UB. October 2014 data reflects the incorporation of Direct Feed LAW and the split of Shared Services into LBL Facility Services and Project Services. March 2016 LBL percent complete data is a total of LAW-BOF-LAB-DFLAW and LBL Facility Services. The Project Services Allocation account (zPSA), as shown on the CPR Format 1, is not added to LBL for percent complete purposes.

Table 1 Administrative Record Metadata

Milestone Number or Facility Identification	Title
D-00A-07	LAW Facility Construction Substantially Complete
D-00A-08	Start LAW Facility Cold Commissioning
D-00A-09	LAW Facility Hot Commissioning Complete
D-00B-01D	C-105 Submit Retrieval Completion Certification
D-00B-00-01	Submit Revised TWRWP Prior to Initiating Installation of Equipment
D-00B-00-02	Submit TWRWP to Ecology
D-00C-02DI	Submit to Ecology & State of Oregon Monthly Summary Report
D-16B-03	Of the 12 SSTs Referred to in B-1 and B-2, Complete Retrieval of Tank Wastes in at Least 5
H-0-8	Waste Treatment and Immobilization Plant (WTP)
S-2-3	Double-Shell Tank System (DST) & 204-AR Waste Unloading Station
S-2-4	Single-Shell Tank System (SST)

LAW = Low-Activity Waste (Facility).

TWRWP = tank waste retrieval work plan.