

**FINAL**

Office of River Protection  
Consent Decree  
Monthly Report  
April<sup>1</sup> 2017

**Consent Decree, *State of Washington v. Dept. of Energy*, Case No. 2:08-cv-05085-FVS  
(October 25, 2010)**

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

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

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<sup>1</sup> The narrative descriptions of progress in this report cover the period from March 1–31, 2017. Earned Value Management System data and descriptions cover the period of February 1–28, 2017; this includes the facility completion percentage estimates included at various locations in the Waste Treatment and Immobilization Plant section.

<sup>2</sup> 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**

ABW	ABW Technologies
BNI	Bechtel National, Inc.
BOF	Balance of Facilities
C5V	ventilation system for potential contamination zones C5
CD	Consent Decree ( <i>State of Washington v. Dept. of Energy</i> , Case No. 2:08-cv-05085-FVS [October 25, 2010]; as amended, Amended Consent Decree, Case No. 2:08-cv-05085-RMP [March 11, 2016]; as amended, Second Amended Consent Decree, Case No. 2:08-cv-05085-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
EMF	Effluent Management Facility
ERSS	extended reach sluicer system
EVMS	Earned Value Management System
FY	fiscal year
HAMTC	Hanford Atomic Metals Trades Council
HEPA	high-efficiency particulate air
HLW	High-Level Waste (Facility)
HPAV	hydrogen in piping and ancillary vessels
HVAC	heating, ventilation, and air-conditioning
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
WRPS	Washington River Protection Solutions LLC
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 2020</b>				
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.
<b>Fiscal Year 2022</b>				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		On Schedule
<b>Fiscal Year 2023</b>				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		On Schedule
<b>Fiscal Year 2024</b>				
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 advice Ecology accordingly.	03/31/2024		Notice given that a serious risk has arisen. See letter 16-ORP- 0097.
<b>Fiscal Year 2030</b>				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		On Schedule

Milestone	Title	Due Date	Completion Date	Status
<b>Fiscal Year 2031</b>				
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
<b>Fiscal Year 2032</b>				
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
<b>Fiscal Year 2033</b>				
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
<b>Fiscal Year 2036</b>				
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, 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, 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

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>Status</b>
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:**

- Design of the new spare 242-A Evaporator reboiler is ongoing with ABW Technologies (ABW). A finite element analysis associated with the reboiler is in the process of being performed. The bounding conditions associated with the finite element analysis model were provided to ABW by Washington River Protection Solutions LLC (WRPS) engineering. The commercial grade dedication plan submitted by ABW has been reviewed by WRPS engineering. Comments associated with the commercial dedication plan have been generated by WRPS and have been submitted back to ABW for disposition.

**Single-Shell Tank Retrieval Program****Tank Farms Assistant Manager:** Glyn Trenchard**Federal Program Manager:** Jeff Rambo

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>Status</b>
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 advice 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 for the Prior Three Months:**

- Completed AX Farm emergency shower installation
- Completed an additional AX Farm pit clean out (AX-02B); seven of eight pit clean outs completed
- Completed initial AX POR-126 exhauster and POR-127 exhauster testing; both exhausters are operating under “testing” conditions
- Completed foam and lead removal at AX-103
- Completed Tank C-105 riser go-no-go testing for extended reach sluicer system (ERSS) installation

- Completed Tank C-105 excavations for electrical installations
- Initiated C Farm hose-in-hose transfer line removals planned for fiscal year (FY) 2017.

**Significant Planned Activities in the Next Three Months:**

- Negotiate contract proposal for installing and performing the third retrieval technology at Tank C-105
- Add second Tank C-105 construction shift to mitigate schedule impacts
- Complete Tank C-105 electrical installation
- Initiate Tank C-105 ERSS installation
- Initiate Tank C-105 slurry pump installation
- Complete AX Farm ventilation readiness/turnover at portable exhauster POR126 and POR127
- Initiate AX-102 and AX-104 in-tank equipment removal
- Complete the one remaining AX-104 pit clean out
- Complete AX-101 foam and lead removal
- Complete 801A Building demolition
- Complete installation of the C-105 Control System Trailer.

**Issues:**

- See previous reports for a description of the history of the July 11, 2016, Hanford Atomic Metal Trades Council (HAMTC) “stop work” order requiring mandatory use of supplied air within the perimeter fence lines of both single- and double-shell tank farms, and the August 31, 2016, Memorandum of Agreement between HAMTC and WRPS, which lifted the stop work based upon WRPS’s agreement to remain on supplied air until chemical cartridge testing is complete and reviewed by a third party selected by HAMTC. The litigation between Hanford Challenge, United Association of Plumbers and Steamfitters Local Union 598, and the State of Washington vs. the U.S. Department of Energy (DOE) and WRPS remains pending with a trial date set for March 5, 2018; however, the parties have agreed to pursue mediation, which is currently scheduled to occur April 20 and 21, 2017.
- On December 6, 2016, by letter number 16-ORP-0097, DOE formally notified the Washington State Department of Ecology (Ecology) that a serious risk had risen that DOE may be unable to meet Consent Decree milestones B-2 and B-3. Ecology responded to 16-ORP-0097 on January 4, 2017, and requested a meeting in accordance with Section IV.C.3.a of the Consent Decree. The meeting occurred on March 16, 2017, contemporaneously with the Joint Three Year Review under Section VI of the Consent Decree.

**Tank Waste Retrieval Work Plan Status**

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	In Progress	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	–
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0037	–

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
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:**

- None.

**Significant Planned Activities in the Next Three Months:**

- Finalize AX Farm tank retrieval work plans
- Incorporate third retrieval technology in the revised C-105 Tank Waste Retrieval Work Plan.

**Issues:**

- None.

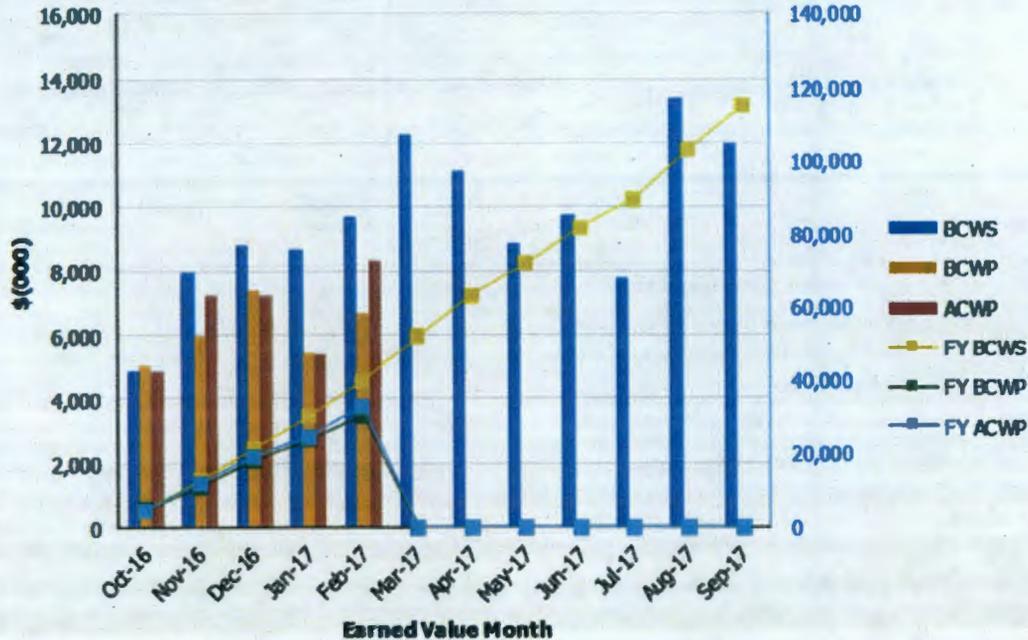
**EXC-01a: Fiscal Year Cost and Schedule Report**

Earned Value Data: Fiscal Year 2017

February-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	\$12,286	\$0	\$0	0.00	0.00	\$52,160	\$0	\$0	0.00	0.00
Apr 2017	\$11,137	\$0	\$0	0.00	0.00	\$63,298	\$0	\$0	0.00	0.00
May 2017	\$8,865	\$0	\$0	0.00	0.00	\$72,163	\$0	\$0	0.00	0.00
Jun 2017	\$9,738	\$0	\$0	0.00	0.00	\$81,901	\$0	\$0	0.00	0.00
Jul 2017	\$7,769	\$0	\$0	0.00	0.00	\$89,670	\$0	\$0	0.00	0.00
Aug 2017	\$13,387	\$0	\$0	0.00	0.00	\$103,057	\$0	\$0	0.00	0.00
Sep 2017	\$11,973	\$0	\$0	0.00	0.00	\$115,030	\$0	\$0	0.00	0.00

CTD	\$749,042	\$728,544	\$753,700	0.97	0.97
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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)**

The February 2017 **unfavorable** schedule variance (SV) of (\$3,009K) is due to:

- Winter weather and beryllium concerns continue to limit and at times suspend field activities within AX Farm and C Farm.
- In-tank equipment removals within AX Farm continue to be delayed as a result of the stop work prohibiting the operation of the ventilation system (as a waste distributing activity).

The February 2017 **unfavorable** cost variance (CV) of (\$1,634K) is due to:

- Labor inefficiencies as a result of ice and snow removal. Crews spent a good portion of the month removing snow and ice to maintain surveillance and monitoring capabilities.
- Previously completed field work packages for AX Farm and C Farm required revisions as a result of beryllium concerns; these revisions required additional labor hours not originally budgeted.

## 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 2,831 full-time equivalent contractor, Bechtel National, Inc. (BNI), and subcontractor personnel. This includes 617 craft, 603 non-manual, and 187 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 February 2017, total LBL facilities were 54 percent complete, design and engineering was 79 percent complete, procurement was 68 percent complete, construction was 70 percent complete, and startup and commissioning was 15 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:

- As noted in the previous report, the Acting Assistant Secretary for Environmental Management sent a letter and supporting documentation to the Defense Nuclear Facilities Safety Board (DNFSB) Chairman in late January on the status of the nuclear safety technical issues, "Preventing Potential Hydrogen Build-Up" and "Preventing Criticality." The letter indicated that since design-related activities on the Pretreatment (PT) Facility and the High-Level Waste (HLW) Facility were suspended in 2012, the U.S. Department of Energy (DOE) and the WTP contractor have performed a comprehensive set of work activities, which now provides the DOE Office of River Protection (ORP) with sufficient confidence to direct the resumption of design activities affected by these nuclear safety technical issues.
- Also noted in the previous report, ORP briefed the DNFSB in late January on the status of the nuclear safety technical issues described in the above bullet (i.e., technical issue T1 in relation to hydrogen gas events in vessels, T2 in relation to criticality in pulse jet mixer (PJM) vessels, and T3 in relation to hydrogen in piping and ancillary vessels). These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development.

**Significant Planned Activities in the Next Three Months:**

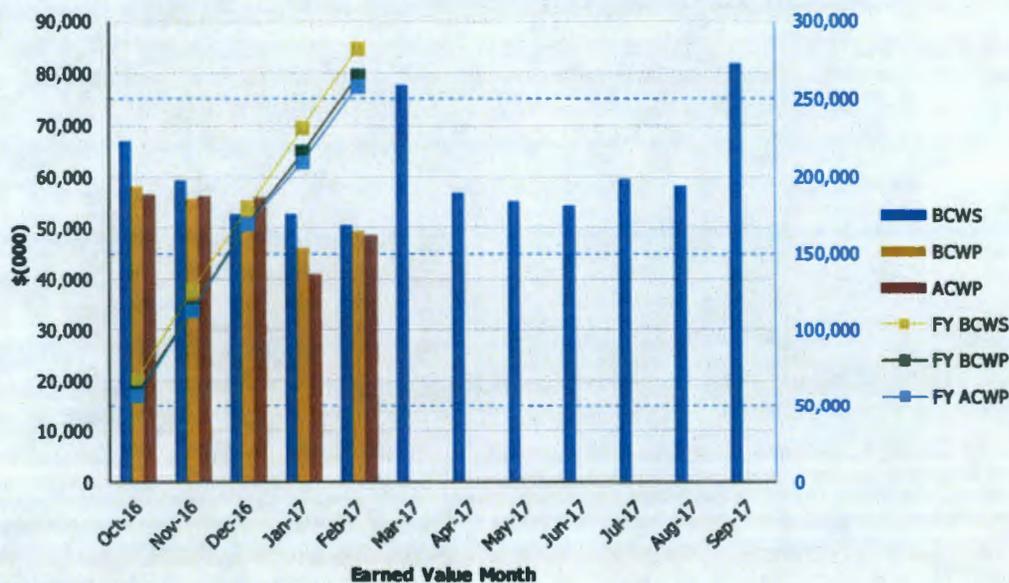
- Significant planned activities in the next three months are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

Data Set: FY 2017 Earned Value Data

Data as of: February 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	\$77,702									
Apr 2017	\$56,734									
May 2017	\$55,298									
Jun 2017	\$54,462									
Jul 2017	\$59,542									
Aug 2017	\$58,331									
Sep 2017	\$81,888									
<b>PTD</b>	<b>\$10,110,444</b>	<b>\$10,065,931</b>	<b>\$9,988,654</b>	<b>1.00</b>	<b>1.01</b>					

- 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.

**Project Schedule and Cost Variance Performance**

Performance Tracking	SV (\$x1,000)	CV (\$x1,000)
Current Period (February 2017)	(\$1,136)	\$726
Fiscal Year 2017 to-date	(\$17,407)	\$6,356
Cumulative (through February 2017)	(\$44,513)	\$77,277

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 February EVMS reporting period, a net **unfavorable** SV of approximately (\$1.1 million) was reported (meaning that a net of \$1.1 million of planned work did not get completed), primarily due to the following:

- LBL reported a net unfavorable SV of (\$2.1 million), related to LAW engineering delays in mechanical systems and controls and instrumentation (C&I) and other LAW planned work scope, as the engineering labor staff is focused on completing the LAW PDSA-II, which is behind schedule. DFLAW is experiencing delays in completing civil, structural, and design reviews, and cannot provide planned procurement support for C&I, because of reduced FY 2017 funding levels. Startup reported delays in BOF because of Building 91 testing delays related in part to inclement weather, and a delay in turnover of the cooling tower and water treatment buildings. Plant Material reported delays in DFLAW related to late delivery of steel, pipe, and hangers.
- PT reported a net favorable SV of \$0.8 million, resulting from a rescheduling of a planned procurement delivery, early completion of controls testing and platform modifications, and resumption of simulant procurement and analysis for mixing testing.

For the February EVMS reporting period, a net **favorable** CV of approximately \$0.7 million was reported (meaning it cost \$0.7 million less to complete the work than estimated), primarily due to the following:

- There were several weather-related site closure days. This resulted in a net favorable CV for level-of-effort (LOE) type work, as the LOE work is considered performed. Because employees did not actually work those days, the account was not charged for actual costs. The actual cost for the employees staying home was charged to other general distribution or overhead-type accounts in Project Services. With the primary crafts and trades not working, the support craft and personnel – which are also considered LOE – did not work as well. This resulted in the facility-specific accounts reporting a net favorable CV, while the support accounts (i.e., Project Services) reported a net unfavorable CV.
- LBL reported a net favorable CV of \$2.0 million, resulting primarily from February weather-related closures. This was offset by additional engineering charges for revised PDSA work.
- HLW reported a net favorable CV of \$0.3 million, resulting primarily from February weather-related closures.
- PT reported a net favorable CV of \$0.2 million, resulting primarily from February weather-related closures. This was offset by technical teams' additional labor cost to complete the standard high-solids vessel (SHSV) design plant vessel structural analysis and scrubber trade study.
- Project Services reported a net unfavorable CV of (\$1.7 million), related to absorbing the general/other services weather-related site closures labor costs described in the above bullets.

Through the current monthly reporting period, there are no SVs or CVs impacting current 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.

ORP and BNI continue to work on resolving the remaining technical issues as described in the Amended Consent Decree, which includes, “Ensuring Control of the Pulse Jet Mixers” (i.e., T4 in relation to 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).

Full-scale testing is ongoing and significant progress has been made in addressing the PJM controls and mixing issue. Test plans have been designed to demonstrate adequacy of the PJM control system and the vessel mixing to support resolution of PJM issues applicable to PT Facility vessels with high solids concentrations and non-Newtonian slurries. Test results will be used to support the PT Facility redesign with the SHSV design. ORP continues to work with

BNI to develop closure packages for each technical issue, defining work scope, required deliverables, and technical issue resolution criteria.

**Significant Accomplishments during the Prior Three Months:**

- ORP has made significant progress regarding the WTP nuclear safety technical issues, “Preventing Potential Hydrogen Build-Up” and “Preventing Criticality,” as described in the Amended Consent Decree. In late January, the Acting Assistant Secretary for Environmental Management sent a letter and supporting documentation to the DNFSB Chairman regarding the status of these technical issues. The letter noted ORP and BNI have performed a comprehensive set of work activities since 2012 which provides ORP with sufficient confidence to direct resumption of design activities affected by these technical issues at the PT and HLW facilities.
- ORP briefed the DNFSB in late January on the status of the technical issues noted in the above bullet (i.e., T1 in relation to hydrogen gas events in vessels, T2 in relation to criticality in PJM vessels, and T3 in relation to hydrogen in piping and ancillary vessels). These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. Design, control system changes, and safety basis updates associated with these resolutions will be implemented as part of the facility design process.
- ORP and BNI initiated testing of a proposed PJM SHSV design to replace a number of vessel designs in the PT Facility (this is in relation to resolving concerns over PJM vessel mixing and control [i.e., T4]). A prototype of the 16-foot-diameter SHSV was commissioned in December 2016. Testing is expected to be completed by December 2017 and will provide the required design and operations information to support PT Facility design.
- BNI issued a Basis of Design Change Notice establishing the erosion/corrosion basis of design parameters (this is in relation to resolving concerns over erosion/corrosion in piping and vessels [i.e., T5]).
- BNI issued the draft SHSV Conceptual Design Plan to ORP for review.

**Significant Planned Activities in the Next Three Months:**

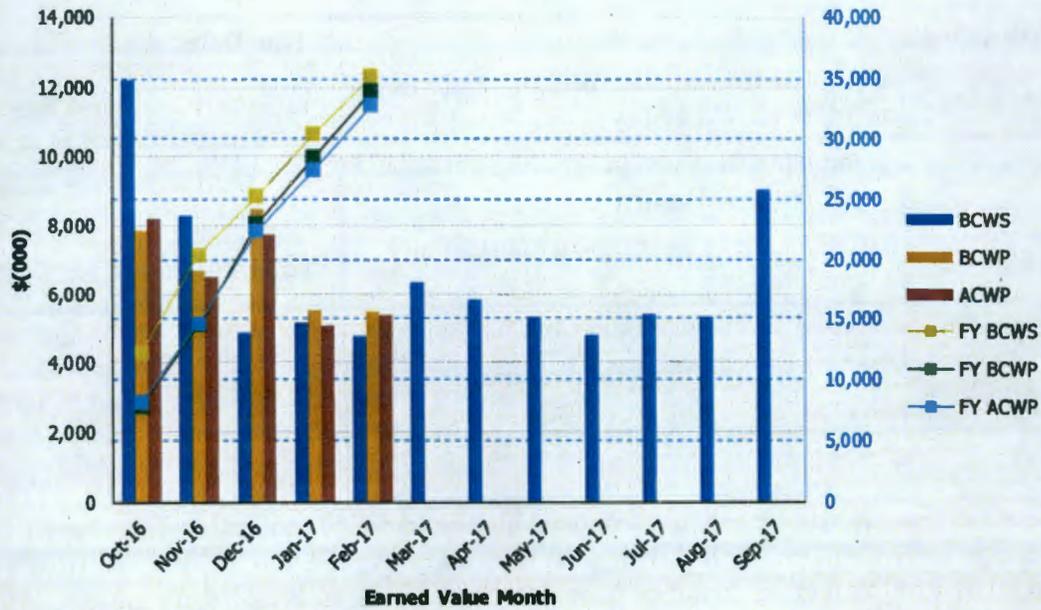
- BNI to complete the erosion/corrosion synergistic test simulant qualification and final recipe.
- BNI will continue full-scale testing of the SHSV design prototype, focusing on the PJM control system testing.
- BNI to complete non-Newtonian blend testing at the National Engineering Technology Laboratory that supports the full-scale vessel testing.
- ORP and BNI will continue efforts to resolve the spray leak methodology and sliding bed wear issues identified by the DNFSB in its *26<sup>th</sup> Annual Report to Congress*, dated March 2016.
- BNI to issue an update to the localized corrosion test basis document.

Data Set: FY 2017 Earned Value Data

Data as of: February 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									
Apr 2017	\$5,816									
May 2017	\$5,300									
Jun 2017	\$4,769									
Jul 2017	\$5,384									
Aug 2017	\$5,306									
Sep 2017	\$9,009									
<b>PTD</b>	<b>\$1,883,479</b>	<b>\$1,884,277</b>	<b>\$1,860,378</b>	<b>1.00</b>	<b>1.01</b>					

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.

## 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 FY 2017–FY 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 final draft of the HLW Facility Completion Plan is under review by ORP for approval.

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 has reviewed all disposition comments for adequacy. BNI is now developing a final D&O report to summarize recommendations to support ORP authorization for full construction.

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 is being impacted by resource constraint and has been delayed due to the ongoing LBL PDSA review and approval, which is a higher WTP priority at this time. Once the HLW PDSA is approved, system design requirements will be confirmed to ensure facility design is aligned with the nuclear safety basis.

All testing at Mississippi State University of the high-efficiency particulate air (HEPA) filter “Design 4” for the safe-change and remote-change housings have been completed successfully. Underwriters Laboratories testing for flame and flammability resistance is underway. The final report from the results of the testing is planned to be issued in mid-2017.

**Significant Accomplishments during the Prior Three Months:**

- BNI incorporated ORP comments into the final HLW Facility Completion Plan submittal.
- BNI transmitted revised PDSA change package, incorporating responses to the Safety Basis Review Team comments.
- BNI released material procurement and 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 supports roof installation. Fabrication of these vessels is underway.
- BNI completed disposition of D&O comments.
- BNI completed NQA-1 HEPA filter qualification testing of the “Design 4” safe-change and remote-change filters.

**Significant Planned Activities in the Next Three Months:**

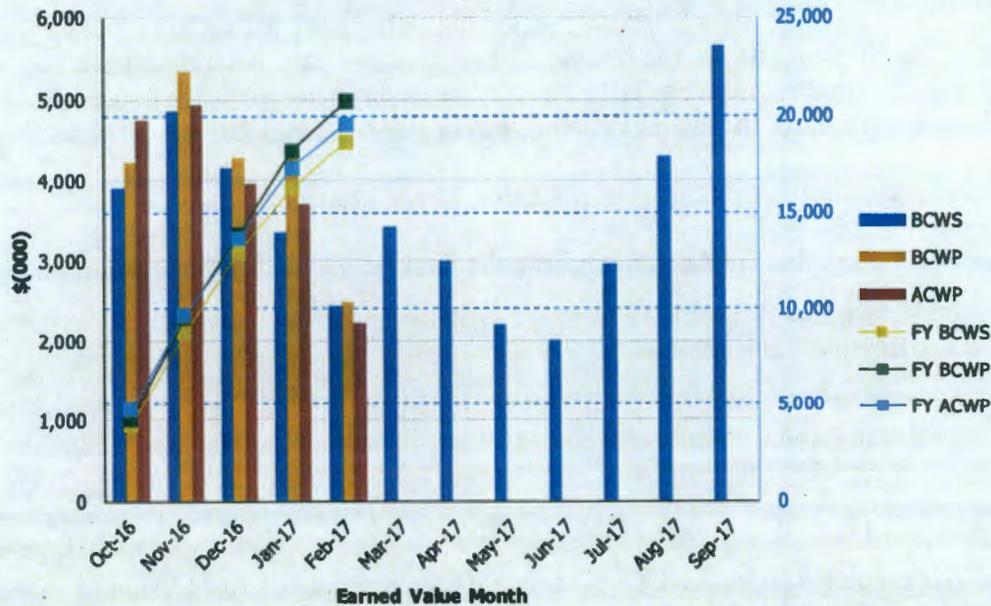
- BNI to issue the final D&O report to ORP summarizing disposition of D&O comments.
- ORP to perform comment resolution of the draft PDSA update.
- BNI to issue reports associated with the full-scale testing and final selection of HEPA filters supporting the ventilation and offgas systems of HLW and LBL facilities.
- ORP to approve the HLW Facility Completion Plan.
- BNI to continue focusing on the facility preservation and maintenance.

Data Set: FY 2017 Earned Value Data

Data as of: February 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									
Apr 2017	\$2,998									
May 2017	\$2,208									
Jun 2017	\$2,006									
Jul 2017	\$2,959									
Aug 2017	\$4,305									
Sep 2017	\$5,644									

PTD	\$1,301,741	\$1,302,319	\$1,280,574	1.00	1.02
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- |   |  |
|---|--|
| ACWP = actual cost of work performed.   | CTD = contract to date.                |
| BCWP = budgeted cost of work performed. | EVMS = earned value management system. |
| BCWS = budgeted cost of work scheduled. | FY = fiscal year.                      |
| CPI = cost performance index.           | SPI = schedule performance index.      |

## 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 February 2017, the LAW Facility was 60 percent complete overall, with engineering design 81 percent complete, procurement 75 percent complete, construction 84 percent complete, and startup and commissioning 9 percent complete.

### Significant Accomplishments during the Prior Three Months:

- BNI provided ORP with the draft LAW PDSA.
- BNI received delivery of the final shipment of caustic scrubber internals and completed installation.
- ORP completed caustic scrubber vessel vertical slice review.
- BNI installed the steel caustic scrubber platform on the greater than the 48-foot elevation (i.e., EL+48).
- BNI installed 200 linear feet of process piping.
- BNI installed 850 linear feet of conduit and pulled 15,010 linear feet of cable.
- BNI completed repairs for the LAW primary offgas system wet electrostatic precipitator vessel nozzle welds.
- BNI completed LAW Facility secondary offgas/vessel vent process system pipe tie-ins at caustic scrubber and thermal catalytic oxidizer.
- BNI installed and tested melter bubblers and completed welding on melter shield lids.
- BNI completed redesign of the melter jack-bolts as progress continues on completing the melters.

- BNI completed base frame modifications on both melters.
- BNI completed radiographic testing of wet electrostatic precipitator nozzles to verify adequacy of welds.
- BNI issued the 90 percent design review reports for the following:
  - C1 ventilation system (C1V)–C5 ventilation system (C5V)
  - Radioactive solid waste handling system
  - LAW melter handling system
  - LAW melter equipment support handling system
  - Carbon dioxide gas system
  - Plant cooling water system.

**Significant Planned Activities in the Next Three Months:**

- BNI to place concrete for the caustic scrubber platform.
- BNI to start layout and assembly of cooling jackets for LAW melter feed process vessels.
- BNI to reinstall wet electrostatic precipitator internals now that radiographic testing to verify adequacy of welds is complete.
- BNI to receive and install redesigned melter jack-bolts.
- BNI to perform initial system walkdowns for the following:
  - Chilled water system
  - Domestic (potable) water system
  - C1V.
- ORP to evaluate preliminary hazard category calculation for LAW Facility.
- BNI to develop hazard identification checklist, what-if tables, and process hazard analysis events for accident scenarios to support PDSA update development.
- BNI to install C3V air conditioning unit for offgas exhausters on the greater than the 48-foot elevation (i.e., EL+48).

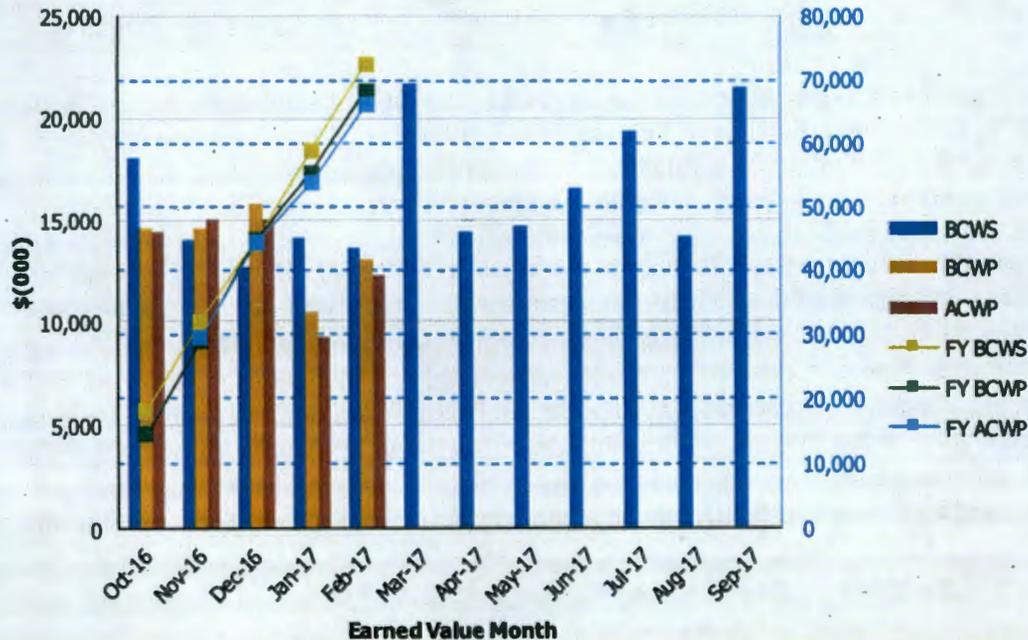
**EXC-01a: Fiscal Year Cost and Schedule Report**

Data Set: FY 2017 Earned Value Data

Data as of: February 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		0.81	#DIV/0!
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	\$21,692									
Apr 2017	\$14,379									
May 2017	\$14,671									
Jun 2017	\$16,536									
Jul 2017	\$19,384									
Aug 2017	\$14,158									
Sep 2017	\$21,550									
<b>PTD</b>	<b>\$1,521,451</b>	<b>\$1,506,526</b>	<b>\$1,502,301</b>	<b>0.99</b>	<b>1.00</b>					

- 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.

## 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 February 2017, BOF was 64 percent complete overall, with engineering design 82 percent complete, procurement 80 percent complete, construction 90 percent complete, and startup and commissioning 24 percent complete.

Engineering activities continue to support the DFLAW initiative. Current efforts are focused on progressing the design of the Effluent Management Facility (EMF), supporting the EMF dangerous waste permit, supporting EMF procurement activities, and providing field support for BOF startup activities. Construction efforts are focused on rebar and embed placement for the EMF walls, concrete placement for EMF slabs, and completion of the remaining items required for energization of the BOF switchgear building from the WTP switchgear building. Additional construction punch list activities are underway to support turnover of the water treatment building and cooling tower facility to the startup organization for component-level testing.

### Significant Accomplishments during the Prior Three Months:

- BNI energized the water treatment building (Building 86) from BOF switchgear (Building 91) low voltage permanent power.
- EMF Secondary Containment Dangerous Waste Permit public comments received and temporary authorization for EMF concrete placement received. Concrete placement of utility building (Building 26) completed.
- BNI awarded process tank and vessel procurements for EMF.
- BNI completed the low point drain tank excavation and began mud mat placement.
- BNI completed turnover of the following systems to its startup organization:
  - BOF switchgear building low voltage electrical system
  - BOF switchgear building medium voltage electrical system
  - Water treatment building fire detection and alarm system
  - Water treatment building nonradioactive, nondangerous liquid drain system
  - Water treatment building low voltage electrical system
  - Cathodic protection systems
  - Cooling tower process control system.
- BNI completed the acceptance test report for switchgear Building 87 and BOF switchgear Building 91.

- BNI initiated testing for the cathodic protection system rectifiers.
- BNI completed the following fire protection design acceptance test plans:
  - Cooling tower facility
  - Switchgear building
  - Water treatment building.
- BNI completed the functional review of installation of the fire detection and alarm system fire detection equipment in the water treatment building (Building 86) and cooling tower facility (Building 83).
- ORP and the Washington State Department of Ecology provided informal comments to BNI on the EMF Underground Transfer Line Permit package.

**Significant Planned Activities in the Next Three Months:**

- BNI expects to turn over the following systems to its startup organization:
  - Water treatment building domestic (potable) water system
  - Water treatment building demineralized water system
  - Water treatment building process service water system
  - Cooling tower facility low voltage electrical system
  - Cooling tower facility plant cooling water system
  - Diesel fuel oil facility process control system
  - Diesel fuel oil facility diesel fuel oil system
  - Chiller compressor plant, Plant Service Air System
  - Chiller compressor plant nonradioactive liquid drain system
  - Chiller compressor plant low voltage electrical system
  - Chiller compressor plant fire detection and alarm system
  - Chiller compressor plant chilled water system
  - Chiller compressor plant process control system.
- BNI to award EMF evaporator fabrication.
- BNI to formally submit EMF Underground Transfer Line Permit package to ORP.
- BNI to confirm final sizing of new rectifiers for the cathodic protection system through completion of current injection test.
- BNI to complete testing in support of Phase 2 energization to BOF switchgear Building 91.

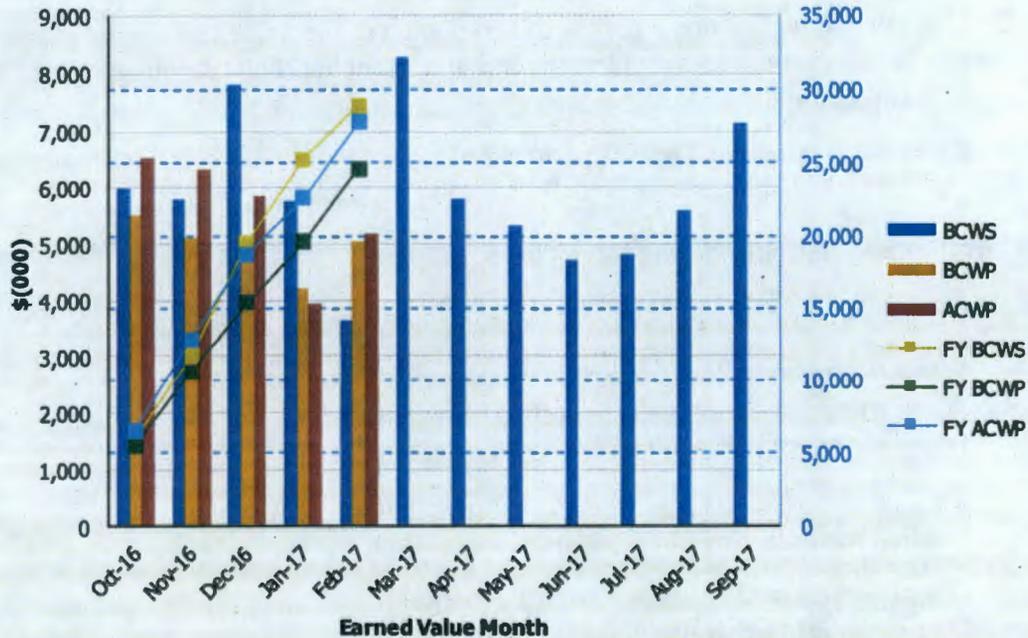
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: February 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	\$8,291									
Apr 2017	\$5,796									
May 2017	\$5,303									
Jun 2017	\$4,726									
Jul 2017	\$4,801									
Aug 2017	\$5,601									
Sep 2017	\$7,126									

PTD	\$556,545	\$546,430	\$551,095	0.98	0.99
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- |      |   |                                  |      |   |                                 |
|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed.   | CTD  | = | contract to date.               |
| BCWP | = | budgeted cost of work performed. | EVMS | = | earned value management system. |
| BCWS | = | budgeted cost of work scheduled. | FY   | = | fiscal year.                    |
| CPI  | = | cost performance index.          | SPI  | = | schedule performance index.     |

## 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 February 2017, the LAB was 63 percent complete overall, with engineering design 81 percent complete, procurement 88 percent complete, construction 95 percent complete, and startup and commissioning 16 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:

- BNI completed the fire detection and alarm system facility battery-drawdown fire protection acceptance test.
- BNI completed installation of the test engineer's workstation and turned equipment over to startup.
- BNI completed turnover of the fire protection water system in support of the test engineer's workstation to startup.
- BNI completed turnover of the process control system in support of the test engineer's workstation to startup.
- BNI continued final wall and floor coatings.
- BNI continued development of procedures for the WTP analytical methods.
- BNI received the replacement heating, ventilation, and air-conditioning (HVAC) condenser.

### Significant Planned Activities in the Next Three Months:

- ORP and BNI to reach an agreement on proposed C5V modifications, if needed.
- BNI to receive bids for the temporary laboratory space request for proposal, which allows for earlier laboratory methods development and training to ensure laboratory staff are ready at the start of commissioning.
- BNI to continue testing control and monitoring systems in the test engineer's workstation to support the nonradioactive liquid waste disposal system functional tests.
- BNI to award procurement for toxicity refrigerant monitor needed for beneficial occupancy.

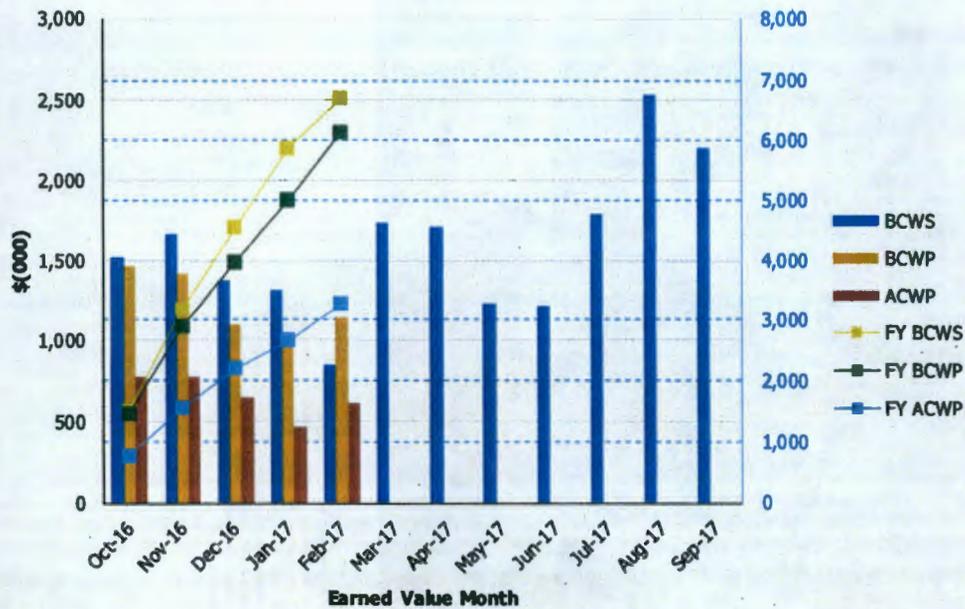
- BNI to install the replacement HVAC condenser.

Data Set: FY 2017 Earned Value Data

Data as of: February 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	\$1,732									
Apr 2017	\$1,706									
May 2017	\$1,229									
Jun 2017	\$1,214									
Jul 2017	\$1,794									
Aug 2017	\$2,537									
Sep 2017	\$2,203									

PTD	\$345,317	\$342,717	\$332,301	0.99	1.03
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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.

### Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status  
Through February 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
<b>Facilities</b>																		
Low-Activity Waste	2,312.0	1,377.8	60%	556.0	450.7	81%	373.4	281.5	75%	688.6	580.6	84%	889.9	60.9	9%	4.0	4.0	100%
Balance of Facilities	759.0	484.3	64%	154.0	127.0	82%	72.4	57.7	80%	259.9	234.7	90%	272.2	64.4	24%	0.5	0.5	100%
Analytical Lab	623.7	330.1	53%	108.3	87.5	81%	65.6	57.4	88%	162.7	154.7	95%	186.5	30.0	16%	0.5	0.5	100%
Direct Feed LAW	397.1	98.5	25%	96.5	59.3	61%	56.2	5.7	10%	235.3	29.2	12%	0.0	0.0	0%	9.1	4.4	48%
LBL Facility Services	609.8	180.7	30%	0.0	0.0	0%	61.1	24.8	41%	133.2	42.7	32%	252.7	59.9	24%	162.8	53.3	33%
<b>Total LBL</b>	<b>4,601.5</b>	<b>2,471.5</b>	<b>54%</b>	<b>914.8</b>	<b>724.6</b>	<b>79%</b>	<b>628.8</b>	<b>427.2</b>	<b>68%</b>	<b>1,479.6</b>	<b>1,041.8</b>	<b>70%</b>	<b>1,401.4</b>	<b>215.3</b>	<b>15%</b>	<b>176.9</b>	<b>62.7</b>	<b>35%</b>
<b>Project Services</b>	<b>1,029.0</b>	<b>419.1</b>	<b>41%</b>	<b>131.8</b>	<b>59.7</b>	<b>45%</b>	<b>73.9</b>	<b>37.7</b>	<b>51%</b>	<b>105.5</b>	<b>73.3</b>	<b>69%</b>	<b>1.7</b>	<b>1.7</b>	<b>100%</b>	<b>716.1</b>	<b>246.7</b>	<b>34%</b>
<b>Total Project Services</b>	<b>1,029.0</b>	<b>419.1</b>	<b>41%</b>	<b>131.8</b>	<b>59.7</b>	<b>45%</b>	<b>73.9</b>	<b>37.7</b>	<b>51%</b>	<b>105.5</b>	<b>73.3</b>	<b>69%</b>	<b>1.7</b>	<b>1.7</b>	<b>100%</b>	<b>716.1</b>	<b>246.7</b>	<b>34%</b>
<b>Total LBL, DFLAW &amp; Project Services</b>	<b>5,630.5</b>	<b>2,890.6</b>	<b>51%</b>	<b>1,046.6</b>	<b>784.3</b>	<b>75%</b>	<b>702.7</b>	<b>464.9</b>	<b>66%</b>	<b>1,585.2</b>	<b>1,115.1</b>	<b>70%</b>	<b>1,403.1</b>	<b>217.0</b>	<b>15%</b>	<b>893.0</b>	<b>309.3</b>	<b>35%</b>
<b>PTHLW/SS Percent Complete Status Frozen as of September 2012 (due to project rebaselining efforts)</b>																		
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%
<b>Total HLWPT/SS</b>	<b>8,722.8</b>	<b>5,965.2</b>	<b>68%</b>	<b>2,173.1</b>	<b>1,948.9</b>	<b>90%</b>	<b>1,565.5</b>	<b>1,124.8</b>	<b>72%</b>	<b>2,887.6</b>	<b>1,764.8</b>	<b>61%</b>	<b>758.5</b>	<b>143.2</b>	<b>19%</b>	<b>1,338.1</b>	<b>983.5</b>	<b>73%</b>
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
<b>Total WTP</b>	<b>14,353.3</b>	<b>8,855.8</b>	<b>62%</b>	<b>3,219.7</b>	<b>2,733.2</b>	<b>85%</b>	<b>2,268.2</b>	<b>1,589.7</b>	<b>70%</b>	<b>4,472.8</b>	<b>2,879.9</b>	<b>64%</b>	<b>2,161.6</b>	<b>360.2</b>	<b>17%</b>	<b>2,231.1</b>	<b>1,292.8</b>	<b>58%</b>

Source: Preliminary WTP Contract Performance Report - Format 1, Data for February 2017

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 PTHLW/SS Interim Work Plan was incorporated into the project OTB baseline resulting in decreases to the PTHLW/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 PTHLW/SS is \$2,014M. The percent complete values for the Total WTP are the current total LBL BCWP added to the frozen HLWPT/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 HLWPT 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 (pPSA), as shown on the CPR Format 1, is not added to LBL for percent complete purposes.