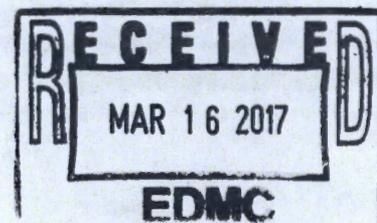


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Office of River Protection  
Consent Decree  
Monthly Report  
March<sup>1</sup> 2017



**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>

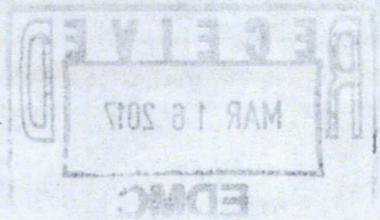
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<sup>1</sup> The narrative descriptions of progress in this report cover the period from February 1–28, 2017. Earned Value Management System data and descriptions cover the period of January 1–31, 2017; this includes the facility completion percentage 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
Ecology	Washington State Department of Ecology
EM	U.S. Department of Energy, Office of Environmental Management
EM-1	U.S. Department of Energy, Assistant Secretary for Environmental Management
EMF	Effluent Management Facility
ERSS	extended reach sluicer 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 advise 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: End of month following 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: Scheduled 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:

- 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 from 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

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 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-04D); six of eight pit clean outs completed.
- Completed AX POR-126 exhauster and POR-127 exhauster cold operational acceptance tests and hot tie-ins.
- Initiated hot operational acceptance test for POR126 and POR127 exhausters.
- Initiated foam and lead removal near AX-101 and AX-103.
- Received three extended reach sluicer systems (ERSS) for installation in Tank C-105.

- Completed Tank C-105 riser go-no-go testing for ERSS installation successfully. Detailed discussion contained in the “Issues” section.
- Completed Tank C-105 excavations for electrical installations.
- Completed Tank C-105 third retrieval technology construction design.
- Completed C Farm POR008 exhauster isolation.

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

- Initiate C Farm hose-in-hose transfer line removals planned for fiscal year (FY) 2017
- 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
- Initiate Tank C-105 ERSS installation
- Initiate Tank C-105 slurry pump installation
- Complete AX ventilation readiness/turnover at portable exhauster POR126 and POR127
- Initiate AX-102 and AX-104 in-tank equipment removal
- Complete the two remaining AX-104 pit clean outs
- Complete AX-101 and AX-103 foam and lead removal.

**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, the DOE formally notified the Washington State Department of Ecology (Ecology) serious risk has risen where 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 is currently scheduled to occur on March 16, 2017, contemporaneously with the Joint Three Year Review under Section VI of the Consent Decree.

- The schedule for ERSS installation in Tank C-105 has been delayed due to riser and weather issues. A standard 12-inch riser go/no-go gauge did not fit in the Tank C-105 riser indicating the ERSS may not fit in the riser. A new go/no-go gauge was fabricated more closely representing an ERSS and the risers were recleaned using high-pressure (approximately 4,000 psi) water. The go/no-go gauge test was successfully completed for both risers on February 4, 2017. The 3-month delay will not impact any Consent Decree milestones.

**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 C-105 Tank Waste Retrieval Work Plan.

#### Issues:

- None.

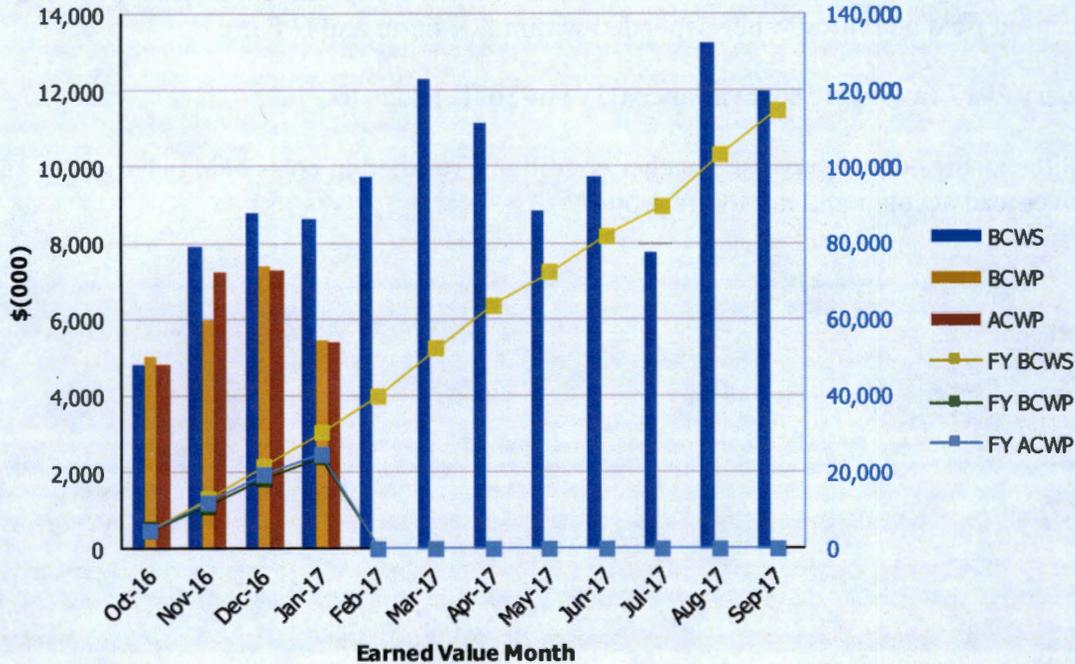
### EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

January-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	\$0	\$0	0.00	0.00	\$39,874	\$0	\$0	0.00	0.00
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	\$13,258	\$0	\$0	0.00	0.00	\$102,928	\$0	\$0	0.00	0.00
Sep 2017	\$11,973	\$0	\$0	0.00	0.00	\$114,901	\$0	\$0	0.00	0.00

CTD	\$739,326	\$721,837	\$745,359	0.98	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 January 2017 **unfavorable** schedule variance (SV) of (\$3,224K) is due to:

- DOE delayed removal of in-tank legacy equipment within AX Farm until this work could be supported by an operating exhauster
- Winter weather and sampling for beryllium in work spaces have limited and at times have caused field activities to be suspended within AX Farm and C Farm.

The January 2017 **favorable** cost variance (CV) of \$62K is due to:

- Site closures due to adverse weather conditions, resulted in costs being charged to an overhead account and not to the project.

## 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 2,404 full-time equivalent contractor, Bechtel National, Inc. (BNI), and subcontractor personnel. This includes 606 craft, 560 non-manual, and 158 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 January 2017, total LBL facilities were 53 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:

- The DOE Office of River Protection (ORP) briefed the Defense Nuclear Facilities Safety Board (DNFSB) on the status of the nuclear safety technical issues, “Preventing Potential Hydrogen Build-Up” and “Preventing Criticality” (also referred to as ORP 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 [HPAV]). These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. This briefing took place in Washington, D.C. on January 31, 2017.
- The Acting Assistant Secretary for Environmental Management, Susan M. Cange, sent a letter and supporting documentation to the DNFSB Chairman, dated January 24, 2017. The letter noted since design-related activities on the Pretreatment (PT) Facility and the High-Level Waste (HLW) Facility were suspended in 2012, DOE and the WTP contractor have performed a comprehensive set of work activities, which now provides ORP with sufficient confidence to direct the resumption of design activities affected by the nuclear safety technical issues noted in the above bullet.

- The ORP and BNI contract modification and Baseline Change Proposal to support the new DFLAW/LBL work scope was approved by the Deputy Energy Secretary, in her role as the Chief Executive for Project Management, and the Energy System Acquisition Advisory Board.

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

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

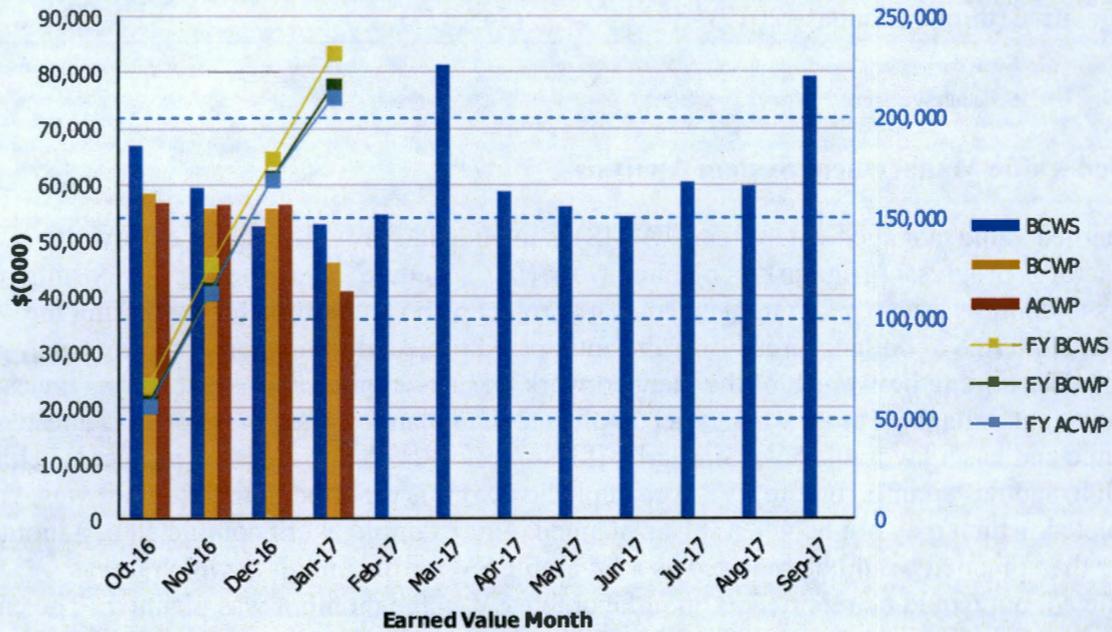
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: January 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	\$54,590									
Mar 2017	\$81,197									
Apr 2017	\$58,540									
May 2017	\$55,806									
Jun 2017	\$54,060									
Jul 2017	\$60,391									
Aug 2017	\$59,868									
Sep 2017	\$79,171									

PTD	\$10,059,955	\$10,016,577	\$9,940,027	1.00	1.01
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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.     |

**Project Schedule and Cost Variance Performance**

<b>Performance Tracking</b>	<b>SV (\$x1,000)</b>	<b>CV (\$x1,000)</b>
Current Period (January 2017)	(\$6,730)	\$5,195
Fiscal Year 2017 to-date	(\$16,272)	\$5,630
Cumulative (through January 2017)	(\$43,377)	\$76,550

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 January EVMS reporting period, a net unfavorable SV of approximately (\$6.7 million) was reported (meaning that a net of \$6.7 million of planned work did not get completed), primarily due to the following:**

- LBL reported a net unfavorable SV of (\$8.2 million) related to construction delays associated with the prolonged receipt of the Effluent Management Facility (EMF) Temporary Authorization permit and challenges with on-time delivery of pipe procurement. As a result, construction deferred site work, concrete, piping, and installation of tank ring beams. In addition, the equivalent of 3 days of work stoppage due to inclement weather postponements or delays impacted subcontract and craft work levels. LAW engineering is behind schedule primarily related to delays in mechanical systems development, which were impacted by the delay in completing the LAW Preliminary Documented Safety Analysis (PDSA). Startup lags in BOF were related to nonradioactive liquid waste disposal system testing delays and not achieving system turnover of the cooling tower and water treatment buildings.
- HLW reported a favorable SV of \$1.0 million, primarily due to the remote change high-efficiency particulate air (HEPA) filter qualification testing progressing ahead of schedule.
- PT reported a net favorable SV of \$0.4 million, primarily due to the Test Completion Team resumption of simulant procurement and analysis for mixing tests.

**For the January EVMS reporting period, a net favorable CV of approximately \$5.2 million was reported (meaning it cost \$5.2 million less to complete the work than estimated), primarily due to the following:**

- LBL reported a favorable CV of \$4.1 million, primarily due to weather-related closures, delays, and holiday time-off impacts effecting work scheduled and earned, but not actualized or fully costed.
- HLW reported a favorable CV of \$0.7 million, primarily due to inclement weather closures, delays, and holiday time-off impacts.
- PT reported a favorable CV of \$0.5 million, primarily due to weather-related closures, delays and holiday time-off impacts.

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 continues to focus on resolving the outstanding WTP technical issues as described in the Amended Consent Decree. Significant progress has been made regarding the nuclear safety technical issues, "Preventing Potential Hydrogen Build-Up" and "Preventing Criticality" (also referred to as ORP 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 HPAV). These technical issues have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. The status of these technical issues were presented to the DNFSB Chairman with supporting documentation. Design, control system changes, and safety basis updates associated with these resolutions will be implemented as part of the facility design process.

Work will continue on resolving the remaining technical issues as described in the Amended Consent Decree, which includes, "Ensuring Control of the Pulse Jet Mixers" (also referred to as ORP technical issue T4 in relation to PJM vessel mixing and control); "Protecting Against Possible Erosion and Corrosion" (also referred to as ORP technical issue T5 in relation to erosion/corrosion in piping and ancillary vessels); and "Ensuring Ventilation Balancing" (also referred to as ORP technical issue 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 (also referred to as ORP technical issue T6 in relation to design redundancy and in-service inspection); and evaluating vessel and equipment structural integrity (also referred to as ORP technical issue T7).

Testing is ongoing and significant progress has been made in addressing the PJM controls and mixing issue. 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, in coordination with BNI and DOE Office of Environmental Management (EM) staff, provided the technical basis for resolution of the DNFSB safety issue associated with hydrogen generation and control in PT Facility process vessels mixed with PJM (also referred to as ORP technical issue T1). The documents were provided to the former DOE Assistant Secretary for Environmental Management (EM-1). Based on the extensive analyses completed, ORP considers this DNFSB safety issue regarding hydrogen retention and control and heat transfer in PJM vessels to have been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. The Acting EM-1 issued a letter with supporting documentation to the DNFSB Chairman detailing the significant progress made to address issues associated with this technical issue. Detailed design and the PDSA update for the implementation of the controls will proceed as part of design completion.
- ORP, in coordination with BNI and EM staff, provided the technical basis to the former EM-1 for resolution of the DNFSB safety issue associated with criticality in PJM vessels (also referred to as ORP technical issue T2). The criticality issue was extensively investigated and does not represent a credible hazard based on the proposed controls in the WTP Preliminary Criticality Safety Evaluation Report, and a proposed strategy in an engineering study used to evaluate potential treatment of Hanford tank waste containing plutonium particulates and oxide. This technical issue regarding the DNFSB safety issue on criticality has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. The Acting EM-1 issued a letter with supporting documentation to the DNFSB Chairman detailing the significant progress made to address issues associated with this technical issue. Detailed design and the PDSA update for the implementation of the controls will proceed as part of design completion.
- ORP, in coordination with BNI and EM staff, provided the technical basis to the former EM-1 for resolution of the DNFSB safety issue associated with HPAV (also referred to as ORP technical issue T3). This technical issue has been sufficiently resolved to allow engineering to proceed in support of design and safety basis development. The Acting EM-1 issued a letter with supporting documentation to the DNFSB Chairman detailing the significant progress made to address issues associated with this technical issue. Detailed design and the PDSA update for the implementation of the controls will proceed as part of design completion.
- 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 [ORP technical issue T4]). A prototype of the 16-foot-diameter SHSV was commissioned on December 22, 2016. Scheduled testing will complete the final stage of PJM control system testing to support resolution of control issues applicable to PT Facility vessels with high solids concentrations and non-Newtonian slurries. This testing will demonstrate the required PJM control parameters and control approach to be used during the qualification of the design for the SHSV design. Testing is expected to be completed by December 2017 and will provide the required design and operations information to support completion of the 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 [ORP technical issue T5]).
- BNI issued the draft SHSV Conceptual Design Plan to ORP for review.
- BNI started the full-scale vessel operational set point test as part of the PJM controls testing.

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

- BNI to complete the erosion/corrosion synergistic test simulant qualification and final recipe.
- BNI will continue testing the SHSV design prototype, focusing on the PJM control system 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 complete operational set point tests.
- BNI to complete non-Newtonian blend testing at the National Engineering Technology Laboratory that supports the full-scale vessel testing.
- BNI to issue localized corrosion test basis document revision.

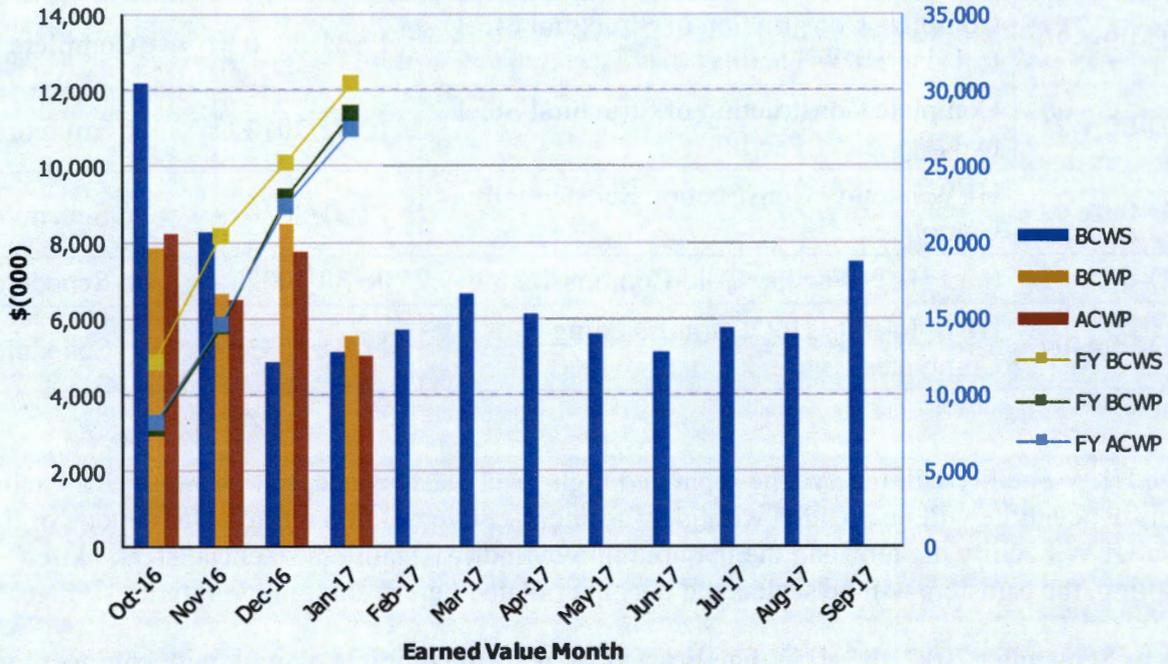
**EXC-01a: Fiscal Year Cost and Schedule Report**

Data Set: FY 2017 Earned Value Data

Data as of: January 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	\$5,709									
Mar 2017	\$6,656									
Apr 2017	\$6,116									
May 2017	\$5,597									
Jun 2017	\$5,133									
Jul 2017	\$5,766									
Aug 2017	\$5,620									
Sep 2017	\$7,496									

PTD	\$1,878,714	\$1,878,760	\$1,855,018	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.
- 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 has submitted a facility completion plan identifying the strategy for obtaining full authorization to complete engineering, procurement, and construction of the HLW Facility, which is currently under review and comment resolution with ORP.

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. BNI is now coordinating the development of 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 is in the process of submitting the comment resolution to ORP. 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 of the HEPA filter “Design 4” for the safe-change and remote-change housings have been completed successfully. 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 completed disposition of design and operability comments.
- BNI issued the HLW canister pour handling system engineering study.
- BNI completed NQA-1 HEPA filter qualification testing of the “Design 4” safe-change and remote-change filters.
- BNI issued the draft HLW Facility offgas process system Phase II engineering study.
- 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.

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

- BNI to resolve ORP comments on the submitted HLW Facility Completion Plan.
- BNI to resolve ORP comments on the submitted draft HLW PDSA update.
- BNI to issue the final report to ORP summarizing disposition of design and operability comments.
- ORP to perform comment resolution of the draft PDSA update.
- BNI to issue the 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 weathering in the building and facility preservation maintenance.

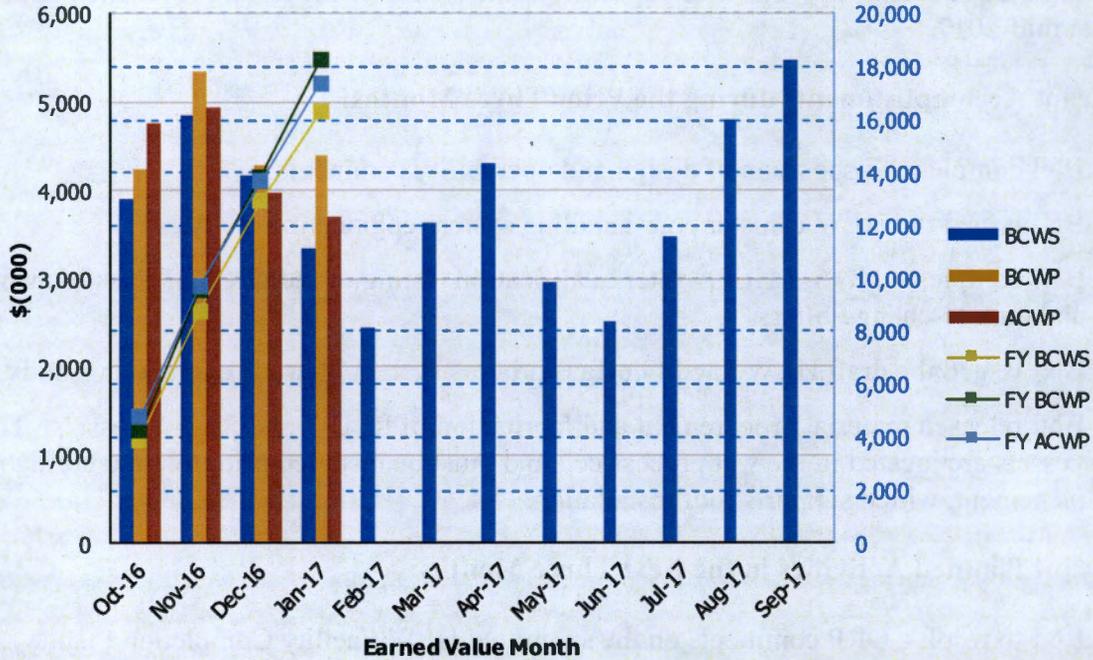
**EXC-01a: Fiscal Year Cost and Schedule Report**

Data Set: FY 2017 Earned Value Data

Data as of: January 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									
Mar 2017	\$3,627									
Apr 2017	\$4,315									
May 2017	\$2,964									
Jun 2017	\$2,508									
Jul 2017	\$3,471									
Aug 2017	\$4,805									
Sep 2017	\$5,476									

PTD	\$1,299,302	\$1,299,828	\$1,278,349	1.00	1.02
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ACWP = actual cost of work performed.  
 BCWP = budgeted cost of work performed.  
 BCWS = budgeted cost of work scheduled.  
 CPI = cost performance index.

CTD = contract to date.  
 EVMS = earned value management system.  
 FY = fiscal year.  
 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 January 2017, the LAW Facility was 59 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 second shipment of caustic scrubber internals and completed installation.
- BNI completed repairs for the LAW primary offgas system wet electrostatic precipitator vessel 00001 nozzle welds.
- BNI completed LAW Facility secondary offgas/vessel vent process system pipe tie-ins at caustic scrubber and thermal catalytic oxidizer.
- 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.
- 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 installed 210 linear feet of process piping.
- BNI installed 750 linear feet of conduit and pulled 9,510 linear feet of cable.
- BNI installed 9 process area penetration seals.
- BNI set the caustic scrubber vessel in its final position.
- BNI completed base frame modifications on both melters.
- BNI completed radiographic testing of wet electrostatic precipitator nozzles to verify adequacy of welds.

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

- 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 complete caustic scrubber vessel vertical slice review.
- 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 (aka – EL+48).
- BNI to install steel caustic scrubber platform on the greater than the 48-foot elevation (aka – EL+48).

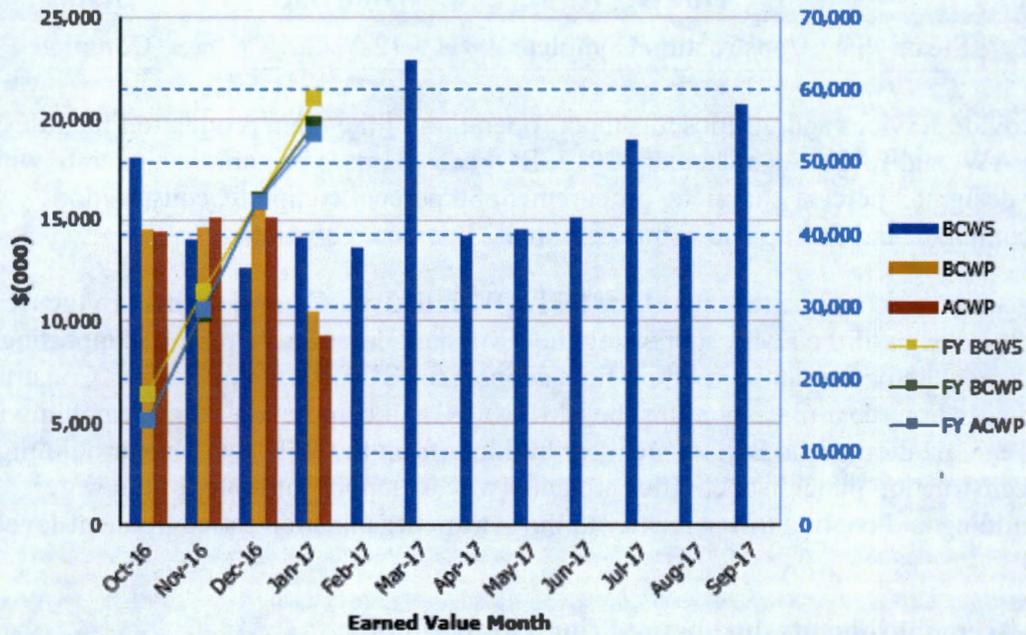
**EXC-01a: Fiscal Year Cost and Schedule Report**

Data Set: FY 2017 Earned Value Data

Data as of: January 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	\$13,803									
Mar 2017	\$22,875									
Apr 2017	\$14,230									
May 2017	\$14,481									
Jun 2017	\$15,112									
Jul 2017	\$18,920									
Aug 2017	\$14,187									
Sep 2017	\$20,701									

PTD	\$1,507,848	\$1,493,579	\$1,490,018	0.99	1.00
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
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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 January 2017, BOF was 63 percent complete overall, with engineering design 82 percent complete, procurement 80 percent complete, construction 89 percent complete, and startup and commissioning 23 percent complete.

Engineering activities continue to support the DFLAW initiative. Current efforts are focused on progressing the design of the 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 placement for the EMF walls, and completion of the remaining items required for energization of the BOF switchgear building from the WTP switchgear building. Additional construction punchlist 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 completed turnover of the following systems to its startup organization:
  - BOF switchgear building low voltage electrical system.
  - BOF switchgear building medium voltage electrical system.
  - Cooling tower facility process control system.
  - Water treatment building process control system.
  - Water treatment building fire detection and alarm system.
  - Water treatment building low voltage electrical system.
  - Water treatment building nonradioactive, nondangerous liquid drain system.
- BNI completed the following fire protection design acceptance test plans:
  - Cooling tower facility.
  - Switchgear building.
  - Water treatment building.
- BNI completed the first row of soldier pile tie-backs (42 each), excavated down to 26 feet and initiated second row tie-backs installations.

- EMF Secondary Containment Dangerous Waste Permit public comments received and temporary authorization letter received.
- BNI completed the acceptance test report for switchgear Building 87 and BOF switchgear Building 91.
- 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).
- BNI initiated testing for the cathodic protection system rectifiers.
- ORP and 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:
  - Cooling tower facility low voltage electrical system
  - Cooling tower facility plant cooling water system.
  - Water treatment building domestic (potable) water system.
  - Water treatment building demineralized water system.
  - Water treatment building process service water system.
  - Fuel oil facility process control system.
  - Fuel oil facility diesel fuel oil 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 and tank and vessel procurements.
- 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 energized testing in support of Phase 2 energization to BOF switchgear Building 91.

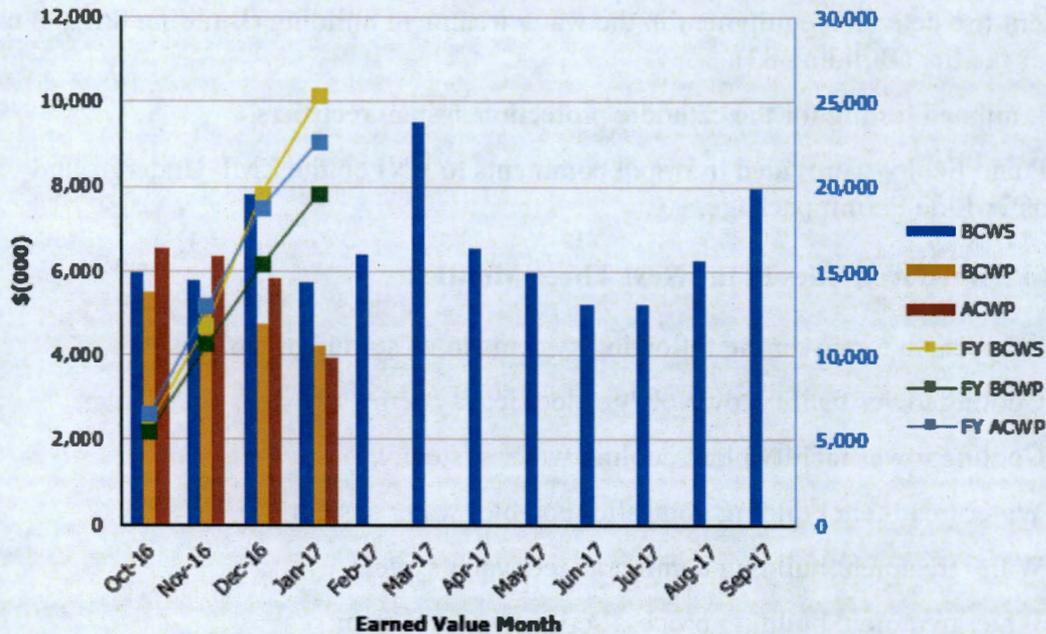
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: January 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	\$6,410									
Mar 2017	\$9,536									
Apr 2017	\$6,546									
May 2017	\$5,970									
Jun 2017	\$5,193									
Jul 2017	\$5,230									
Aug 2017	\$6,267									
Sep 2017	\$7,950									
<b>PTD</b>	<b>\$552,910</b>	<b>\$541,382</b>	<b>\$545,898</b>	<b>0.98</b>	<b>0.99</b>					

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 BCWS = budgeted cost of work scheduled.  
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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 January 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 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.

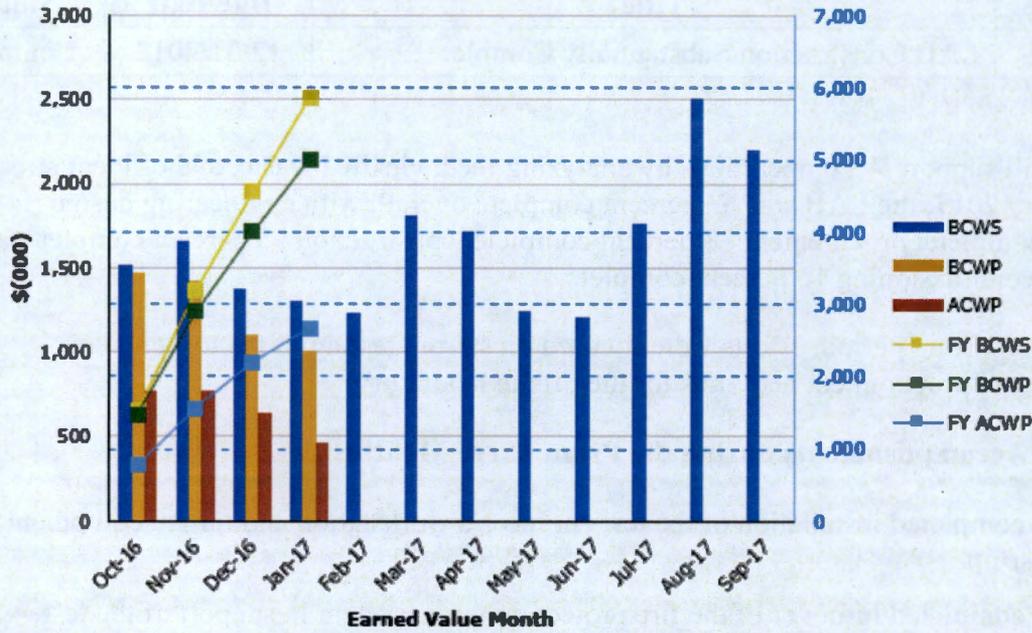
**EXC-01a: Fiscal Year Cost and Schedule Report**

Data Set: FY 2017 Earned Value Data

Data as of: January 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	\$1,227									
Mar 2017	\$1,809									
Apr 2017	\$1,720									
May 2017	\$1,242									
Jun 2017	\$1,213									
Jul 2017	\$1,764									
Aug 2017	\$2,505									
Sep 2017	\$2,205									

PTD	\$344,472	\$341,575	\$331,689	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 January 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	2,308.6	1,364.9	59%	552.8	446.7	81%	373.5	280.6	75%	687.3	574.6	84%	690.9	59.0	9%	4.0	4.0	100%
Balance of Facilities	760.3	479.3	63%	153.2	126.1	82%	72.4	57.6	80%	260.7	232.7	89%	273.6	62.4	23%	0.5	0.5	100%
Analytical Lab	523.8	329.0	63%	107.8	87.1	81%	65.6	57.4	88%	162.7	154.6	95%	187.1	29.5	16%	0.5	0.5	100%
Direct Feed LAW	395.3	93.8	24%	95.5	57.6	60%	56.5	5.3	9%	234.3	26.7	11%	0.0	0.0	0%	8.9	4.2	47%
LBL Facility Services	608.0	173.3	29%	0.0	0.0	0%	60.5	23.9	40%	132.4	40.3	30%	254.8	57.5	23%	160.4	51.6	32%
<b>Total LBL</b>	<b>4,596.0</b>	<b>2,440.3</b>	<b>53%</b>	<b>909.4</b>	<b>717.4</b>	<b>79%</b>	<b>628.6</b>	<b>424.8</b>	<b>68%</b>	<b>1,477.4</b>	<b>1,029.0</b>	<b>70%</b>	<b>1,406.4</b>	<b>208.4</b>	<b>15%</b>	<b>174.3</b>	<b>60.7</b>	<b>35%</b>
Project Services	1,021.6	409.0	40%	129.7	58.4	45%	74.2	36.9	50%	113.1	72.5	64%	1.7	1.7	100%	703.0	239.3	34%
<b>Total Project Services</b>	<b>1,021.6</b>	<b>409.0</b>	<b>40%</b>	<b>129.7</b>	<b>58.4</b>	<b>45%</b>	<b>74.2</b>	<b>36.9</b>	<b>50%</b>	<b>113.1</b>	<b>72.5</b>	<b>64%</b>	<b>1.7</b>	<b>1.7</b>	<b>100%</b>	<b>703.0</b>	<b>239.3</b>	<b>34%</b>
<b>Total LBL, DFLAW &amp; Project Services</b>	<b>5,617.6</b>	<b>2,849.2</b>	<b>51%</b>	<b>1,039.0</b>	<b>775.8</b>	<b>75%</b>	<b>702.8</b>	<b>461.8</b>	<b>66%</b>	<b>1,590.4</b>	<b>1,101.5</b>	<b>69%</b>	<b>1,408.1</b>	<b>210.1</b>	<b>15%</b>	<b>877.3</b>	<b>300.1</b>	<b>34%</b>
<b>PT/HLW/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 HLW/PT/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>14,340.4</b>	<b>8,814.4</b>	<b>61%</b>	<b>3,212.1</b>	<b>2,724.7</b>	<b>85%</b>	<b>2,268.3</b>	<b>1,586.6</b>	<b>70%</b>	<b>4,478.0</b>	<b>2,866.3</b>	<b>64%</b>	<b>2,166.6</b>	<b>353.3</b>	<b>16%</b>	<b>2,215.4</b>	<b>1,283.6</b>	<b>58%</b>

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

*Notes: 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.*