

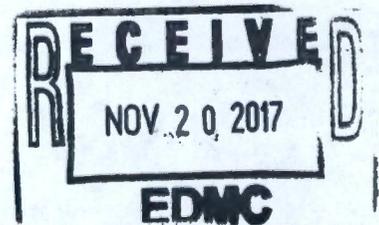
FINAL

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

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

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

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



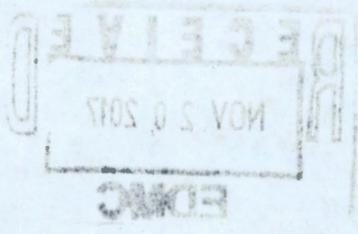
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<sup>1</sup> The narrative descriptions of progress in this report cover the period from October 1–31, 2017. Earned Value Management System data and descriptions cover the period of September 1-30, 2017; this includes the facility completion percentage 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.

1348881  
(11/15/2017)

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**Acronyms and Abbreviations**

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

**Consent Decree Milestone Statistics/Status**

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>Completion Date</b>	<b>Status</b>
<b>Fiscal Year 2021</b>				
D-00A-07 Interim	LAW Facility Construction Substantially Complete	12/31/2020		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 2023</b>				
D-00A-08 Interim	Start LAW Facility Cold Commissioning	12/31/2022		On Schedule
<b>Fiscal Year 2024</b>				
D-00A-09 Interim	LAW Facility Hot Commissioning Complete	12/31/2023		On Schedule
D-16B-01	Complete Retrieval of Tank Waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111	03/31/2024		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 2031</b>				
D-00A-02 Interim	HLW Facility Construction Substantially Complete	12/31/2030		On Schedule
<b>Fiscal Year 2032</b>				
D-00A-13 Interim	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2031		On Schedule

<b>Milestone</b>	<b>Title</b>	<b>Due Date</b>	<b>Completion Date</b>	<b>Status</b>
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
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
<b>Fiscal Year 2033</b>				
D-00A-15 Interim	Start PT Facility Cold Commissioning	12/31/2032		On Schedule
<b>Fiscal Year 2034</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 2037</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 (due November 14, 2017), 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

Milestone	Title	Due Date	Status
D-16E-02	Have available spare E-A-1 reboiler for the 242-A Evaporator	12/31/2018	On Schedule

DOE = U.S. Department of Energy.

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

- Washington River Protection Solutions LLC awarded a not-to-exceed design/build contract to ABW Technologies in the amount of \$461,000 for fabrication of a spare reboiler, with delivery prior to December 31, 2018. Total estimate at completion is \$776,000.
- Washington River Protection Solutions LLC has approved the reboiler final design. ABW Technologies began material procurement and will begin fabrication of the reboiler upon receipt of material. Fabrication of the new spare reboiler is scheduled to begin on November 14, 2017. Washington River Protection Solutions LLC remains on schedule to have a spare E-A-1 reboiler available for the 242-A Evaporator by the milestone due date of December 31, 2018.

## Single-Shell Tank Retrieval Program

*Tank Farms Assistant Manager:* Glyn Trenchard

*Federal Program Manager:* Jeff Rambo

Milestone	Title	Due Date	Status
D-16B-03	Of the 12 SSTs referred to in B-1 and B-2, complete retrieval of tank waste in at least 5	12/31/2020	Notice given that a serious risk has arisen. See letter 16-ORP-0097.
D-16B-01	Complete retrieval of tank waste from the following remaining SSTs in WMA-C: C-102, C-105, and C-111	03/31/2024	On Schedule
D-16B-02	Complete retrieval of tank wastes from the following SSTs in Tank Farms A and AX: A-101, A-102, A-104, A-105, A-106, AX-101, AX-102, AX-103, and AX-104. Subject to the requirements of Section IV-B-3 DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly.	03/31/2024	Notice given that a serious risk has arisen. See letter 16-ORP-0097.

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

### Significant Accomplishments During the Prior Three Months:

- Completed cover block removal at Tank AX-103 and Tank AX-101.
- Removed five thermocouples from Tank AX-102 and Tank AX-104.
- Removed obsolete sluicer from Tank AX-104.
- Completed installation of the AX Tank Farm splitter box.
- Completed Tank AZ-102 drop leg assembly installation in preparation for AX Tank Farm retrieval.
- Completed fabrication and acceptance of the A Tank Farm and AX Tank Farm water service skid (POR466).
- Completed the A-285 chemical and water service building.
- Continued installation of hose-in-hose transfer lines (HIHTL) for AX Tank Farm to Tank AZ-102.

- Continued installation of new 13.8 kV transformer and infrastructure to provide power for AX Tank Farm retrieval.
- Received extended reach sluicer systems for Tank AX-101.
- Completed fabrication of two exhausters (POR518/519) for A Tank Farm.
- Continued Tank AX-103 pit clean-out in preparation for long-length equipment removal.
- Removed an obsolete pump from Tank AX-102.
- Completed exhauster readiness activities for AX Tank Farm exhausters POR126 and POR127 and turned them over to Operations.
- Initiated installation of the caustic/water system piping from A-285 building to AX Tank Farm.
- Initiated installation of the electrical infrastructure inside AX Tank Farm to support retrieval activities.
- Completed dispersion modeling for stacks at A Tank Farm, AX Tank Farm, and 242-A Evaporator resulting in a redesign of the A Tank Farm ventilation system.
- Completed redesign of the A Tank Farm exhauster system. This redesign required relocation of the exhausters (POR518/519) within A Tank Farm.
- Completed major equipment installation for Tank C-105 third technology.
- Completed Tank C-105 third technology construction acceptance testing.
- Completed Tank C-105 operational acceptance testing.
- Initiated Tank C-105 third technology retrieval operations.
- Completed the first sluicing, hot water rinse, high pressure water sluicing, and caustic dissolution cycles of Tank C-105 third technology retrieval.
- Completed second planned water rinse cycle of Tank C-105 third technology retrieval.
- Completed second high pressure water sluicing cycle of Tank C-105, reaching the limits of the approved second technology.
- Initiated second caustic dissolution cycle of Tank C-105 third technology retrieval.
- Completed the removal and disposal of 18 HIHTLs from C Tank Farm.
- Document RPP-RPT-60173, *Retrieval Data Report for Single-Shell Tank 241-C-111*, was completed and submitted to the Washington State Department of Ecology (Ecology) via letter 17-TPD-0018, "The U.S. Department of Energy Office of River Protection Submits the Retrieval Data Report for Tank 241-C-111," on August 11, 2017, in accordance with Milestone M-045-86

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

- Remove legacy long-length equipment from Tank AX-102 and Tank AX-104

- Initiate fieldwork to install exhauster pads for new A Tank Farm exhausters (POR518/519)
- Initiate video inspection of Tank A-104 and Tank A-105
- Complete retrieval of Tank C-105 using chemical dissolution to the limits of the approved third technology
- Complete final rinsing of Tank C-105 and secure retrieval operations
- Construct ingress/egress tent at AN Tank Farm to support 20 HIHTL removals in fiscal year 2018
- Begin removing plates and hose barns and start disconnecting eight HIHTLs between C Tank Farm and AN Tank Farm.

**Issues:**

- Reduced worker efficiencies associated with mandatory use of supplied air continues to impact work in the tank farms.
- Installation of the A Tank Farm portable exhausters has been impacted by concerns with placement of the exhausters near the stacks at 242-A Evaporator and AX Tank Farm. Exhaust stack modeling was completed and an alternate location was selected.

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

Tank	TWRWP	Expected Revisions	Retrieval Technology		
			First	Second	Third
AX-101	RPP-RPT-58932, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-102	RPP-RPT-58933, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-103	RPP-RPT-58934, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
AX-104	RPP-RPT-58935, Rev. 1	Complete	Sluicing with ERSS	High-Pressure Water deployed with ERSS	–
C-101	RPP-22520, Rev. 8	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	–
C-102	RPP-22393, Rev. 7	Complete	Modified Sluicing with ERSS	High-Pressure Water deployed with the ERSS	–
C-104	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0018	–
C-105	RPP-22520, Rev. 8	Complete	MARS-V	MARS-V High-Pressure Water Spray	Chemical Dissolution Process with ERSS
C-107	RPP-22393, Rev. 7	Complete	MARS-S	MARS-S High-Pressure Water Spray	Water Dissolution
C-108	RPP-22393, Rev. 7	Complete	Modified Sluicing	Chemical Retrieval Process complete per 13-TF-0025	–
C-109	RPP-21895, Rev. 5	Complete	Modified Sluicing	Chemical Retrieval Process	–

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

ERSS = extended reach sluicer system.  
MARS-S = Mobile Arm Retrieval System-Sluicing.  
MARS-V = Mobile Arm Retrieval System-Vacuum.  
TWRWP = tank waste retrieval work plan.

#### Significant Accomplishments During the Prior Three Months:

- Rev. 1 of the AX Tank retrieval work plans were submitted to Ecology via letter 17-TF-0072, "Submittal of the 241-AX-101, 241-AX-102, 241-AX-103 and 241-AX-104 Tanks Waste Retrieval Work Plans," dated October 20, 2017.

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

- None.

#### Issues:

- None.

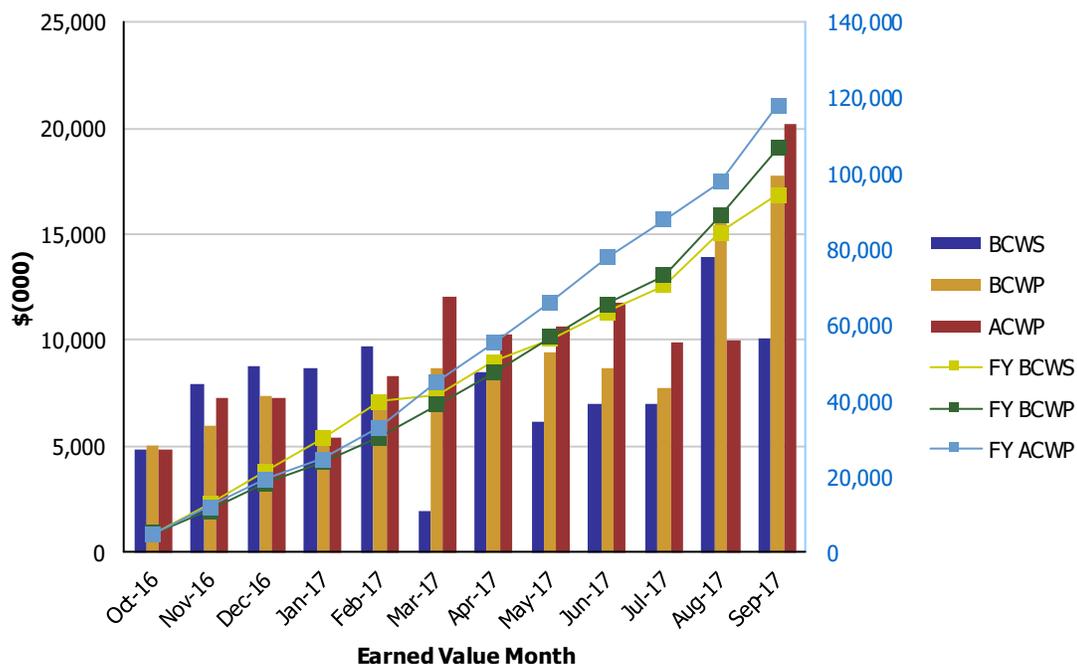
### EXC-01a: Fiscal Year Cost and Schedule Report

Earned Value Data: Fiscal Year 2017

September-17

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$4,816	\$4,996	\$4,822	1.04	1.04	\$4,816	\$4,996	\$4,822	1.04	1.04
Nov 2016	\$7,924	\$5,969	\$7,241	0.75	0.82	\$12,740	\$10,965	\$12,063	0.86	0.91
Dec 2016	\$8,772	\$7,401	\$7,262	0.84	1.02	\$21,512	\$18,365	\$19,325	0.85	0.95
Jan 2017	\$8,646	\$5,422	\$5,360	0.63	1.01	\$30,158	\$23,787	\$24,685	0.79	0.96
Feb 2017	\$9,716	\$6,707	\$8,341	0.69	0.80	\$39,874	\$30,495	\$33,026	0.76	0.92
Mar 2017	\$1,903	\$8,675	\$12,056	4.56	0.72	\$41,777	\$39,170	\$45,082	0.94	0.87
Apr 2017	\$8,477	\$8,214	\$10,268	0.97	0.80	\$50,254	\$47,384	\$55,350	0.94	0.86
May 2017	\$6,110	\$9,406	\$10,604	1.54	0.89	\$56,364	\$56,790	\$65,953	1.01	0.86
Jun 2017	\$6,982	\$8,684	\$11,807	1.24	0.74	\$63,345	\$65,474	\$77,761	1.03	0.84
Jul 2017	\$7,043	\$7,702	\$9,910	1.09	0.78	\$70,388	\$73,176	\$87,670	1.04	0.83
Aug 2017	\$13,912	\$15,660	\$10,002	1.13	1.57	\$84,301	\$88,836	\$97,672	1.05	0.91
Sep 2017	\$10,103	\$17,777	\$20,206	1.76	0.88	\$94,404	\$106,613	\$117,878	1.13	0.90
CTD	\$803,571	\$804,663	\$838,552	1.00	0.96					

- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- CTD = contract to date.
- EVMS = earned value management system.
- FY = fiscal year.
- SPI = schedule performance index.

**Retrieve and Close Single-Shell Tanks (5.02)<sup>3</sup>**

The September 2017 **favorable** schedule variance (SV) of \$7,674,000 is due to:

- Retrieval operations for Tank C-105 third technology operations started in mid-August and were able to operate on a 24-hour, 7-days a week operating schedule, which accelerated the completion of the caustic dissolution – Phase 1, and the start of the presluicing – Phase 2 in September, thereby accomplishing work scheduled in future months.
- Accelerated delivery of several long-lead procured items, including exhausters and ventilation equipment for A Tank Farm and extended reach sluicer systems for Tank AX-101 and Tank AX-103, contributed to favorable schedule variance.

The September 2017 **unfavorable** cost variance (CV) of (\$2,428,000) is due to:

- Accelerated delivery of several long-lead items resulted in early payments.
- Delays in the removal of equipment from Tank AX-104, due to degraded condition of the sluicer in riser 1B, the failure of the 801A concrete cap to meet specifications, and resulting rework contributed to the unfavorable CV.

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<sup>3</sup> “Closure” activities are expressly excluded from the Consent Decree. See 2010 Consent Decree, Appendix C, first paragraph: “Processes not covered by a TWRWP (e.g., tank closure) are not established under this Consent Decree.”

## Waste Treatment and Immobilization Plant Project

*Federal Project Director:* 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 2,773 full-time equivalent contractor, Bechtel National, Inc. (BNI), and subcontractor personnel. This includes 659 craft, 729 non-manual, and 159 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 September 2017, total LBL facilities were 59 percent complete, design and engineering was 85 percent complete, procurement was 70 percent complete, construction was 75 percent complete, and startup and commissioning was 21 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:

- A Project Peer Review (PPR) on the WTP Project was conducted October 23-27, 2017. As a result of the review the WTP Project is considering initiatives to optimize completion efforts.
- On August 15, 2017, Acting Assistant Secretary for Environmental Management James Owendoff met with Washington State Department of Ecology (Ecology) Director Maia Bellon and Ecology Nuclear Waste Program Manager Alex Smith and had a brief conversation about several potential ideas to accelerate cleanup of the Hanford Site. Following this conversation, Acting Assistant Secretary Owendoff sent a letter to Director Bellon dated September 20, 2017. The letter noted items discussed during their August 15, 2017, conversation, including whether work on the Pretreatment (PT) and High-Level Waste (HLW) facilities could be paused for a short period in order to accelerate implementation of DFLAW, without impacting WTP milestones and requested a meeting at Ecology's earliest convenience in order to continue the conversation and hear more about Ecology's perspective and priorities regarding Hanford cleanup activities. Director Bellon sent a reply letter dated October 16, 2017.

- Other significant accomplishments during the prior three months are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

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

- As a result of the Project Peer Review in late October 2017, the WTP Project is considering initiatives to optimize completion efforts.
- Acting Assistant Secretary Owendoff and Director Bellon are scheduled to meet on November 9, 2017 to discuss the matters noted above.
- Other significant planned activities in the next three months are noted in project reports for the PT Facility, HLW Facility, LAW Facility, BOF, and LAB.

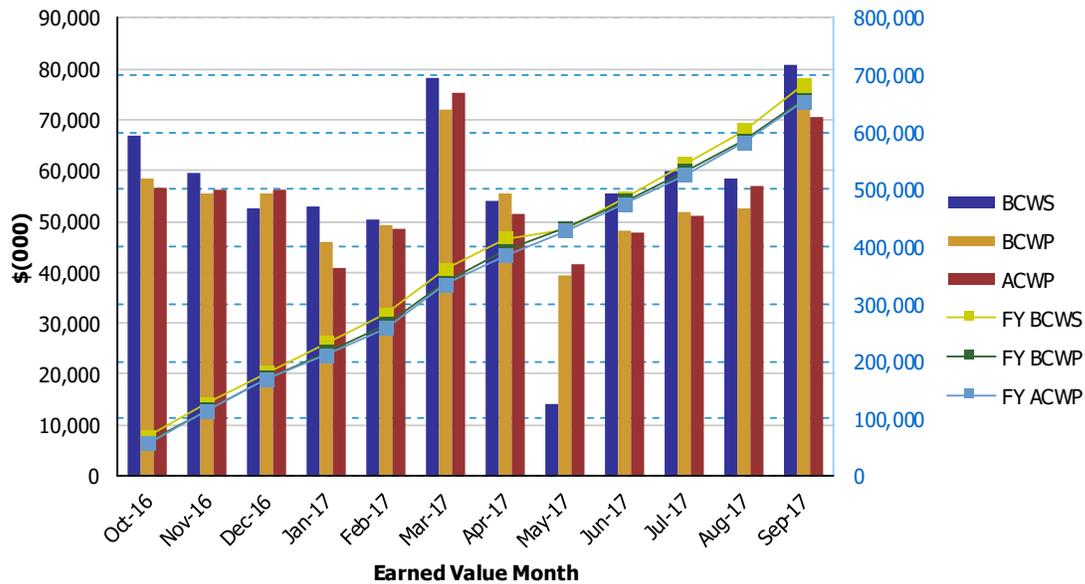
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: September 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$67,019	\$58,321	\$56,633	0.87	1.03	\$67,019	\$58,321	\$56,633	0.87	1.03
Nov 2016	\$59,361	\$55,681	\$56,299	0.94	0.99	\$126,379	\$114,002	\$112,932	0.90	1.01
Dec 2016	\$52,654	\$55,489	\$56,125	1.05	0.99	\$179,033	\$169,491	\$169,057	0.95	1.00
Jan 2017	\$52,807	\$46,077	\$40,881	0.87	1.13	\$231,840	\$215,568	\$209,938	0.93	1.03
Feb 2017	\$50,489	\$49,354	\$48,627	0.98	1.01	\$282,329	\$264,922	\$258,565	0.94	1.02
Mar 2017	\$78,183	\$72,145	\$75,415	0.92	0.96	\$360,512	\$337,067	\$333,981	0.93	1.01
Apr 2017	\$54,085	\$55,376	\$51,509	1.02	1.08	\$414,597	\$392,443	\$385,490	0.95	1.02
May 2017	\$13,975	\$39,451	\$41,659	2.82	0.95	\$428,572	\$431,894	\$427,148	1.01	1.01
Jun 2017	\$55,640	\$48,136	\$47,667	0.87	1.01	\$484,211	\$480,030	\$474,815	0.99	1.01
Jul 2017	\$59,893	\$51,954	\$50,998	0.87	1.02	\$544,105	\$531,985	\$525,813	0.98	1.01
Aug 2017	\$58,557	\$52,729	\$56,871	0.90	0.93	\$602,662	\$584,714	\$582,685	0.97	1.00
Sep 2017	\$80,817	\$72,173	\$70,640	0.89	1.02	\$683,479	\$656,887	\$653,325	0.96	1.01

PTD	\$10,511,594	\$10,457,897	\$10,383,414	0.99	1.01
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- |      |   |                                  |      |   |                                 |
|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed.   | EVMS | = | earned value management system. |
| BCWP | = | budgeted cost of work performed. | FY   | = | fiscal year.                    |
| BCWS | = | budgeted cost of work scheduled. | PTD  | = | project to date.                |
| CPI  | = | cost performance index.          | SPI  | = | schedule performance index.     |

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

<b>Performance Tracking</b>	<b>SV</b>	<b>CV</b>
Current Period (September 2017)	(\$8,644)	\$1,533
Fiscal Year 2017 to-date	(\$26,592)	\$3,562
Cumulative (through September 2017)	(\$53,698)	\$74,483

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 September EVMS reporting period, a net **unfavorable** SV of approximately (\$8.6 million) was reported (meaning that a net of \$8.6 million of September scheduled work did not get completed in September), primarily due to the following:

- LBL/DFLAW reported an unfavorable SV of (\$6.5 million) because work planned for this month was performed ahead of schedule and prior to implementation of the Waste Treatment Completion Company accounts; LBL Engineering remains unfavorable because nuclear safety engineering resources continue to be focused on the process hazards analysis, safety strategy summary documents, and comment resolution of the draft Preliminary Documented Safety Analysis (PDSA); DFLAW construction is unfavorable because a pipe rack delivery for the Effluent Management Facility (EMF) continues to be delayed.
- PT Facility reported an unfavorable SV of (\$1.8 million). Plant Material is unfavorable because of a delayed request for equitable adjustment from a subcontractor, the early receipt of pre-buy pipe spools from a different subcontractor, and a delay in receipt of scrapping piping materials from a third subcontractor.
- HLW Facility reported an unfavorable SV of (\$0.2 million). Plant Equipment is unfavorable because mitigation for mounted cranes associated with seismic overstress conditions was not completed in this month as planned.

For the September EVMS reporting period, a net **favorable** CV of approximately \$1.5 million was reported (meaning that it cost a net \$1.5 million less to perform the work completed in September than estimated), primarily due to the following:

- Project Services reported a favorable CV of \$1.2 million because actual labor charges were less than planned for this month due to unfilled positions.
- PT Facility reported a favorable CV of \$0.4 million because of Waste Treatment Completion Company staffing prioritization to support LBL/DFLAW activities, along with a delay of gravel upgrades at the Material Handling Facility.
- HLW Facility reported a favorable CV of \$0.4 million. Procurement freight deliveries and audits cost less than planned. In addition, actual costs for construction level-of-effort field non-manual accounts and preventive maintenance activities were less than planned.

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

## Pretreatment Facility

*Federal Project Director:* Bill Hamel

*Facility Federal Project Director:* Wahed Abdul

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

PT = pretreatment.

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

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

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

ORP and BNI continued testing of the PJM SHSV design to replace a number of vessel designs in the PT Facility to resolve concerns over PJM vessel mixing and control (i.e., T4). A prototype of the 16-foot-diameter SHSV was commissioned in December 2016. The testing results will provide the required design and operations information to support PT Facility design. Full-scale PJM controls testing was completed in April 2017. Final mixing testing was completed in

September 2017. This testing substantiated PJM control parameters and the control approach to be used for the qualification of the design for the SHSV.

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

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

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

- BNI is expected to complete data analysis and documentation for the just completed full-scale PJM mixing systems testing of the SHSV design prototype by the end of December 2017.
- BNI is expected to develop an engineering study documenting SHSV conceptual design functions and requirements in support of resolving issues in relation to design redundancy and in-service inspection (i.e., T6).
- BNI is expected to issue the methodology for the vessel structural integrity verification.
- BNI is expected to issue an update to the localized corrosion test basis document.
- As previously reported, BNI will continue to focus on facility preservation and preventative maintenance activities.

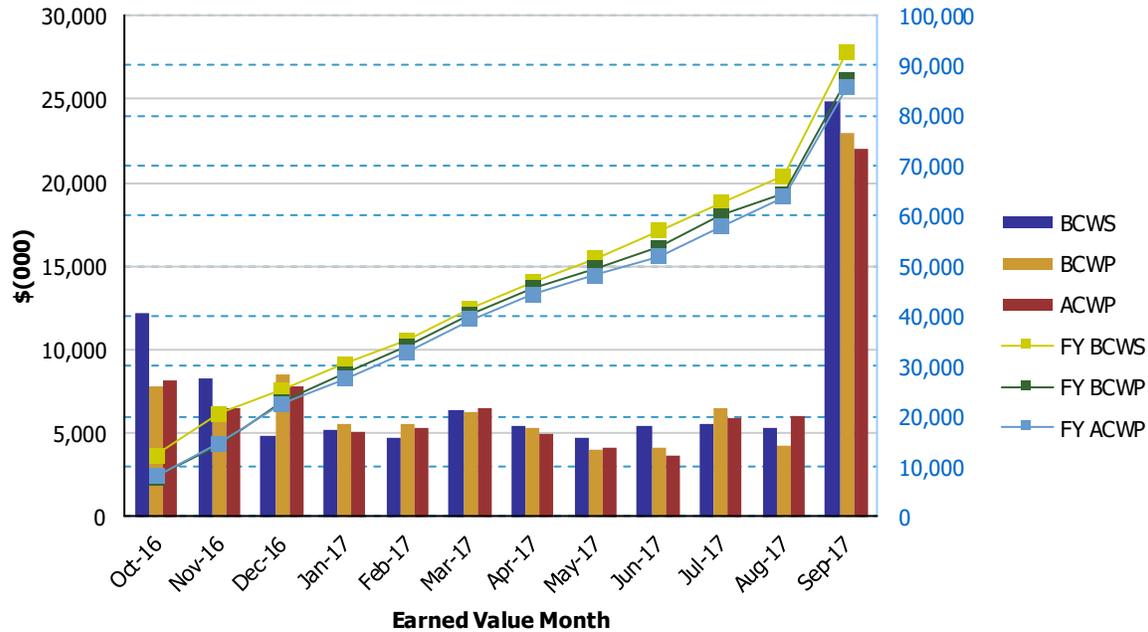
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: September 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$12,193	\$7,845	\$8,196	0.64	0.96	\$12,193	\$7,845	\$8,196	0.64	0.96
Nov 2016	\$8,254	\$6,654	\$6,487	0.81	1.03	\$20,447	\$14,500	\$14,684	0.71	0.99
Dec 2016	\$4,851	\$8,480	\$7,738	1.75	1.10	\$25,298	\$22,980	\$22,421	0.91	1.02
Jan 2017	\$5,139	\$5,539	\$5,024	1.08	1.10	\$30,437	\$28,519	\$27,445	0.94	1.04
Feb 2017	\$4,765	\$5,517	\$5,361	1.16	1.03	\$35,202	\$34,036	\$32,806	0.97	1.04
Mar 2017	\$6,333	\$6,286	\$6,455	0.99	0.97	\$41,535	\$40,322	\$39,261	0.97	1.03
Apr 2017	\$5,382	\$5,260	\$4,917	0.98	1.07	\$46,918	\$45,582	\$44,178	0.97	1.03
May 2017	\$4,718	\$4,057	\$4,110	0.86	0.99	\$51,635	\$49,639	\$48,288	0.96	1.03
Jun 2017	\$5,472	\$4,073	\$3,670	0.74	1.11	\$57,107	\$53,712	\$51,958	0.94	1.03
Jul 2017	\$5,510	\$6,432	\$5,841	1.17	1.10	\$62,618	\$60,144	\$57,799	0.96	1.04
Aug 2017	\$5,353	\$4,184	\$5,958	0.78	0.70	\$67,971	\$64,328	\$63,758	0.95	1.01
Sep 2017	\$24,861	\$23,017	\$22,030	0.93	1.04	\$92,832	\$87,345	\$85,788	0.94	1.02

PTD	\$1,941,109	\$1,937,585	\$1,913,361	1.00	1.01
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- ACWP = actual cost of work performed.
- BCWP = budgeted cost of work performed.
- BCWS = budgeted cost of work scheduled.
- CPI = cost performance index.
- EVMS = earned value management system.
- FY = fiscal year.
- PTD = project to date.
- SPI = schedule performance index.

## High-Level Waste Facility

**Federal Project Director:** Bill Hamel

**Facility Federal Project Director:** Wahed Abdul

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

HLW = high-level waste.

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

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

Work on the HLW Facility is being performed in accordance with the fiscal year 2017 through fiscal year 2021 Interim Work Plan. BNI has been working under a limited construction and procurement authorization since 2012, and BNI's efforts this reporting period were focused on completing activities required to resume full-production engineering, procurement, and construction of the HLW Facility (i.e., DOE Decision 2A, "Authorization to Resume HLW Procurement and Construction"). To support that, BNI earlier submitted a facility completion plan identifying the strategy for obtaining full-production authorization, which was previously approved by ORP.

As previously reported, BNI earlier provided the final Design and Operability Disposition Report to ORP, summarizing the issue resolutions path forward. ORP reviewed all disposition comments for adequacy. Based on completion of the Design and Operability Disposition Report, BNI notified ORP it had completed the required criteria for DOE Decision 2A pending ORP approval of the updated PDSA (24590-WTP-PSAR-ESH-01-002-04, *Preliminary Documented Safety Analysis to Support Construction Authorization: HLW Facility Specific Information*).

A multi-discipline ORP review team reviewed BNI documentation for several months to validate completion of all DOE Decision 2A criteria. One of the key documents for obtaining ORP authorization to resume production was updating the HLW PDSA to align facility design with the nuclear safety basis. This was a primary focus of the ORP-chartered Safety Basis Review Team for several months.

Upon resolution of all comments from the Safety Basis Review Team, ORP approved the updated PDSA Rev. 7 on September 27, 2017. Based on approval of the updated PDSA, ORP issued letter 17-WTP-0179, "Contract No. DE-AC27-01RV14136 – Decision 2A Criteria for Authorization to Resume High-Level Waste Facility Procurement and Construction Has Been Met," to BNI on September 27, 2017, indicating DOE Decision 2A criteria for authorization to resume HLW Facility procurement and construction activities have been met.

All testing at Mississippi State University of the redesigned high-efficiency particulate air (HEPA) filter for the safe-change and remote-change housings was completed successfully. The final report from the results of the testing was issued in September 2017.

#### **Significant Accomplishments During the Prior Three Months:**

- An ORP multi-discipline review of BNI's request for authorization to proceed with procurement and construction of the HLW Facility based on completion of Decision 2A criteria was completed on September 20, 2017. BNI's request to ORP was in letter CCN: 294937, "Contract No. DE-AC27-01RV14136 – Advance Notification of Completion of Decision 2A Criteria and Request for Authorization to Proceed with Procurement and Construction of HLW Facility," dated July 20, 2017.
- BNI transmitted the final revised PDSA change package to ORP in September 2017, incorporating responses to the ORP-chartered Safety Basis Review Team comments. ORP approved Rev. 7 of the HLW Facility PDSA on September 27, 2017.
- ORP issued letter 17-WTP-0179 to BNI on September 27, 2017, indicating DOE Decision 2A criteria for authorization to resume HLW Facility procurement and construction activities has been met.
- BNI issued a final report on the HEPA filter testing and a final selection of HEPA filters supporting the ventilation and offgas systems of HLW and LBL facilities.
- BNI is continuing to design the remaining portions of the radioactive liquid waste disposal system.
- BNI is continuing fabrication of RLD-7 and RLD-8 vessels. These vessels are located in the wet process cell and must be installed prior to concrete slab placement, which will support roof installation and building enclosure.

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

- BNI will continue to update its long-range planning documents to support a future rebaseline effort.

- As previously reported, BNI will continue to focus on facility preservation and preventative maintenance activities.

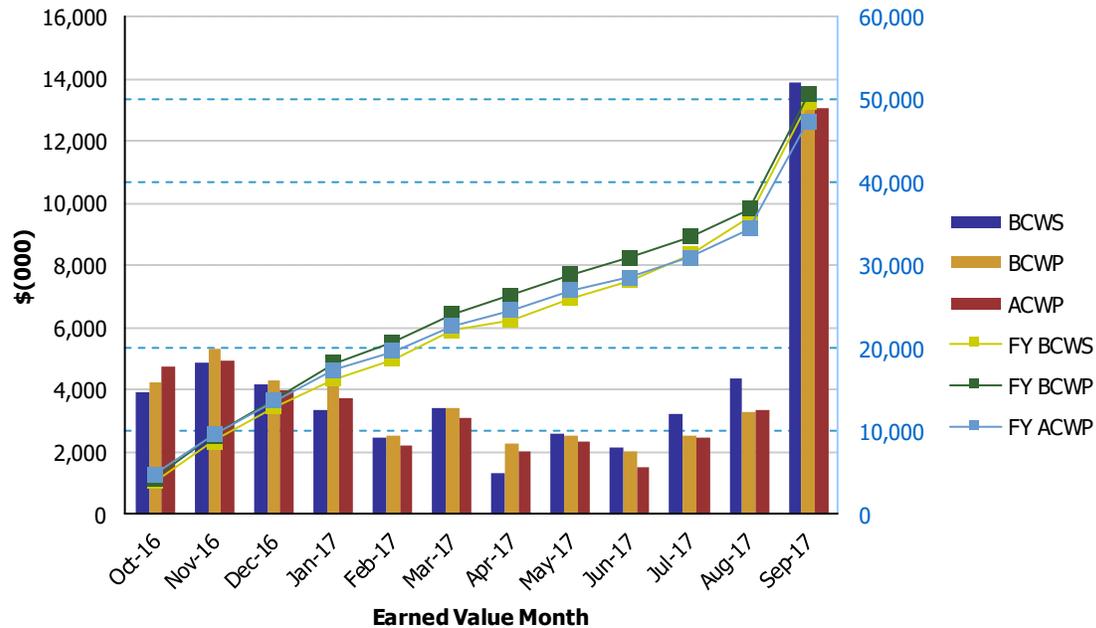
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: September 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$3,910	\$4,231	\$4,761	1.08	0.89	\$3,910	\$4,231	\$4,761	1.08	0.89
Nov 2016	\$4,855	\$5,337	\$4,930	1.10	1.08	\$8,766	\$9,568	\$9,692	1.09	0.99
Dec 2016	\$4,163	\$4,292	\$3,960	1.03	1.08	\$12,929	\$13,860	\$13,652	1.07	1.02
Jan 2017	\$3,343	\$4,387	\$3,702	1.31	1.19	\$16,271	\$18,247	\$17,354	1.12	1.05
Feb 2017	\$2,439	\$2,491	\$2,225	1.02	1.12	\$18,710	\$20,738	\$19,579	1.11	1.06
Mar 2017	\$3,425	\$3,427	\$3,098	1.00	1.11	\$22,135	\$24,165	\$22,676	1.09	1.07
Apr 2017	\$1,296	\$2,292	\$1,997	1.77	1.15	\$23,431	\$26,457	\$24,674	1.13	1.07
May 2017	\$2,594	\$2,492	\$2,345	0.96	1.06	\$26,025	\$28,949	\$27,018	1.11	1.07
Jun 2017	\$2,135	\$1,991	\$1,530	0.93	1.30	\$28,160	\$30,939	\$28,549	1.10	1.08
Jul 2017	\$3,196	\$2,553	\$2,449	0.80	1.04	\$31,356	\$33,493	\$30,998	1.07	1.08
Aug 2017	\$4,372	\$3,309	\$3,367	0.76	0.98	\$35,728	\$36,802	\$34,365	1.03	1.07
Sep 2017	\$13,912	\$13,752	\$13,032	0.99	1.06	\$49,640	\$50,553	\$47,397	1.02	1.07
PTD	\$1,332,671	\$1,332,135	\$1,308,392	1.00	1.02					

- |      |   |                                  |      |   |                                 |
|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed.   | EVMS | = | earned value management system. |
| BCWP | = | budgeted cost of work performed. | FY   | = | fiscal year.                    |
| BCWS | = | budgeted cost of work scheduled. | PTD  | = | project to date.                |
| CPI  | = | cost performance index.          | SPI  | = | schedule performance index.     |

## Low-Activity Waste Facility

*Federal Project Director:* Bill Hamel

*Facility Federal Project Director:* Jeff Bruggeman

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

LAW = low-activity waste.

The LAW Facility will process concentrated low-activity waste, which will be mixed with silica and other glass-forming materials. The mixture will be fed into the LAW Facility's two melters at a design capacity of 30 metric tons per day, heated to 2,100°F, and vitrified into glass. The 300-ton melters are approximately 20 feet by 30 feet and 16 feet high. The glass mixture will then be poured into stainless steel containers, which are 4 feet in diameter, 7 feet tall, and weigh more than 7 tons. These containers are anticipated to be disposed of on the Hanford Site in the Integrated Disposal Facility. As of September 2017, the LAW Facility was 64 percent complete overall, with engineering design 86 percent complete, procurement 78 percent complete, construction 87 percent complete, and startup and commissioning 12 percent complete.

### Significant Accomplishments During the Prior Three Months:

- BNI completed contractual interim Milestone A-4, "LBL Construction Complete Performance Based Incentive Fee, Complete LAW Bulk Cable, El +48," ahead of mid-February 2018 contract date. (Note: El +48 equals greater than the 48-foot elevation.)
- BNI completed discharge chamber vent piping on melter No. 1 and melter No 2.
- BNI completed initial, 8-week system walkdown for plant service water system.
- BNI completed final, 3-week system walkdowns for the following:
  - Nonradioactive liquid waste disposal system.
  - Low-voltage electrical system.
- BNI completed installation of flexible hoses for the cooling jackets for LAW Facility melter feed and feed preparation process vessels.
- BNI completed contractual Interim Milestone A-3, "LBL Construction Complete Performance Based Incentive Fee, Complete Final Assembly of Melter #2," in late August 2017. ORP has approved this for payment.
- The 400 kilo-volt-ampere uninterruptible power supply was delivered to the site.
- BNI completed hydrostatic testing for process cell vessels.

- BNI completed removal of discharge chamber heaters in melter No. 1.
- BNI completed reinstallation of internal components in wet electrostatic precipitator vessel No. 2.
- BNI issued the 90 percent design review report for the uninterruptible power electrical system.
- ORP approved a PDSA interim change package to reflect additional defense-in-depth structures, systems, and components and changes in safety-significant structures, systems, and components' safety functions and functional requirements.
- BNI moved melter No. 1 into final position.
- BNI completed installation of the LAW Facility secondary offgas/vessel vent process system preheaters, El +48.

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

- BNI is expected to perform 90 percent design reviews of the primary and secondary offgas systems.
- BNI is expected to install primary offgas spool fittings (hilltop fittings).
- BNI is expected to perform initial system walkdowns for the following:
  - Plant service air system.
  - Instrument air system.
  - Demineralized water system.
  - Uninterruptible power electrical system.
- BNI is expected to continue developing chapters for the PDSA/documented safety analysis.
- BNI is expected to continue work on glass pour seal head assembly for melter No 1.
- BNI is expected to continue work on installation of seismic restraint assemblies for melter No. 1 and melter No. 2.
- BNI is expected to continue work on cooling jacket installation of permanent banding for LAW melter feed process vessels VSL-00003 and VSL-00004.

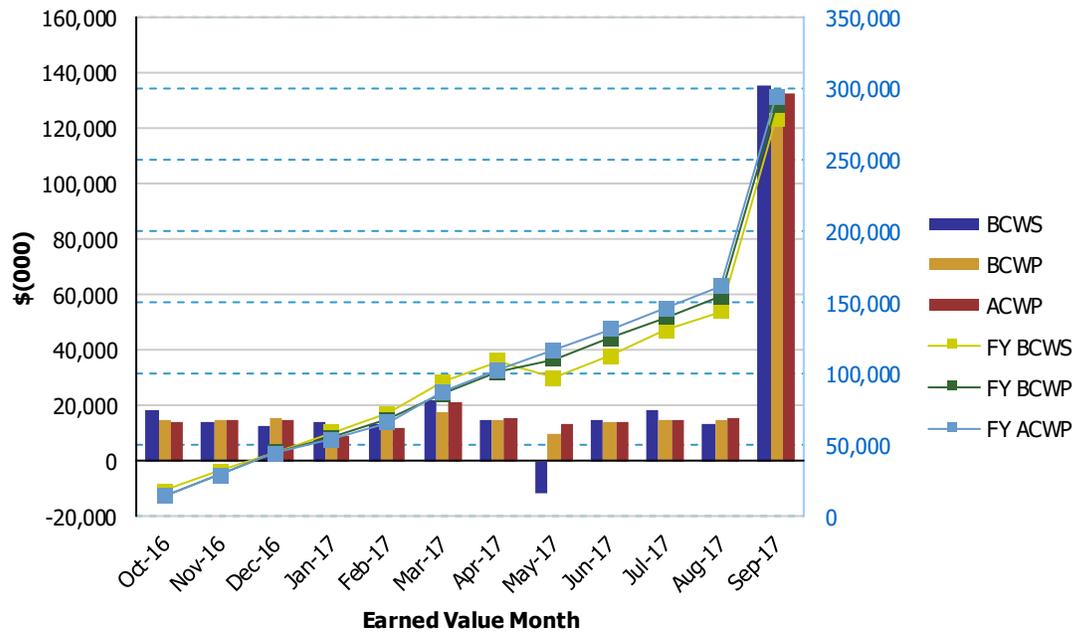
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: September 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$18,055	\$14,539	\$14,396	0.81	1.01	\$18,055	\$14,539	\$14,396	0.81	1.01
Nov 2016	\$14,013	\$14,564	\$15,062	1.04	0.97	\$32,068	\$29,102	\$29,458	0.91	0.99
Dec 2016	\$12,629	\$15,785	\$15,081	1.25	1.05	\$44,697	\$44,887	\$44,539	1.00	1.01
Jan 2017	\$14,122	\$10,498	\$9,286	0.74	1.13	\$58,818	\$55,386	\$53,825	0.94	1.03
Feb 2017	\$13,603	\$12,947	\$12,282	0.95	1.05	\$72,421	\$68,333	\$66,107	0.94	1.03
Mar 2017	\$22,131	\$17,933	\$21,287	0.81	0.84	\$94,552	\$86,266	\$87,395	0.91	0.99
Apr 2017	\$14,450	\$14,968	\$15,573	1.04	0.96	\$109,002	\$101,234	\$102,967	0.93	0.98
May 2017	(\$11,648)	\$9,459	\$13,678	-0.81	0.69	\$97,354	\$110,693	\$116,645	1.14	0.95
Jun 2017	\$15,084	\$13,971	\$14,289	0.93	0.98	\$112,438	\$124,664	\$130,934	1.11	0.95
Jul 2017	\$18,103	\$14,597	\$15,147	0.81	0.96	\$130,541	\$139,261	\$146,081	1.07	0.95
Aug 2017	\$13,363	\$14,807	\$15,717	1.11	0.94	\$143,904	\$154,068	\$161,798	1.07	0.95
Sep 2017	\$135,290	\$134,173	\$132,616	0.99	1.01	\$279,194	\$288,242	\$294,414	1.03	0.98

PTD	\$1,728,224	\$1,726,435	\$1,730,607	1.00	1.00
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- |      |   |                                  |      |   |                                 |
|------|---|----------------------------------|------|---|---------------------------------|
| ACWP | = | actual cost of work performed.   | EVMS | = | earned value management system. |
| BCWP | = | budgeted cost of work performed. | FY   | = | fiscal year.                    |
| BCWS | = | budgeted cost of work scheduled. | PTD  | = | project to date.                |
| CPI  | = | cost performance index.          | SPI  | = | schedule performance index.     |

## 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 September 2017, BOF was 69 percent complete overall, with engineering design 91 percent complete, procurement 82 percent complete, construction 90 percent complete, and startup and commissioning 31 percent complete. Design of the EMF was 75 percent complete.

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

### Significant Accomplishments During the Prior Three Months:

- BNI initiated placement of EMF low point drain walls.
- ORP has submitted the formal EMF Equipment Package No. 1 permit modification to Ecology.
- BNI completed functional testing and certification of BOF switchgear Building 91. This completes startup testing activities for the WTP electrical distribution system.
- BNI completed energized testing of the water treatment facility domestic potable water and process service water systems.
- BNI energized the low-voltage electrical system for the cooling tower and began testing the cooling tower fan motors.
- BNI completed the fill, vent, and pressure testing of the underground piping for the process service water system at the cooling tower.
- ORP received approval of the EMF Secondary Containment Permit package from Ecology.
- BNI continued installation of ring beams and secondary steel to support topping slab placement in EMF.

- BNI continued first lift wall placements and rebar and formwork activities to support additional wall placements at EMF.

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

- BNI is expected to place EMF processing facility topping slab.
- BNI is expected to complete balancing of the cathodic protection system.

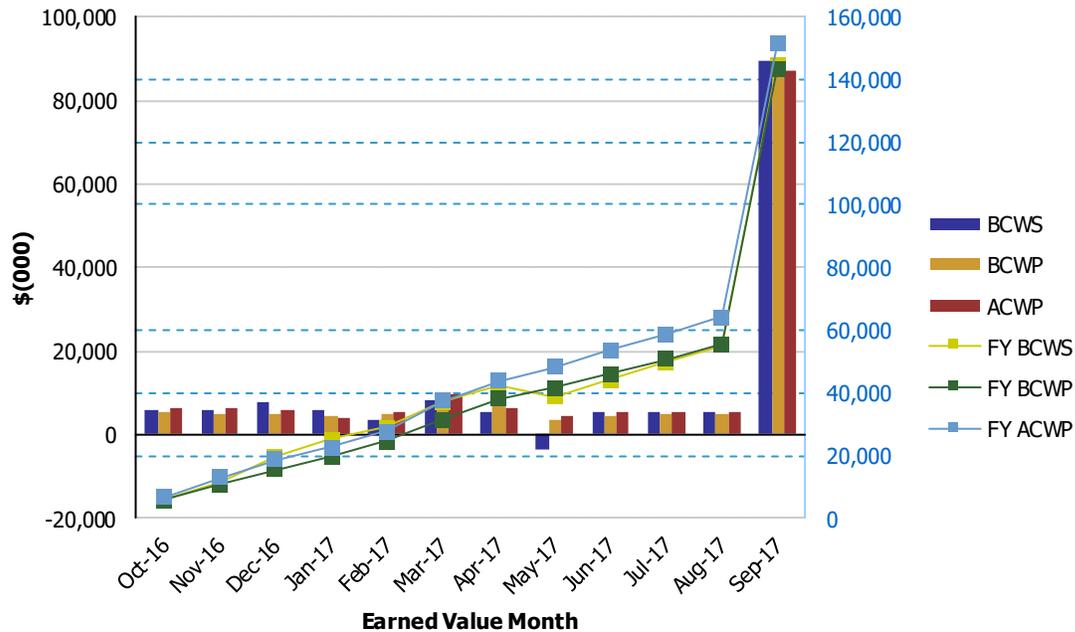
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: September 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$5,977	\$5,519	\$6,535	0.92	0.84	\$5,977	\$5,519	\$6,535	0.92	0.84
Nov 2016	\$5,773	\$5,120	\$6,338	0.89	0.81	\$11,751	\$10,640	\$12,874	0.91	0.83
Dec 2016	\$7,799	\$4,729	\$5,843	0.61	0.81	\$19,549	\$15,369	\$18,717	0.79	0.82
Jan 2017	\$5,754	\$4,219	\$3,918	0.73	1.08	\$25,304	\$19,588	\$22,634	0.77	0.87
Feb 2017	\$3,635	\$5,048	\$5,197	1.39	0.97	\$28,938	\$24,636	\$27,831	0.85	0.89
Mar 2017	\$8,237	\$6,862	\$9,546	0.83	0.72	\$37,175	\$31,498	\$37,378	0.85	0.84
Apr 2017	\$5,228	\$6,632	\$6,364	1.27	1.04	\$42,403	\$38,130	\$43,742	0.90	0.87
May 2017	(\$3,611)	\$3,405	\$4,480	-0.94	0.76	\$38,793	\$41,536	\$48,222	1.07	0.86
Jun 2017	\$5,387	\$4,410	\$5,282	0.82	0.83	\$44,179	\$45,945	\$53,504	1.04	0.86
Jul 2017	\$5,507	\$4,744	\$5,172	0.86	0.92	\$49,686	\$50,690	\$58,677	1.02	0.86
Aug 2017	\$5,449	\$4,821	\$5,511	0.88	0.87	\$55,135	\$55,511	\$64,188	1.01	0.86
Sep 2017	\$89,603	\$88,204	\$87,293	0.98	1.01	\$144,738	\$143,715	\$151,481	0.99	0.95
PTD	\$672,344	\$665,508	\$674,744	0.99	0.99					

- |   |  |
|---|--|
| ACWP = actual cost of work performed.   | EVMS = earned value management system. |
| BCWP = budgeted cost of work performed. | FY = fiscal year.                      |
| BCWS = budgeted cost of work scheduled. | PTD = project to date.                 |
| CPI = cost performance index.           | SPI = schedule performance index.      |

## Analytical Laboratory

**Federal Project Director:** 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 September 2017, the LAB was 68 percent complete overall, with engineering design 87 percent complete, procurement 86 percent complete, construction 96 percent complete, and startup and commissioning 21 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 turnover of the low-voltage electrical system to the Startup organization.
- BNI continued monitoring systems from the test engineer's workstation in support of turnover and testing activities by the Startup organization.
- BNI continued work in progress to install replacement air-conditioning condenser to support the test engineer's work station.
- BNI completed final wall and floor coatings.

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

- BNI is expected to occupy temporary laboratory space so that development of laboratory methods and training can occur earlier than initially planned to ensure laboratory staff are ready at the start of commissioning.
- BNI is expected to install a toxicity refrigerant monitor needed for beneficial occupancy.
- BNI is expected to complete 90 percent design review of ventilation systems (C1V, C2V, C3V, and C5V).

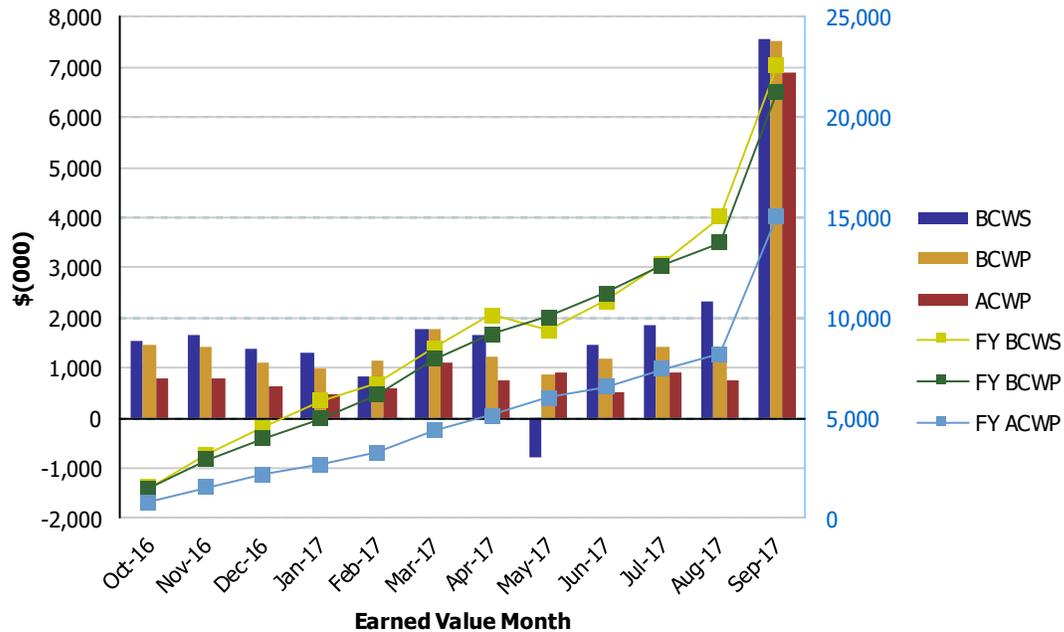
### EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2017 Earned Value Data

Data as of: September 2017

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

EVMS Monthly and Fiscal Year Values



Earned Value Month	BCWS	BCWP	ACWP	SPI	CPI	FY BCWS	FY BCWP	FY ACWP	FY SPI	FY CPI
Oct 2016	\$1,521	\$1,470	\$776	0.97	1.89	\$1,521	\$1,470	\$776	0.97	1.89
Nov 2016	\$1,661	\$1,426	\$777	0.86	1.83	\$3,182	\$2,896	\$1,553	0.91	1.86
Dec 2016	\$1,375	\$1,098	\$645	0.80	1.70	\$4,557	\$3,994	\$2,198	0.88	1.82
Jan 2017	\$1,309	\$1,008	\$466	0.77	2.16	\$5,866	\$5,001	\$2,664	0.85	1.88
Feb 2017	\$845	\$1,141	\$612	1.35	1.86	\$6,711	\$6,143	\$3,277	0.92	1.87
Mar 2017	\$1,791	\$1,774	\$1,109	0.99	1.60	\$8,502	\$7,916	\$4,385	0.93	1.81
Apr 2017	\$1,673	\$1,241	\$746	0.74	1.66	\$10,174	\$9,157	\$5,131	0.90	1.78
May 2017	(\$790)	\$887	\$909	-1.12	0.98	\$9,384	\$10,044	\$6,040	1.07	1.66
Jun 2017	\$1,456	\$1,179	\$498	0.81	2.37	\$10,840	\$11,223	\$6,538	1.04	1.72
Jul 2017	\$1,864	\$1,411	\$916	0.76	1.54	\$12,705	\$12,634	\$7,453	0.99	1.70
Aug 2017	\$2,331	\$1,133	\$745	0.49	1.52	\$15,036	\$13,768	\$8,199	0.92	1.68
Sep 2017	\$7,567	\$7,515	\$6,895	0.99	1.09	\$22,602	\$21,283	\$15,093	0.94	1.41
PTD	\$361,208	\$357,857	\$344,118	0.99	1.04					

ACWP = actual cost of work performed.  
 BCWP = budgeted cost of work performed.  
 BCWS = budgeted cost of work scheduled.  
 CPI = cost performance index.

EVMS = earned value management system.  
 FY = fiscal year.  
 PTD = project to date.  
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### Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status																		
Through September 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	2,311.4	1,483.9	64%	555.5	478.0	86%	383.2	297.6	78%	718.7	627.4	87%	650.0	76.7	12%	4.0	4.0	100%
Balance of Facilities	756.6	521.5	69%	146.5	133.0	91%	71.2	58.6	82%	274.2	247.2	90%	264.3	82.3	31%	0.5	0.5	100%
Analytical Lab	498.1	339.4	68%	103.5	90.4	87%	66.9	57.7	86%	161.9	155.9	96%	165.3	34.9	21%	0.5	0.5	100%
Direct Feed LAW	406.2	136.0	33%	102.9	71.8	70%	64.4	10.9	17%	229.7	47.5	21%	0.0	0.0	0%	9.3	5.8	63%
LBL Facility Services	682.0	248.9	36%	0.0	0.0	0%	69.2	31.9	46%	137.4	64.3	47%	214.4	77.5	36%	260.9	75.2	29%
<b>Total LBL</b>	<b>4,654.3</b>	<b>2,729.7</b>	<b>59%</b>	<b>908.3</b>	<b>773.2</b>	<b>85%</b>	<b>655.0</b>	<b>456.7</b>	<b>70%</b>	<b>1,521.8</b>	<b>1,142.3</b>	<b>75%</b>	<b>1,294.0</b>	<b>271.4</b>	<b>21%</b>	<b>275.2</b>	<b>86.1</b>	<b>31%</b>
Project Services	1,007.5	495.4	49%	129.2	70.1	54%	71.6	42.4	59%	107.4	77.7	72%	1.7	1.7	100%	697.7	303.5	43%
<b>Total Project Services</b>	<b>1,007.5</b>	<b>495.4</b>	<b>49%</b>	<b>129.2</b>	<b>70.1</b>	<b>54%</b>	<b>71.6</b>	<b>42.4</b>	<b>59%</b>	<b>107.4</b>	<b>77.7</b>	<b>72%</b>	<b>1.7</b>	<b>1.7</b>	<b>100%</b>	<b>697.7</b>	<b>303.5</b>	<b>43%</b>
<b>Total LBL, DFLAW &amp; Project Services</b>	<b>5,661.9</b>	<b>3,225.1</b>	<b>57%</b>	<b>1,037.6</b>	<b>843.3</b>	<b>81%</b>	<b>726.5</b>	<b>499.1</b>	<b>69%</b>	<b>1,629.2</b>	<b>1,220.0</b>	<b>75%</b>	<b>1,295.7</b>	<b>273.2</b>	<b>21%</b>	<b>972.9</b>	<b>389.5</b>	<b>40%</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>14,384.7</b>	<b>9,190.3</b>	<b>64%</b>	<b>3,210.7</b>	<b>2,792.2</b>	<b>87%</b>	<b>2,292.0</b>	<b>1,623.9</b>	<b>71%</b>	<b>4,516.8</b>	<b>2,984.8</b>	<b>66%</b>	<b>2,054.2</b>	<b>416.4</b>	<b>20%</b>	<b>2,311.0</b>	<b>1,373.0</b>	<b>59%</b>
Source: Preliminary WTP Contract Performance Report - Format 1, Data for September 2017																		
<p>Note: In September 2012, the LBL Replan was incorporated into the project OTB baseline resulting in increases/decreases to the LBL facility budgets, which correspondingly increased/decreased the facility/function to-date percent complete values. In October 2012, the PT/HLW/SS Interim Work Plan was incorporated into the project OTB baseline resulting in decreases to the PT/HLW/SS facility budgets, this was due to a work scope shift from the Distributed budget to UB. Percent Complete Values shown for PT, HLW and SS have been frozen with the September 2012 values due to the Interim Work Plan and budgets being moved into UB. UB value for the project for PT/HLW/SS is \$2,014M. The percent complete values for the Total WTP are the current total LBL BCWP added to the frozen HLW/PT/SS BCWP values. In March 2014, Project Controls and Project Management work scope was moved out of Shared Services control accounts into the facilities with new control accounts being set up in the facilities. These will now be seen under Project Management/Shared Services by facility. The Shared Services PMB value has not been changed to reflect this change due to the freeze on HLW/PT and SS and the budgets remaining in UB. October 2014 data reflects the incorporation of Direct Feed LAW and the split of Shared Services into LBL Facility Services and Project Services. March 2016 LBL percent complete data is a total of LAW-BOF-LAB-DFLAW and LBL Facility Services. The Project Services Allocation account (zPSA), as shown on the CPR Format 1, is not added to LBL for percent complete purposes.</p>																		