

FINAL

Office of River Protection
Consent Decree
Monthly Report
September¹ 2017

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) ²

¹ The narrative descriptions of progress in this report cover the period from August 1-31, 2017. Earned Value Management System data and descriptions cover the period of July 1-31, 2017; this includes the facility completion percentage estimates included at various locations in the Waste Treatment and Immobilization Plant section.

² The cited consent decrees are between the State of Washington and U.S. Department of Energy. For each of these decrees, there are companion, separate consent decrees with the State of Oregon, as Intervenor, under the same case numbers.

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Acronyms and Abbreviations

BNI	Bechtel National, Inc.
BOF	Balance of Facilities
C#V	ventilation system for potential contamination zones C#
CD	Consent Decree (<i>State of Washington v. Dept. of Energy</i> , No. 08-5085-FVS [October 25, 2010]; as amended, Amended Consent Decree, NO. 2:08-CV-5085-RMP [March 11, 2016]; as amended, Second Amended Consent Decree, No. 2:08-CV-5085-RMP [April 12, 2016])
CV	cost variance
D&O	design and operability
DFLAW	direct-feed low-activity waste
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	Effluent Management Facility
EVMS	Earned Value Management System
FY	fiscal year
HEPA	high-efficiency particulate air
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
PDSA	preliminary documented safety analysis
PJM	pulse-jet mixer
PT	Pretreatment (Facility)
SHSV	standard high-solids vessel
SV	schedule variance
WTP	Waste Treatment and Immobilization Plant

Consent Decree Milestone Statistics/Status

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2020				
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	12/31/2020		Notice given that a serious risk has arisen. See letter 16-ORP-0097.
Fiscal Year 2022				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		On Schedule
Fiscal Year 2023				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		On Schedule
Fiscal Year 2024				
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		On Schedule
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	03/31/2024		Notice given that a serious risk has arisen. See letter 16-ORP-0097.
Fiscal Year 2030				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		On Schedule

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2031				
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2031		On Schedule
D-00A-14 Interim	PT Facility Construction Substantially Complete	12/31/2031		On Schedule
D-00A-19 Interim	Complete Elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2031		On Schedule
Fiscal Year 2032				
D-00A-03 Interim	Start HLW Facility Cold Commissioning	06/30/2032		On Schedule
D-00A-06 Interim	Complete Methods Validations	06/30/2032		On Schedule
D-00A-15 Interim	Start PT Facility Cold Commissioning	12/31/2032		On Schedule
Fiscal Year 2033				
D-00A-04 Interim	HLW Facility Hot Commissioning Complete	12/31/2033		On Schedule
D-00A-16 Interim	PT Facility Hot Commissioning Complete	12/31/2033		On Schedule
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2033		On Schedule
Fiscal Year 2036				
D-00A-01	Achieve Initial Plant Operations for the Waste Treatment Plant	12/31/2036		On Schedule

DOE = U.S. Department of Energy.
Ecology = Washington State Department of Ecology.
HLW = high-level waste.
LAW = low-activity waste.
PT = pretreatment.
SST = single-shell tank.
WMA-C = C Farm waste management area.

Consent Decree Reports/Reviews

D-16C-03 series, Submit to State of Washington and State of Oregon Quarterly Report, Due: 45 days following after each calendar year quarter (August 14, 2017), Status: Complete (August 9, 2017).

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, Status: Complete.

D-006-00-B, Meet Approximately Every Three Years after Entry of Decree to review requirements of the Consent Decree, Status: Complete (March 16, 2017).

Spare Reboiler Requirement Status

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: Paul Hernandez

Milestone	Title	Due Date	Status
D-16E-01	DOE must purchase by December 31, 2016, a spare E-A-1 reboiler for the 242-A Evaporator	12/31/2016	Complete
D-16E-02	Have available spare E-A-1 reboiler for the 242-A Evaporator	12/31/2018	On Schedule

DOE = U.S. Department of Energy.

Description of activity and progress made for the spare E-A-1 reboiler for the 242-A Evaporator, including a description of cost and schedule performance

- Washington River Protection Solutions LLC awarded a not-to-exceed design/build contract to ABW Technologies in the amount of \$461,000 for fabrication of a spare reboiler, with delivery prior to December 31, 2018. Total estimate at completion is \$776,000.
- Washington River Protection Solutions LLC is reviewing the final design of the spare 242-A Evaporator reboiler. ABW Technologies has completed the finite element analysis associated with the proposed reboiler design. ABW Technologies will begin material procurements as well as fabrication of the reboiler upon approval of the final design by Washington River Protection Solutions LLC. This analysis and design work does not impact the DOE's ability to meet the milestone due date of December 31, 2018.

Single-Shell Tank Retrieval Program

Tank Farms Assistant Manager: Glyn Trenchard

Federal Program Manager: 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 5	12/31/2020	Notice given that a serious risk has arisen. See letter 16-ORP-0097.
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	On Schedule
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.	03/31/2024	Notice given that a serious risk has arisen. See letter 16-ORP-0097.

DOE = U.S. Department of Energy.
 Ecology = Washington State Department of Ecology.
 SST = single-shell tank.
 WMA-C = C Farm waste management area.

Significant Accomplishments During the Prior Three Months:

- Completed cover block removal at Tank AX-103
- Continued field activities in preparation for removing Tank AX-101 cover blocks
- Removed five thermocouples from Tank AX-102 and Tank AX-104
- Completed major equipment installation for Tank C-105 third technology
- Completed Tank C-105 third technology construction acceptance testing
- Completed fabrication and acceptance of the A Tank Farm and AX Tank Farm water service skid (POR466)
- Completed Tank C-105 operational acceptance testing
- Completed 801A building demolition
- Removed eight hose-in-hose transfer lines from C Tank Farm and packaged them for disposal

- Completed the A285 chemical and water service building
- Initiated Tank C-105 third technology retrieval operations
- Initiated installation of hose-in-hose transfer lines for AX Tank Farm to Tank AZ-102
- Initiated installation of new 13.8 kV transformer and infrastructure to provide power for AX Tank Farm retrieval
- Document RPP-RPT-60173, *Retrieval Data Report for Single-Shell Tank 241-C-111*, was completed and submitted to the Washington State Department of Ecology (Ecology) via letter 17-TPD-0018, “The U.S. Department of Energy Office of River Protection Submits the Retrieval Data Report for Tank 241-C-111,” on August 11, 2017, in accordance with Milestone M-045-86.

Significant Planned Activities in the Next Three Months:

- Remove legacy long-length equipment from Tank AX-102 and Tank AX-104
- Remove Tank AX-101 cover blocks in preparation for cleaning out pits
- Receive remaining extended reach sluicer systems for Tank AX-101
- Receive two exhausters (POR518/519) for the A Tank Farm
- Initiate video inspection planning of Tank A-104 and Tank A-105
- Complete AX Tank Farm POR126 and POR127 portable exhauster readiness activities
- Complete the removal of 10 hose-in-hose transfer lines from C Tank Farm
- Complete dispersion modeling for stacks at A Tank Farm, AX Tank Farm, and 242-A Evaporator
- Initiate Tank AX-103 pit clean out in preparation for long-length equipment removal
- Complete Tank C-105 third technology retrieval operations
- Initiate fieldwork to install exhauster pads for new A Tank Farm exhausters (POR518/519).

Issues:

- Reduced worker efficiencies associated with mandatory use of supplied air continues to impact work in the tank farms. With respect to ongoing litigation regarding chemical vapors, additional mediation sessions are tentatively scheduled for September 18 and 19, 2017.
- Installation of the A Tank Farm portable exhausters has been impacted by concerns with placement of the exhausters near the stacks at 242-A Evaporator and AX Tank Farm. Exhaust stack modeling has been completed and the alternate location is under review. The redesign of the A Tank Farm ventilation system was initiated in August.

Tank Waste Retrieval Work Plan Status*Tank Farms Assistant Manager:* Glyn Trenchard*Federal Program Manager:* Jeff Rambo

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
AX-101	RPP-RPT-58932, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-102	RPP-RPT-58933, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-103	RPP-RPT-58934, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-104	RPP-RPT-58935, Rev. 0	In Progress	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
C-101	RPP-22520, Rev. 8	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	–
C-102	RPP-22393, Rev. 7	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	–
C-104	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0018	–
C-105	RPP-22520, Rev. 8	Complete	MARS-V	MARS-V High-Pressure Water Spray	Chemical Dissolution Process with ERSS
C-107	RPP-22393, Rev. 7	Complete	MARS-S	MARS-S High-Pressure Water Spray	Water Dissolution
C-108	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0025	–

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0037	–
C-110	RPP-33116, Rev. 3	Complete	Modified Sluicing	Mechanical Waste Conditioning with an In-Tank Vehicle	High Pressure Water
C-111	RPP-37739, Rev. 2	Complete	Modified Sluicing	High pressure water using the ERSS	Chemical Dissolution Process with ERSS
C-112	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process	–

ERSS = extended reach sluicer system.

MARS-S = Mobile Arm Retrieval System-Sluicing.

MARS-V = Mobile Arm Retrieval System-Vacuum.

TWRWP = tank waste retrieval work plan.

Significant Accomplishments During the Prior Three Months:

- None.

Significant Planned Activities in the Next Three Months:

- Finalize AX Tank Farm retrieval work plans.

Issues:

- None.

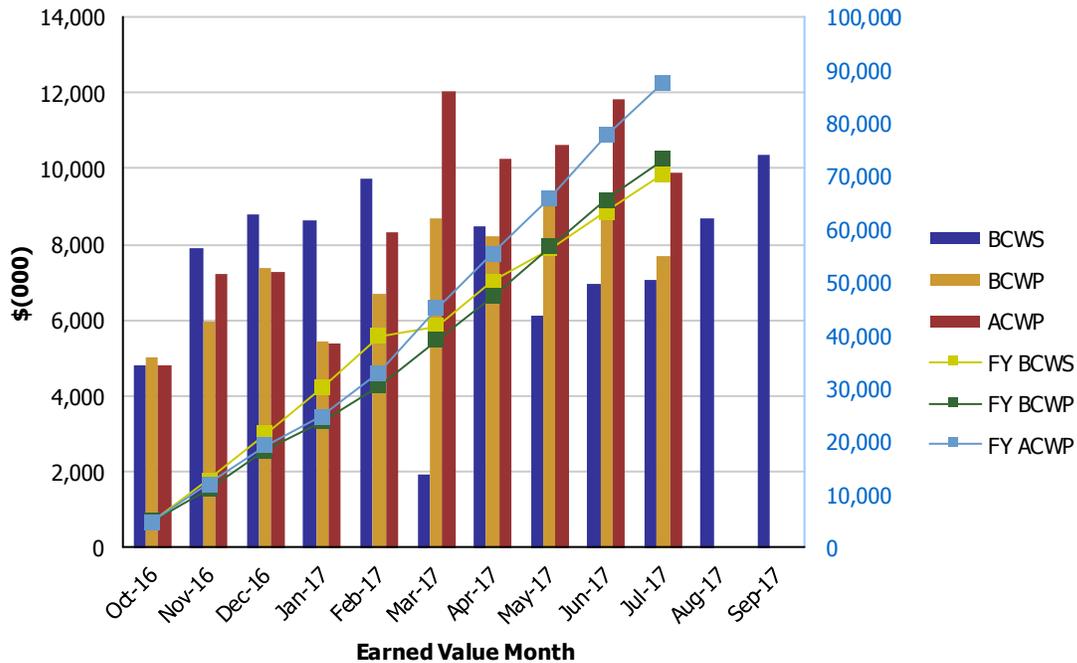
EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

July-17

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$4,816	\$4,996	\$4,822	1.04	1.04	\$4,816	\$4,996	\$4,822	1.04	1.04
Nov 2016	\$7,924	\$5,969	\$7,241	0.75	0.82	\$12,740	\$10,965	\$12,063	0.86	0.91
Dec 2016	\$8,772	\$7,401	\$7,262	0.84	1.02	\$21,512	\$18,365	\$19,325	0.85	0.95
Jan 2017	\$8,646	\$5,422	\$5,360	0.63	1.01	\$30,158	\$23,787	\$24,685	0.79	0.96
Feb 2017	\$9,716	\$6,707	\$8,341	0.69	0.80	\$39,874	\$30,495	\$33,026	0.76	0.92
Mar 2017	\$1,903	\$8,675	\$12,056	4.56	0.72	\$41,777	\$39,170	\$45,082	0.94	0.87
Apr 2017	\$8,477	\$8,214	\$10,268	0.97	0.80	\$50,254	\$47,384	\$55,350	0.94	0.86
May 2017	\$6,110	\$9,406	\$10,604	1.54	0.89	\$56,364	\$56,790	\$65,953	1.01	0.86
Jun 2017	\$6,982	\$8,684	\$11,807	1.24	0.74	\$63,345	\$65,474	\$77,761	1.03	0.84
Jul 2017	\$7,043	\$7,702	\$9,910	1.09	0.78	\$70,388	\$73,176	\$87,670	1.04	0.83
Aug 2017	\$8,673									
Sep 2017	\$10,391									

CTD	\$779,556	\$771,226	\$808,344	0.99	0.95
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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)³

The July 2017 **favorable** schedule variance (SV) of \$659,000 is due to:

- Schedule recovery – Two thermocouples were removed from Tank AX-102 and Tank AX-104 in July, this work had been previously delayed due to the waste disturbing stop work order prohibiting the operation of the ventilation system.
- Installation of the AX Tank Farm splitter box was completed in July, ahead of schedule due to favorable weather, efficiencies in work planning, and available resources.
- Tank C-105 construction crews worked additional shifts (Fridays and weekends) to accelerate recovery plans to support completing retrieval operational testing in July and to initiate waste retrieval operations on August 10, 2017.

The July 2017 **unfavorable** cost variance (CV) of \$2,207,000 is due to:

- Additional monitoring and controls have been required as a result of beryllium and vapors within A Tank Farm and AX Tank Farm. The additional controls have reduced field productivity and required additional work planning and engineering input/reviews prior to field execution.
- Additional costs were realized, due to the need for extra construction forces (overtime/weekend shifts) to support the restart of Tank C-105 retrieval operations, which occurred on August 10, 2017.

³ “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: Bill Hamel

Deputy Federal Project Director: Joni Grindstaff

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	On Schedule
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2036	On Schedule

WTP = Waste Treatment and Immobilization Plant.

The Waste Treatment and Immobilization Plant (WTP) Project currently employs approximately 2,777 full-time equivalent contractor, Bechtel National, Inc. (BNI), and subcontractor personnel. This includes 689 craft, 751 non-manual, and 146 subcontractor full-time equivalent personnel working at the WTP construction site (all facilities).

The 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 LAW [DFLAW] and LBL facility services). As of July 2017, total LBL facilities were 58 percent complete, design and engineering was 84 percent complete, procurement was 71 percent complete, construction was 75 percent complete, and startup and commissioning was 20 percent complete.

The WTP Project has complied with milestones already come due as of the date of this report. There are no missed milestones that may affect compliance with other milestones.

Significant Accomplishments During the Prior Three Months:

- Significant accomplishments during the prior three months are noted in project reports for the Pretreatment (PT) Facility, High-Level Waste (HLW) Facility, LAW Facility, BOF, and LAB.

Significant Planned Activities in the Next Three Months:

- On August 15, 2017, Acting Assistant Secretary James Owendoff met with Director of Ecology Maia Bellon and Ecology Nuclear Waste Program Manager Alex Smith and had a brief conversation about several potential ideas to accelerate cleanup of the Hanford Site and anticipates scheduling additional discussions on these matters in the near future.
- Significant planned activities in the next three months are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

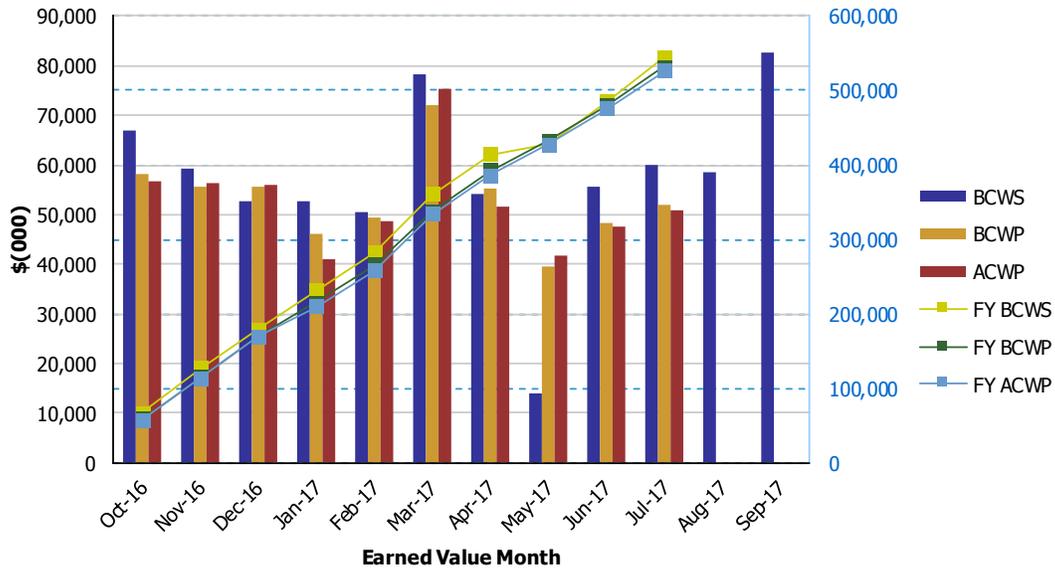
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: July 2017

**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 2016	\$67,019	\$58,321	\$56,633	0.87	1.03	\$67,019	\$58,321	\$56,633	0.87	1.03
Nov 2016	\$59,361	\$55,681	\$56,299	0.94	0.99	\$126,379	\$114,002	\$112,932	0.90	1.01
Dec 2016	\$52,654	\$55,489	\$56,125	1.05	0.99	\$179,033	\$169,491	\$169,057	0.95	1.00
Jan 2017	\$52,807	\$46,077	\$40,881	0.87	1.13	\$231,840	\$215,568	\$209,938	0.93	1.03
Feb 2017	\$50,489	\$49,354	\$48,627	0.98	1.01	\$282,329	\$264,922	\$258,565	0.94	1.02
Mar 2017	\$78,183	\$72,145	\$75,415	0.92	0.96	\$360,512	\$337,067	\$333,981	0.93	1.01
Apr 2017	\$54,085	\$55,376	\$51,509	1.02	1.08	\$414,597	\$392,443	\$385,490	0.95	1.02
May 2017	\$13,975	\$39,451	\$41,659	2.82	0.95	\$428,572	\$431,894	\$427,148	1.01	1.01
Jun 2017	\$55,640	\$48,136	\$47,667	0.87	1.01	\$484,211	\$480,030	\$474,815	0.99	1.01
Jul 2017	\$59,893	\$51,954	\$50,998	0.87	1.02	\$544,105	\$531,985	\$525,813	0.98	1.01
Aug 2017	\$58,619									
Sep 2017	\$82,702									
PTD	\$10,372,220	\$10,332,994	\$10,255,902	1.00	1.01					

- 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 (July 2017)	(\$7,939)	\$956
Fiscal Year 2017 to-date	(\$12,120)	\$6,171
Cumulative (through July 2017)	(\$39,226)	\$77,092

CV = cost variance.

SV = schedule variance.

Earned Value Management System Analysis

The Earned Value Management System (EVMS) is intended to provide a status of how the contractor is progressing against its planned work (i.e., schedule), and whether it is costing more or less to complete the work than planned. The project plan is measured by expressing the schedule in terms of dollars spread over the anticipated project duration, and then for each month, determining how much of the planned work was accomplished or “earned,” as measured in equivalent dollars. If more work is accomplished than planned, then the project is ahead of schedule and has a favorable SV. Similarly, if less work is accomplished, the project is behind schedule and has an unfavorable SV. Accomplished work is reported in the month it was completed, which may not be when it was planned. For example, work completed in a month earlier than planned would be reported as a favorable SV for the month in which it was completed, but would be reported as an unfavorable SV in the month it was planned. The end result would be the overall cumulative SV netting out to zero over these months. Likewise, work completed late will recover an earlier reported unfavorable SV.

The CV measures the actual cost of work performed against the earned dollar value of that performed work. As an example, assume \$10,000 of work was planned to-date, \$8,000 was reported as being performed (earned), at an actual cost of \$9,000. This work would be reported as being \$2,000 behind schedule [a negative or unfavorable SV: $\$8,000 - \$10,000 = (\$2,000)$], and has cost \$1,000 more [a negative or unfavorable CV: $\$8,000 - \$9,000 = (\$1,000)$] than was planned for completing that work scope. Likewise, a favorable or positive CV would be reported if it cost less to complete the work than the performed dollar value of the work.

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

For the July EVMS reporting period, a net unfavorable SV of approximately (\$7.9 million) was reported (meaning that a net of \$7.9 million worth of scheduled work scope was not completed as planned), primarily due to the following:

- LBL reported an unfavorable SV of (\$8.2 million) because work planned for this month was performed ahead of schedule and prior to implementation of the Waste Treatment Completion Company accounts. LBL Engineering remains unfavorable because nuclear safety engineering resources are focused on the process hazards analysis, safety strategy summary documents, and comment resolution of the draft Preliminary Documented Safety Analysis (PDSA). This impacts the progression of the LAW Facility Documented Safety Analysis chapters and development of the technical safety requirement document. DFLAW construction is unfavorable because some installation work on the radioactive Liquid Effluent Retention Facility was deferred because of other project priorities, and because a pipe rack delivery for the Effluent Management Facility (EMF) was delayed.
- HLW reported an unfavorable SV of (\$0.6 million) because work planned for this month on the engineering qualification testing for remote-change, high-efficiency particulate air (HEPA) filters was completed ahead of schedule. However, the radioactive liquid disposal system design is behind schedule because of the focus on updating the PDSA. Plant Equipment is unfavorable because a cable reel shipment and delivery was delayed while a quality verification document package review occurred.
- PT reported a favorable SV of \$0.9 million because mixing test operations work planned for this month by the Test Completion Team were completed earlier. Plant Material was unfavorable due to delayed steel deliveries in July.

For the July EVMS reporting period, a net **favorable** CV of approximately \$1.0 million was reported (meaning it cost a net of \$1.0 million less to do the work than planned), primarily due to the following:

- Project Services reported a favorable CV of \$0.8 million because General/Other Services actual labor charges were less than planned caused by a combination of unfilled positions and holiday leave. Procurement and Engineering also reported favorable CVs because actual labor costs were less than had been planned for.
- PT reported a favorable CV of 0.6 million, due in part to technical team efficiencies in completing documents to support the concept design alternative study. Plant Material reported a favorable CV due to adjustment of accruals from closed work packages.
- LBL reported an unfavorable CV of (\$0.6 million), because LBL Engineering (excluding DFLAW) continues to dedicate additional resources to support LAW Facility PDSA comment resolution and process hazard analysis augmentation.

Through the current monthly reporting period, there are no SVs or CVs impacting existing Consent Decree milestones.

Pretreatment Facility

Federal Project Director: Bill Hamel

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 in PT Facility	12/31/2031	On Schedule
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2031	On Schedule
D-00A-14	PT Facility Construction Substantially Complete	12/31/2031	On Schedule
D-00A-15	Start PT Facility Cold Commissioning	12/31/2032	On Schedule
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2033	On Schedule

PT = pretreatment.

The PT Facility will separate radioactive tank waste into high-level waste and low-activity waste fractions, and transfer each waste type to the respective vitrification facility for immobilization. As of September 2012, the PT Facility was 56 percent complete overall, with engineering design 85 percent complete, procurement 56 percent complete, construction 43 percent complete, and startup and commissioning 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.

The DOE Office of River Protection (ORP) and BNI continue to work on resolving the remaining technical issues as referenced in the Second Amended Consent Decree, which include, “Ensuring Control of the Pulse Jet Mixers” (i.e., T4 in relation to pulse-jet mixer [PJM] vessel mixing and control); “Protecting Against Possible Erosion and Corrosion” (i.e., T5 in relation to erosion/corrosion in piping and ancillary vessels); and “Ensuring Ventilation Balancing” (i.e., T8 in relation to facility ventilation/process offgas treatment).

Work is also being performed to evaluate the facility design using the standard high-solids vessel (SHSV) test design prototype (i.e., T6 in relation to design redundancy and in-service inspection), and evaluating vessel and equipment structural integrity (i.e., T7 in relation to seismic ground motion criteria changes around 2005).

ORP and BNI initiated testing of the PJM SHSV design to replace a number of vessel designs in the PT Facility to resolve concerns over PJM vessel mixing and control (i.e., T4). A prototype of the 16-foot-diameter SHSV was commissioned in December 2016. The testing results will

provide the required design and operations information to support PT Facility design. Full-scale PJM controls testing was completed in April 2017. This testing substantiated PJM control parameters and the control approach to be used for the qualification of the design for the SHSV.

Significant Accomplishments During the Prior Three Months:

- In early August, ORP and BNI agreed on the assumptions, method of analysis, and results regarding spray leak methodology and sliding bed wear in piping. This was in response to issues identified by the Defense Nuclear Facilities Safety Board (DNFSB) in its *26th Annual Report to Congress*, dated March 2016. The DNFSB was briefed on the agreed to information noted above. BNI will continue to work on issues related to spray leak methodology and sliding bed wear in piping, and will respond to any concerns identified by the DNFSB during its review of the information noted above.
- Final stage testing of the PJM system to verify mixing parameters started in late June 2017 to support resolution of mixing issues applicable to PT Facility vessels with high solids concentrations and non-Newtonian slurries. Mixing testing is currently scheduled to be completed in September 2017. Testing has been going well, and the preliminary results indicate that the mixing system is performing better than expected at this time.

Significant Planned Activities in the Next Three Months:

- BNI is expected to develop an engineering study documenting SHSV conceptual design functions and requirements in support of resolving issues in relation to design redundancy and in-service inspection (i.e., T6).
- BNI is expected to continue full-scale testing of the SHSV design prototype, focusing on completion of the full-scale PJM mixing systems testing. The mixing systems testing is expected to be completed by the end of September 2017, with supporting documentation expected to be completed by the end of December 2017.
- BNI is expected to complete testing of non-Newtonian blends at the National Engineering Technology Laboratory supporting the full-scale PJM vessel testing.
- BNI is expected to issue the methodology for the vessel structural integrity verification.
- BNI is expected to issue an update to the localized corrosion test basis document.

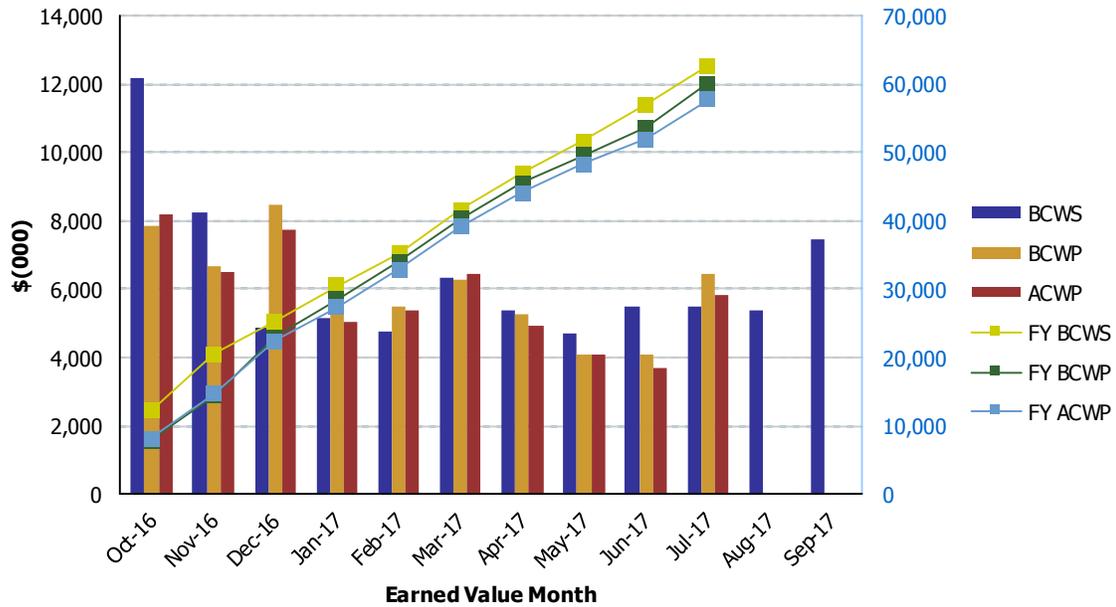
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: July 2017

**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 2016	\$12,193	\$7,845	\$8,196	0.64	0.96	\$12,193	\$7,845	\$8,196	0.64	0.96
Nov 2016	\$8,254	\$6,654	\$6,487	0.81	1.03	\$20,447	\$14,500	\$14,684	0.71	0.99
Dec 2016	\$4,851	\$8,480	\$7,738	1.75	1.10	\$25,298	\$22,980	\$22,421	0.91	1.02
Jan 2017	\$5,139	\$5,539	\$5,024	1.08	1.10	\$30,437	\$28,519	\$27,445	0.94	1.04
Feb 2017	\$4,765	\$5,517	\$5,361	1.16	1.03	\$35,202	\$34,036	\$32,806	0.97	1.04
Mar 2017	\$6,333	\$6,286	\$6,455	0.99	0.97	\$41,535	\$40,322	\$39,261	0.97	1.03
Apr 2017	\$5,382	\$5,260	\$4,917	0.98	1.07	\$46,918	\$45,582	\$44,178	0.97	1.03
May 2017	\$4,718	\$4,057	\$4,110	0.86	0.99	\$51,635	\$49,639	\$48,288	0.96	1.03
Jun 2017	\$5,472	\$4,073	\$3,670	0.74	1.11	\$57,107	\$53,712	\$51,958	0.94	1.03
Jul 2017	\$5,510	\$6,432	\$5,841	1.17	1.10	\$62,618	\$60,144	\$57,799	0.96	1.04
Aug 2017	\$5,353									
Sep 2017	\$7,436									

PTD	\$1,910,895	\$1,910,384	\$1,885,372	1.00	1.01
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

High-Level Waste Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Wahed Abdul

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

HLW = high-level waste.

The HLW Facility will receive the separated high-level waste concentrate from the PT Facility. This concentrate will 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 will be sealed and decontaminated before shipping to interim storage.

As of September 2012, the HLW Facility was 62 percent complete overall, with engineering design 89 percent complete, procurement 81 percent complete, construction 43 percent complete, and startup and commissioning 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 now being performed in accordance with the fiscal year 2017–fiscal year 2021 Interim Work Plan. BNI is still working under a limited construction and procurement authorization, and efforts are focused on completing activities required to obtain full-production authorization from ORP. BNI submitted a facility completion plan identifying the strategy for obtaining full authorization to complete engineering, procurement, and construction of the HLW Facility. The HLW Facility Completion Plan was approved by ORP on April 13, 2017.

BNI Engineering is focused on activities to support implementation of technical core team recommendations and development of engineering studies and analysis to disposition design and operability (D&O) review comments. All of the planned engineering studies and individual comment dispositions in support of the resolution of the D&O comments have been issued. ORP reviewed all disposition comments for adequacy. BNI provided the Final D&O Disposition Report to ORP in July 2017, summarizing the issue resolutions path forward. Additionally, BNI notified ORP it has completed all of the required criteria for ORP's authorization of the resumption of full procurement and construction, pending ORP approval of the updated PDSA.

The HLW Facility PDSA update to align design and the safety basis was previously submitted to ORP. The ORP-chartered Safety Basis Review Team provided initial comments, and BNI submitted responses to those comments along with a revised PDSA in early March 2017. This review and comment resolution process was initially impacted by resource constraints and has been delayed due to the ongoing LBL PDSA/document safety analysis review and approval, which is a higher WTP priority at this time. Recently, ORP and BNI provided additional resources to support HLW Facility PDSA approval. BNI has resolved all ORP comments and transmitted Rev. 7 of the PDSA on August 31, 2017 for ORP approval. Once the updated HLW Facility PDSA is approved, activities can be initiated to implement the revised safety requirements to confirm facility design is aligned with the nuclear safety basis.

All testing at Mississippi State University of the redesigned HEPA filter for the safe-change and remote-change housings have been completed successfully. The final report from the results of the testing is expected to be issued in late September 2017.

Significant Accomplishments During the Prior Three Months:

- BNI issued the Final D&O Disposition Report in mid-July 2017, summarizing the issue resolutions and path forward recommendations in support of ORP's authorization to resume full procurement and construction.
- BNI issued a notification letter to ORP indicating all of the DOE Decision 2A, "Authorization to Resume HLW Procurement and Construction," criteria have been met, pending ORP approval of the updated PDSA.
- BNI transmitted the formal revised PDSA change package to ORP in August 2017, incorporating responses to the ORP Safety Basis Review Team comments.
- ORP continued to perform reviews and surveillances to validate that BNI has completed all criteria and program improvements required for DOE Decision 2A.
- BNI continued fabrication of RLD-7 and RLD-8 vessels. These vessels are located in the wet process cell and must be installed prior to concrete slab placement, which will support roof installation and building enclosure.
- BNI is continuing to design the remaining portions of the radioactive liquid waste disposal system.

Significant Planned Activities in the Next Three Months:

- ORP is expected to approve Rev. 7 of the HLW Facility PDSA by the end of September 2017.
- ORP is expected to approve DOE Decision 2A in accordance with the updated safety basis and the verification of all required documentation and program improvements by a multi-organizational review team.
- BNI is expected to issue final reports associated with the full-scale testing and final selection of HEPA filters supporting the ventilation and offgas systems of HLW and LBL facilities.

- BNI will continue to update its long-range planning documents to support a future rebaseline effort.
- As previously reported, BNI to continue focusing on the facility preservation and maintenance activities.

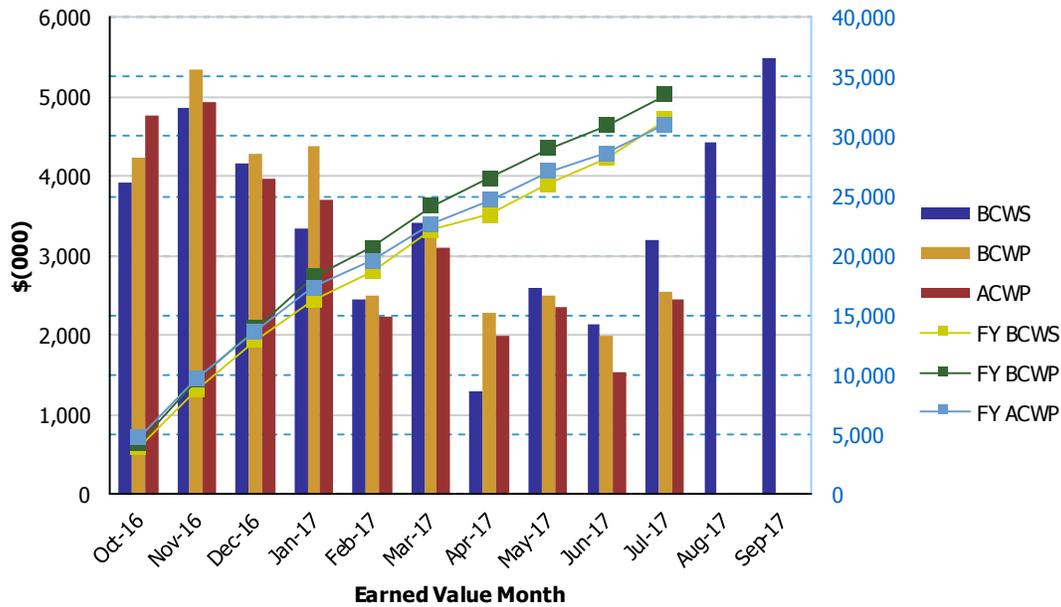
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: July 2017

**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 2016	\$3,910	\$4,231	\$4,761	1.08	0.89	\$3,910	\$4,231	\$4,761	1.08	0.89
Nov 2016	\$4,855	\$5,337	\$4,930	1.10	1.08	\$8,766	\$9,568	\$9,692	1.09	0.99
Dec 2016	\$4,163	\$4,292	\$3,960	1.03	1.08	\$12,929	\$13,860	\$13,652	1.07	1.02
Jan 2017	\$3,343	\$4,387	\$3,702	1.31	1.19	\$16,271	\$18,247	\$17,354	1.12	1.05
Feb 2017	\$2,439	\$2,491	\$2,225	1.02	1.12	\$18,710	\$20,738	\$19,579	1.11	1.06
Mar 2017	\$3,425	\$3,427	\$3,098	1.00	1.11	\$22,135	\$24,165	\$22,676	1.09	1.07
Apr 2017	\$1,296	\$2,292	\$1,997	1.77	1.15	\$23,431	\$26,457	\$24,674	1.13	1.07
May 2017	\$2,594	\$2,492	\$2,345	0.96	1.06	\$26,025	\$28,949	\$27,018	1.11	1.07
Jun 2017	\$2,135	\$1,991	\$1,530	0.93	1.30	\$28,160	\$30,939	\$28,549	1.10	1.08
Jul 2017	\$3,196	\$2,553	\$2,449	0.80	1.04	\$31,356	\$33,493	\$30,998	1.07	1.08
Aug 2017	\$4,435									
Sep 2017	\$5,488									

PTD	\$1,314,387	\$1,315,074	\$1,291,993	1.00	1.02
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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. |

Low-Activity Waste Facility

Federal Project Director: Bill Hamel

Facility Federal Project Director: Jeff Bruggeman

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 July 2017, the LAW Facility was 64 percent complete overall, with engineering design 85 percent complete, procurement 78 percent complete, construction 90 percent complete, and startup and commissioning 11 percent complete.

Significant Accomplishments During the Prior Three Months:

- BNI completed contractual Interim Milestone A-3, "LBL Construction Complete Performance Based Incentive Fee, Complete Final Assembly of Melter #2," in late August 2017. ORP is evaluating the completion package submitted by BNI.
- The 400 kilo-volt-ampere uninterruptible power supply was delivered to the site.
- BNI completed installation of cooling jackets for LAW Facility melter feed and feed preparation process vessels.
- BNI completed hydrostatic testing for process cell vessels.
- BNI completed removal of discharge chamber heaters in melter No. 1.
- BNI completed reinstallation of internal components in wet electrostatic precipitator vessel No. 2.
- BNI installed the melter offgas pre-heaters in the secondary offgas system for melter No. 1 and melter No. 2.
- BNI issued the 90 percent design review report for the uninterruptible power electrical system.

- ORP approved a PDSA interim change package to reflect additional defense-in-depth structures, systems, and components and changes in safety-significant structures, systems, and components' safety functions and functional requirements.
- BNI moved melter No. 1 into final position.

Significant Planned Activities in the Next Three Months:

- BNI is expected to perform 90 percent design reviews of the primary and secondary offgas systems.
- BNI is expected to install primary offgas spool fittings (hilltop fittings).
- BNI is expected to perform initial system walkdowns for the following:
 - Direct current electrical system
 - Plant service air system
 - Low voltage electrical system
 - Plant service water system
 - Nonradioactive liquid waste disposal system.
- ORP is expected to evaluate preliminary hazard category calculations for the LAW Facility.
- BNI is expected to continue developing process hazard analysis events for accident scenarios to support PDSA update development.
- BNI is expected to complete contractual interim Milestone A-4, "LBL Construction Complete Performance Based Incentive Fee, Complete LAW Bulk Cable, El +48," ahead of mid-February 2018 contract date. (Note: El +48 = greater than the 48-foot elevation.)

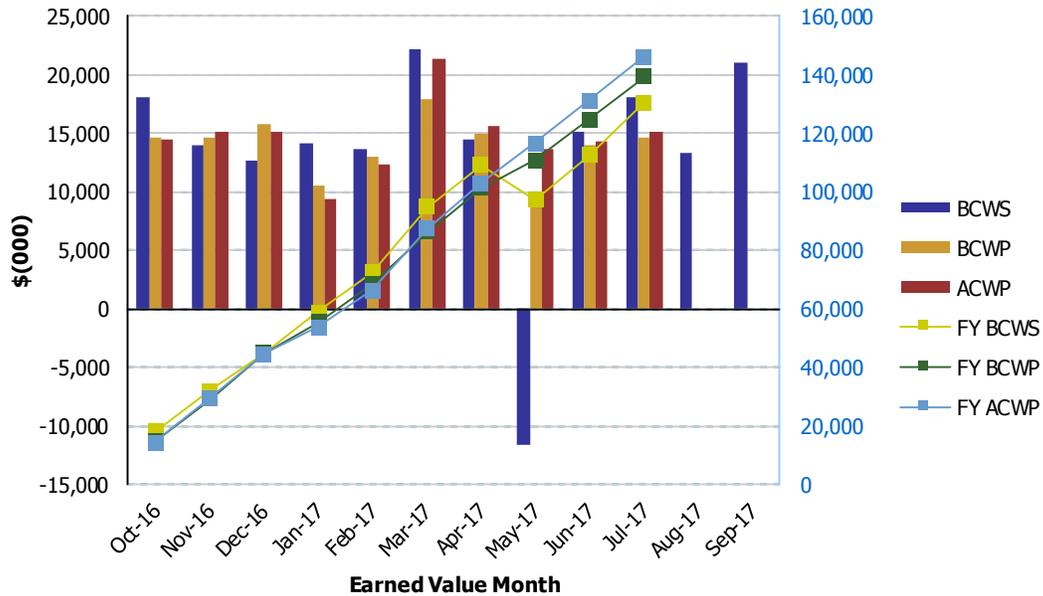
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: July 2017

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 2016	\$18,055	\$14,539	\$14,396	0.81	1.01	\$18,055	\$14,539	\$14,396	0.81	1.01
Nov 2016	\$14,013	\$14,564	\$15,062	1.04	0.97	\$32,068	\$29,102	\$29,458	0.91	0.99
Dec 2016	\$12,629	\$15,785	\$15,081	1.25	1.05	\$44,697	\$44,887	\$44,539	1.00	1.01
Jan 2017	\$14,122	\$10,498	\$9,286	0.74	1.13	\$58,818	\$55,386	\$53,825	0.94	1.03
Feb 2017	\$13,603	\$12,947	\$12,282	0.95	1.05	\$72,421	\$68,333	\$66,107	0.94	1.03
Mar 2017	\$22,131	\$17,933	\$21,287	0.81	0.84	\$94,552	\$86,266	\$87,395	0.91	0.99
Apr 2017	\$14,450	\$14,968	\$15,573	1.04	0.96	\$109,002	\$101,234	\$102,967	0.93	0.98
May 2017	(\$11,648)	\$9,459	\$13,678	-0.81	0.69	\$97,354	\$110,693	\$116,645	1.14	0.95
Jun 2017	\$15,084	\$13,971	\$14,289	0.93	0.98	\$112,438	\$124,664	\$130,934	1.11	0.95
Jul 2017	\$18,103	\$14,597	\$15,147	0.81	0.96	\$130,541	\$139,261	\$146,081	1.07	0.95
Aug 2017	\$13,363									
Sep 2017	\$21,004									

PTD	\$1,579,571	\$1,577,454	\$1,582,274	1.00	1.00
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- CPI = cost performance index.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
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Balance of Facilities

Federal Project Director: Bill Hamel

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 July 2017, BOF was 69 percent complete overall, with engineering design 90 percent complete, procurement 81 percent complete, construction 93 percent complete, and startup and commissioning 30 percent complete.

Engineering activities continue to support the DFLAW initiative. Current efforts are focused on completing the design of EMF, supporting the EMF dangerous waste permit, supporting EMF procurement activities, and providing field support for BOF startup activities. Construction efforts are focused on formwork and rebar installation to support placement of the EMF walls, installation of ring beams and secondary steel to support topping slab placement, startup testing of the medium-voltage systems in the BOF switchgear building, and system flushing in the water treatment facility. Additional construction punch list activities are underway to support testing of the cooling tower facility. The Startup organization continued component-level testing for systems in the water treatment facility, the cooling tower facility, and BOF switchgear building.

Significant Accomplishments During the Prior Three Months:

- ORP received approval of the EMF Secondary Containment Permit package from the Ecology.
- ORP has submitted the EMF Equipment Package No. 1 permit modification to Ecology.
- BNI will continue installation of ring beams and will place topping slabs for EMF.
- BNI sanitized the domestic potable water system, and energized testing of supporting potable water equipment is in progress.
- BNI awarded the EMF large vessel fabrication contract to Harris Thermal.
- BNI completed turnover of the nonradioactive, nondangerous liquid disposal system to the Plant Management organization.
- ORP received approval of the EMF Underground Transfer Line Permit package from Ecology.
- BNI completed the EMF design to a committed status to support equipment procurements and submitted the “Schedule Declaration of Completion” for the CLIN 2.1 DFLAW Design Completion Fee contractual interim milestone. ORP reviewed the contractual interim milestone completion documentation and concurred with BNI the requirements were met.
- BNI awarded the EMF evaporator fabrication contract to Northwest Copper.

- BNI completed transfers from the WTP nonradioactive, nondangerous liquid disposal system to the Treated Effluent Disposal Facility.
- BNI has energized both the original and the supplemental cathodic protection systems and system balancing is in progress.
- BNI completed EMF slab foundation concrete placements and continued rebar and formwork activities to support additional wall placements at EMF.
- BNI received temporary authorization for placement of EMF topping slabs and associated embedded steel.
- BNI installed the additional rotary screw compressor to support DFLAW.
- BNI issued steam plant DFLAW modification drawings for construction.
- BNI completed turnover of the following systems to the Startup organization:
 - Steam plant facility fire detection and alarm system
 - Diesel fuel oil system
 - Diesel fuel oil facility process control system
 - Chiller compressor plant low-voltage electrical system
 - Chiller compressor plant process control system
 - Chiller compressor plant fire detection and alarm system.

Significant Planned Activities in the Next Three Months:

- BNI is expected to complete balancing of the cathodic protection system.
- BNI is expected to complete functional testing for the BOF switchgear building.
- BNI is expected to complete turnover of the following systems to the Startup organization:
 - Steam plant facility process control system
 - Steam plant facility low-voltage electrical system
 - Cooling tower facility plant cooling water system
 - Chiller compressor plant chilled water system.
- BNI is expected to continue with placement of EMF wall concrete placements.

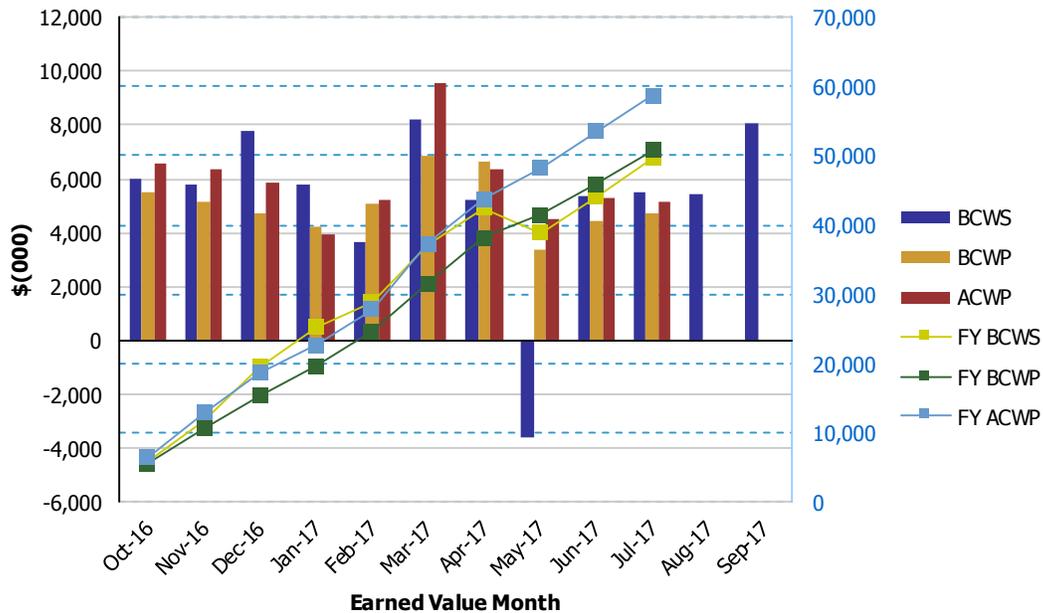
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: July 2017

**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 2016	\$5,977	\$5,519	\$6,535	0.92	0.84	\$5,977	\$5,519	\$6,535	0.92	0.84
Nov 2016	\$5,773	\$5,120	\$6,338	0.89	0.81	\$11,751	\$10,640	\$12,874	0.91	0.83
Dec 2016	\$7,799	\$4,729	\$5,843	0.61	0.81	\$19,549	\$15,369	\$18,717	0.79	0.82
Jan 2017	\$5,754	\$4,219	\$3,918	0.73	1.08	\$25,304	\$19,588	\$22,634	0.77	0.87
Feb 2017	\$3,635	\$5,048	\$5,197	1.39	0.97	\$28,938	\$24,636	\$27,831	0.85	0.89
Mar 2017	\$8,237	\$6,862	\$9,546	0.83	0.72	\$37,175	\$31,498	\$37,378	0.85	0.84
Apr 2017	\$5,228	\$6,632	\$6,364	1.27	1.04	\$42,403	\$38,130	\$43,742	0.90	0.87
May 2017	(\$3,611)	\$3,405	\$4,480	-0.94	0.76	\$38,793	\$41,536	\$48,222	1.07	0.86
Jun 2017	\$5,387	\$4,410	\$5,282	0.82	0.83	\$44,179	\$45,945	\$53,504	1.04	0.86
Jul 2017	\$5,507	\$4,744	\$5,172	0.86	0.92	\$49,686	\$50,690	\$58,677	1.02	0.86
Aug 2017	\$5,449									
Sep 2017	\$8,092									

PTD	\$577,292	\$572,484	\$581,940	0.99	0.98
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|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed. | EVMS | = | earned value management system. |
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Analytical Laboratory

Federal Project Director: Bill Hamel

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 July 2017, the LAB was 68 percent complete overall, with engineering design 86 percent complete, procurement 88 percent complete, construction 97 percent complete, and startup and commissioning 20 percent complete.

During this reporting period, efforts were focused on startup testing of the test engineer's workstation and procurement activities for the offsite laboratory.

Significant Accomplishments During the Prior Three Months:

- ORP formally submitted the LAB operating permit to Ecology.
- BNI completed LAB radioactive liquid waste disposal system and confinement ventilation system 90 percent design reviews.
- BNI completed turnover of fire detection and alarm-scoped systems to the Startup organization.
- BNI completed final wall and floor coatings.
- BNI completed turnover of grounding and lightning protection system to the Startup organization.
- BNI submitted a letter to ORP for approval of temporary offsite laboratory space lease.
- BNI completed turnover of the sanitary disposal system to the Startup organization.
- BNI completed turnover of the ventilation system for potential contamination zone C1 (C1V) to the Startup organization.

Significant Planned Activities in the Next Three Months:

- BNI is expected to occupy temporary laboratory space so laboratory methods development and training can occur earlier than initially planned to ensure laboratory staff are ready at the start of commissioning.
- BNI is expected to install a toxicity refrigerant monitor needed for beneficial occupancy.
- ORP and BNI are expected to reach an agreement on proposed C5V modifications, if needed.

- BNI is expected to continue testing control and monitoring systems in the test engineer's workstation as systems are turned over to the Startup organization.
- BNI is expected to complete 90 percent design review of ventilation systems (C1V, C2V, C3V, and C5V).
- BNI is expected to complete turnover of the low-voltage electrical system to the Startup organization.
- BNI is expected to install the replacement heating, ventilation, and air-conditioning condenser.

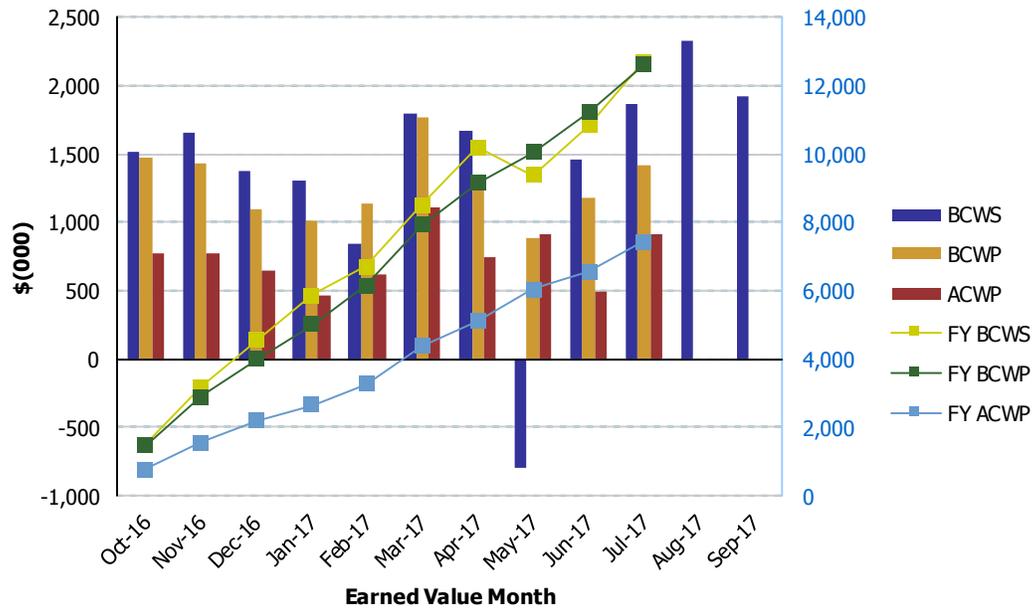
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: July 2017

**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 2016	\$1,521	\$1,470	\$776	0.97	1.89	\$1,521	\$1,470	\$776	0.97	1.89
Nov 2016	\$1,661	\$1,426	\$777	0.86	1.83	\$3,182	\$2,896	\$1,553	0.91	1.86
Dec 2016	\$1,375	\$1,098	\$645	0.80	1.70	\$4,557	\$3,994	\$2,198	0.88	1.82
Jan 2017	\$1,309	\$1,008	\$466	0.77	2.16	\$5,866	\$5,001	\$2,664	0.85	1.88
Feb 2017	\$845	\$1,141	\$612	1.35	1.86	\$6,711	\$6,143	\$3,277	0.92	1.87
Mar 2017	\$1,791	\$1,774	\$1,109	0.99	1.60	\$8,502	\$7,916	\$4,385	0.93	1.81
Apr 2017	\$1,673	\$1,241	\$746	0.74	1.66	\$10,174	\$9,157	\$5,131	0.90	1.78
May 2017	(\$790)	\$887	\$909	-1.12	0.98	\$9,384	\$10,044	\$6,040	1.07	1.66
Jun 2017	\$1,456	\$1,179	\$498	0.81	2.37	\$10,840	\$11,223	\$6,538	1.04	1.72
Jul 2017	\$1,864	\$1,411	\$916	0.76	1.54	\$12,705	\$12,634	\$7,453	0.99	1.70
Aug 2017	\$2,331									
Sep 2017	\$1,928									

PTD	\$351,311	\$349,208	\$336,478	0.99	1.04
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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. |

Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status Through July 2017																		
(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	2,264.0	1,448.7	64%	551.8	468.6	85%	374.3	292.2	78%	684.0	612.6	90%	649.8	71.3	11%	4.0	4.0	100%
Balance of Facilities	741.6	510.4	69%	146.4	131.2	90%	72.4	58.4	81%	261.9	243.3	93%	260.5	76.9	30%	0.5	0.5	100%
Analytical Lab	495.7	336.6	68%	103.6	89.5	86%	65.6	57.7	88%	161.0	155.6	97%	165.2	33.3	20%	0.5	0.5	100%
Direct Feed LAW	395.2	124.6	32%	100.3	68.7	69%	56.5	8.5	15%	229.5	42.0	18%	0.0	0.0	0%	8.9	5.4	61%
LBL Facility Services	654.1	227.4	35%	0.0	0.0	0%	57.1	29.6	52%	137.0	58.4	43%	214.4	72.1	34%	245.6	67.3	27%
Total LBL	4,550.6	2,647.8	58%	902.1	758.1	84%	625.9	446.5	71%	1,473.3	1,112.0	75%	1,289.9	253.6	20%	259.5	77.7	30%
Project Services	1,015.6	471.0	46%	129.5	66.8	52%	72.9	40.8	56%	107.4	75.9	71%	1.7	1.7	100%	704.1	285.7	41%
Total Project Services	1,015.6	471.0	46%	129.5	66.8	52%	72.9	40.8	56%	107.4	75.9	71%	1.7	1.7	100%	704.1	285.7	41%
Total LBL, DFLAW & Project Services	5,566.2	3,118.7	56%	1,031.6	824.9	80%	698.8	487.3	70%	1,580.6	1,187.8	75%	1,291.6	255.3	20%	963.6	363.4	38%
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 HLW/PT/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	14,289.0	9,083.9	64%	3,204.7	2,773.8	87%	2,264.3	1,612.1	71%	4,468.2	2,952.6	66%	2,050.1	398.5	19%	2,301.7	1,346.9	59%
<small>Source: Preliminary WTP Contract Performance Report - Format 1, Data for July 2017</small>																		
<small>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.</small>																		