

# Office of River Protection Consent Decree Monthly Report

Monthly Reporting Period  
October 1–October 31, 2020<sup>1</sup>

**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)<sup>2</sup>

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<sup>1</sup> 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 September 2020.

<sup>2</sup> 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.

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## Acronyms and Abbreviations

AoA	analysis of alternatives
BNI	Bechtel National, Inc.
BOF	Balance of Facilities
COVID-19	coronavirus disease 2019
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
HLW	High-Level Waste (Facility)
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LBL	Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory
PT	Pretreatment (Facility)
SV	schedule variance
WTP	Waste Treatment and Immobilization Plant

**Consent Decree Milestone Statistics/Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>Completion Date</b>	<b>Status</b>
<b>Fiscal Year 2021</b>				
D-00A-07 Interim	LAW Facility Construction Substantially Complete	12/31/2020		Amendment Proposed <sup>4</sup>
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 <sup>1</sup>		Amendment Proposed <sup>4</sup>
<b>Fiscal Year 2023</b>				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		Amendment Proposed <sup>4</sup>
<b>Fiscal Year 2024</b>				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		Amendment Proposed <sup>4</sup>
<b>Fiscal Year 2026</b>				
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 <sup>1</sup>		Under Analysis <sup>2</sup> / Amendment Proposed <sup>4</sup>
<b>Fiscal Year 2031</b>				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		At Risk <sup>3</sup>
<b>Fiscal Year 2032</b>				
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-OOOO1A/1B	12/31/2031		At Risk <sup>3</sup>
D-00A-14 Interim	PT Facility Construction Substantially Complete	12/31/2031		At Risk <sup>3</sup>
D-00A-19 Interim	Complete Elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2031		At Risk <sup>3</sup>
D-00A-03 Interim	Start HLW Facility Cold Commissioning	06/30/2032		At Risk <sup>3</sup>

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

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

<sup>2</sup> 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.

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

<sup>4</sup> Certain Consent Decree-related work at the Hanford Site has been interrupted since March 23, 2020, due to the COVID-19 pandemic. On May 21, 2020, the U.S. Department of Justice, on behalf of DOE, submitted a proposal to the State of Washington to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.) due to a Force Majeure event. ENV\_DEFENSE-#919846, 2020, “Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to Force Majeure Event,” (external letter to A.A. Fitz, Office of the Attorney General, Ecology Division), from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

COVID-19 = coronavirus disease 2019.

LAW = low-activity waste.

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.

## **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: Complete – Meeting held on September 9, 2020.

### **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 <sup>1</sup>	Amendment Proposed <sup>3</sup>
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 <sup>1</sup>	Under Analysis <sup>2</sup> / Amendment Proposed <sup>3</sup>

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

<sup>2</sup> 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.

<sup>3</sup> Certain Consent Decree-related work at the Hanford Site has been interrupted since March 23, 2020, due to the COVID-19 pandemic. On May 21, 2020, the U.S. Department of Justice, on behalf of DOE, submitted a proposal to the State of Washington to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.) due to a Force Majeure event. ENV\_DEFENSE-#919846, 2020, “Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to Force Majeure Event,” (external letter to A.A. Fitz, Office of the Attorney General, Ecology Division), from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

COVID-19 = coronavirus disease 2019.

SST = single-shell tank.

DOE = U.S. Department of Energy.

WMA-C = C Tank Farm waste management area.

Ecology = Washington State Department of Ecology.

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, region, and the environment.

On May 20, 2020, the U.S. Department of Energy (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 continued and targeted mobilization and low-risk workscope, such as

implementation of added coronavirus disease 2019 (COVID-19) protocols to infrastructure and facilities, required training, medical evaluations, and limited construction activities.

On May 21, 2020, the Department of Justice, on behalf of DOE, sent a letter to the Washington State Office of the Attorney General with a proposal to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.). The proposal included schedule extensions due to force majeure events associated with the COVID-19 pandemic.<sup>3</sup> DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information and COVID-19 potential impacts to the Consent Decree, and if other actions may be necessary.

The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the workforce that was performing portable work via telework generally continued to telework. The majority of the workforce performing nonportable work returned to the site by September 30, 2020 to progress work activities leveraging established COVID-19 controls.

Since March 24, 2020, when moving to the essential mission-critical operations posture due to COVID-19 concerns, the site has experienced numerous impacts related to COVID-19-based restrictions or requirements.

The following highlights some examples of impacts continuing at the site or having occurred in October 2020:

- Continuing COVID-19 impacts:
  - Equipment exposure to a radiation field longer than planned, during the COVID-19 delays, may have resulted in equipment damage. Tank AX-104 waste retrieval equipment will undergo operational acceptance testing prior to the start of retrieval operations.
  - Quarantines due to COVID-19 testing and potential exposures resulted in approximately 50 to 70 workers at a time being quarantined throughout the period.
  - Cleaning of workspaces, briefing rooms, and egress/ingress areas resulted in limited delays in performing fieldwork.
  - Potential exposure of workers to COVID-19, and the need for quarantining when exposures were assessed as possible by contact tracing, did impact the execution of fieldwork. The temporary loss of crewmembers being quarantined out of an abundance of caution, made some work crews short staffed. If no qualified individuals were available, the work was delayed until qualified personnel became available. Remaining crewmembers were reassigned when possible to other available work tasks. The randomness of losing (single or multiple) personnel made it difficult to predict the negative impacts to the project schedule and cost.

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<sup>3</sup> ENV\_DEFENSE-#919846, 2020, “Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to *Force Majeure* Event,” (external letter to A.A. Fitz, Office of the Attorney General, Ecology Division), from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

- COVID-19 impacts continue to be evaluated and schedule adjustments will occur based on state/federal recommendations and inefficiencies associated with COVID-19 social distancing controls that significantly impact prejob briefings, donning/doffing durations, and in-farm work area ingress/egress access.
- October 2020 COVID-19 impacts:
  - On entering Phase 2, it has been necessary to place the field crews on a revised 8-hour day/swing shift work schedule to achieve COVID-19 social distancing protocols. The revised shift structure is less efficient than the standard 10-hour shift the site employed prior to COVID-19. On the day/swing shifts, the pre- and post-job briefings require multiple meetings to ensure appropriate social distancing. Since the job does not start until all the field crewmembers have been briefed and are in the farm, significant work delays occur, resulting in less time in the tank farm. In addition, working evening shifts during the fall/winter reduces productivity because of the need for artificial lighting. In order to return to the standard work schedule, additional trailer and tent space to accommodate social distancing protocols are being installed.

### **Significant Accomplishments during the Prior Month:**

#### Completed Accomplishments:

- Completed Tank AX-102 camera / Computer Aided Design modeling system videos
- Completed Tank AX-104 mechanical and electrical system installation
- Completed Tank A-101 riser 12 thermocouple removal
- Completed Tank AX-102 post retrieval residual waste sampling.

#### Ongoing Activities:

- The residual volume measurement system is in final development and will be deployed, after the camera / Computer Aided Design modeling system, to calculate the Tank AX-102 residual waste volume.
- Work continued on the development of a Tank AX-102 third retrieval technology practicability evaluation. A chemical dissolution (acid) study and an alternative mechanical retrieval options study are underway in addition to the chemical analysis of the Tank AX-102 post retrieval samples, which will support the request to forgo a third retrieval technology in Tank AX-102.
- Continued Tank AX-104 mechanical and electrical system construction acceptance testing, operations acceptance testing, readiness, and retrieval operations.
- Continued Tank AX-103 on-dome electrical system installation.
- Continued Tank AX-103 hose-in-hose transfer line system installation.
- Continued Tank A-101 equipment removal activities.

**Significant Planned Activities in the Next Month:**

- Complete Tank AX-104 construction acceptance testing
- Complete Tank AX-103 on-dome electrical system installation
- Complete Tank AP-102 jumper removal and removal of remaining two sections (inside of AP Tank Farm) of the AY to AP hose-in-hose transfer line in support of future A Tank Farm hose-in-hose transfer line installation.

**Issues:**

- Work restrictions related to the COVID-19 pandemic are expected to continue into the next reporting period.
- DOE is engaged in ongoing analysis of challenges and condition issues associated with the retrievals of tanks A-104 and A-105 (i.e., two of the nine tanks currently specified for retrieval under the B-2 Milestone).<sup>4</sup> 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; therefore, negative impacts to the cost and schedule are being realized.
  - Removal of Tank A-103 riser 2 thermocouple required a duration of 209 days (planned 83 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 to be lowered to the tank bottom. This activity was originally planned for 83 days, but the actual duration was 235 days.
  - Removal of Tank A-106 riser 2 thermocouple was removed in sections, with the lower section left in the tank. Removal of the thermocouple was planned for 113 days, but required 246 days.
  - A stuck shield plug in Tank A-101 01C Pit required an alternative method (core drilling) to tie in the ventilation system. Removal of the shield plug was expected to require 12 days, but was completed in 31 days.
  - A stuck shield plug in Tank AX-102 02B Pit prevented the installation of the planned third extended reach sluicer system. Eighty days were expended (planned 12 days) on the attempts to remove the plug, until it was decided the plug could not be removed and to retrieve Tank AX-102 with two extended reach sluicer systems.

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<sup>4</sup> 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.

- On January 28, 2019, DOE received a letter (WRPS-1900243) from Washington River Protection Solutions LLC, outlining potential impacts to tank retrievals at A and AX tank farms, due to a lack of Washington State Department of Ecology (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. While DOE was able to complete retrieval of Tank AX-102 to the limits of two technologies, DOE was unable to retrieve more than one tank at a time due to the limited airflow rate. DOE will continue to assess retrieval performance 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). DOE 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. DOE submitted a revised application on October 31, 2019 (19-ECD-0080), to provide supplemental information to address Ecology's comments. DOE is able to resume work on this application now that the ambient air boundary issue is resolved.

## 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:

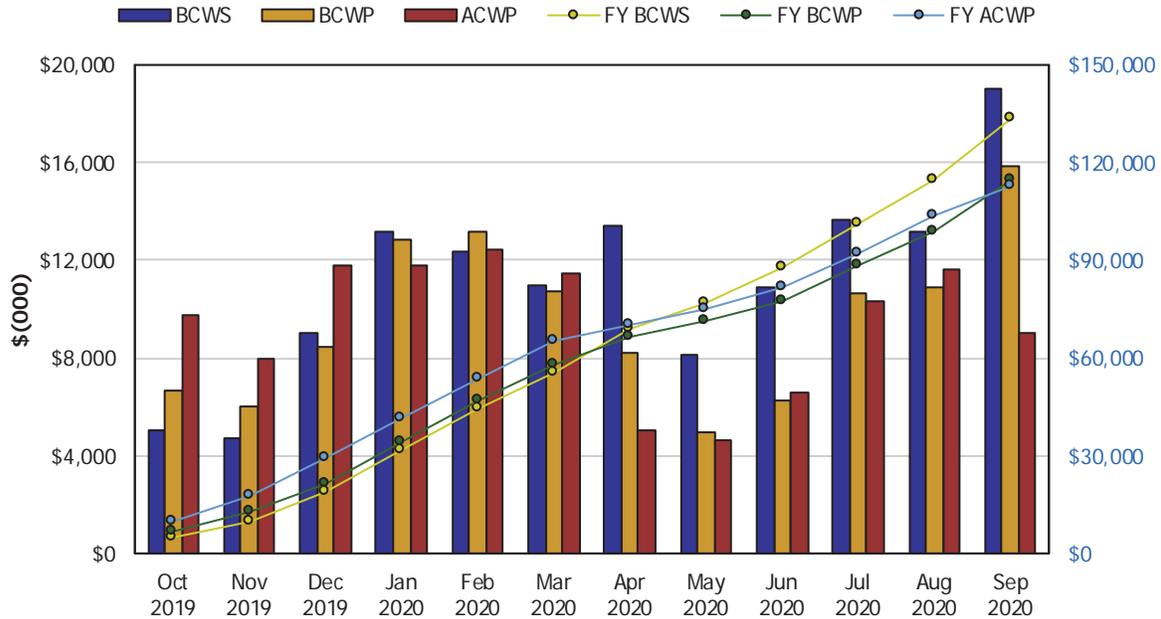
- None.

Earned Value Data: Fiscal Year 2020

September-2020

**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	\$12,323	\$13,174	\$12,473	1.07	1.06	\$44,326	\$47,245	\$53,834	1.07	0.88
Mar 2020	\$10,984	\$10,744	\$11,497	0.98	0.93	\$55,310	\$57,989	\$65,331	1.05	0.89
Apr 2020	\$13,412	\$8,230	\$5,011	0.61	1.64	\$68,722	\$66,218	\$70,343	0.96	0.94
May 2020	\$8,123	\$4,957	\$4,623	0.61	1.07	\$76,845	\$71,175	\$74,966	0.93	0.95
Jun 2020	\$10,857	\$6,262	\$6,619	0.58	0.95	\$87,702	\$77,437	\$81,585	0.88	0.95
Jul 2020	\$13,648	\$10,678	\$10,292	0.78	1.04	\$101,350	\$88,115	\$91,877	0.87	0.96
Aug 2020	\$13,193	\$10,903	\$11,608	0.83	0.94	\$114,543	\$99,019	\$103,484	0.86	0.96
Sep 2020	\$19,005	\$15,847	\$8,994	0.83	1.76	\$133,549	\$114,865	\$112,479	0.86	1.02

CTD	\$1,217,810	\$1,176,207	\$1,231,262	0.97	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.
- CTD = contract to date.
- EVMS = earned value management system.
- FY = fiscal year.
- SPI = schedule performance index.

**Retrieve and Close Single-Shell Tanks (5.02)<sup>5</sup>**

The September unfavorable schedule variance (SV) of (\$3,158,500) was primarily due to the following:

- Installation of Tank AX-103 in-tank retrieval system components were delayed due to higher priority work on the installation of the Tank AX-104 retrieval system.
- COVID-19 protocols for social distancing impacted tank farm ingress/egress. Social distancing requirements for those donning personal protective equipment for tank farm work introduce inefficiencies, especially for work activities requiring larger crew sizes. The protocols result in reduced “in-field” work time each day, resulting in longer durations to complete tasks.

The September favorable cost variance (CV) of \$6,852,300 was primarily due to the following:

- Favorable fiscal year 2020 year-end indirect pool liquidation pass backs experienced in the current reporting period. The favorable pass backs are a result of the actual fiscal-year-end indirect rates being less than the provisional indirect rates utilized to allocate indirect costs to the projects over the course of the fiscal year. This is a one-time credit incurred at the end of the fiscal year to liquidate the indirect pools.
- COVID-19 costs incurred by the Retrieval and Closure cost account were transferred to the Washington River Protection Solutions LLC corporate-level COVID-19 cost account.

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<sup>5</sup> “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 <sup>1</sup>
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	At Risk <sup>1</sup>

<sup>1</sup> 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 September 2020, DFLAW modifications for the WTP Project were 95 percent complete, engineering design was 99 percent complete, procurement was 100 percent complete, and construction was 92 percent complete. As of September 2020, total LBL facilities were 87 percent complete, engineering design was 99 percent complete, procurement was 99 percent complete, construction was 98 percent complete, and startup and commissioning was 63 percent complete.

In 2018, at DOE’s request, the U.S. Army Corps of Engineers conducted a parametric analysis of 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 a low probability that DOE could meet construction and commissioning milestones for these facilities as established by the Amended Consent Decree under the current funding profile. The DOE Office of Project Management subsequently conducted an independent assessment of the U.S. Army Corps of Engineers report.

Based on the review, on September 4, 2019, DOE notified Ecology that there was a serious risk DOE may be unable to meet milestones for the HLW and PT facilities in the Amended Consent Decree.<sup>6</sup> 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

<sup>6</sup> 19-ORP-0007, 2019, “Discussion of Amended Consent Decree – State of Washington v. Perry (E.D. Wash. No. 2:08-CV-5085).”

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.<sup>7</sup>

Pursuant to Section IV-C-3(b) of the Amended Consent Decree<sup>8</sup>, 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.

DOE set up the WTP HLW Treatment Analysis of Alternatives (AoA) contractor team in June 2019. 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*. DOE and Ecology staff have been participating in the AoA team plans, discussions, and review of reports. DOE 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 Steering Committee members to include the method, approach, and schedule to be used in conducting an independent AoA for the identified mission need.

The AoA team drafted report *The Waste Treatment and Immobilization Plant High-Level Waste Treatment Analysis of Alternatives Final Report*, and submitted it to Ecology for review and comment. Ecology was provided 10 days to review the report. Rather than provide detailed comments, Ecology communicated some “significant” broader concerns via a letter (20-NWP-107, dated June 11, 2020) to Tom Fletcher.

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, 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 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.

On May 21, 2020, the Department of Justice, on behalf of DOE, sent a letter to the Washington State Office of the Attorney General with a proposal to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.). The proposal included

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<sup>7</sup> Footnotes 3 and 4 were omitted from this quote.

<sup>8</sup> *State of Washington v. Dept. of Energy*, No. 2:08-CV-5085-RMP (March 11, 2016).

schedule extensions due to *force majeure* events associated with the COVID-19 pandemic.<sup>9</sup> DOE and its contractors are engaged in ongoing analysis of work schedule impacts. DOE is continuing to evaluate the information and COVID-19 potential impacts on the Consent Decree, and if other actions may be necessary.

The Hanford Site transitioned to Phase 2 beginning August 31, 2020. In Phase 2, the WTP Project expects to have Building Trades back in the field with the majority of nonmanual workers continuing to telework to the degree workscope allows.

Since March 24, 2020, when the site moved to the essential mission-critical operations posture due to COVID-19 concerns, the site experienced numerous impacts related to restrictions or requirements based on COVID-19.

The following highlights some examples of impacts continuing at the site or having occurred in October 2020:

- Continuing COVID-19 impacts:
  - Social distancing requirements reduce the number of workers allowed in a given area at the same time and decreases the number of tasks that can be performed in parallel. This greatly impacts relatively compact work areas such as the Effluent Management Facility.
  - Engineering and management personnel are primarily working remotely. Communications through remote means, such as the use of meeting software and electronic devices, are not as efficient as traditional face-to-face communications and slows the resolution of issues that arise.
  - COVID-19 cleaning/decontamination protocols are put into place when any worker exhibits symptoms in the work place or tests positive. These activities require the temporary evacuation and isolation of work areas for cleaning.
  - Ongoing evaluations of meeting areas and fieldwork locations for social distancing requirements are required and allowed occupancy signage is posted and updated as appropriate.
  - Sanitization stations are provided and health-monitoring stations are staffed.
- October 2020 COVID-19 impacts:
  - The LAW Facility control room was evacuated due to a positive COVID-19 test result. This resulted in a delay for planned testing of LAW Facility cranes, which are operated from the control room.
  - A COVID-19 exposure resulted in the temporary shutdown of a commissioning training course while personnel were tested and the training area was sanitized. The

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<sup>9</sup> ENV\_DEFENSE-#919846, 2020, “Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to *Force Majeure* Event,” external letter to A.A. Fitz, Office of the Attorney General, Ecology Division from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

training platform had to be changed to accommodate remote learning until the quarantine period was completed.

- Multiple work areas throughout the site were evacuated, sanitized, and reevaluated for occupancy allowance due to positive COVID-19 test results or symptomatic workers.

**Significant Accomplishments during the Prior Month:**

- 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:**

- Significant planned activities in the reporting period are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF and LAB.

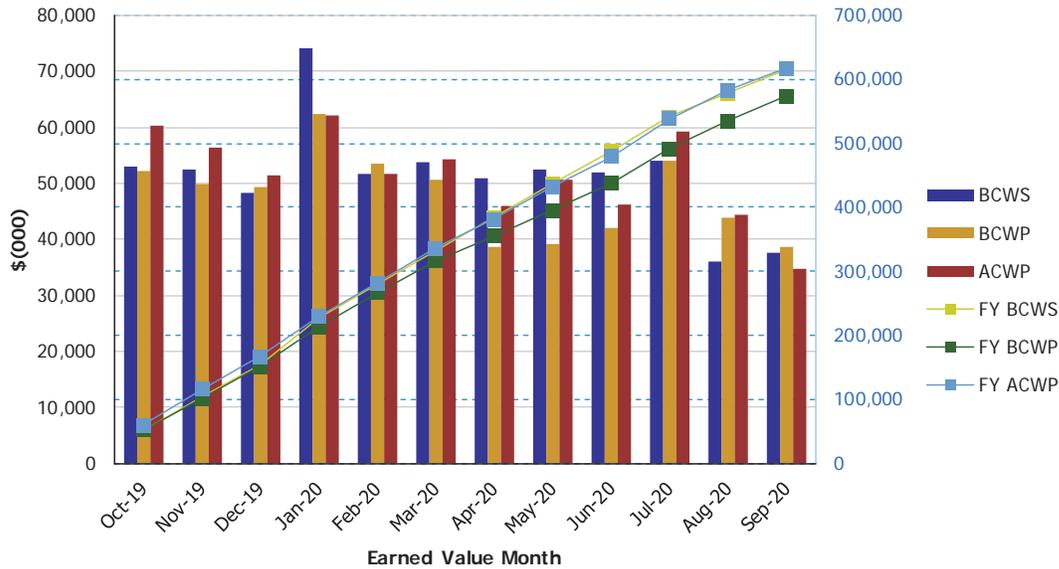
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: September 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	\$51,722	\$53,420	\$51,766	1.03	1.03	\$279,267	\$266,908	\$281,867	0.96	0.95
Mar 2020	\$53,763	\$50,732	\$54,238	0.94	0.94	\$333,030	\$317,640	\$336,106	0.95	0.95
Apr 2020	\$50,878	\$38,578	\$45,969	0.76	0.84	\$383,908	\$356,218	\$382,075	0.93	0.93
May 2020	\$52,452	\$39,269	\$50,645	0.75	0.78	\$436,360	\$395,487	\$432,720	0.91	0.91
Jun 2020	\$52,019	\$42,059	\$46,219	0.81	0.91	\$488,379	\$437,546	\$478,940	0.90	0.91
Jul 2020	\$53,942	\$54,031	\$59,260	1.00	0.91	\$542,321	\$491,577	\$538,199	0.91	0.91
Aug 2020	\$36,029	\$43,828	\$44,306	1.22	0.99	\$578,350	\$535,405	\$582,505	0.93	0.92
Sep 2020	\$37,691	\$38,688	\$34,785	1.03	1.11	\$616,041	\$574,092	\$617,290	0.93	0.93
PTD	\$12,494,269	\$12,352,153	\$12,367,021	0.99	1.00					

- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- 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 (September 2020)	\$997	\$3,902
Fiscal Year 2020 to-date	(\$41,948)	(43,198)
Cumulative (through September 2020)	(\$142,116)	(\$14,867)

CV = cost variance.

SV = schedule variance.

For the September 2020 earned value management system reporting period, a net favorable SV of approximately \$1.0 million was reported, primarily due to the following:

- DFLAW reported a favorable SV due to completion of construction activities for electrical, piping, site work, and subcontracted work associated with heat trace, insulation, and ultrasonic testing scope, which were previously behind schedule.
- LAW Facility reported a favorable SV due to completion of startup system and component testing activities that were previously behind schedule.
- BOF Startup reported a favorable SV due to earnings on system testing activities that were scheduled in previous months.

For the September 2020 earned value management system reporting period, a net favorable CV of approximately \$3.9 million was reported, primarily due to the following:

- Project Services control account (1.15 ZPSA) completed the annual transfer of allocation to individual Facility Project Services accounts. It reported favorable CV due to actual costs being less than the estimated budget.
- LBL Facility Services reported a favorable CV due to need for lesser number of spare parts and the lower purchase cost than the baseline. Additionally, planned purchase of an operations building was cancelled due to change of strategy, resulting in favorable CV.

The favorable CV was offset by:

- DFLAW reported an unfavorable CV due to the need to continue construction support for activities behind schedule and additional heat trace and insulation work, partially due to COVID-19 impacts.
- BOF continued to report an unfavorable CV due to higher demands for work planning and fieldwork activities associated with preventive maintenance and corrective maintenance, and due to incorrectly charged costs of LAW Facility related training to BOF. Cost corrections have been submitted and charging guidance has been updated.

## 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 <sup>1</sup>
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-O0001A/1B	12/31/2031	At Risk <sup>1</sup>
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	At Risk <sup>1</sup>
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	At Risk <sup>1</sup>
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	At Risk <sup>1</sup>

<sup>1</sup> 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.

DOE and Bechtel National, Inc. (BNI) completed resolution of all the technical issues identified in the Third Order Regarding Motions to Modify Consent Decrees<sup>10</sup>.

Design and Construction of the PT Facility remain on hold. The results of the ongoing AoA will inform the path forward on the PT Facility. Key ongoing activities include maintenance of the facility and discussions with vendors regarding suspended procurements in order to reduce liabilities.

### Significant Accomplishments during the Prior Month:

- None.

<sup>10</sup> *State of Washington v. Dept. of Energy*, No: 2:08-CV-5085-RMP (March 11, 2016) (ECF-221).

**Significant Planned Activities for the Next Month:**

- Continue to manage suspended plant equipment purchase orders to reduce storage and suspension costs and evaluate ways to reduce procurement liability
- Continue to implement asset maintenance at the PT Facility to protect equipment and structures and to ensure design documents are maintained.

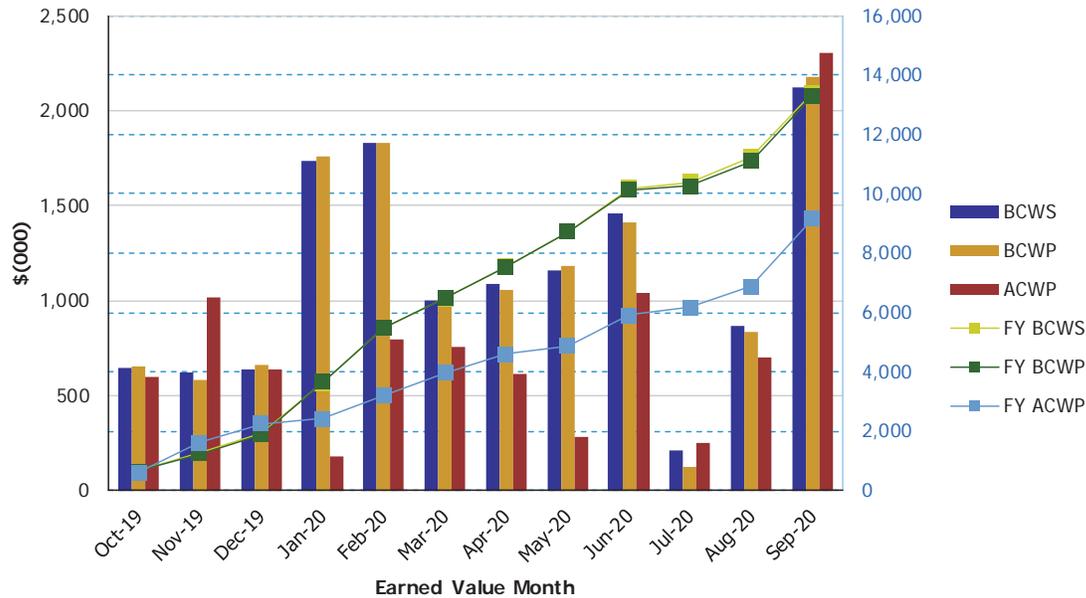
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: September 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	\$1,830	\$792	1.00	2.31	\$5,479	\$5,491	\$3,220	1.00	1.71
Mar 2020	\$1,000	\$994	\$758	0.99	1.31	\$6,479	\$6,485	\$3,978	1.00	1.63
Apr 2020	\$1,091	\$1,059	\$614	0.97	1.72	\$7,569	\$7,543	\$4,592	1.00	1.64
May 2020	\$1,155	\$1,187	\$283	1.03	4.20	\$8,725	\$8,730	\$4,875	1.00	1.79
Jun 2020	\$1,463	\$1,416	\$1,042	0.97	1.36	\$10,188	\$10,146	\$5,917	1.00	1.71
Jul 2020	\$207	\$126	\$247	0.61	0.51	\$10,395	\$10,272	\$6,164	0.99	1.67
Aug 2020	\$866	\$838	\$704	0.97	1.19	\$11,261	\$11,110	\$6,868	0.99	1.62
Sep 2020	\$2,127	\$2,182	\$2,305	1.03	0.95	\$13,388	\$13,292	\$9,173	0.99	1.45
PTD	\$3,526,468	\$3,524,432	\$3,457,078	1.00	1.02					

- 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 <sup>1</sup>
D-00A-03	Start HLW Facility Cold Commissioning	06/30/2032	At Risk <sup>1</sup>
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2033	At Risk <sup>1</sup>

<sup>1</sup> 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.

Since 2019, HLW Facility design activities have been ramping up as the engineering staff have been transitioning from DFLAW/LBL activities based on the availability of funds. System designs for completing preliminary design (60 percent) and detailed design (90 percent) reviews, and updating the hazards analysis and safety basis based on the updated design are the key ongoing activities. Additionally, because of the revision of the natural phenomena hazards that increased the ashfall criteria significantly, strategy and planning activities for developing the path forward for the updated ashfall criteria are being conducted to minimize the potential impact to the project.

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:**

- Issued the 60 percent design review report for the melter offgas treatment system.

**Significant Planned Activities in the Next Month:**

- Continue to advance system designs and hazard analysis for key mechanical and process systems
- Continue activities to develop path forward for the updated (increased) ashfall criteria
- Continue to manage suspended plant equipment purchase orders to reduce storage and suspension costs and to evaluate ways to reduce procurement liability
- Continue to implement asset maintenance at the HLW Facility to protect equipment and structures and to ensure design documents are maintained.

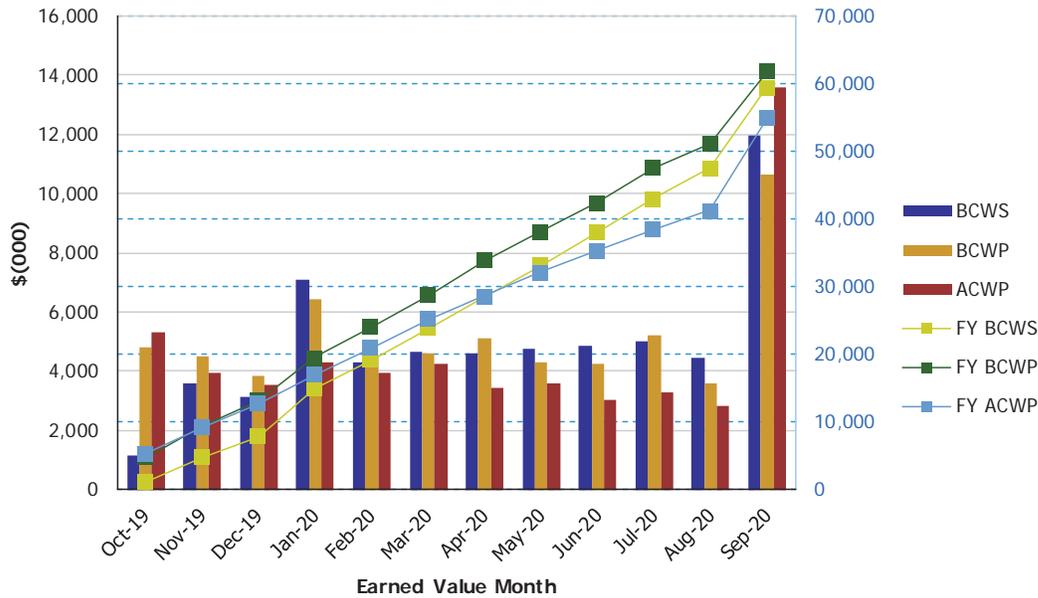
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: September 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	\$4,531	\$3,931	1.06	1.15	\$19,248	\$24,113	\$20,964	1.25	1.15
Mar 2020	\$4,655	\$4,595	\$4,257	0.99	1.08	\$23,903	\$28,707	\$25,221	1.20	1.14
Apr 2020	\$4,595	\$5,126	\$3,414	1.12	1.50	\$28,498	\$33,833	\$28,635	1.19	1.18
May 2020	\$4,735	\$4,309	\$3,573	0.91	1.21	\$33,234	\$38,142	\$32,207	1.15	1.18
Jun 2020	\$4,833	\$4,233	\$3,052	0.88	1.39	\$38,067	\$42,374	\$35,259	1.11	1.20
Jul 2020	\$5,009	\$5,230	\$3,265	1.04	1.60	\$43,076	\$47,604	\$38,524	1.11	1.24
Aug 2020	\$4,431	\$3,570	\$2,832	0.81	1.26	\$47,508	\$51,175	\$41,356	1.08	1.24
Sep 2020	\$11,963	\$10,653	\$13,585	0.89	0.78	\$59,470	\$61,828	\$54,940	1.04	1.13

PTD	\$2,563,220	\$2,560,250	\$2,502,742	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.

## Low-Activity Waste Facility<sup>11</sup>

**Federal Project Director:** Tom Fletcher

**Facility Federal Project Director:** Jason Young

Milestone	Title	Due Date	Status
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2020	Amendment proposed <sup>1</sup>
D-00A-08	Start LAW Facility Cold Commissioning	12/31/2022	Amendment proposed <sup>1</sup>
D-00A-09	LAW Facility Hot Commissioning Complete	12/31/2023	Amendment proposed <sup>1</sup>

<sup>1</sup> Certain Consent Decree-related work at the Hanford Site has been interrupted since March 23, 2020, due to the COVID-19 pandemic. On May 21, 2020, the U.S. Department of Justice, on behalf of DOE, submitted a proposal to the State of Washington to amend the Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.) due to a Force Majeure event. ENV\_DEFENSE-#919846, 2020, "Proposal to Amend Consent Decree in *State of Washington v. Brouillete, et al.*, No. 2:08-cv-5085-RMP (E.D. Wash.), Due to Force Majeure Event," (external letter to A.A. Fitz, Office of the Attorney General, Ecology Division), from A.D. Saylor, C.H. Kolman, and S. Shea, United States Department of Justice, Environmental Defense Section, Washington, D.C., May 21.

COVID-19 = coronavirus disease 2019.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

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 September 2020, the LAW Facility was 86 percent complete overall, with engineering design 98 percent complete, procurement 100 percent complete, construction 99 percent complete, and startup and commissioning 50 percent complete. Construction has been completed and startup testing initiated for all LAW Facility systems. Startup testing has been completed for 40 percent of LAW Facility systems, and custody of these systems has been transferred to the Plant Management organization for operations.

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<sup>11</sup> 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:**

- Construction completed turnover of the LAW Facility process control system (PCJ-L-05) to the Startup organization for testing
- Construction completed turnover of the LAW Facility environmental monitoring system (EMJ-L-02) to the Startup organization for testing
- Construction completed turnover of the LAW Facility passive gas analysis system (LVP-L-02) to the Startup organization for testing
- Construction completed turnover of the LAW Facility active gas analysis system (LVP-L-04) to the Startup organization for testing
- Construction completed turnover of the LAW Facility stack discharge monitoring system (SDJ-L-01) to the Startup organization for testing
- Construction completed turnover of the LAW Facility lighting electrical system (LTE-L-01) to the Startup organization for testing.

**Significant Planned Activities in the Next Month:**

- WTP simulator is expected to receive authorization to operate from the DOE cybersecurity organization
- Startup organization will continue punch list resolution and system testing for the LAW Facility.

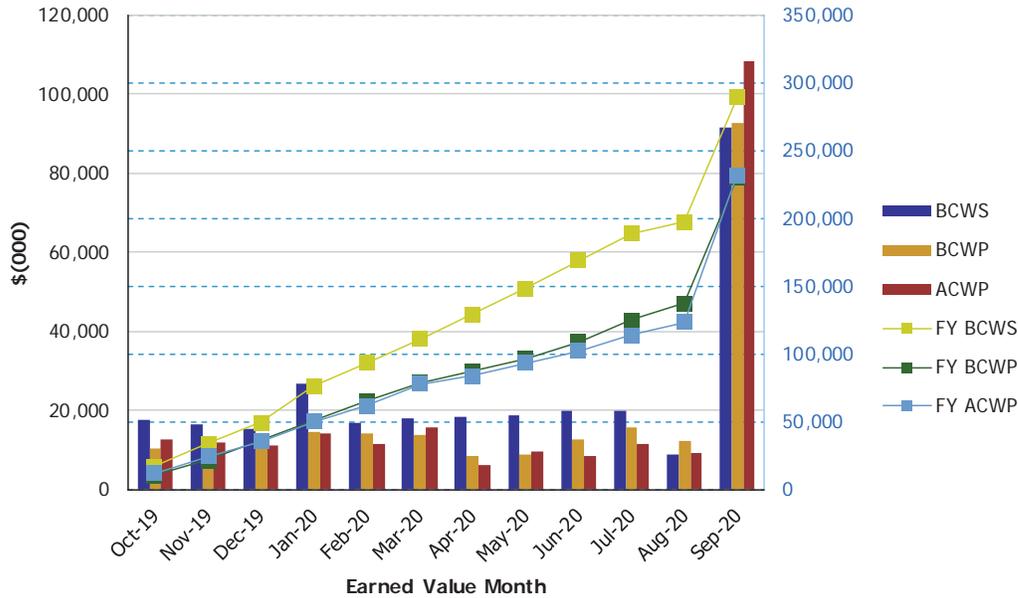
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: September 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	\$16,880	\$14,419	\$11,727	0.85	1.23	\$93,266	\$65,303	\$61,858	0.70	1.06
Mar 2020	\$18,044	\$13,801	\$15,925	0.76	0.87	\$111,310	\$79,103	\$77,783	0.71	1.02
Apr 2020	\$18,469	\$8,484	\$6,307	0.46	1.35	\$129,779	\$87,588	\$84,090	0.67	1.04
May 2020	\$18,880	\$9,045	\$9,578	0.48	0.94	\$148,659	\$96,632	\$93,668	0.65	1.03
Jun 2020	\$20,112	\$12,537	\$8,592	0.62	1.46	\$168,771	\$109,169	\$102,259	0.65	1.07
Jul 2020	\$19,981	\$15,861	\$11,735	0.79	1.35	\$188,753	\$125,030	\$113,995	0.66	1.10
Aug 2020	\$8,771	\$12,354	\$9,259	1.41	1.33	\$197,523	\$137,384	\$123,253	0.70	1.11
Sep 2020	\$91,699	\$92,580	\$108,362	1.01	0.85	\$289,223	\$229,964	\$231,616	0.80	0.99

PTD	\$2,573,888	\$2,471,780	\$2,474,649	0.96	1.00
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
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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 September 2020, BOF was 92 percent complete overall, engineering design was 98 percent complete, procurement was 100 percent complete, construction was 96 percent complete, and startup and commissioning was 83 percent complete. Design of Effluent Management Facility (EMF) was 100 percent complete.

Construction has been completed and startup testing initiated for all BOF systems. Startup testing has been completed for all systems except the Glass Former Storage Facility system (GFR-B-01). Custody of these systems has been transferred to the Plant Management organization for operations. System operation and maintenance, operator training, and procedure refinement continues as BNI prepares for increased BOF demands to support LAB operation and LAW Facility system testing.

### Significant Accomplishments during the Prior Month:

- Maintenance organization completed pressure safety valve replacement and modification activities for the plant service air compressors.
- Maintenance organization completed replacement of the pressurization bladder in the chilled water system expansion tank.
- Maintenance organization completed repairs to the diesel fuel oil system booster pumps located in the Steam Plant.
- Plant Management completed modifications to the Steam Plant boiler nozzles to improve operational performance over a wider range of steam demand.

### Significant Planned Activities in the Next Month:

- Engineering will continue to support EMF construction, EMF system walkdowns, and EMF system startup testing.
- Plant Management will continue operations, testing, and tuning of the Steam Plant.
- Construction will continue onsite road preparation and paving.

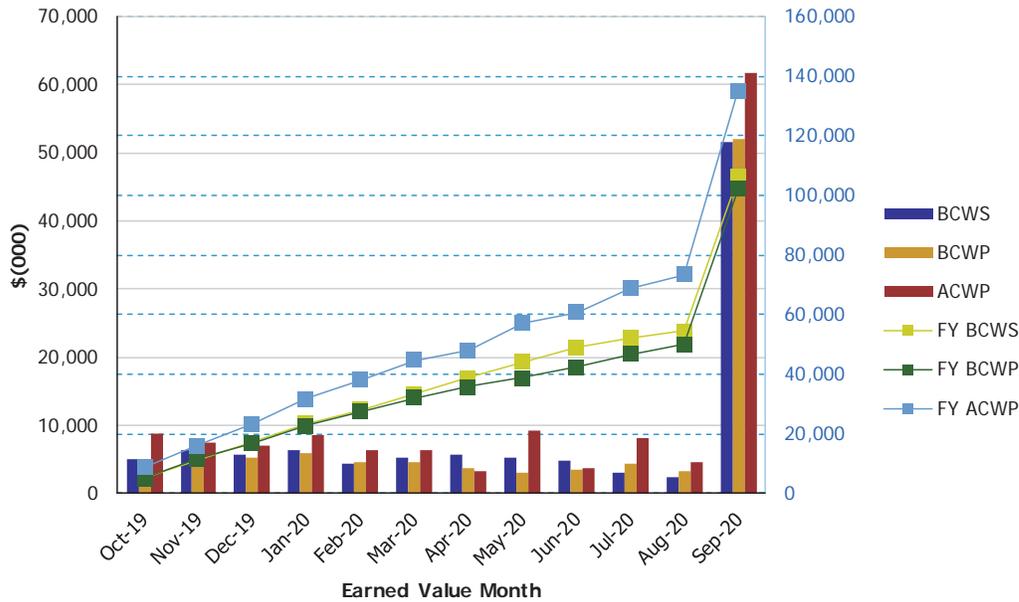
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: September 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	\$4,392	\$4,689	\$6,304	1.07	0.74	\$27,990	\$27,520	\$38,205	0.98	0.72
Mar 2020	\$5,265	\$4,631	\$6,385	0.88	0.73	\$33,256	\$32,151	\$44,590	0.97	0.72
Apr 2020	\$5,698	\$3,696	\$3,341	0.65	1.11	\$38,954	\$35,847	\$47,931	0.92	0.75
May 2020	\$5,194	\$3,159	\$9,256	0.61	0.34	\$44,148	\$39,006	\$57,188	0.88	0.68
Jun 2020	\$4,909	\$3,424	\$3,657	0.70	0.94	\$49,057	\$42,430	\$60,845	0.86	0.70
Jul 2020	\$3,145	\$4,386	\$8,058	1.39	0.54	\$52,202	\$46,816	\$68,903	0.90	0.68
Aug 2020	\$2,311	\$3,217	\$4,552	1.39	0.71	\$54,513	\$50,033	\$73,455	0.92	0.68
Sep 2020	\$51,649	\$52,059	\$61,750	1.01	0.84	\$106,162	\$102,092	\$135,205	0.96	0.76

PTD	\$1,021,151	\$1,005,025	\$1,071,718	0.98	0.94
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- |      |   |                                  |      |   |                                 |
|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed.   | EVMS | = | earned value management system. |
| BCWP | = | budgeted cost of work performed. | FY   | = | fiscal year.                    |
| BCWS | = | budgeted cost of work scheduled. | PTD  | = | project to date.                |
| CPI  | = | cost performance index.          | SPI  | = | schedule performance index.     |

## 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 September 2020, the LAB was 91 percent complete overall, engineering design was 99 percent complete, procurement was 100 percent complete, construction was 100 percent complete, and startup and commissioning was 73 percent complete.

The LAB has completed construction and startup testing for all LAB systems, and custody of these systems has been transferred to the Plant Management organization for operations. BNI is working to resolve outstanding punch list items, progress procedure preparations, and perform methods validation activities in support of the transition to facility operations.

### Significant Accomplishments during the Prior Month:

- Completed a joint DOE/BNI walkdown of the LAB in preparation for the BNI management LAB readiness assessment.
- Plant Management initiated recertification activities for the LAB fume hoods.
- Plant Management completed retest activities for the LAB radioactive liquid waste disposal system transfer pumps.

### Significant Planned Activities in the Next Month:

- Plant Management is expected to complete certification of the LAB fume hoods.
- Plant Management is expected to approve all remaining LAB method reports and complete the methods validation process for sealed sources
- Plant Management is expected to complete program implementation activities to support LAB readiness for operation.
- Plant management is expected to conduct the formal contractor assessment for the LAB ready to operate contract milestone.

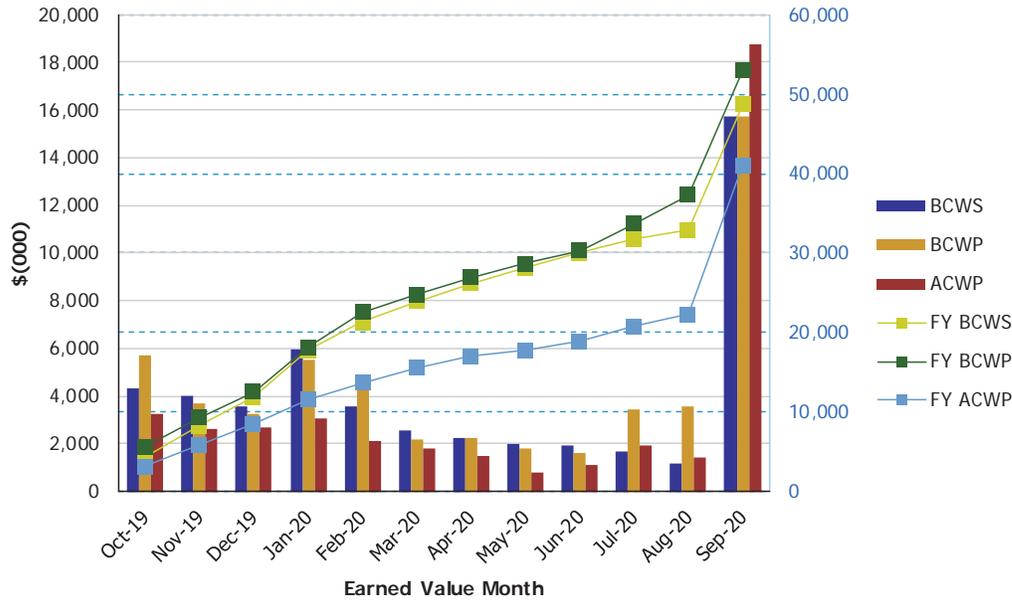
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2020 Earned Value Data

Data as of: September 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	\$3,548	\$4,446	\$2,136	1.25	2.08	\$21,326	\$22,522	\$13,709	1.06	1.64
Mar 2020	\$2,568	\$2,191	\$1,808	0.85	1.21	\$23,894	\$24,713	\$15,517	1.03	1.59
Apr 2020	\$2,221	\$2,214	\$1,462	1.00	1.51	\$26,114	\$26,928	\$16,979	1.03	1.59
May 2020	\$1,995	\$1,772	\$765	0.89	2.32	\$28,110	\$28,699	\$17,744	1.02	1.62
Jun 2020	\$1,930	\$1,601	\$1,136	0.83	1.41	\$30,040	\$30,301	\$18,880	1.01	1.60
Jul 2020	\$1,680	\$3,445	\$1,925	2.05	1.79	\$31,719	\$33,746	\$20,805	1.06	1.62
Aug 2020	\$1,141	\$3,587	\$1,431	3.14	2.51	\$32,860	\$37,332	\$22,236	1.14	1.68
Sep 2020	\$15,752	\$15,702	\$18,739	1.00	0.84	\$48,612	\$53,034	\$40,975	1.09	1.29

PTD	\$492,464	\$488,447	\$464,416	0.99	1.05
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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.



**Table 1 Administrative Record Metadata**

<b>Milestone Number or Facility Identification</b>	<b>Title</b>
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-02DQ	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)

Ecology = Washington State department of Ecology.

LAW = Low-Activity Waste (Facility).

TWRWP = tank waste retrieval work plan.