

FINAL

Office of River Protection
Consent Decree 08-5085-FVS

Monthly Summary Report

November 2015

Office of River Protection**Consent Decree 08-5085-FVS
Monthly Summary Report****November 2015 (Monthly Summary Report/Project Earned Value Management System
reflects September 2015 information)**

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CD Milestone Statistics/Status

Milestone	Title	Due Date	Completion Date	Status
Fiscal Year 2014				
D-00B-01	Complete Retrieval of Tank Waste from 10 SSTs in WMA-C	09/30/2014		Past Due
D-00B-02	Advise Ecology of the Nine SSTs Waste will be Retrieved by 2022	09/30/2014	08/24/2011	Completed
Fiscal Year 2015				
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2014		Past Due
D-00A-19	Complete elevation 98 feet Concrete Floor Slab Placements in PT Facility	12/31/2014		Past Due
Fiscal Year 2016				
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2015		Ongoing
Fiscal Year 2017				
D-00A-02	HLW Facility Construction Substantially Complete	12/31/2016		Ongoing

CD = Consent Decree.

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-00C-01 series, Submit to State of Washington and State of Oregon Semi-Annual Report, Due: Semiannually – January 31 and July 31 of each year, Status: Ongoing. The July 2015 Semiannual Report was issued on July 31, 2015, via U.S. Department of Energy (DOE), Office of River Protection (ORP) letter 15-ECD-0037, “July 2015 Semi-Annual Report for State of Washington vs. U.S. Department of Energy, Case No. 08-5085-FVS, for Waste Treatment and Immobilization Plant Construction and Startup Activities and Tank Retrieval Activities – November 1, 2014, thorough April 30, 2015.”

D-00C-02 series, Submit to State of Washington and State of Oregon Monthly Summary Reports, Due: End of each month, Status: Ongoing.

D-006-00-B1, Provide State of Oregon notice of meetings in D-006-00-B, etc. no less than 30 days before they are scheduled, Due: September 25, 2016, Status: On Schedule.

D-006-00-B, Meet Approximately Every Three Years after Entry of Decree to review requirements of the Consent Decree, Due: October 25, 2016, Status: On Schedule.

Single-Shell Tank Retrieval Program

Milestone	Title	Due Date	Status
D-00B-01	Complete Retrieval of Tank Wastes from 10 Remaining SSTs in WMA-C	September 30, 2014	Past Due
D-00B-01A through D-00B-01J	Submit Tank Retrieval Complete Certification	One year following each retrieved tank retrieval completion report ^a	Ongoing
D-00B-02	Advise Ecology of the Nine SSTs from which Waste Will Be Retrieved by 2022	September 30, 2014	Completed
D-00B-03	Initiate Startup of Retrieval in At Least 5 of 9 SSTs in D-00B-02	December 31, 2017	Ongoing*
D-00B-04	Complete Retrieval of Tank Wastes from the nine SSTs in D-00B-02	September 30, 2022	Ongoing*
D-00B-04A through D-00B-04I	Submit Tank Retrieval Complete Certification	TBD	TBD

a. Pursuant to Section IV-B-5 of the Consent Decree, the U.S. Department of Energy (DOE) must submit to the Washington State Department of Ecology (Ecology) a written certification that DOE has completed retrieval of a tank in accordance with the requirements of Appendix C, Part 1, of the Consent Decree.

Completed for Single-Shell Tank (SST) C-104 on March 21, 2013, via DOE Office of River Protection (ORP) letter 13-TF-0018. Completed for SST C-108 on May 1, 2013, via ORP letter 13-TF-0025. Completed for SST C-109 on June 4, 2013, via ORP letter 13-TF-0037. Completed for SST C-110 on January 29, 2014, via ORP letter 14-TF-0007. Completed for SST C-107 on September 30, 2014, via ORP letter 14-TF-0114. Completed for SST C-112 on September 30, 2014, via ORP letter 14-TF-0115.

SST = single-shell tank.

TBD = to be determined.

WMA-C = C Farm waste management area.

Significant Past Accomplishments:

- Received approval to forego a third retrieval technology in Tank 241-C-102 from the Washington State Department of Ecology (Ecology).
- Continued operation of Tank 241-C-105 Mobile Arm Retrieval System – Vacuum (MARS- V) retrieval system using high-pressure water, volume retrieved is approximately 45 percent.

- Completed extended reach sluicers system (ERSS) installation and operational testing in preparation for restarting retrieval operations at Tank 241-C-111.

Significant Planned Activities in the Next Six Months:

- Finish a Tank 241-C-105 systems engineering evaluation of the current retrieval method; will potentially need a revised tank waste retrieval work plan due to recent MARS-V failure.
- Begin startup of hard heel retrieval in Tank 241-C-111 using high-pressure water, with caustic/water dissolution in early October 2015.

Issues:

*DOE has notified the State of Washington and State of Oregon that a serious risk has arisen that DOE may be unable to meet this Consent Decree milestone.

Tank Waste Retrieval Work Plan Status

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
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	-
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	-
C-110	RPP-33116, Rev. 3	Complete	Modified Sluicing	Mechanical Waste Conditioning with an In-Tank Vehicle	High Pressure Water

Tank	TWRWP	Expected Revisions	First Retrieval Technology	Second Technology	Third Technology
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 sluicing system.

MARS = Mobile Arm Retrieval System.

S = sluicing.

TWRWP = Tank Waste Retrieval Work Plan.

V = vacuum.

Significant Accomplishments:

None.

Significant Planned Activities in the Next Six Months:

- Finalize AX-Farm TWRWP.

Issues:

None.

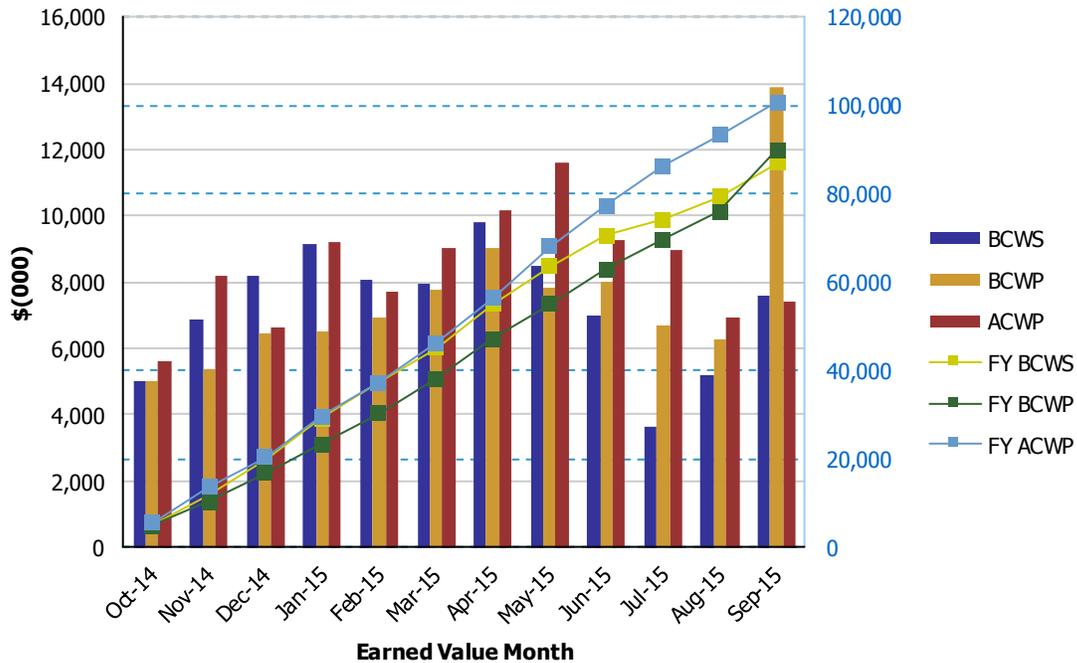
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

September-15

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 2014	\$5,024	\$5,011	\$5,609	1.00	0.89	\$5,024	\$5,011	\$5,609	1.00	0.89
Nov 2014	\$6,852	\$5,392	\$8,174	0.79	0.66	\$11,876	\$10,403	\$13,783	0.88	0.75
Dec 2014	\$8,171	\$6,453	\$6,612	0.79	0.98	\$20,047	\$16,856	\$20,395	0.84	0.83
Jan 2015	\$9,167	\$6,524	\$9,195	0.71	0.71	\$29,214	\$23,380	\$29,589	0.80	0.79
Feb 2015	\$8,075	\$6,924	\$7,719	0.86	0.90	\$37,290	\$30,304	\$37,309	0.81	0.81
Mar 2015	\$7,971	\$7,801	\$9,009	0.98	0.87	\$45,261	\$38,105	\$46,318	0.84	0.82
Apr 2015	\$9,818	\$9,019	\$10,148	0.92	0.89	\$55,079	\$47,124	\$56,466	0.86	0.83
May 2015	\$8,474	\$7,830	\$11,613	0.92	0.67	\$63,553	\$54,954	\$68,079	0.86	0.81
Jun 2015	\$6,981	\$8,021	\$9,247	1.15	0.87	\$70,534	\$62,976	\$77,326	0.89	0.81
Jul 2015	\$3,666	\$6,714	\$8,983	1.83	0.75	\$74,199	\$69,690	\$86,309	0.94	0.81
Aug 2015	\$5,201	\$6,256	\$6,916	1.20	0.90	\$79,400	\$75,946	\$93,225	0.96	0.81
Sep 2015	\$7,578	\$13,863	\$7,404	1.83	1.87	\$86,979	\$89,809	\$100,629	1.03	0.89

CTD	\$592,478	\$585,227	\$609,972	0.99	0.96
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ACWP = actual cost of work performed.
 BCWS = budgeted cost of work scheduled.
 BCWP = budgeted cost of work performed.
 CPI = cost performance index.

EVMS = earned value management system.
 FY = fiscal year.
 SPI = schedule performance index.

Retrieve and Close Single-Shell Tanks

The current month favorable schedule variance (SV) of \$6,285K is due to:

- The remaining performance taken on the MARS-V due to an end effector hose leak that permanently shut down this retrieval system for Tank-241-C-105.

The current month favorable cost variance (CV) of \$6,477K is due to:

- Performance was claimed with minimal costs due to the permanent shut down of the MARS-V due to an end effector hose leak.

Waste Treatment and Immobilization Plant Project

Number	Title	Due Date	Status
D-00A-06	Complete Methods Validations	12/31/2017	Ongoing*
D-00A-17	Hot Start of Waste Treatment Plant	12/31/2019	Ongoing*
D-00A-01	Achieve Initial Plant Operations for WTP	12/31/2022	Ongoing*

WTP = Waste Treatment and Immobilization Plant.

The Waste Treatment and Immobilization Plant (WTP) Project currently employs approximately 2,874 full-time equivalent contractor (Bechtel National, Inc. [BNI]) and subcontractor personnel. This includes 627 craft, 419 non-manual, and 146 subcontractor full-time equivalent personnel working at the WTP construction site (all facilities).

In October 2012, the percent-complete values for Pretreatment (PT) and High-Level Waste (HLW) facilities were frozen at the September 2012 rate. Construction, procurement, and production engineering activities were placed on hold for PTF and significantly slowed down for HLW. In August 2014, the U.S. Department of Energy (DOE) approved continuation of production engineering activities for HLW. Subsequently, DOE has approved the fiscal year (FY) 2015 and FY 2016 2-Year Interim Work Plan. In April 2015, a 3-Year Interim Work Plan for the PT Facility was implemented emphasizing prioritization of technical issue resolution activities. The WTP Project is focused on resolving PT Facility technical issues and finalizing HLW Facility design.

The WTP Project continues to focus on completion of the Low-Activity Waste (LAW) Facility, Analytical Laboratory (LAB), and Balance of Facilities (BOF) (collectively LBL). As of September 2015, LBL facilities were 50 percent complete, design and engineering was 78 percent complete, procurement was 71 percent complete, construction was 79 percent complete, and startup and commissioning was 8 percent complete.

In September 2015, the cumulative to-date WTP Project schedule variance was a negative \$20.2 million, and the cumulative to-date WTP Project cost variance was a positive \$61.7 million. The cumulative to-date cost and schedule variance is based on the progress of the LBL internal forecast.

The following is the project status through the end of September 2015.

Significant Past Accomplishments:

- Completed multi-discipline review of Effluent Management Facility (EMF) design (BOF)
- Issued the direct-feed LAW (DFLAW) Basis of Design Change Notice (BOF)
- Completed melter 1 internal structural reinforcement welding (LAW)
- Completed one concrete placement (wall 4104) (HLW)
- Installed 17.2 tons of structural steel (HLW)
- Issued PT T2 Criticality Calculation Report (PT)

Significant Planned Actions in the Next Six Months:

- Receive caustic scrubber (LAW)
- Assemble and install wet electrostatic precipitator internals (LAW)
- Receive the thermal catalytic oxidizer (TCO) and ammonia skid
- Complete EMF Preliminary Documented Safety Analysis (PDSA) (BOF)
- Begin excavation for EMF (BOF)
- Complete site energization from permanent power supply (BOF)
- Begin LAB system walk downs in support of DFLAW modifications (LAB)
- Begin full scale high-efficiency particulate air (HEPA) filter testing in accordance with the HEPA Filter Test Plan at the Mississippi State University facility (HLW)
- Initiate HLW melter off-gas treatment process/process vessel vent (HOP/PVV) design study (HLW)
- Complete criticality safety evaluation engineering study for ultrafiltration process system (UFP)/HLW lag storage and feed blending process (HLP)/plant wash and disposal system (PWD) with controls (PT)
- Complete hydrogen control strategy gap analysis (engineering study includes gap analysis and post design basis event [DBE] ventilation and air requirements) (PT).

Issues:

*DOE has notified the State of Washington and State of Oregon that a serious risk has arisen that DOE may be unable to meet this Consent Decree milestone. Technical issues related to WTP include, among others, pulse-jet mixers (PJM), corrosion/erosion in piping and vessels, hydrogen accumulation, criticality, and ventilation.

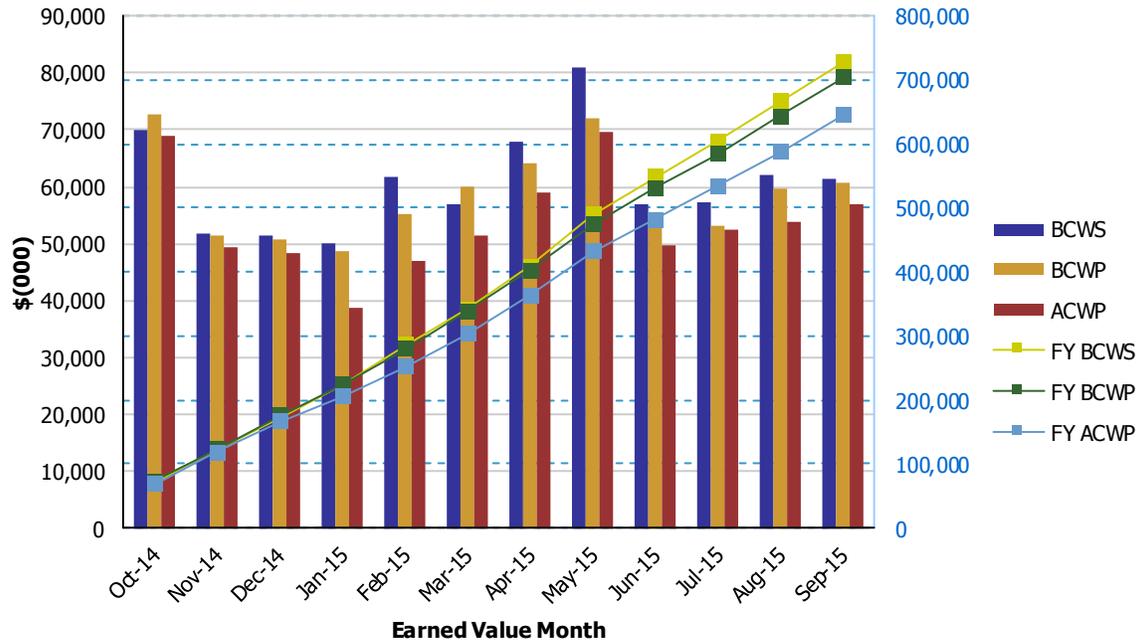
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

Data as of: September 2015

**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 2014	\$69,893	\$72,879	\$69,039	1.04	1.06	\$69,893	\$72,879	\$69,039	1.04	1.06
Nov 2014	\$51,713	\$51,323	\$49,300	0.99	1.04	\$121,606	\$124,202	\$118,339	1.02	1.05
Dec 2014	\$51,573	\$50,885	\$48,245	0.99	1.05	\$173,179	\$175,087	\$166,583	1.01	1.05
Jan 2015	\$50,143	\$48,696	\$38,818	0.97	1.25	\$223,323	\$223,783	\$205,401	1.00	1.09
Feb 2015	\$61,729	\$55,235	\$46,859	0.89	1.18	\$285,052	\$279,018	\$252,260	0.98	1.11
Mar 2015	\$56,799	\$59,925	\$51,563	1.06	1.16	\$341,850	\$338,942	\$303,823	0.99	1.12
Apr 2015	\$67,809	\$64,010	\$58,892	0.94	1.09	\$409,659	\$402,952	\$362,716	0.98	1.11
May 2015	\$80,875	\$72,114	\$69,468	0.89	1.04	\$490,534	\$475,066	\$432,184	0.97	1.10
Jun 2015	\$56,972	\$55,423	\$49,685	0.97	1.12	\$547,506	\$530,489	\$481,869	0.97	1.10
Jul 2015	\$57,131	\$53,298	\$52,407	0.93	1.02	\$604,637	\$583,787	\$534,276	0.97	1.09
Aug 2015	\$62,130	\$59,762	\$53,793	0.96	1.11	\$666,767	\$643,549	\$588,069	0.97	1.09
Sep 2015	\$61,517	\$60,659	\$56,948	0.99	1.07	\$728,284	\$704,208	\$645,017	0.97	1.09

PTD	\$9,099,763	\$9,079,546	\$9,017,802	1.00	1.01
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ACWP = actual cost of work performed.
 BCWS = budgeted cost of work scheduled.
 BCWP = budgeted cost of work performed.
 CPI = cost performance index.

EVMS = earned value management system.
 FY = fiscal year.
 SPI = schedule performance index.

Pretreatment Facility

Number	Title	Due Date	Status
D-00A-19	Complete Elevation 98' Concrete Floor Slab in PT Facility	12/31/2014	Past Due
D-00A-13	Complete Installation of Pretreatment Feed Separation Vessels	12/31/2015	Ongoing*
D-00A-14	PT Facility Construction Substantially Complete	12/31/2017	Ongoing*
D-00A-15	Start PT Facility Cold Commissioning	12/31/2018	Ongoing*
D-00A-16	PT Facility Hot Commissioning Complete	12/31/2019	Ongoing*

PT = pretreatment.

The PT will separate radioactive tank waste into HLW and LAW 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. Construction, procurement, and production engineering activities remain on hold, resulting in no change to the percent-complete status since September 2012. BNI and DOE continue to focus on resolving technical issues, performing hazard analyses, and completing safety evaluations for process systems in accordance with the revised PT Facility 3-Y Interim Work Plan

BNI has submitted resolution plans for eight technical issues: T1, Hydrogen in Vessels; T2, Criticality; T3, Hydrogen in Piping and Ancillary Vessels (HPAV); T4, Mixing; T5, Erosion Corrosion; T6, PT Facility Optimization; T7, Vessel Analysis; and T8, Ventilation. Phase 1 of the Full-Scale Vessel Testing is continuing for the PJM controls utilizing the RLD-8T vessel. Technical review teams continue to evaluate open PT Facility technical issues. An evaluation is ongoing relative to a standardized design for high-solids vessels within the PT Facility. With primary emphasis on design and fabrication of hold point releases supporting procurement, fabrication and delivery of the standardized high solids vessel design (SHSVD)-T16ft vessel.

Significant Past Accomplishments:

- Issued PT T2 Criticality Calculation Report (PT)
- Completed first Phase 2 test
- Completed SHSVD info testing and identify design features
- Started PJM fabrication

Significant Planned Actions in the Next Six Months:

- Complete criticality safety evaluation engineering study for UFP/HLP/PWD with controls

- Complete hydrogen control strategy gap analysis (engineering study includes gap analysis and post DBE ventilation and air requirements)
- Receive technical issue closure work packages T1 and T3
- Issue Phase 2 PJM controls study
- Complete sliding bed evaluation report and brief DOE Office of River Protection (ORP)
- Issue SHSVD Design Verification Guide

Issues:

*DOE has notified the State of Washington and State of Oregon that a serious risk has arisen that DOE may be unable to meet this Consent Decree milestone. Technical issues related to WTP include, among others, PJMs, corrosion/erosion in piping and vessels, hydrogen accumulation, criticality, and ventilation.

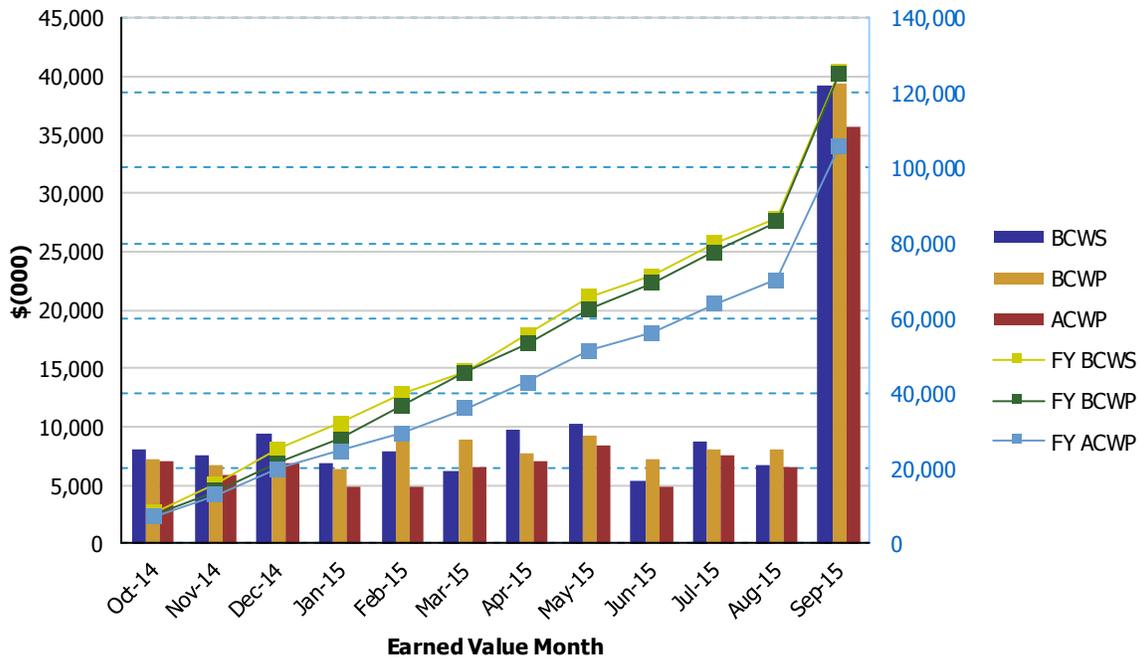
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

Data as of: September 2015

**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 2014	\$8,100	\$7,285	\$7,050	0.90	1.03	\$8,100	\$7,285	\$7,050	0.90	1.03
Nov 2014	\$7,582	\$6,657	\$5,917	0.88	1.13	\$15,682	\$13,942	\$12,967	0.89	1.08
Dec 2014	\$9,361	\$7,472	\$6,841	0.80	1.09	\$25,043	\$21,414	\$19,808	0.86	1.08
Jan 2015	\$6,819	\$6,293	\$4,765	0.92	1.32	\$31,862	\$27,707	\$24,574	0.87	1.13
Feb 2015	\$7,877	\$9,034	\$4,869	1.15	1.86	\$39,740	\$36,742	\$29,442	0.92	1.25
Mar 2015	\$6,180	\$8,917	\$6,567	1.44	1.36	\$45,920	\$45,659	\$36,009	0.99	1.27
Apr 2015	\$9,661	\$7,631	\$7,008	0.79	1.09	\$55,581	\$53,290	\$43,017	0.96	1.24
May 2015	\$10,243	\$9,161	\$8,322	0.89	1.10	\$65,823	\$62,451	\$51,340	0.95	1.22
Jun 2015	\$5,406	\$7,122	\$4,769	1.32	1.49	\$71,229	\$69,573	\$56,109	0.98	1.24
Jul 2015	\$8,740	\$8,112	\$7,602	0.93	1.07	\$79,970	\$77,685	\$63,710	0.97	1.22
Aug 2015	\$6,613	\$8,122	\$6,608	1.23	1.23	\$86,583	\$85,808	\$70,318	0.99	1.22
Sep 2015	\$39,146	\$39,406	\$35,615	1.01	1.11	\$125,729	\$125,214	\$105,933	1.00	1.18

PTD	\$1,732,400	\$1,731,832	\$1,712,560	1.00	1.01
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- ACWP = actual cost of work performed.
- BCWS = budgeted cost of work scheduled.
- BCWP = budgeted cost of work performed.
- CPI = cost performance index.
- EVMS = earned value management system.
- FY = fiscal year.
- SPI = schedule performance index.

High-Level Waste Facility

Number	Title	Due Date	Status
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	12/31/2016	Ongoing*
D-00A-03	Start HLW Facility Cold Commissioning	6/30/2018	Ongoing*
D-00A-04	HLW Facility Hot Commissioning Complete	12/31/2019	Ongoing*

HLW = high-level waste.

The HLW Facility will receive the separated HLW concentrate from the PT Facility. This concentrate will be blended with glass formers, converted into molten glass in one of the two HLW melter, 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. Construction, procurement, and production engineering activities have been significantly slowed down, resulting in minimal change to the percent completion status since September 2012.

Currently, all activities are being performed in accordance with the FY 2015/FY 2016 2-Year Work Plan. Efforts are focused on completing activities required to obtain full production authorization by DOE. Limited construction is continuing with the concrete placements, installation of support steel, and crane rails in the canister decontamination cave and melter cave.

To support construction, engineering continues to execute detailed evaluations of structural supports for future installation of heating, ventilation, and air-conditioning (HVAC); fire protection; process piping; and electrical commodities. Design activities are focused to support safety design strategy gap analysis, technical core team recommendations, and engineering study development to resolve design and operability reviews. Studies are being performed to determine the ventilation system capability, waste handling capability, etc. One such study, the Personnel Access Door Study, which analyzed the system's ability to maintain cascade ventilation during operations has been issued. Hazard and accident analyses are ongoing to support the Preliminary Documented Safety Analysis (PDSA) update to align design and the safety basis.

Systems Engineering continues to implement the Systems Engineering Management Plan. The development of the emergency turbine generator system (ETX) system design description continues.

Preliminary testing has begun to support design and qualification of ventilation and off gas system high-efficiency particulate air (HEPA) filters. Multiple filter media designs are being

tested to ensure that the qualified filters support the needs for HLW and LBL facilities. Fabrication of full scale test filters has begun.

Design is progressing for radioactive liquid waste disposal (RLD) vessels 7 and 8. PDSA change packages for these vessel designs have been submitted to DOE for approval and comment resolution is ongoing

Significant Past Accomplishments:

- Continued HEPA filter testing in accordance with the HEPA Filter Test Plan at the Mississippi State University facility
- Began fabrication of full scale HEPA test filters
- Completed one concrete placement (wall 4104)
- Installed 17.2 tons of structural steel
- Issued personnel access door study

Significant Planned Actions in the Next Six Months:

- DOE approval of the RLD safety basis change package
- Complete installation of crane rails and supports in the canister decontamination cave
- Issue ETX system design description
- Begin full scale HEPA filter testing in accordance with the HEPA Filter Test Plan at the Mississippi State University facility
- Initiate high-level waste melter off gas treatment process/process vessel vent (HOP/PVV) design study

Issues:

*DOE has notified the State of Washington and State of Oregon that a serious risk has arisen that DOE may be unable to meet this Consent Decree milestone. Technical issues related to the WTP include, among others, PJMs, corrosion/erosion in piping and vessels, hydrogen accumulation, criticality, and ventilation.

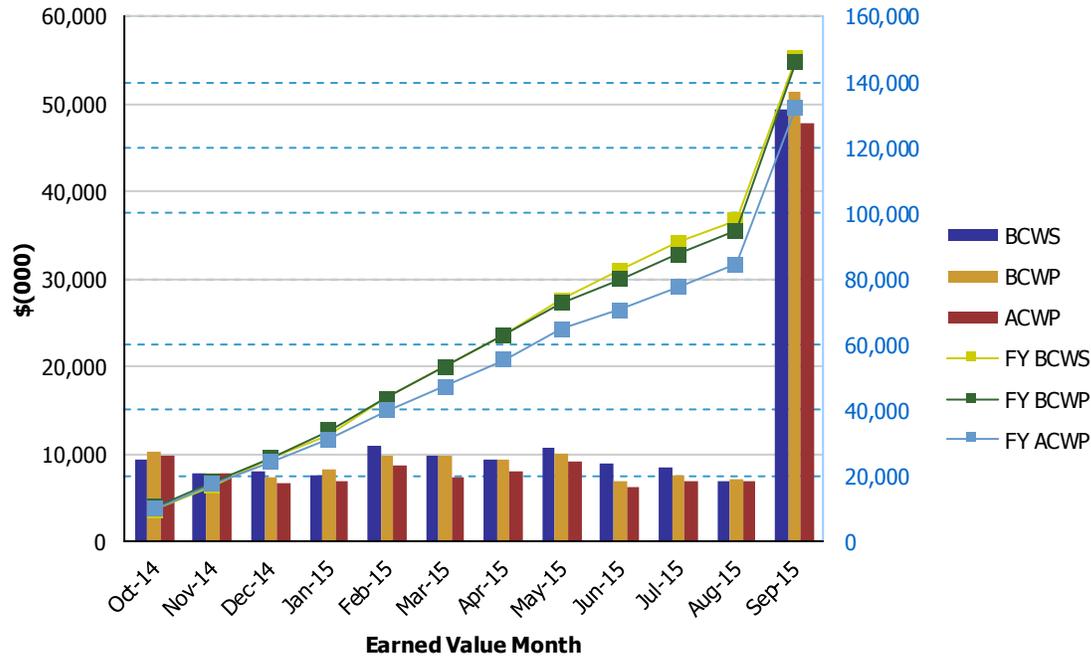
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

Data as of: September 2015

**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 2014	\$9,449	\$10,367	\$9,783	1.10	1.06	\$9,449	\$10,367	\$9,783	1.10	1.06
Nov 2014	\$7,743	\$7,833	\$7,880	1.01	0.99	\$17,192	\$18,200	\$17,663	1.06	1.03
Dec 2014	\$7,973	\$7,359	\$6,631	0.92	1.11	\$25,165	\$25,559	\$24,294	1.02	1.05
Jan 2015	\$7,490	\$8,342	\$6,994	1.11	1.19	\$32,655	\$33,901	\$31,288	1.04	1.08
Feb 2015	\$10,995	\$9,796	\$8,662	0.89	1.13	\$43,650	\$43,698	\$39,949	1.00	1.09
Mar 2015	\$9,792	\$9,760	\$7,295	1.00	1.34	\$53,442	\$53,458	\$47,244	1.00	1.13
Apr 2015	\$9,391	\$9,411	\$8,115	1.00	1.16	\$62,834	\$62,868	\$55,359	1.00	1.14
May 2015	\$10,774	\$10,029	\$9,242	0.93	1.09	\$73,608	\$72,897	\$64,601	0.99	1.13
Jun 2015	\$9,004	\$6,949	\$6,124	0.77	1.13	\$82,611	\$79,846	\$70,725	0.97	1.13
Jul 2015	\$8,380	\$7,599	\$6,797	0.91	1.12	\$90,991	\$87,445	\$77,522	0.96	1.13
Aug 2015	\$6,904	\$7,168	\$6,825	1.04	1.05	\$97,895	\$94,613	\$84,347	0.97	1.12
Sep 2015	\$49,280	\$51,282	\$47,721	1.04	1.07	\$147,175	\$145,894	\$132,068	0.99	1.10

PTD	\$1,201,288	\$1,200,265	\$1,186,130	1.00	1.01
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Low-Activity Waste Facility

Number	Title	Due Date	Status
D-00A-07	LAW Facility Construction Substantially Complete	12/31/2014	Past Due
D-00A-08	Start LAW Facility Cold Commissioning	12/31/2018	Ongoing*
D-00A-09	LAW Facility Hot Commissioning Complete	12/31/2019	Ongoing*

LAW = low-activity waste.

The LAW Facility will process LAW that will be mixed with glass formers, vitrified into glass at a design capacity of 30 metric tons per day and placed in stainless steel containers anticipated to be disposed of on the Hanford Site in the Integrated Disposal Facility. As of September 2015, the LAW Facility was 53 percent complete overall, with engineering design 77 percent complete, procurement 75 percent complete, construction 77 percent complete, and startup and commissioning 4 percent complete.

Significant Past Accomplishments:

- Installed over 260 linear feet of process piping and hydro-tested 380 linear feet of piping
- Installed over 860 linear feet of conduit and pulled approximately 23,730 linear feet of cable
- Installed over 138 pen seals comprised of 29 conduit/steel, 92 spares, 16 pipe and 1 HVAC duct penetrations
- Completed melter 1 internal structural reinforcement welding
- Completed coating repairs on melter 1 structural steel

Significant Planned Actions in the Next Six Months:

- Complete subcontractor work scope in the annex
- Receive caustic scrubber
- Assemble and install wet electrostatic precipitator internals
- Receive the TCO and ammonia skid

Issues:

*DOE has notified the State of Washington and State of Oregon that a serious risk has arisen that DOE may be unable to meet this Consent Decree milestone.

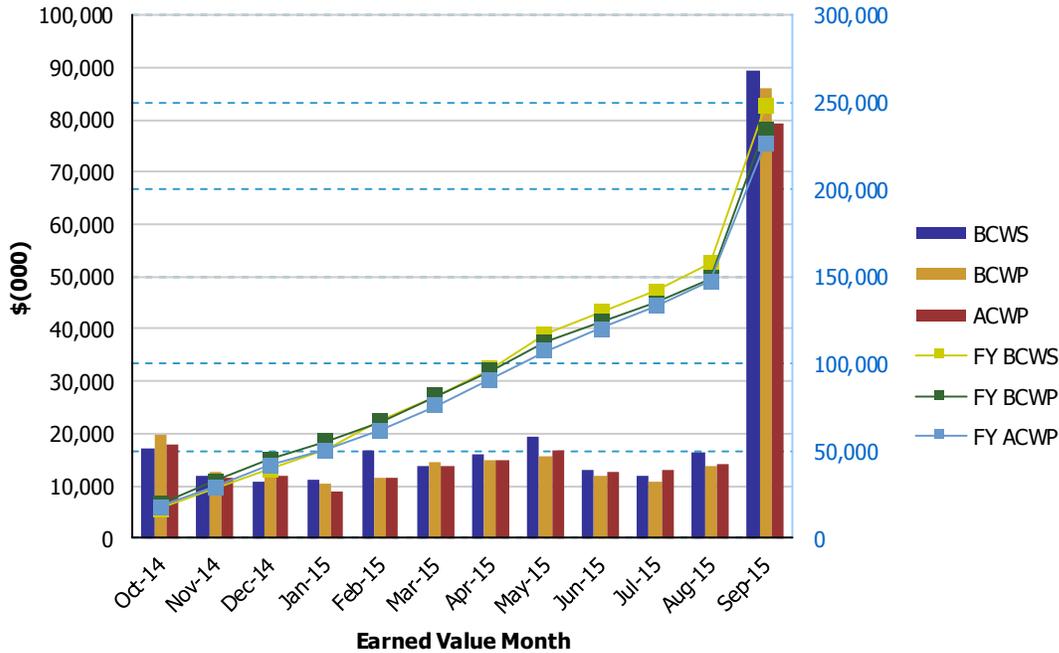
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

Data as of: September 2015

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 2014	\$16,994	\$19,896	\$17,781	1.17	1.12	\$16,994	\$19,896	\$17,781	1.17	1.12
Nov 2014	\$11,700	\$12,666	\$11,597	1.08	1.09	\$28,694	\$32,562	\$29,378	1.13	1.11
Dec 2014	\$10,760	\$12,499	\$11,927	1.16	1.05	\$39,454	\$45,061	\$41,305	1.14	1.09
Jan 2015	\$11,248	\$10,387	\$9,033	0.92	1.15	\$50,702	\$55,448	\$50,338	1.09	1.10
Feb 2015	\$16,654	\$11,341	\$11,676	0.68	0.97	\$67,356	\$66,789	\$62,014	0.99	1.08
Mar 2015	\$13,681	\$14,539	\$13,778	1.06	1.06	\$81,037	\$81,329	\$75,792	1.00	1.07
Apr 2015	\$16,031	\$14,925	\$15,002	0.93	0.99	\$97,068	\$96,254	\$90,794	0.99	1.06
May 2015	\$19,533	\$15,802	\$16,674	0.81	0.95	\$116,601	\$112,056	\$107,468	0.96	1.04
Jun 2015	\$12,899	\$11,881	\$12,626	0.92	0.94	\$129,500	\$123,936	\$120,094	0.96	1.03
Jul 2015	\$12,044	\$10,770	\$12,910	0.89	0.83	\$141,543	\$134,707	\$133,004	0.95	1.01
Aug 2015	\$16,309	\$13,852	\$13,987	0.85	0.99	\$157,853	\$148,558	\$146,991	0.94	1.01
Sep 2015	\$89,562	\$86,107	\$79,465	0.96	1.08	\$247,414	\$234,665	\$226,456	0.95	1.04

PTD	\$1,218,199	\$1,208,256	\$1,201,489	0.99	1.01
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Balance of Facilities

Number	Title	Due Date	Status
D-00A-12	Steam Plant Construction Complete	12/31/2012	Complete

The BOF will provide services and utilities to support operation of the main production facilities: PT, HLW, LAW, and LAB. As of September 2015, BOF was 55 percent complete overall, with engineering design 80 percent complete, procurement 71 percent complete, construction 80 percent complete, and startup and commissioning 14 percent complete.

Engineering activities are in progress to develop the preliminary design for BOF systems in support of DFLAW. Current efforts are focused on progressing the design of the Effluent Management Facility (EMF), defining the required BOF system isolations, preparing procurements, and initiating the Preliminary Design Safety Analysis (PDSA) process for EMF. Construction efforts are focused on initiation of BOF system isolations and completion of the remaining punch list items required to support turnover of all major systems within the Nonradioactive Liquid Waste Disposal Facility, WTP switchgear, and BOF switchgear buildings for component level testing.

Significant Past Accomplishments:

- Completed multi-discipline review of EMF design
- Continued excavation and drilling activities to install cathodic protection system upgrades
- Issued the DFLAW Basis of Design Change Notice (BODCN)
- Continued switchgear testing in support of site energization

Significant Planned Actions in the Next Six Months:

- Complete EMF PDSA
- Begin excavation for EMF
- Complete site energization from permanent power supply

Issues:

No major issues at this time.

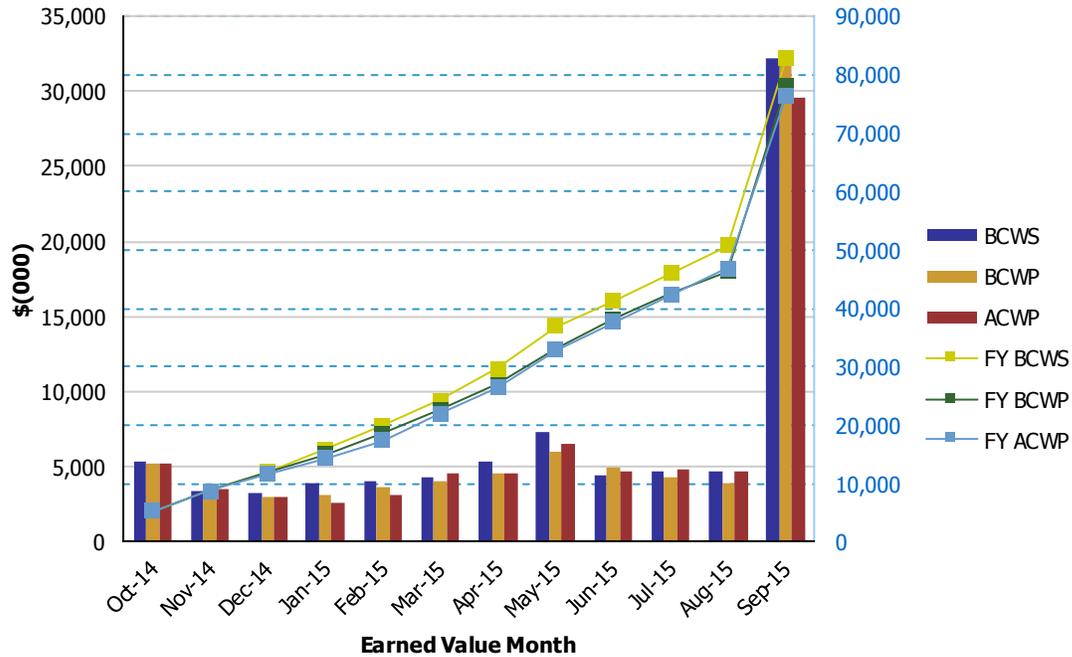
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

Data as of: September 2015

**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 2014	\$5,300	\$5,238	\$5,223	0.99	1.00	\$5,300	\$5,238	\$5,223	0.99	1.00
Nov 2014	\$3,429	\$3,578	\$3,454	1.04	1.04	\$8,729	\$8,816	\$8,677	1.01	1.02
Dec 2014	\$3,240	\$3,023	\$2,976	0.93	1.02	\$11,969	\$11,839	\$11,653	0.99	1.02
Jan 2015	\$3,885	\$3,098	\$2,584	0.80	1.20	\$15,854	\$14,937	\$14,237	0.94	1.05
Feb 2015	\$4,074	\$3,578	\$3,151	0.88	1.14	\$19,928	\$18,515	\$17,388	0.93	1.06
Mar 2015	\$4,270	\$4,016	\$4,491	0.94	0.89	\$24,198	\$22,531	\$21,879	0.93	1.03
Apr 2015	\$5,384	\$4,497	\$4,491	0.84	1.00	\$29,582	\$27,029	\$26,370	0.91	1.02
May 2015	\$7,347	\$6,027	\$6,470	0.82	0.93	\$36,930	\$33,056	\$32,841	0.90	1.01
Jun 2015	\$4,403	\$4,990	\$4,649	1.13	1.07	\$41,333	\$38,046	\$37,489	0.92	1.01
Jul 2015	\$4,638	\$4,339	\$4,769	0.94	0.91	\$45,971	\$42,386	\$42,259	0.92	1.00
Aug 2015	\$4,690	\$3,880	\$4,646	0.83	0.84	\$50,661	\$46,265	\$46,905	0.91	0.99
Sep 2015	\$32,167	\$31,837	\$29,588	0.99	1.08	\$82,828	\$78,103	\$76,493	0.94	1.02

PTD	\$429,495	\$425,201	\$423,623	0.99	1.00
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Analytical Laboratory

Number	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 2015, the LAB was 60 percent complete overall, with engineering design 82 percent complete, procurement 86 percent complete, construction 96 percent complete, and startup and commissioning 10 percent complete.

During this reporting period engineering efforts are focused on LAB system reviews to evaluate potential modifications or isolations in support of the direct feed of LAW. Closure of nonconformance reports and construction deficiency reports continued. Construction efforts within the LAB are minimal. The remaining construction work scope will be completed in parallel with system modifications and construction activities required to support the direct feed of LAW.

Significant Past Accomplishments:

- Continued development of the test engineers workstation
- Continued development of procedures for the WTP analytical methods development process

Significant Planned Actions in the Next Six Months:

- Initiate component level testing of select LAB systems
- Complete LAB system walk downs in support of DFLAW modifications

Issues:

No major issues at this time.

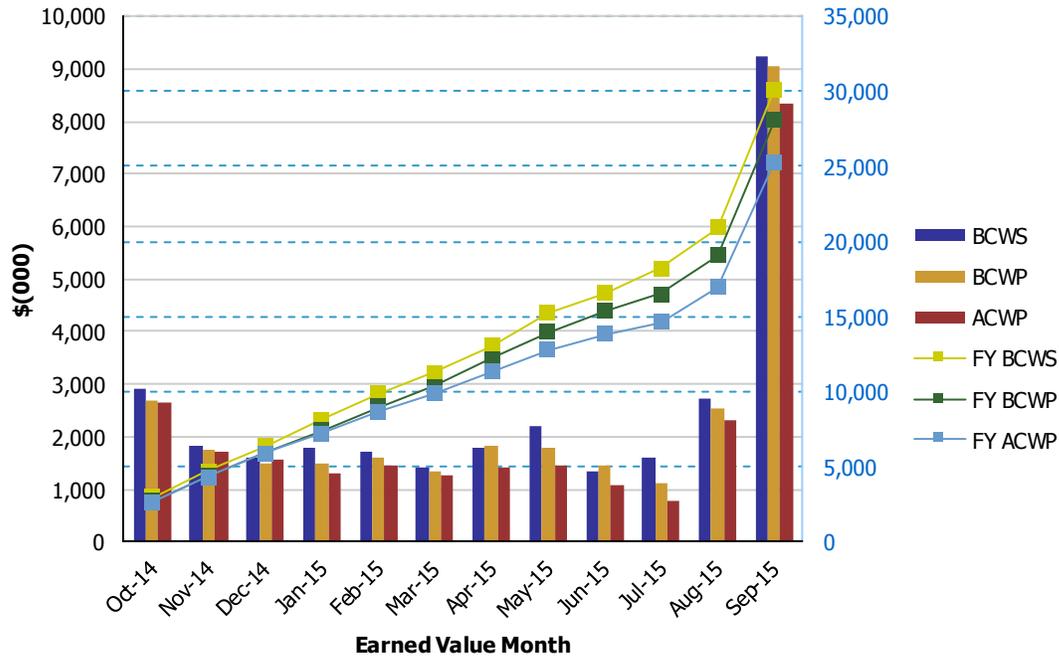
EXC-01a: Fiscal Year Cost and Schedule Report

Data Set: FY 2015 Earned Value Data

Data as of: September 2015

**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 2014	\$2,920	\$2,670	\$2,645	0.91	1.01	\$2,920	\$2,670	\$2,645	0.91	1.01
Nov 2014	\$1,827	\$1,748	\$1,695	0.96	1.03	\$4,747	\$4,418	\$4,340	0.93	1.02
Dec 2014	\$1,614	\$1,482	\$1,552	0.92	0.95	\$6,361	\$5,900	\$5,892	0.93	1.00
Jan 2015	\$1,788	\$1,490	\$1,304	0.83	1.14	\$8,149	\$7,390	\$7,196	0.91	1.03
Feb 2015	\$1,716	\$1,618	\$1,447	0.94	1.12	\$9,865	\$9,008	\$8,643	0.91	1.04
Mar 2015	\$1,413	\$1,322	\$1,266	0.94	1.04	\$11,278	\$10,330	\$9,909	0.92	1.04
Apr 2015	\$1,781	\$1,833	\$1,407	1.03	1.30	\$13,059	\$12,163	\$11,316	0.93	1.07
May 2015	\$2,186	\$1,773	\$1,459	0.81	1.21	\$15,245	\$13,936	\$12,775	0.91	1.09
Jun 2015	\$1,338	\$1,453	\$1,077	1.09	1.35	\$16,584	\$15,390	\$13,852	0.93	1.11
Jul 2015	\$1,608	\$1,130	\$777	0.70	1.45	\$18,192	\$16,520	\$14,629	0.91	1.13
Aug 2015	\$2,730	\$2,534	\$2,323	0.93	1.09	\$20,922	\$19,054	\$16,952	0.91	1.12
Sep 2015	\$9,230	\$9,036	\$8,343	0.98	1.08	\$30,152	\$28,090	\$25,295	0.93	1.11

PTD	\$312,565	\$310,919	\$308,349	0.99	1.01
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Waste Treatment Plant Project Percent Complete Status (Table)

Waste Treatment Plant Project - (LBL/Project Services) Percent Complete Status Through September 2015																		
(Dollars - Millions)	Overall Facility Percent Complete Unallocated Dollars			Design/Engineering Unallocated Dollars			Procurement Unallocated Dollars			Construction Unallocated Dollars			Startup & Plant Operations Unallocated Dollars			Project Management & Shared Services Unallocated Dollars		
	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete	Performance Measurement Baseline (PMB)	Budgeted Cost of Work Performed (BCWP)	% Complete
Facilities																		
Low-Activity Waste	2,124.0	1,133.3	53%	473.6	364.3	77%	341.3	254.4	75%	627.4	482.3	77%	677.6	28.2	4%	4.0	4.0	100%
Balance of Facilities	720.3	397.5	55%	132.8	106.7	80%	75.9	53.8	71%	248.4	199.3	80%	262.7	37.2	14%	0.5	0.5	100%
Analytical Lab	507.2	303.0	60%	94.5	77.8	82%	65.7	56.8	86%	155.8	149.1	96%	190.7	18.8	10%	0.5	0.5	100%
LBL Facility Services	438.3	57.8	13%	0.0	0.0	0%	42.6	10.2	24%	31.4	5.3	17%	241.7	20.3	8%	122.6	22.12	18%
Total LBL	3,789.8	1,891.5	50%	700.9	548.8	78%	525.6	375.2	71%	1,063.1	835.9	79%	1,372.7	104.5	8%	127.6	27.1	21%
Direct Feed LAW	89.3	18.0	20%	61.6	16.5	27%	7.48	0.00	0%	15.6	0.5	3%	0.0	0.0	0%	4.6	0.93	20%
Project Services	363.5	206.6	57%	54.0	26.7	49%	34.9	18.4	53%	71.0	54.0	76%	1.7	1.7	100%	201.8	105.9	52%
Total DFLAW & PS	452.7	224.6	50%	115.6	43.2	37%	42.4	18.4	43%	86.6	54.5	63%	1.7	1.7	100%	206.4	106.8	52%
Total LBL, DFLAW & Project Services	4,242.6	2,116.1	50%	816.6	592.1	73%	568.0	393.6	69%	1,149.6	890.4	77%	1,374.4	106.2	8%	334.0	133.9	40%
PT/HLW/SS Percent Complete Status Frozen as of September 2012 (due to project rebaselining efforts)																		
High-Level Waste	1,478.6	922.1	62%	364.4	325.2	89%	433.9	349.4	81%	561.1	243.2	43%	119.2	4.4	4%	n/a	n/a	n/a
Pretreatment	2,517.3	1,410.5	56%	761.7	645.8	85%	679.9	380.4	56%	890.0	378.6	43%	185.8	5.6	3%	n/a	n/a	n/a
Shared Services	4,726.9	3,632.6	77%	1,047.0	977.9	93%	451.7	395.0	87%	1,436.5	1,143.0	80%	453.5	133.2	29%	1,338.1	983.5	73%
Total HLW/PT/SS	8,722.8	5,965.2	68%	2,173.1	1,948.9	90%	1,565.5	1,124.8	72%	2,887.6	1,764.8	61%	758.5	143.2	19%	1,338.1	983.5	73%
Undistributed Budget	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total WTP	12,965.4	8,081.3	62%	2,989.7	2,541.0	85%	2,133.5	1,518.4	71%	4,037.2	2,655.2	66%	2,132.9	249.4	12%	1,672.1	1,117.4	67%
<small>Source: Preliminary WTP Contract Performance Report - Format 1, Data for September 2015</small>																		
<small>Note: In September 2012, the LBL Replan was incorporated into the project OTB baseline resulting in increases/decreases to the LBL facility budgets, which correspondingly increased/decreased the facility/function to-date percent complete values. In October 2012, the PT/HLW/SS Interim Work Plan was incorporated into the project OTB baseline resulting in decreases to the PT/HLW/SS facility budgets, this was due to a work scope shift from the Distributed budget to UB. Percent Complete Values shown for PT, HLW and SS have been frozen with the September 2012 values due to the Interim Work Plan and budgets being moved into UB. UB value for the project for PT/HLW/SS is \$2,014M. The percent complete values for the Total WTP are the current total LBL BCWP added to the frozen HLW/PT/SS BCWP values. In March 2014, Project Controls and Project Management work scope was moved out of Shared Services control accounts into the facilities with new control accounts being set up in the facilities. These will now be seen under Project Management/Shared Services by facility. The Shared Services PMB value has not been changed to reflect this change due to the freeze on HLW/PT and SS and the budgets remaining in UB. October 2014 data reflects the incorporation of Direct Feed LAW and the split of Shared Services into LBL Facility Services and Project Services. July 2015 LBL percent complete data is a total of LAW-BOF-LAB and LBL Facility Services. The Project Services Allocation account (zPSA), as shown on the CPR Format 1, is not added to LBL for percent complete purposes.</small>																		