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DEPARTMENT OF
WATER RESOURCES

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July 11, 2023

Richard Stover
Governor's Office of Energy and Mineral Resources
P.O. Box 83720
Boise, ID 83720-0199
Via email to: richard.stover@oer.idaho.gov

Subject: Water Rights Technical Assistance Review Follow Up – Perpetua Resources Idaho, Inc.

Dear Richard:

Perpetua Resources Idaho, Inc. (Perpetua Resources), in our letter and its attached memorandum dated June 27, 2022 (2022 Memorandum), requested a technical assistance review from the Idaho Department of Fish and Game (IDFG) and the Office of Species Conservation (OSC), relating to Perpetua Resources' water rights application pending before the Idaho Department of Water Resources. This letter summarizes the results of analyses completed by Perpetua Resources that support the proposed measures in that submittal.

At that time, we proposed and submitted for IDFG and OSC review a water right condition that would condition Perpetua Resources' net water diversions to no more than 20 percent of the unimpaired (i.e., without Project surface water and groundwater withdrawals) streamflow in the East Fork of the South Fork of the Salmon River (EFSFSR) immediately downstream of its confluence with Sugar Creek, whenever flows are less than 25 cubic feet per second (cfs). This condition was designed to be protective of fisheries resources while allowing sufficient water withdrawals for Perpetua Resources to maintain proposed mining and ore processing operations under most streamflow conditions.

The 2022 Memorandum provided background and detailed information to support the proposed water rights condition. The tunnel, fishway, and stream habitat enhancements were designed prior to the current Project refinements, optimizations, and associated hydrologic effects modeling, and prior to development of the water rights application. Therefore, the 2022 Memorandum proposed several additional studies and updates intended to evaluate how mine operations under the proposed restriction would affect fish passage in the EFSFSR from the Sugar Creek confluence up to the proposed tunnel and fishway.

The additional analyses and design basis modifications are now complete, and included the following (descriptions combined and shortened from the original):

1. Establishing additional species-specific movement periods and passage (swim speed, drop height) criteria for Westslope cutthroat trout, and reevaluate swim speed criteria for bull trout.

2. Determining "with Project" flows integrating updated stream gage records and predicted Project-generated flow effects and recompute species-specific flow-duration statistics.
3. Surveying channel cross sections at critical locations within the reach of the EFSFSR from the tunnel outlet to Sugar Creek reach of the and model hydraulic conditions throughout the reach at the updated low flows and compare with species-specific criteria.
4. Modeling tunnel fishway hydraulic conditions for the updated low flows and compare with species-specific criteria.

As discussed in the 2022 Memorandum, given that additional conditions may be imposed by federal agencies, particularly as part of the National Environmental Policy Act (NEPA) process or as an outcome of Endangered Species Act (ESA) Section 7 Consultation, design documents (i.e., drawings, design report, specifications) for the tunnel and stream enhancements would not be updated until after these regulatory processes have concluded (expected later in 2023 or in 2024).

Updated modeling demonstrates that with the Perpetua Resources proposed water withdrawal limit, the tunnel fishway and the reach of the EFSFSR from the tunnel outlet to Sugar Creek reach of the EFSFSR will be passable to the four species of interest (Chinook salmon, bull trout, steelhead, and Westslope cutthroat trout) within their respective migration periods under most conditions during mining. Simulated passage conditions (velocity and depth) in the EFSFSR are not meaningfully different between existing (current) and proposed (with Project and proposed water rights condition) scenarios. The following sections summarize the results of these efforts, and the details can be found in technical memoranda attached to this letter.

Species-Specific Arrival Timing Update

Previous Stibnite Gold Project fish use and periodicity determinations, on which the 2018 tunnel fishway design was based, did not have the benefit of recent passive integrated transponder (PIT) tag data collected at the Yellow Pine pit (YPP) lake PIT tag interrogation site (Barrett and Miller 2018; Miller 2018). The YPP interrogation site (Brown and Caldwell [BC] 2019; BC 2020) was established by Perpetua Resources to study bull trout use of the YPP lake. The PIT interrogation site just downstream of the YPP went online in May of 2018 and is close to the location of the proposed EFSFSR tunnel north portal where the fishway entrance would be located. BioAnalysts (2023, Attachment A to this letter) updated species-specific arrival timing for the EFSFSR at the proposed EFSFSR tunnel fishway based on observed "first detection" dates of individual fish at the YPP PIT interrogation site. BioAnalysts also added Westslope cutthroat trout to the evaluation based on limited PIT data and research by others within the Salmon River basin.

Arrival timing of spring/summer Chinook salmon has varied from late June to the last week of August. Steelhead were detected the first week of May.

The migration period formerly reported for spring/summer Chinook salmon was July 8 to September 30 (Barrett and Miller 2018; BC et al. 2021). Based on the detection of PIT-tagged adult Chinook salmon the arrival timing was adjusted earlier by one week to June 30th. Neither steelhead nor bull trout migration dates required adjustment.

Expected arrival timing of Westslope cutthroat trout was assessed based on limited recent PIT tag interrogation information, along with research in the Middle Fork Salmon River (Zurstadt and Stephan 2004) and Upper Salmon River basin (Schoby and Curet 2007). Based on PIT data and tributary arrival timing in those studies, mid-April through the end of June was adopted as the expected arrival timing for adult Westslope cutthroat trout.

The updated migration periods (Table *1*) provide useful information for development of expected streamflow conditions (e.g., 5 and 95 percent exceedance flows) for fish passage evaluation and establishment of instream work windows. These are important to the design, construction, and management of the proposed EFSFSR tunnel fishway (BC et al. 2021) and nearby stream habitat restoration and enhancement projects.

Table 1. Updated Migration Periods for Spring/Summer Chinook Salmon, Steelhead, Bull Trout, and Westslope Cutthroat Trout in the EFSFSR Near Stibnite

Species	Life Stage	Passage Direction	Migration Time Period
Chinook Salmon	Adult	Upstream	Jun 30 – Sep 30
Bull Trout	Adult	Upstream	Jul 8 – Sep 30
Steelhead	Adult	Upstream	Apr 1 – May 31
Westslope Cutthroat Trout	Adult	Upstream	Apr 15 – Jun 30
Salmonids	Juvenile	Downstream	Year-round

Source:
Table 4 in BioAnalysts 2022
Abbreviations:
EFSFSR = East Fork of the South Fork of the Salmon River

Design Flow Update

In 2018, Rio Applied Science and Engineering (Rio ASE) conducted a comprehensive surface water hydrologic analysis (Rio ASE 2021) for the Project based on United States Geological Survey (USGS) streamflow records and mine plan information available at that time. While existing streamflow characteristics have changed little since, mine plan improvements, modeling of flow depletions associated with the Project, and proposal of the water rights condition all post-date that 2018 study. Rio ASE (2023, Attachment B to this letter) updated their previous analysis, considering the mine plan and water management improvements, predicted flow depletions, water rights conditions, and BioAnalysts' (2022) updated fish migration periods since 2018, and using the most recent 25 years of stream gage records available (through September 2022), per the National Marine Fisheries Service (NMFS; 2022) guidance.

Using flow frequency, regression, and record extension methodologies developed during previous analyses (Rio ASE 2021), the 95 percent and 5 percent exceedance flows (the standard benchmarks for fish passage design per National Oceanic and Atmospheric Administration [NOAA] NMFS guidelines; NMFS 2022) were recalculated for the updated migration time periods and updated streamflow records for USGS gage sites near the Project area. The 95 percent exceedance values (i.e., fish passage design low flows) were then adjusted to reflect the proposed mine plan and associated water diversion configurations and drainage area changes, along with the implementation of the proposed water rights condition at low flow. In applying the water rights condition, Project water withdrawals were limited to 20 percent of the total flow in the EFSFSR immediately downstream of Sugar Creek at flows less than 25

cfs, and withdrawals calculated on this basis were applied (subtracted) from the 95 percent exceedance flow in the EFSFSR from the tunnel to Sugar Creek. In other words, all flow reductions were applied to the EFSFSR above Sugar Creek, and no reduction was applied to Sugar Creek. Updated flow exceedance values, applicable to the reach of the EFSFSR from the tunnel to the confluence with Sugar Creek, are listed in Table 2. Withdrawals up to the limits of the proposed water rights condition were included as described above in all low fish passage design flows (i.e., 95 percent exceedance), but in practice, withdrawals up to the maximum allowable amount would not occur in all years or at all times during a given year. Therefore, the estimates of 95 percent exceedance flows are lower than the 95 percent exceedance flows would be in practice, in which flows would lie between the tabulated existing and proposed values. Hydraulic analyses conducted with these computed flows are thus conservative with respect to flow depth, the key potential passage impediment at low flow. Project flow depletions are a minimal percentage of high flows and were not subtracted from the 5 percent exceedance flows, making the 5 percent exceedance flow estimate slightly higher than flows expected in actual practice and slightly conservative with respect to velocity, the key potential passage impediment at high flow.

Table 2. Summary of Existing and Proposed 95% and 5% Daily Average Exceedance Discharge Values Based on 1997-2022 Data (Proposed with Water Rights Conditions Applied) at the Proposed Tunnel Entrance Downstream to the Confluence with Sugar Creek

Fish Passage Daily Average Exceedance Discharge (cfs)			
Species/Life Stage	Existing (without Project) 95%	Proposed (with Project and Water Rights condition) 95%	Existing and Proposed 5%
Chinook – Adult Upstream Passage	9.9	6.6	57.4
Steelhead – Adult Upstream Passage	9.8	6.4	244.7
Bull Trout – Adult Upstream Passage	9.9	6.6	41.5
Westslope Cutthroat Trout – Adult Upstream Passage	22.7	18.1	255.5
Juvenile Salmonids - Downstream Passage	8.5	5.8	142.7

Source:
Table 6 in Rio ASE 2023a
Abbreviations:
Cfs = cubic feet per second

Instream Fish Passage – Tunnel Outlet to Sugar Creek

Rio ASE (2023b; Attachment C to this letter) used the updated species- and life stage-specific fish passage design flows in Table 2, hydraulic models developed for previous studies, and supplemental river bathymetric data collected in the field in 2022, to develop and calibrate a detailed hydraulic model of the EFSFSR channel from the tunnel outlet to Sugar Creek. Rio ASE then assessed hydraulic conditions (depth and velocity) at 95 percent and 5 percent exceedance flows for each species' migration period against fish passage design criteria applicable to each species' swim speed and body size.

Species-Specific Design Criteria

Updated species-specific fish passage design criteria are listed in Table 3 and Table 4, based on literature values for fishway designs (including nature-like fishways).

Table 3. Fish Passage Criteria

Species	Life Stage	Passage Direction	Migration Depth (ft)
Chinook Salmon	Adult	Upstream	0.9 [1]
Steelhead	Adult	Upstream	0.7 [1]
Bull Trout	Adult	Upstream	0.7 [1]
Westslope Cutthroat Trout	Adult	Upstream	0.4 [1]
Salmonids	Juvenile	Downstream	0.3 [1]

Source:
Table 2 in Rio ASE 2023b
Notes:
[1] California Department of Fish and Wildlife, 2017
Abbreviations:
ft = foot/feet

Under certain conditions, NMFS requires that the minimum depth be maintained for a minimum of 10 percent of the wetted width. While technically only a requirement at picket trap locations, professionals in the field have often been directed to maintain minimum passage depths for that 10 percent of the wetted width in non-picket trap situations (NMFS, 2022; D. Nelson, personal communication, November 1, 2022), so this criterion was adopted for evaluating water depth at low flow.

Table 4. Summary of Maximum Swim Velocities (ft/sec)

Species	NMFS Nature-Like Fishway Max Velocity[1]	Cruising Swim Speed[2]	Sustained Swim Speed[2]	Burst Swim Speed[2]
Chinook Salmon – Adult	5	<4.0	<11.0	<22.0
Steelhead – Adult	5	<5.5	<15.0	<26.0
Bull Trout – Adult	5	<2.5	<2.5	<6.6
Westslope Cutthroat Trout – Adult	5	<2.0[3]	<6.4[3]	<13.5[3]

Notes:
[1] NMFS, 2022. These values are for constructed man-made channels and represent conservative values to ensure passage of all species
[2] McMillen Jacobs, 2018
[3] Bell, 1991
Abbreviations:
ft/sec = feet per second
NMFS = National Marine Fisheries Service

Modeled velocities were evaluated against the fish swim speeds of Table 4. Over short distances such as a step-pool crest, fishway weir, or other local obstruction, burst swim speed is applied as the design criterion. For longer distances, cruising or sustained speeds are the appropriate measure. No additional new information on bull trout swim speeds was located.

Low-Flow (95 Percent Exceedance) Fish Passage Evaluation

Table 5 compares the low-flow (95 percent exceedance) hydraulic model results to flow depth criteria on a reach-wide basis. Average depths in the reach were greater than minimum depth criteria at all species-specific 95 percent exceedance flows for existing and proposed conditions. In all cases, considerably more than the minimum 10 percent (historically required by NMFS) of the wetted width has sufficient depth, and Project flow depletions under the proposed water rights condition reduce flow depth by approximately 0.1 foot versus existing conditions.

Average cross-sectional velocities throughout the reach for all species and flows range from 1.1 to 2.4

feet per second (ft/sec), below cruise swim speeds for all species, indicating that based on depth the reach is readily passable for all species of interest.

Table 5. Hydraulic Model Results Comparison to Fish Passage Criteria per Species within the EFSFSR from the Tunnel Outlet to Sugar Creek at 95% Exceedance Flows

Species/Life Stage	Minimum Depth Passage Criteria (ft)[1]	Existing (without Project) Conditions at 95% Exceedance Flows		Proposed Conditions (with Project and Water Rights Condition) at 95% Exceedance Flows	
		Average Maximum Depth (ft)[2]	Average Percentage of Channel Width Meeting Minimum Depth[3]	Average Maximum Depth (ft)[2]	Average Percentage of Channel Width Meeting Minimum Depth[3]
Adult Chinook Salmon	0.9	1.3	32%	1.2	26%
Adult Steelhead	0.7	1.3	47%	1.2	40%
Adult Bull Trout	0.7	1.3	47%	1.2	40%
Adult Westslope Cutthroat Trout	0.4	1.4	73%	1.4	75%
Juvenile Salmonids	0.3	1.3	77%	1.1	72%

Notes:
1. California Department of Fish and Wildlife (CDFW), 2017. Minimum percentage 10% based on NMFS, 2022.
2. Average maximum depth calculated by a weighted average of the maximum depth at all surveyed cross sections (excludes interpolated cross sections) weighted by the length of channel represented by each cross section.
3. Percentage of channel width calculated by width of channel within depth criteria (measured from a depth raster output in GIS) divided by total wetted width of channel at each surveyed cross section (excludes interpolated cross sections) and weighted by the length of channel represented by each cross section.
Abbreviations:
EFSFSR = East Fork of the South Fork of the Salmon River
ft = foot/feet

Low-flow passage was evaluated at each individual surveyed cross section within the reach of interest, though such evaluation is likely conservative because depth and velocity passage criteria typically established for man-made hydraulic structures do not account for the topographical and hydraulic complexity and variability of natural channels. For the purposes of this analysis, when the maximum depth at a surveyed cross section in the hydraulic model is less than the species-specific minimum depth criterion, the cross section is considered to not meet the depth criterion; however, small-scale variations in hydraulic conditions and channel topography, at scales too small to feasibly model, typically still allow effective passage even when the species-specific minimum depth criterion is not met.

Table 6 summarizes the overall cumulative percentage of channel length that meets minimum flow depth requirements. Overall, the majority (greater than 85 percent) of the reach meets minimum depth requirements for all species of interest at all flows, and existing conditions exhibit slightly higher in-compliance percentages and slightly greater depths (by 0.1 foot or less). For steelhead and bull trout, locations not meeting the depth criterion occur over relatively short distances (average length of 7 feet for each species with a range from 4 to 9 feet under existing conditions and range of 3 to 12 feet for proposed conditions). For Chinook salmon, locations not meeting the depth criterion have a slightly larger average length of 8 feet and wider range of 3 to 30 feet. Spatially, most cross sections not

meeting the depth criterion located within step-pool dominated subreaches at the step-pool drop/crest, which notably is where the largest difference between modeled and observed water surface elevations occur at the calibration flow. This suggests that improved model calibration or survey resolution in these areas could eliminate potentially spurious identification of area not meeting the depth criterion. In any event, a minimum depth criterion when occurring for only short distances would not typically impair upstream movements of these species.

Table 6. Hydraulic Model Results Showing Percentage of Reach Meeting Minimum Depth Criteria (%) at 95% Exceedance Flows

Species and Life Stage	Reach Length	Species and Life Stage	Reach Length
Adult Chinook Salmon	1,709	91%	87%
Adult Steelhead	1,709	98%	95%
Adult Bull Trout	1,709	98%	96%
Adult Westslope Cutthroat Trout	1,709	100%	100%
Juvenile Salmonids	1,709	100%	100%

Source:
Table 13 in Rio ASE 2023b

Bathymetry is highly variable in the reach of interest due to the abundance of both individual boulders and boulder bedforms (steps), likely leading to the model underpredicting maximum depths, and thus overpredicting the number and extent of areas not meeting the depth criterion. This is due to limitations on conventional bathymetric surveying (using RTK GPS rovers) precision, infeasibility of collecting detailed data on all bed features (boulders, etc.), and 1-D model generalizations of the surveyed cross sections, which may miss narrow, deep passages between boulders, and fail to account for areas of ineffective flow or eddies (i.e., deeper slower flow) located upstream and downstream of boulder formations.

While difficult to survey and model completely, these rough channel characteristics aid fish in passage through them by providing resting areas between zones of higher velocity (Natural Resources Conservation Service 2007), and locally deeper water. Given this, while certain cross sections are computed as having flow depths slightly less than the criteria for larger-bodied species, it is highly likely that passage would be successful throughout the reach. This is borne out by the fact that no barriers have been historically identified within this reach by NOAA and the United States Forest Service (NMFS 2017; Nelson 2009; BioAnalysts 2020), and PIT tag array data demonstrates that the species of interest have successfully passed through the reach, travelling upstream to the YPP lake.

High-Flow (5 Percent Exceedance) Fish Passage Evaluation

Velocity and depth at 5 percent exceedance flows (high flows) were compared to passage criteria and known swim speeds of each fish species of concern. Table 7 summarizes average depths and velocities through the reach of interest for each fish species. Average maximum depths within the tunnel outlet to Sugar Creek reach were simulated to be greater than minimum depth requirements at all species-specific 5 percent exceedance flows for existing and proposed conditions, and average velocities are below species-specific sustained swim speeds, except for bull trout.

Despite computed velocities exceeding the relatively low sustained speed (2.5 ft/sec) of bull trout, PIT tag data (BioAnalysts 2022) demonstrates bull trout movement past the sensor array located in this

reach over a range of streamflow conditions.

Table 7. Hydraulic Model Results Comparison to Adult Fish Specific Swim Speeds within the Reach of Interest at 5 Percent Exceedance Flows

Species[1]	Minimum Depth Passage Criteria (ft)[2]	Swim Speeds		Existing and Proposed Conditions at 5% Exceedance	
		Sustained Swim Speed (ft/sec)[3,4]	Burst Swim Speed (ft/sec)[3,4]	Average Maximum Depth (ft)[5]	Average Cross-Sectional Velocity (ft/sec)[6]
Chinook Salmon	0.9	<11	<22	1.8	3.4
Steelhead	0.7	<15	<26	2.9	6.0
Bull Trout	0.7	<2.5	<6.6	1.6	3.0
Westslope Cutthroat	0.4	<6.4	<13.5	3.0	6.0

Notes:
1.Adult life stages
2.CDFW, 2017
3.McMillen Jacobs, 2018
4.Bell, 1991
5 Average maximum depth calculated by using a length weighted average of the maximum depth at all surveyed cross sections (excludes interpolated cross sections) weighted by the channel length each cross section represents
6. Average cross-sectional velocity calculated by using a length weighted average of the cross-sectional velocity at all surveyed cross sections weighted by the channel length each cross section represents
Abbreviations:
ft = foot/feet
ft/sec = feet per second

Table 8 summarizes the percentage of the tunnel outlet to Sugar Creek reach that meets minimum depth, sustained swim speed, and burst swim speed thresholds at 5 percent exceedance flows. There would be no velocity-related impediment to passage for Chinook salmon and steelhead, as velocities are below their respective sustained speeds, and are often below or slightly above cruising speed based on Table 7, throughout the reach.

Bull trout and Westslope cutthroat would be able to swim 42 percent and 58 percent of the channel length at sustained swim speeds, respectively. At the modeled conditions the velocity areas exceeding sustained swim speeds for bull trout and Westslope cutthroat trout manifest as disconnected short segments ranging in length from 3 to 94 feet for bull trout and 3 to 70 feet for cutthroat. The average velocity in these zones for bull trout is 3.9 ft/sec with an average zone length of 17 feet. The average velocity in these zones for cutthroat is 7.6 ft/sec with an average zone length of 14 feet. These average flow velocities are below the respective burst speeds of both species.

Comparing average flow velocity to burst speed at individual sections, 99 percent to 100 percent of the reach has flow velocities below burst speed, respectively, for bull and cutthroat trout. The 1 percent of the reach where bull trout burst speeds are exceeded consists of three segments that range from 3 to 6 feet in length with velocities ranging from 8.5 to 9.4 ft/sec.

Where average flow velocities exceed burst speeds, it is expected that fish will utilize that portion of the cross section that falls below their maximum burst speed.

As discussed above with respect to low flow depths, survey, and modeling limitations in representing the bathymetric and hydraulic diversity of natural channels likely result in conservative conclusions. This, coupled with observed bull trout passage at the PIT array, make it highly likely that the reach in question is passable by bull trout at 5 percent exceedance flows. While not due to the Project, if any passage impediments are identified at high flow, planned stream enhancements in this reach could be readily modified to target and eliminate them.

Table 8. Hydraulic Model Results Showing Percentage of Reach Meeting Minimum Depth and Various Velocity Criteria at 5% Exceedance Flows

Species and Life Stage	Reach Length(ft)	Existing and Proposed Conditions at 5% Exceedance Flow	
		Length Meeting Minimum Depth Criteria and Average Velocities Less than Sustained Swim Speeds	Length Meeting Minimum Depth Criteria and Average Velocities Less than Burst Swim Speeds
Adult Chinook Salmon	1,709	100%	100%
Adult Steelhead	1,709	100%	100%
Adult Bull Trout	1,709	42%	99%
Adult Westslope Cutthroat Trout	1,709	58%	100%

Source:
Adapted from Table 15 in Rio ASE 2023b
Abbreviations:
ft = foot/feet

Tunnel Fishway Hydraulics

McMillen (formerly McMillen Jacobs) reevaluated the EFSFSR Tunnel fishway hydraulic design based on the Project flow depletions with the proposed water rights condition in place, using computational fluid dynamics (CFD) modeling (2022). The updated CFD modeling demonstrates the ability for the tunnel fishway to perform at lower 95 percent exceedance flows with minor modifications to the fishway weir design, without compromising effectiveness at higher flows (i.e., without inducing velocities greater than fish swim speeds due to the narrower weir opening). Design modifications have been deferred until the Biological Opinion for the Project is completed, and any additional conditions imposed in ESA Section 7 consultation or the Project's NEPA Record of Decision are finalized.

McMillen (2022) modeled a range of low flows (5 to 8 cfs) and high flows (14.5 to 25 cfs) using the CFD model Flow-3D, assuming the fishway weir width would be reduced from the 2018 design of 24 inches to 15 inches, matching the NMFS (2022) width criterion for Chinook salmon, the largest of the species of interest.

Low flow simulations targeted maintaining approximately 1 foot of depth over the weir, with a maximum hydraulic drop of 1 foot. High flow simulations targeted 2 feet of depth and a 1-foot drop. Flow depth controlled; all simulations achieved the drop criterion.

Results of the CFD simulations indicate that a flow rate of 7.25 cfs is required to achieve a 1-foot weir flow depth over a 15-inch-wide weir. At 6.6 cfs (the bull trout and Chinook salmon 95 percent

exceedance flow), the depth over the weir is slightly greater than the Chinook salmon minimum depth of 0.9 feet (California Department of Fish and Wildlife 2017). A total fishway flow of 5 cfs leads to a weir flow depth of 0.72 feet (just over the bull trout and steelhead depth criteria), an average velocity of approximately 5.8 ft/sec (below bull trout burst speed and other species' sustained speed), and a hydraulic drop from pool to pool of approximately 0.64 feet. At a 2-foot hydraulic drop and 19 cfs flow rate, maximum velocities are less than 6.6 ft/sec (bull trout burst speed). Hence, CFD modeling demonstrates that the simple modification of reducing the fishway weir notch width to 15 inches results in hydraulic conditions that are passable by Chinook salmon down to their 95 percent exceedance flow, and by the other three species of interest down to 5 cfs (well below their respective 95 percent exceedance flows).

Additional or different design modifications and refinements, supported by additional CFD modeling, may accomplish the same result at a different weir notch width or configuration, and will be investigated in final design once ESA consultation and NEPA are finalized.

Closing

Thank you for reviewing Perpetua Resources' proposed water rights condition. We hope the above summary and the attached documents provide the needed support for our application and sufficiently demonstrate the protectiveness of the proposed condition. Please contact me if you have any questions.

Sincerely,

Alan Haslam
PERPETUA RESOURCES IDAHO, INC.
Vice President – Permitting

Enclosures:

Attachment A: Update-YPP PIT Interrogation Site and Key Migration Periods. Technical Memorandum from BioAnalysts to Perpetua Resources. October 13, 2022.

Attachment B: Stibnite Gold Project Updated Fish Passage Flows. Technical Memorandum from Rio ASE to Perpetua Resources. March 21, 2023.

Attachment C: Stibnite Gold Project Fish Passage Evaluation. Technical Memorandum from Rio ASE to Perpetua Resources. March 21, 2023.

Attachment D: Supplemental Tunnel Hydraulic Modeling. Technical Memorandum from McMillen Jacobs to Perpetua Resources. December 9, 2022.

Literature Cited:

Barrett, J. and M. Miller, 2018. *Analysis of Streamflows and Fish Passage in the EFSFSR, and Implications for the Design of Fishway in the Proposed EFSFSR Tunnel*. Memo to Midas Gold Idaho, Inc. Boise, Idaho. Memo dated May 15.

Bell, 1991. *Fisheries Handbook of Engineering Requirements and Biological Criteria*. United States Army Corps of Engineers, 3rd edition, 1990.

BioAnalysts, 2020. *Evaluation of Upper EFSFSR Fish Passage Barriers*. Technical Memorandum to Perpetua Resources, January 30, 2020.

BioAnalysts, 2022. *Update-YPP PIT Interrogation Site and Key Migration Periods*. Technical Memorandum to Perpetua Resources, October 13, 2022.

Brown and Caldwell (BC), 2019. *2018 Yellow Pine Pit Lake Fish Sampling Summary Report*. Prepared for Midas Gold, March 2019.

BC, 2020. *2019 Yellow Pine Pit Lake Fish Sampling Summary Report, Final*. Prepared for Midas Gold, April 2020.

BC, McMillen Jacobs Associates, and BioAnalysts, 2021. *Fishway Operations and Management Plan*, Appendix A; Daily average and exceedance flows technical memo, Rio ASE. Prepared for Perpetua Resources Idaho, Inc.

California Department of Fish and Wildlife (CDFW), 2017. *Standard Operating Procedure for Critical Riffle Analysis for Fish Passage in California*. CDFW-IFP-001. September, 2017.

McMillen Jacobs, 2018. *Technical Memo No. 5: 15% Design Alternatives Analysis – Fish Passage Components of the EFSFSR Tunnel*. Prepared for Midas Gold Idaho, Inc. May 24, 2018.

McMillen Jacobs, 2022. *Supplemental Tunnel Hydraulic Modeling*. Technical Memorandum to Perpetua Resources Idaho, Inc. December 9, 2022.

Miller, M., 2018. *Periodicity of Spring/Summer Chinook Salmon, Steelhead, Bull Trout and Westslope Cutthroat Trout*. Prepared for Midas Gold Idaho, Inc. Boise, Idaho, Prepared by BioAnalysts, Boise, Idaho.

National Marine Fisheries Service (NMFS), 2017. *ESA Recovery Plan for Idaho Snake River Spring/Summer Chinook Salmon and Snake River Basin Steelhead*, Appendix C: Idaho Management Unit Chapter 6. National Marine Fisheries Service: Accessed at: *https://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/final_idaho_mu_plan_chapter_6.pdf*

NMFS, 2022. *NOAA Fisheries West Coast Region Anadromous Salmonid Passage Design Manual*, NMFS, WCR, Portland, Oregon.

Natural Resources Conservation Service, 2007. *Part 654 National Engineering Handbook Technical Supplement 14N Fish Passage and Screening Design*.

Nelson R., 2009. *Biological Assessment for the Potential Effects of Managing the Payette National Forest in the South Fork Salmon River Section 7 Watershed on Snake River Spring/Summer Chinook Salmon, Snake River Steelhead, and Columbia River Bull Trout and Biological Evaluation for Westslope Cutthroat Trout*, volume 31.

Perpetua Resources Idaho, Inc., 2022. *Request for Technical Assistance Review*. Technical Memorandum to Tom Bassista, Idaho Department of Fish and Game and Mike Edmondson, Office of Species Conservation, June 27, 2022.

Rio Applied Science and Engineering (Rio ASE), 2021. *Surface Water Hydrology Report for the Stibnite Gold Project.* Prepared for Perpetua Resources Idaho, Inc. September 2021.

Rio ASE, 2023a. *Stibnite Gold Project Updated Fish Passage Flows*. Technical Memorandum to Perpetua Resources, March 21, 2023.

Rio ASE, 2023b. *Stibnite Gold Project Fish Passage Evaluation*. Technical Memorandum to Perpetua Resources, March 21, 2023.

Schoby, G. and T. Curet, 2007. *Seasonal Migrations of Bull Trout, Westslope Cutthroat Trout, and Rainbow Trout in the Upper Salmon River Basin, Idaho*. Report 2003, 2004, 2005. Boise, ID. Bureau of Land Management, Idaho Department of Fish and Game. IDFG 07-12.

Zurstadt, C. F. and K. Stephan, 2004. *Seasonal Migration of Westslope Cutthroat Trout in the Middle Fork Salmon River Drainage, Idaho*. Northwest Science 78(4): 278-285.

Attachment A:

Update-YPP PIT Interrogation Site and Key Migration Periods

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Technical Memorandum

Prepared for: Perpetua Resources Idaho, Inc. (PRII)

Project Title: Stibnite Gold Project

Technical Memorandum

Subject: Update-YPP PIT Interrogation Site and Key Migration Periods

Date: October 13, 2022

To: Gene Bosley, P.E., Senior Engineer

From: Mark Miller, Fisheries Biologist, BioAnalysts

Copy to: Paul Leonard, CFS, Chief Scientist/ Managing Principal, Brown and Caldwell

Prepared by: Mark Miller, Fisheries Biologist

Limitations:

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Table of Contents

List of Figures i
List of Tables i
Section 1: Purpose 1
Section 2: YPP Interrogation Site Arrival Timing 1
References 6

List of Figures

Figure 1. Location of the YPP interrogation site on the upper EFSFSR. 2

List of Tables

Table 1. Number of PIT tagged fish detected at the YPP interrogation site. 1
Table 2. First detections of spring/summer Chinook salmon and steelhead at the YPP interrogation site. 3
Table 3. Bull trout and westslope cutthroat trout detected returning to the YPP interrogation site. Number of days in paratheses indicate the number of days since leaving YPP detection site. 4
Table 4. Key migration periods for spring/summer Chinook salmon, steelhead, bull trout and westslope cutthroat trout detected returning to the YPP interrogation site. 5

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Section 1: Purpose

The purpose of this memo is to provide new information on fish periodicity in the East Fork South Fork Salmon River (EFSFSR) relative to the arrival timing of migratory fish species at the proposed EFSFSR tunnel fishway. The proposed fishway has been designed to provide safe upstream and downstream passage for anadromous and migratory salmonids (BC et al. 2021). Target species intended to pass the fishway include Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*), Snake River Basin steelhead (*O. mykiss*), and Columbia River bull trout (*Salvelinus confluentus*). The fishway may also benefit Westslope cutthroat trout (*Oncorhynchus clarki lewisi*).

Previous fish use and periodicity for the Stibnite Gold Project (SGP) and the proposed EFSFSR tunnel fishway did not have the benefit of recent PIT tag data collected at the Yellow Pine Pit (YPP) lake interrogation site (Barrett and Miller 2018; Miller 2018). The YPP interrogation site went online in May of 2018 and closely approximates the location of the proposed EFSFSR tunnel north portal where the fishway entrance would be located. This memo provides an update based on new information and is intended to assist in tunnel design, streamflow evaluations, migration timing, and proposed management of the EFSFSR tunnel fishway (BC et al. 2021). The sections below present information on the arrival timing of native salmonids that are expected to pass the facility.

Section 2: YPP Interrogation Site Arrival Timing

Data for the YPP interrogation site were downloaded from PTAGIS (https://www.ptagis.org/) on July 19, 2022, to assess the migration timing of PIT tagged fish. The YPP interrogation site is located (Latitude 44.928995°N; Longitude -115.333883°W) on the EFSFSR upstream from the confluence with Sugar Creek and is configured with an upstream and downstream antenna (**Error! Reference source not found.**). Data were separated by species and tag code to provide the number of detection records and unique fish detected at the interrogation site. Since 2018 there have been 9 adult spring/summer Chinook salmon detected at the interrogation site. Two of the adult Chinook salmon were tagged at the Bonneville Dam adult fish facility and the remainder were PIT tagged at Lower Granite Dam. There were two adult steelhead detected at the interrogation site and both were PIT tagged at Lower Granite Dam. There were 83 bull trout detected at the interrogation site and all those fish were tagged during a two-year mark-recapture study conducted in YPP lake (BC 2019; BC 2020). Similarly, there were 36 westslope cutthroat trout detected at the site and all originated from the same mark-recapture study in YPP lake.

Table 1. Number of PIT tagged fish detected at the YPP interrogation site.

Fish Species	Number of Unique Fish Detected	Detection Records[1]
Spring/summer Chinook salmon	9	367
Steelhead	2	59
Bull trout	83	13,676
Westslope cutthroat trout	36	1,014

1. Detection records are single data collection events recorded at a PIT tag array that document the interrogation detail of the PIT-tagged fish. Detailed information is provided on detection date, time, and antenna (with a granularity of 1 second).

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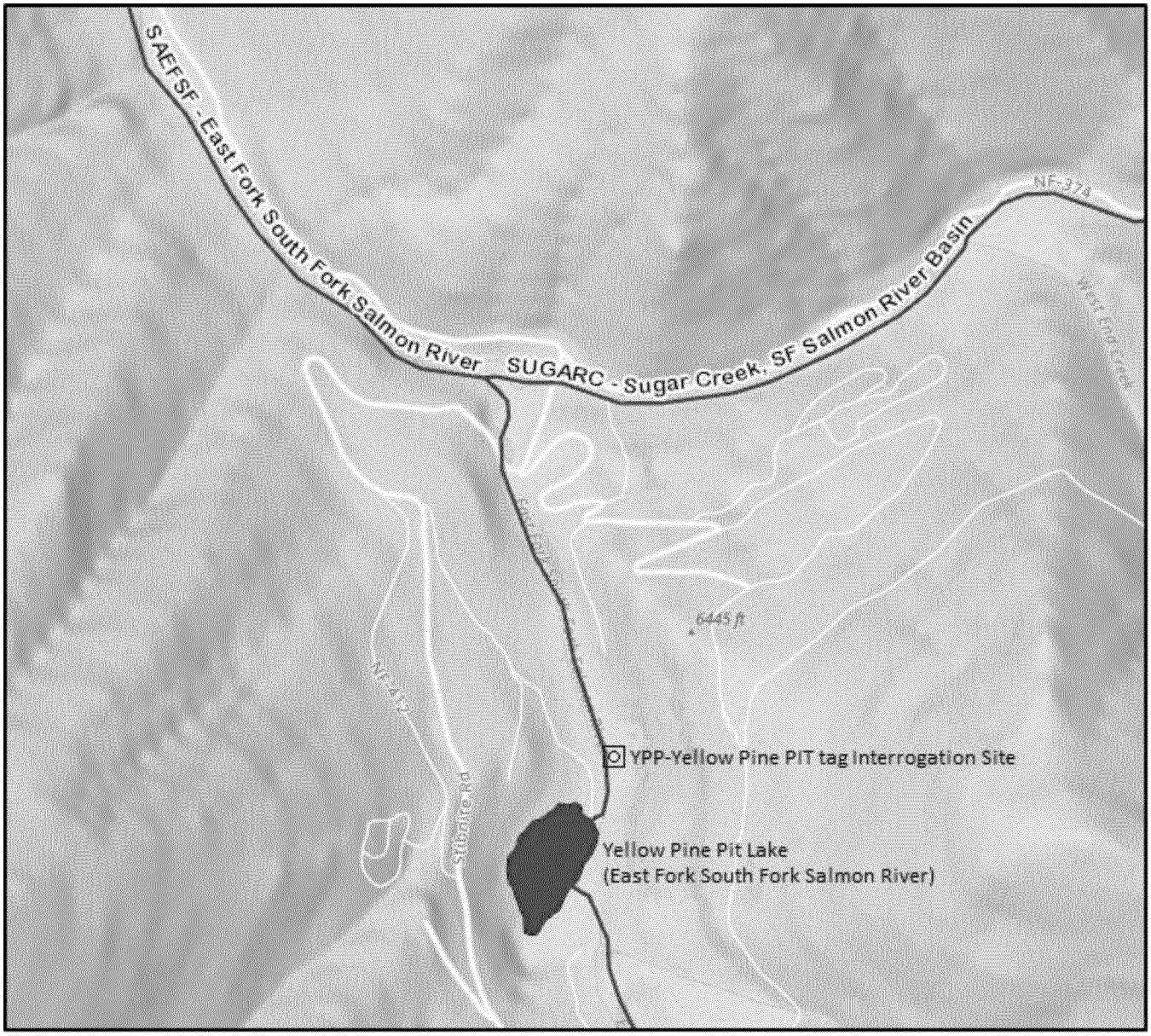


Figure 1. Location of the YPP interrogation site on the upper EFSFSR.

First detection at the YPP interrogation site was used for spring/summer Chinook salmon and steelhead to indicate adult arrival timing near the proposed EFSFSR tunnel fishway. Table 2 provides a summary by unique PIT tag codes for spring/summer Chinook salmon and steelhead when they were first detected at the YPP interrogation site. Arrival timing of spring/summer Chinook salmon has varied from late June to the last week of August. Steelhead were detected the first week of May.

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Table 2. First detections of spring/summer Chinook salmon and steelhead at the YPP interrogation site. Instantaneous and mean daily discharge (cfs) in the EFSFSR and Sugar Creek included for date of detection.

Fish Species	PIT Tag Code	First Detection	Discharge (cfs)[1]			
			EFSFSR-USGS 13311250 (above Sugar Ck. nr Stibnite)		Sugar-USGS 13311450 (Sugar Ck. Above EFSFSR)	
			Instantaneous	Mean Daily	Instantaneous	Mean Daily
Spring/summer Chinook salmon	3DD.007760191F	7/9/2018 9:51:54 PM	32.0	33.3	26.0	24.8
	3DD.00775F2343	7/15/2018 1:55:39 AM	27.6	28.1	20.3	20.3
	3DD.00775F16CA	8/1/2018 2:39:19 AM	19.0	19.0	15.1	15.1
	3DD.00775E4C20	8/8/2018 4:17:12 AM	16.3	17.1	14.0	13.6
	3DD.0077AE11C4	8/22/2018 9:56:12 AM	15.9	16.0	12.0	11.6
	3DD.0077C0C8EC	7/22/2019 1:48:08 AM	25.3	25.5	18.0	18.3
	3DD.0077C0F212	7/29/2019 1:56:44 AM	21.2	22.0	16.2	16.2
	3DD.00775FED9A	7/6/2021 12:36:52 AM	22.2	22.0	16.9	16.8
	3DD.00775EB467	6/30/2021 4:58:51 AM	27.4	26.2	21.8	20.7
Steelhead	3DD.003D4939C9	5/6/2021 5:51:39 PM	104.0	89.8	46.3	45.2
	3DD.003D4937DB	5/7/2021 8:04:33 PM	121.0	117.3	61.4	58.5

[1] Discharge

Instantaneous discharge documented as the nearest 15-minute interval record closest to the time PIT tagged fish was detected.

Mean daily computed for the date PIT tagged fish was detected.

For bull trout and westslope cutthroat trout, there were numerous detection records at the YPP interrogation site which may only indicate local movement near the YPP interrogation site (Table 1). Thus, complete detection histories were downloaded from PTAGIS for all bull trout and westslope cutthroat trout detected at the YPP interrogation site. Complete detection histories were used to determine if some fish had migrated away from the area and were detected at other interrogation sites in the South Fork Salmon River basin. Fish that had migrated downstream and returned to the lake would provide the most reliable information on arrival timing at the proposed EFSFSR tunnel fishway.

There were 4 bull trout and 10 westslope cutthroat trout that had migrated downstream and were detected at other interrogation sites. Bull trout and westslope cutthroat trout were detected downstream in the EFSFSR at Parks Creek (ESS) and the South Fork Salmon River at the Guard Station Bridge (SFG) PIT interrogation sites (Table 3). Three of the bull trout returned to YPP lake, providing arrival timing at the YPP interrogation site. The bull trout returned to YPP in July (i.e., July 3; July 11; July 15) approximately 326 to 351 days after their last detection at the YPP interrogation site (Table 3). There were also two westslope cutthroat trout that returned to YPP lake. The westslope cutthroat trout returned to YPP in early June (i.e., June 4; June 5) approximately 663 days and 690 days after their last detection at the YPP interrogation site.

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Table 3. Bull trout and westslope cutthroat trout detected leaving and returning to the YPP interrogation site. Number of days in parentheses indicate the number of days since leaving YPP detection site.

PIT Tag Code	Date	Yellow Pine Pit (YPP) lake Migration	Discharge (cfs)				Detection Notes
			EFSFSR USGS 13311250 (above Sugar Ck. nr Stibnite)		Sugar Creek USGS 13311450 (Sugar Ck. Above EFSFSR)		
			Instantaneous	Mean Daily	Instantaneous	Mean Daily	
Bull Trout							
3DD.003D2D2321	8/16/2018	Departed	14.7	15.6	11.5	12.2	8/16/2018 last detected at YPP site 9/17/2018 detected downstream at ESS site (31 days) 7/2/2019 detected again at ESS site (320 days) 7/15/2019 detected returning to YPP site (351 days)
	7/15/2019	Returned	31.7	32.1	21.3	21.4	
3DD.003D2D2359	8/11/2018	Departed	15.5	15.9	12.5	13.0	8/11/2018 last detected at YPP site 9/16/2018 detected downstream at ESS site (36 days) 6/12/2019 detected downstream at SFG site (305 days) 6/26/2019 detected again at ESS site (319 days) 7/3/2019 detected returning to YPP site (326 days)
	7/3/2019	Returned	47.7	48.9	29.2	29.4	
3DD.003D2D2362	8/4/2018	Departed	16.5	18.0	14.0	14.4	8/4/2018 last detected at YPP site 9/10/2018 detected downstream at ESS site (36 days) 7/2/2019 detected again at ESS site (332 days) 7/11/2019 detected returning to YPP site (341 days) 7/7/2020 detected again at ESS site (702 days)
	7/11/2019	Returned	35.6	34.7	22.8	22.7	
Westslope Cutthroat Trout							
3DD.003D2D2399	7/16/2019	Departed	29.5	31.5	20.6	21.0	7/16/2019 last detected at YPP site 8/2/2019 detected downstream at ESS site (17 days) 5/26/2021 detected again at ESS site (680 days) 6/5/2021 detected returning to YPP site (690 days)
	6/5/2021	Returned	137.0	137.9	84.1	87.4	
3DD.003D2D23B6	8/12/2019	Departed	20.4	19.9	13.5	13.5	8/12/2019 last detected at YPP site 9/10/2019 detected downstream at ESS site (30 days) 10/6/2019 detected downstream at SFG site (56 days) 5/16/2021 detected again at ESS site (644 days) 6/4/2021 detected at YPP site (663 days) 8/12/2021 detected again at ESS site (732 days)
	6/4/2021	Returned	146.0	143.5	78.9	92.3	

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PIT tag detection information from the YPP interrogation site was used to adjust key migration periods developed by Barrett and Miller (2018). The key migration period formerly reported for spring/summer Chinook salmon was July 8 to September 30 (Barrett and Miller 2018; BC et al. 2021). Based on the detection of PIT-tagged adult Chinook salmon the arrival timing was adjusted by one week to June 30th (Table 4). No other migration dates required adjustment for key species.

Expected arrival timing of westslope cutthroat trout has been added to the key species list based on recent PIT tag interrogation information and specific studies presented in Miller (2018). As noted, PIT tagged westslope cutthroat trout were detected returning to YPP the first week of June. The return of two westslope cutthroat trout is limited so research conducted in the Middle Fork Salmon River (Zurstadt and Stephan 2004) and Upper Salmon River basin (Schoby and Curet 2007) was used to help provide additional information on migration behavior. Schoby and Curet (2007) found that westslope cutthroat trout were detected in tributaries from mid-April to end of June. Zurstadt and Stephan (2004) found similar results with most fish entering tributaries by late May. Our assumption is that tributary arrival timing in those studies serve as a good indicator for arrival timing of westslope cutthroat trout in the upper EFSFSR near the proposed tunnel. Therefore, mid-April to end of June has been set as the expected arrival timing for adult westslope cutthroat trout (Table 4).

Key migration periods provide useful information to help develop expected streamflow conditions (i.e., 5 and 95 percent exceedance flows) during fish migrations and instream work windows important to the design, construction, and management of the proposed EFSFSR tunnel fishway (BC et al. 2021).

Table 4. Key migration periods for spring/summer Chinook salmon, steelhead, bull trout and westslope cutthroat trout in the EFSFSR near Stibnite.

Species and life stage	Time Periods
Spring/summer Chinook Salmon – adult upstream passage	Jun 30 – Sep 30
Bull Trout – adult upstream passage	Jul 8 – Sep 30
Steelhead – adult upstream passage	Apr 1 – May 31
Westslope Cutthroat Trout – adult upstream passage	Apr 15 – Jun 30
Juvenile Salmonids – downstream passage	Year-round

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References

Barrett, J and M. Miller. 2018. Analysis of streamflows and fish passage in the EFSFSR, and implications for the design of fishway in the proposed EFSFSR tunnel. Memo to Midas Gold Idaho, Inc. Boise, Idaho. Memo dated May 15.

Brown and Caldwell (BC). 2019. 2018 Yellow Pine Pit Lake Fish Sampling Summary Report. Prepared for Midas Gold, March 2019.

Brown and Caldwell (BC). 2020. 2019 Yellow Pine Pit Lake Fish Sampling Summary Report, Final. Prepared for Midas Gold, April 2020.

Brown and Caldwell (BC), McMillen-Jacobs Associates, and BioAnalysts. 2021. Fishway operations and management plan, Appendix A; Daily average and exceedance flows technical memo, Rio ASE. Prepared for Perpetua Resources, Idaho.

Miller, M. 2018. Periodicity of spring/summer Chinook salmon, steelhead, bull trout and westslope cutthroat trout. Prepared for Midas Gold Idaho, Inc. Boise, Idaho, Prepared by BioAnalysts, Boise, Idaho.

Schoby, G. and T. Curet. 2007. Seasonal migrations of bull trout, Westslope cutthroat trout, and rainbow trout in the Upper Salmon River Basin, Idaho. Report 2003, 2004, 2005. Boise, ID. Bureau of Land Management, Idaho Department of Fish and Game. IDFG 07-12.

Zurstadt, C. F. and K. Stephan. 2004. Seasonal migration of westslope cutthroat trout in the middle fork Salmon River drainage, Idaho. Northwest Science 78(4): 278-285.

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Attachment B:

Stibnite Gold Project Updated Fish Passage Flows

Technical Memorandum

Applied Science & Engineering

3380 Americana Terrace, Ste 390, Boise, Idaho 83706

To:	Gene Bosley, Perpetua Resources Idaho, Inc.
From:	Jeff Fealko, Rio ASE
Date:	3/21/2023
Project:	023-090-001-16
Subject:	Stibnite Gold Project Updated Fish Passage Flows

Background

In 2018, a comprehensive surface water hydrologic analysis was completed by Rio Applied Science and Engineering (Rio ASE) to support Project development based on the Stibnite Gold Project Plan of Restoration and Operations (Midas Gold, 2016). This hydrologic analysis evaluated a variety of discharge scenarios for the East Fork of the South Fork of the Salmon River (EFSFSR) basin, including periodic exceedance discharge associated with the timing of fish presence and use for the analysis of fish passage (Rio ASE, 2021). At the time, the analysis utilized stream gage data available through 2017. As designs and studies continue, it is important to update previous analyses to utilize the most recently available data. This memo summarizes the analysis completed to update fish passage exceedance discharges with the most recent stream gage records available (through September 2022) in the vicinity of the proposed inlet of the EFSFSR tunnel and from the tunnel outlet to the confluence with Sugar Creek. This analysis is to support fish passage design in these areas associated with predicted flow reductions from Project dewatering and water supply withdrawals, as well as potential limitations to those withdrawals due to any conditions that may be applied during the Project water rights permitting process. These withdrawals are summarized in more detail in a memo prepared by Perpetua Resources Idaho, Inc. (Perpetua) (2022).

Methods

FISH PERIODICITY

Perpetua has been assessing fish use and timing throughout the EFSFSR and developed a species-specific fish periodicity table based on use in proximity to the existing Yellow Pine pit (BioAnalysts, 2023). Fish species include Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*), Snake River Basin steelhead (*O. mykiss*), Columbia River bull trout (*Salvelinus confluentus*) and Westslope cutthroat trout (*O. clarkii lewisi*).

The periodicity data was used in this analysis to define periods of use per each species of interest. This information is summarized in Table 1.

Table 1. Fish Species and Periodicity of Use on the EFSFSR in the Vicinity of Yellow Pine Pit (BioAnalysts, 2023).

Species and Life Stage	Periodicity Timeframe	
	Start	End
Spring/Summer Chinook Salmon – Adult Upstream Passage	June 30	September 30
Steelhead – Adult Upstream Passage	April 1	May 31
Bull Trout – Adult Upstream Passage	July 8	September 30
Westslope Cutthroat Trout – Adult Upstream Passage	April 15	June 30
Juvenile Salmonids – Downstream Passage	Year-Round	

STREAMFLOW DATA

Average daily discharge values were downloaded from the U.S. Geological Survey (USGS) website for USGS gages 13311450, 13311250, and 13313000 on October 10, 2022. USGS gage 13313000 is located on Johnson Creek while the other two are located within the Project area. The Johnson Creek gage is used as an extension gage because it has a long-term, continuous record. The primary data used within the analysis included data from October 1, 2011, through September 30, 2022; this is the concurrent period of record for these gage locations, using full hydrologic years. In addition, the Johnson Creek gage data included data from October 1, 1997, through September 30, 2022, which represents the most recent 25 years of gage data. This data was obtained from the USGS website on October 10, 2022, and contains recent data that is still classified as preliminary; not all discharge data is approved. The 25 most recent hydrologic years of gage data are being used in accordance with National Marine Fisheries Science (NMFS) guidance for fish passage criteria (NMFS, 2023). Table 2 summarizes the gage data utilized for this analysis. The gage locations, along with other key locations, are shown in Figure 1.

Table 2. Summary of USGS Gage Locations and Period of Record Used in Analysis.

Gage Number	Description	Latitude	Longitude	Drainage Area	Period of Record Used in Analysis[1]
13311450	Sugar Creek Near Stibnite, ID	44.93636	115.33722	17.95	10/01/2011 – 9/30/2022
13311250	EFSF[2] Salmon Above Sugar Creek Near Stibnite, ID	44.93478	115.33669	24.07	10/01/2011 – 9/30/2022
13313000	Johnson Creek at Yellow Pine, ID	44.96167	115.50000	217.87	10/01/1997 – 9/30/2022

[1] Gages 13311450 and 13311250 are using the continuous periods of record with concurrent data, while gage 13313000 is only using a portion of its record to follow NMFS guidance that fish passage flows be calculated from the most recent 25 years of record.

[2] EFSF = East Fork of the South Fork

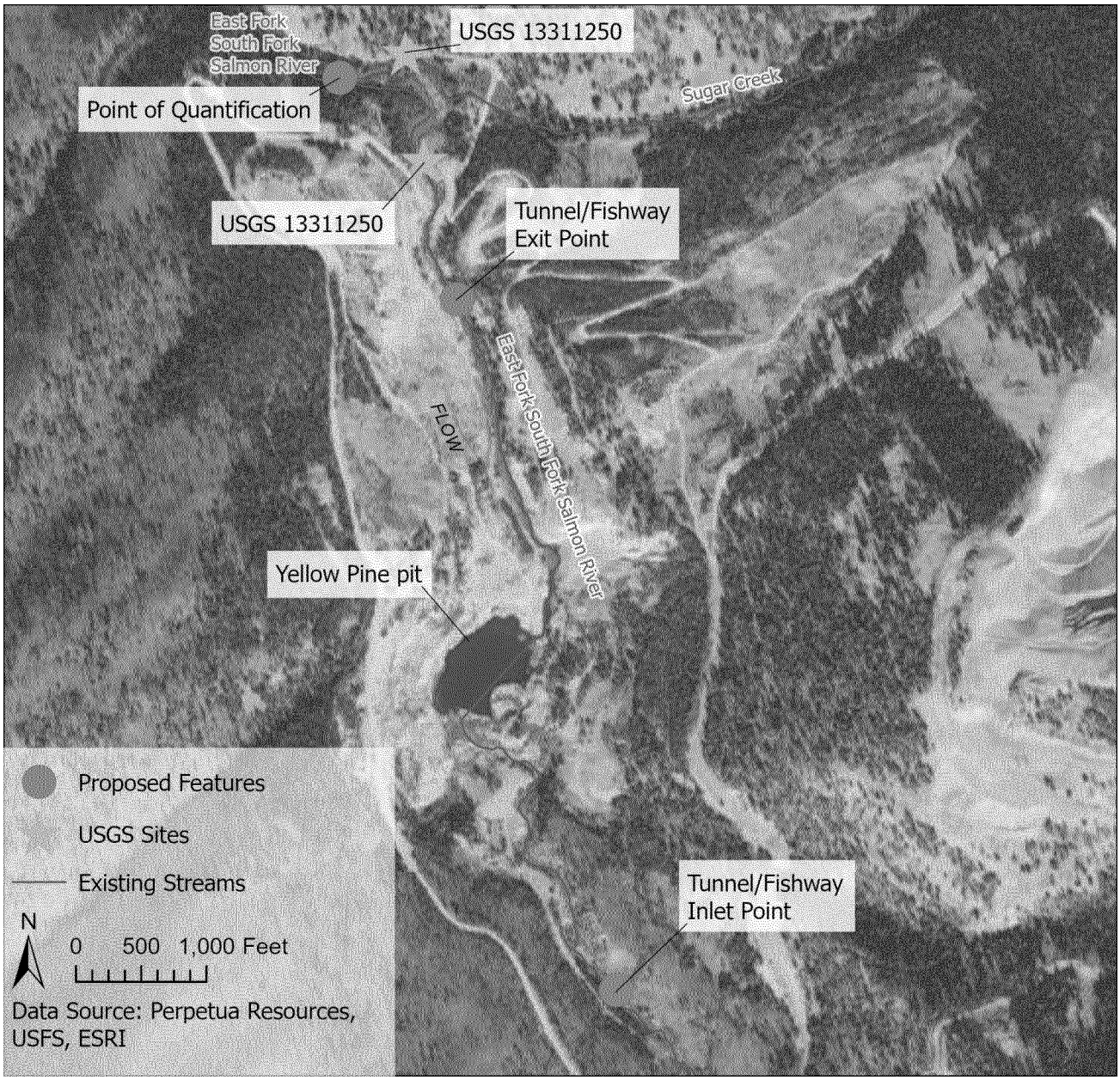


Figure 1. Location map showing key USGS gage locations along with other key features associated with proposed activities, including the Point of Quantification for potential water rights conditions.

EXCEEDANCE DISCHARGES

Exceedance discharges represent a daily average discharge that is only exceeded a certain percentage of the time during the period of interest. These flows are important to fish passage as NMFS uses specific exceedance flows to define low and high discharge conditions during periods of fish migration (NMFS, 2023). These are the standard flows used to evaluate fish passage through a reach. The 95% exceedance is a flow that is exceeded 95% of the period of interest (i.e., a low flow), whereas the 5% exceedance is only exceeded 5% of the period of interest (i.e., a higher flow). Exceedance discharges were estimated for both the 95% and 5% exceedance flows for the fish species and life stages listed in Table 1. for the most recent 25 years of record. USGS gage 13313000 (Johnson Creek) was analyzed for both the 25-year record as well as the concurrent period of record that matches the other two gages (2011-2022). The two periods of record analyzed for the Johnson Creek gage allow us to statistically adjust the records for the two gages of concern to represent the full 25 years of record using a

ratio between the shorter period of record at the two on-site gages compared to the full 25-year period of record. This was done using the same methodology shown as Equation 3-2 in the Hydrology report completed by Rio ASE (2021).

UNGAGED STREAM LOCATIONS

The exceedance discharges are calculated at known gage locations, but discharge values are required at ungaged sites located upstream or downstream of the gaged locations, including the EFSFSR tunnel inlet. To estimate the discharge at an ungaged location, a linear interpolation was used based on drainage basin area between two known sites. The two gages being analyzed are on different streams near their confluence with each other. To develop design discharge values for the EFSFSR immediately downstream of Sugar Creek, given its close proximity to USGS gage 13311450 and USGS gage 13311250, the design flows from these two gages were assumed to be additive. Creating this location on the EFSFSR downstream of Sugar Creek gives us two known discharge locations and allows us to linearly interpolate between them on the EFSFSR. The linear interpolation methodology is the same methodology used in the Hydrology report that results in Equation 7-1 of that report (Rio ASE, 2021).

To determine the basin area at the location relevant to proposed water rights conditions, Perpetua analyzed the proposed mine site configuration during the anticipated period of water withdrawals and updated drainage basin areas at the proposed tunnel inlet. An updated basin area at this location was required, as during mine construction and operations some tributary channels will be diverted or rerouted to new locations, which changes the overall contributing drainage area at a given instream location. This proposed watershed boundary is shown in Figure 2 in relation to the existing watershed boundary. The proposed drainage basin area includes portions of Midnight Creek and Hennessy Creek that are proposed to be diverted to enter the EFSFSR upstream of the tunnel's south (upstream) portal and upstream of their current confluences with the EFSFSR. This additional drainage area increases the total basin area at the tunnel inlet from 22.8 to 24.4 square miles (mi^2).

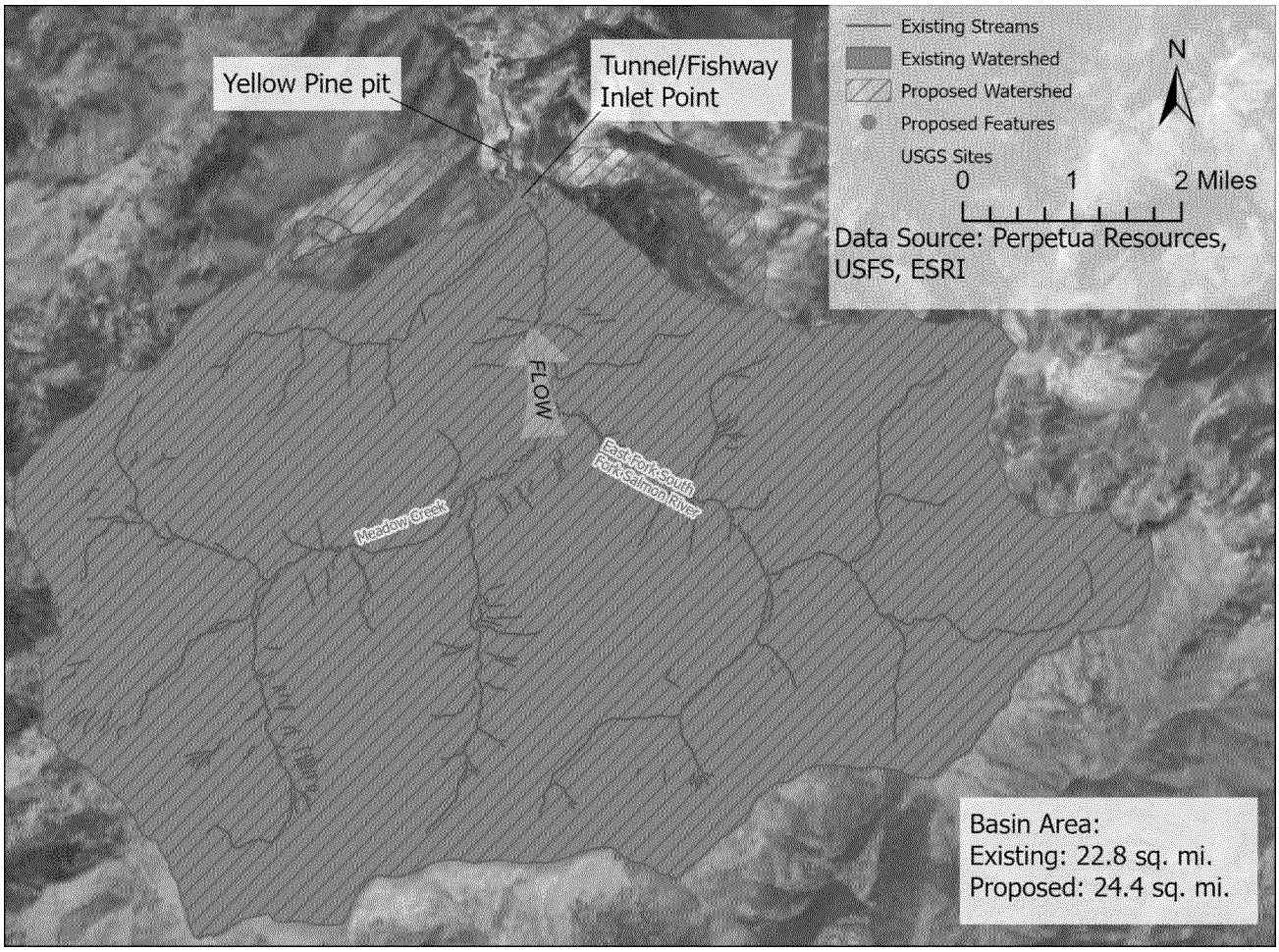


Figure 2. Watershed basin areas associated with the proposed tunnel inlet location on the East Fork South Fork Salmon River.

APPLICATION OF PROPOSED WATER RIGHTS CONDITION

The proposed water rights condition would require that at the proposed point of quantification (on the EFSFSR immediately downstream of the confluence with Sugar Creek), the maximum diversion rate cannot be more than 20% of the total flow of the EFSFSR below Sugar Creek when flow is less than 25 cubic feet per second (cfs) (Perpetua, 2022). Diversions at the maximum rate would be infrequent, and not continuous, but are conservatively applied to the entire record to arrive at a simple, defensible, and conservative estimate of the 95% exceedance discharge with Project-related flow depletions. To determine the exceedance discharge at the point of quantification for the proposed conditions the exceedance values were interpolated based on the basin area at the proposed tunnel inlet (24.4 mi^2). Proposed water rights depletions were then accounted for at the point of quantification; exceedance flows in the EFSFSR below Sugar Creek were reduced by 20% when flows were less than 25 cfs, when 95% exceedance flows were greater than 25 cfs flows were reduced by 5 cfs. To estimate flows in the EFSFSR upstream of Sugar Creek the entire reduction (in cfs) was applied to the EFSFSR above Sugar Creek (USGS gage 13311250), as all proposed points of diversion associated with the proposed water rights are located on the EFSFSR upstream of the confluence with Sugar Creek. This reduction and application of the water right condition was only completed for the 95% exceedance discharges, as they represent low flow. The 5% exceedance discharges that represent higher flows for fish passage were not altered. Passage is assumed at the higher flows as no known barriers have been identified within the area of interest and it is assumed that reducing flows slightly at these higher flows would only benefit conditions for passage.

Results

Utilizing the methods described above, exceedance discharges were first estimated for the two USGS gage locations for each species and specific period of use, as summarized in Table 3 (2011-2022 hydrologic years are the period of record for the two gages located on the Project site). The shorter periods of record were then statistically adjusted using the longer record from Johnson Creek to estimate exceedance values for the most recent 25-year record (1997-2022), as summarized in Table 4. This data was then adjusted to account for proposed conditions (increase in drainage area on the EFSFSR upstream of Sugar Creek due to the proposed partial rerouting of Hennessy Creek and Midnight Creek) as well as proposed water rights conditions during the 95% exceedance scenarios (low flow), with those results summarized in Table 5. This proposed water rights condition was no more than 20% of the flow at flows less than 25 cfs (assumed to be 5 cfs at flows greater than 25 cfs), calculated at the Point of Quantification.

Table 3. Summary of Existing 95% and 5% Daily Average Exceedance Discharge Values Based on 2011-2022 Data (cfs).

2011-2022 Daily Average Exceedance Discharge (cfs)				
Chinook – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	7.7	35.7	6.8	71.7
EFSFSR US[1] Sugar Creek	10.2	49.9	9.5	117.0
Johnson Creek	67.1	393.8	60.2	1150.0
Steelhead – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	12.0	142.7	6.0	230.0
EFSFSR US Sugar Creek	14.6	249.6	9.6	342.0
Johnson Creek	166.0	2755.0	72.9	4330.0
Bull Trout – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	7.6	27.2	6.8	45.6
EFSFSR US Sugar Creek	10.2	37.9	9.5	104.0
Johnson Creek	66.5	283.3	60.2	808.0
Westslope Cutthroat Trout – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	18.5	146.0	10.2	252.0
EFSFSR US Sugar Creek	26.2	258.0	13.2	366.0
Johnson Creek	263.0	2777.0	139.0	4470.0
Juvenile Salmonids – Downstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	5.9	92.6	4.0	252.0
EFSFSR US Sugar Creek	8.9	156.0	6.8	366.0
Johnson Creek	66.9	1760	43.4	4470.0

[1] *EFSFSR = East Fork of the South Fork of the Salmon River; US = Upstream*

Table 4. Summary of Existing 95% and 5% Daily Average Exceedance Discharge Values Based on 1997-2022 Data (cfs).

2011-2022 Daily Average Exceedance Discharge (cfs)				
Chinook – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek[1]	7.5	40.5	N/A[2]	N/A[2]
EFSFSR US[3] Sugar Creek[1]	9.9	56.6	N/A[2]	N/A[2]
Johnson Creek	65.1	447.0	37.0	2160.0
Steelhead – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	8.1	138.3	N/A[2]	N/A[2]
EFSFSR US Sugar Creek	9.8	241.9	N/A[2]	N/A[2]
Johnson Creek	111.4	2,670	72.9	4,600
Bull Trout – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	7.4	29.3	N/A[2]	N/A[2]
EFSFSR US Sugar Creek	9.9	40.9	N/A[2]	N/A[2]
Johnson Creek	64.8	306.0	37.0	1,220
Westslope Cutthroat Trout – Adult Upstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	16.1	142.9	N/A[2]	N/A[2]
EFSFSR US Sugar Creek	22.7	252.5	N/A[2]	N/A[2]
Johnson Creek	228.0	2,718	78.0	4,600
Juvenile Salmonids – Downstream Passage				
Gage/Site Location	**95%**	**5%**	**Min.**	**Max.**
Sugar Creek	5.7	83.6	N/A[2]	N/A[2]
EFSFSR US Sugar Creek	8.5	140.9	N/A[2]	N/A[2]
Johnson Creek	64.0	1,590	37	4,600

[1] Data was statistically corrected to represent the time period using Johnson Creek Data.

[2] N/A – Minimum and maximum flows for the period of record were not determined for gages located in the project reach because the period of record for these gages is shorter than that being represented here.

[3] EFSFSR = East Fork of the South Fork of the Salmon River; US = Upstream.

Table 5. Summary of Proposed 95% and 5% Daily Average Exceedance Discharge Values Based on 1997-2022 Data With and Without Water Rights Conditions Applied (cfs).

Chinook – Adult Upstream Passage			
Gage/Site Location	**95% w/out WR[1]**	**95% w/ WR**	**5%[2]**
Sugar Creek	7.5	7.5	40.5
EFSFSR US Sugar Creek (Tunnel Inlet)	10.1	6.6	57.4
EFSFSR DS Sugar Creek (Point of Quantification)	17.5	14.0	97.9
Steelhead – Adult Upstream Passage			
Gage/Site Location	**95% w/out WR**	**95% w/ WR**	**5%**
Sugar Creek	8.1	8.1	138.3
EFSFSR US Sugar Creek (Tunnel Inlet)	10.0	6.4	244.7
EFSFSR DS Sugar Creek (Point of Quantification)	18.0	14.4	383.0
Bull Trout – Adult Upstream Passage			
Gage/Site Location	**95% w/out WR**	**95% w/ WR**	**5%**
Sugar Creek	7.4	7.4	29.3
EFSFSR US Sugar Creek (Tunnel Inlet)	10.1	6.6	41.5
EFSFSR DS Sugar Creek (Point of Quantification)	17.5	14.0	70.9
Westslope Cutthroat – Adult Upstream Passage			
Gage/Site Location	**95% w/out WR**	**95% w/ WR**	**5%**
Sugar Creek	16.1	16.1	142.9
EFSFSR US Sugar Creek (Tunnel Inlet)	23.1	18.1	255.5
EFSFSR DS Sugar Creek (Point of Quantification)	39.1	34.1	398.4
Juvenile Salmonids – Downstream Passage			
Gage/Site Location	**95% w/out WR**	**95% w/ WR**	**5%**
Sugar Creek	5.7	5.7	83.6
EFSFSR US Sugar Creek (Tunnel Inlet)	8.6	5.8	142.7
EFSFSR DS Sugar Creek (Point of Quantification)	14.3	11.5	226.3

[1] WR = Water Rights; EFSFSR = East Fork of the South Fork of the Salmon River; US = Upstream; DS = Downstream

[2] No reductions were made to the 5% exceedance flows based on water rights conditions since these flows represent high flow conditions and not removing discharge is conservative.

Table 6. Summary of Existing and Proposed 95% and 5% Daily Average Exceedance Discharge Values Based on 1997-2022 Data (Proposed with Water Rights Conditions Applied) at the Proposed Tunnel Entrance Downstream to the Confluence with Sugar Creek (cfs).

Fish Passage Daily Average Exceedance Discharge (cfs)			
Species/Life Stage	**Existing 95%**	**Proposed 95% w/ WR[1]**	**5%**
Chinook – Adult Upstream Passage	9.9	6.6	57.4
Steelhead – Adult Upstream Passage	9.8	6.4	244.7
Bull Trout – Adult Upstream Passage	9.9	6.6	41.5
Westslope Cutthroat Trout – Adult Upstream Passage	22.7	18.1	255.5
Juvenile Salmonids - Downstream Passage	8.5	5.8	142.7

[1] WR = Water Rights

Conclusions

Using methodologies developed during previous analyses, fish periodicity exceedance discharge values were estimated for the 95% and 5% exceedances for USGS gage sites near the Project area. The 95% exceedance values were then modified to represent proposed mine plan and associated water diversion configurations and drainage area changes, along with the implementation of a proposed water rights condition at low flow, wherein Project water withdrawals cannot exceed more than 20% of the total flow on the EFSFSR immediately downstream of Sugar Creek at flows less than 25 cfs (withdrawals assumed to be 5 cfs at flows greater than 25 cfs). Discharge values for the proposed tunnel inlet without water rights shown in Table 5 are slightly greater than those estimated for the existing USGS gage on the EFSFSR upstream of Sugar Creek (Table 4) due to proposed changes in drainage area at the proposed tunnel inlet that include the majority of drainage from Hennessy Creek; in existing conditions this flow is routed into the EFSFSR below Sugar Creek and downstream of this gage location. Flow exceedance values listed in Table 6 should be utilized to analyze fish passage within and downstream of the EFSFSR tunnel to the confluence with Sugar Creek for proposed mine configuration and proposed water rights withdrawals.

References

BioAnalysts (BioAnalysts, Inc.). 2023. Update-YPP Interrogation Site and Key Migration Periods. Prepared for Perpetua Resources Idaho, Inc. March 2023.

Midas Gold (Midas Gold Idaho, Inc.). 2016. Plan of Restoration and Operations: Stibnite Gold Project. Valley County, Idaho.

NMFS (National Marine Fisheries Service). 2023. NOAA Fisheries West Coast Region Anadromous Salmonid Passage Design Manual, NMFS, WCR, Portland, Oregon.

Perpetua (Perpetua Resources Idaho, Inc.). 2022. Request for Technical Assistance Review. Prepared for Idaho Governor's Office of Energy and Mineral Resources.

Rio ASE. 2021. Surface Water Hydrology Report for the Stibnite Gold Project. Prepared for Perpetua Resources Idaho, Inc. September 2021.

Attachment C:

Stibnite Gold Project Fish Passage Evaluation

Technical Memorandum

Applied Science & Engineering

3380 Americana Terrace, Ste 390, Boise, Idaho 83706

To:	Gene Bosley, Perpetua Resources Idaho, Inc.
From:	Joe Young and Jeff Fealko, Rio ASE
Date:	3/21/2023
Project:	023-090-001-16
Subject:	Stibnite Gold Project Fish Passage Evaluation

Background

Rio Applied Science and Engineering (Rio ASE) has prepared this technical memorandum (TM) for Perpetua Resources Idaho, Inc. (Perpetua) to include hydraulic model development, results, and the evaluation of fish passage at low and high flows on the East Fork of the South Fork Salmon River (EFSFSR) from the proposed tunnel outlet to the confluence with Sugar Creek (reach of interest). The proposed EFSFSR tunnel used to bypass Yellow Pine pit is required to support proposed Stibnite Gold Project (SGP) mine operations described in the Stibnite Gold Project Plan of Restoration and Operations (Midas Gold, 2016) and subsequent plan revisions. The outlet of the proposed tunnel daylights approximately 1,700 feet upstream of the confluence with Sugar Creek in the vicinity of the Northwest Bradley Dumps. There are no documented existing barriers within the project reach and therefore volitional passage is assumed (National Marine Fisheries Service [NMFS], 2017; Nelson, 2009).

The fish passage evaluation compares hydraulic conditions (depth and velocity) in the EFSFSR against fish passage guidelines using estimated low flows based on historical stream flow data with and without adjustments for Perpetua's proposed direct water withdrawals and the effects of pit dewatering. The proposed water withdrawals and a proposed water rights condition to mitigate their effects on fish passage are summarized in a memo prepared by Perpetua to the Idaho Governor's Office of Energy and Mineral Resources (Perpetua, 2022). Rio ASE developed a report summarizing fish passage exceedance discharges (or flows) by incorporating the most recently available stream gage records (through September 2022) in the vicinity of the inlet to the proposed EFSFSR tunnel and from the tunnel outlet to the confluence with Sugar Creek (Rio ASE, 2023). This updated hydrologic analysis incorporates Perpetua's proposed water withdrawals and water right restrictions.

This fish passage evaluation summarizes passage criteria for various fish species of interest and determines the linear extent of river that meets and does not meet fish passage criteria under low flow (95% exceedance) conditions (existing conditions), low flow conditions with proposed water withdrawals and water right restrictions (proposed conditions), and high flow (5% exceedance) conditions (existing and proposed are the same).

Data Used

Rio ASE used the following data and information to develop the existing conditions one-dimensional (1D) hydraulic model using the U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center's River Analysis System (HEC-RAS), version 6.3.1.

Topography and Bathymetry

Topographic information used to create the HEC-RAS existing ground surface (terrain) includes the following sources:

- 2009 Light Detection and Ranging (LiDAR) data collected and supplied by Perpetua. Rio ASE utilized multiple *.las files to create a composite existing conditions surface using AutoCAD Civil 3D, version 2021. A vertical adjustment of -1.1 feet was applied to the 2009 LiDAR surface to achieve a better match with numerous control points established by Rio ASE and Russell Surveying in September 2021 in the immediate vicinity of the reach of interest.
- Topographic and bathymetric survey data collected by Rio ASE in September 2021 and September 2022. The coordinate system is referenced to the North American Datum 1983 (NAD83), Idaho State Plane, West Zone coordinate system in units of U.S. survey feet. The vertical datum is referenced to the North American Vertical Datum 1988 (NAVD88) in units of US survey feet.

Surveyed cross sections were spaced a maximum of 1.5 channel widths apart. Most cross sections were more tightly spaced to capture hydraulic controls such as riffle crests, step-pool crests, or constrictions caused by boulders, and the deepest location within pool features, where possible. The average distance between surveyed cross sections in the reach of interest is 7.5 feet. The survey data was used to create a surface representing the channel which was pasted over the 2009 LiDAR surface to create a composite existing conditions surface using AutoCAD Civil 3D version 2022. To create the channel surface, breaklines were created from the surveyed cross sections' points. Additional breaklines were developed from edge of water, toe of slope, thalweg, and other channel points and features to develop the surface. Any remaining points not used to create breaklines were used to fill in the surface. The outer boundary of the channel surface is draped to the LiDAR to create a smooth transition.

Aerial Imagery

Aerial imagery along the EFSFSR was obtained from a drone flight conducted by Rio ASE in September 2021. Outside of the EFSFSR corridor, aerial imagery is sourced from the AutoCAD Civil 3D online map imagery database, of which Google and Bing Maps are data suppliers. The imagery was used to inform the design as follows:

- Define current land use and vegetation type and condition.
- Provide spatial reference to nearby features/landmarks during model development.

Hydrology and Fish Periodicity

The proposed water rights condition would require that at the proposed Point of Quantification (on the EFSFSR immediately downstream of the confluence with Sugar Creek), the maximum diversion rate cannot exceed 20% of the total flow of the EFSFSR below Sugar Creek when flow is less than 25 cubic feet per second (Perpetua, 2022). Hydrologic inputs (inflows) to the hydraulic model utilize species-specific 95% and 5% daily average exceedance discharges (based on fish periodicity and U.S. Geologic Survey [USGS] streamflow gage data from 1997 to 2022), which were then adjusted to account for SGP-related water withdrawals under the proposed water rights restriction. Calculation of fish passage flows is documented in the SGP Updated Fish Passage Flows Technical Memorandum developed by Rio ASE (2022). Table 1 includes fish periodicity information taken from a memo prepared by BioAnalysts (2023) and estimated species-specific 95% and 5% daily average exceedance discharges for existing and proposed conditions. While the SGP is predicted to slightly reduce high flows under certain circumstances, the 5% exceedance discharges that represent higher flows for fish passage were not

altered adding conservativism (i.e., higher calculated velocity) to the passage evaluation at high flows (Rio ASE, 2023).

Table 1. Fish Periodicity and Estimated 95% and 5% Exceedance Daily Discharge Values for 1997-2022 with and without the proposed Water Right Condition Applied

Fish Species and Periodicity of Use in the EFSFSR in the Vicinity of Yellow Pine Pit (BioAnalysts, 2022)				Fish Passage Daily Average Exceedance Discharge (cfs) (Rio ASE, 2023)		
Species	**Life Stage**	**Periodicity**	**Passage Type**	**Existing Conditions 95% Exceedance**	**Proposed Conditions 95% Exceedance**	**Existing and Proposed Conditions 5% Exceedance**
Chinook Salmon	Adult	June 30 to Sept. 30	Upstream	9.9	6.6	57.4
Steelhead	Adult	April 1 to May 31	Upstream	9.8	6.4	244.7
Bull Trout	Adult	July 8 to Sept. 30	Upstream	9.9	6.6	41.5
Westslope Cutthroat	Adult	April 15 to June 30	Upstream	22.7	18.1	255.5
Salmonids	Juvenile	Year-round	Downstream	8.5	5.8	142.7

This passage evaluation does not consider bankfull flow (and higher peak flows) and therefore bankfull results are not discussed or included in this memo. However, hydrology for the bankfull flow (assumed to be equal to the 1.5-year flow event) is included in the hydraulic model in case the model is used to evaluate higher flows to support the design of future projects associated with the SGP. Existing bankfull flows on the EFSFSR and Sugar Creek are 229 cfs and 143 cfs, respectively, as reported in the Surface Water Hydrology Report for the Stibnite Gold Project (Rio ASE, 2021) The value for the proposed bankfull flow on the EFSFSR in this area increase to 236 cfs to include the discharge from Hennessy Creek that will be rerouted to flow back into the EFSFSR upstream of its confluence with Sugar Creek, as it did prior to historical mine activities at the site.

Fish Passage Criteria

Fish passage is typically evaluated at 5% (high flow) and 95% (low flow) exceedance flows. Passage is typically inhibited or prohibited at high flow because maximum swim velocity is exceeded and at low flow because flow depth is too low. For this evaluation, only depth was evaluated at the species-specific 95% exceedance flows, as velocity was low throughout the reach of interest and not a constraint on passage at low flow. Depth and velocity were both evaluated at the species-specific 5% exceedance flows even though discharges at existing and proposed conditions are equal and therefore it is assumed there will be no SGP-induced impacts to fish passage. The 5% exceedance flow analysis results will show the range of depths and velocities fish may encounter while passing at high flows. Velocity at the species-specific 95% exceedance flows were not evaluated because velocity decreases as flow decreases, and since passage for all fish species is assumed to occur at the larger 5% exceedance flow, velocity would not be a limiting factor at the lower 95% exceedance flows.

Minimum depth requirements criteria for all fish species of interest were selected based on passage studies from the California Department of Fish and Wildlife (CDFW) and requirements and guidelines from NMFS. Table 2 summarizes depth criteria used to evaluate passage at the species specific 95% exceedance flows. Under certain conditions, NMFS requires that the minimum depth be maintained for a minimum of 10% of the wetted width. This condition is a requirement at picket trap locations, but professionals in the field have often been directed to

maintain minimum passage depths for that 10% of the wetted width in non-trap situations (NMFS, 2022; D. Nelson, personal communication, November 1, 2022).

Table 2. Fish Passage Criteria at Species-Specific 95% Exceedance Flows

Species	Life Stage	Passage Direction	Minimum Depth (ft[1])
Chinook Salmon	Adult	Upstream	0.9 [2]
Steelhead	Adult	Upstream	0.7 [2]
Bull Trout	Adult	Upstream	0.7 [2]
Westslope Cutthroat Trout	Adult	Upstream	0.4 [2]
Salmonids	Juvenile	Downstream	0.3 [2]

[1] *"ft" = feet*
[2] *CDFW, 2017*

Salmonid swim speeds vary based on effort, but are typically classified in three different categories: cruising, sustained, and burst. Cruising is a swim speed that can be maintained for long periods of time (hours), sustained is associated with swim speeds that can be sustained for minutes, and burst speed is associated with swim speeds that are associated with short, quick movements lasting seconds (Bell, 1991). General migration can be associated with cruising speeds; as passage becomes more difficult, sustained swim speeds are utilized and short, difficult passage zones can likely require burst swim speeds. Typical swim speeds including cruising, sustained, and burst speed for each species of interest are summarized in Table 3. These swim speeds were utilized for comparison to modeled existing and proposed 5% exceedance flow conditions.

Table 3. Summary of Maximum Swim Velocities (ft/sec)

Species	NMFS Nature-Like Fishway Max Velocity[1]	Cruising Swim Speed[2]	Sustained Swim Speed[2]	Burst Swim Speed[2]
Chinook Salmon – Adult	5	<4.0	<11.0	<22.0
Steelhead – Adult	5	<5.5	<15.0	<26.0
Bull Trout – Adult	5	<2.5	<2.5	<6.6
Westslope Cutthroat Trout – Adult	5	<2.0[3]	<6.4[3]	<13.5[3]

[1] *NMFS, 2022. These values are for constructed man-made channels and represent conservative values to ensure passage of all species.*
[2] *McMillen Jacobs, 2018*
[3] *Bell, 1991*

For fish passage analysis, velocities should be less than sustained swim velocities for long uniform sections and should be less than burst swim speeds over short distances (Katopodis, 1992). Boulders or other structures in the channel can be used by fish for resting areas in natural or nature-like channel design where passage would then only be considered between resting areas (Natural Resources Conservation Service [NRCS], 2007).

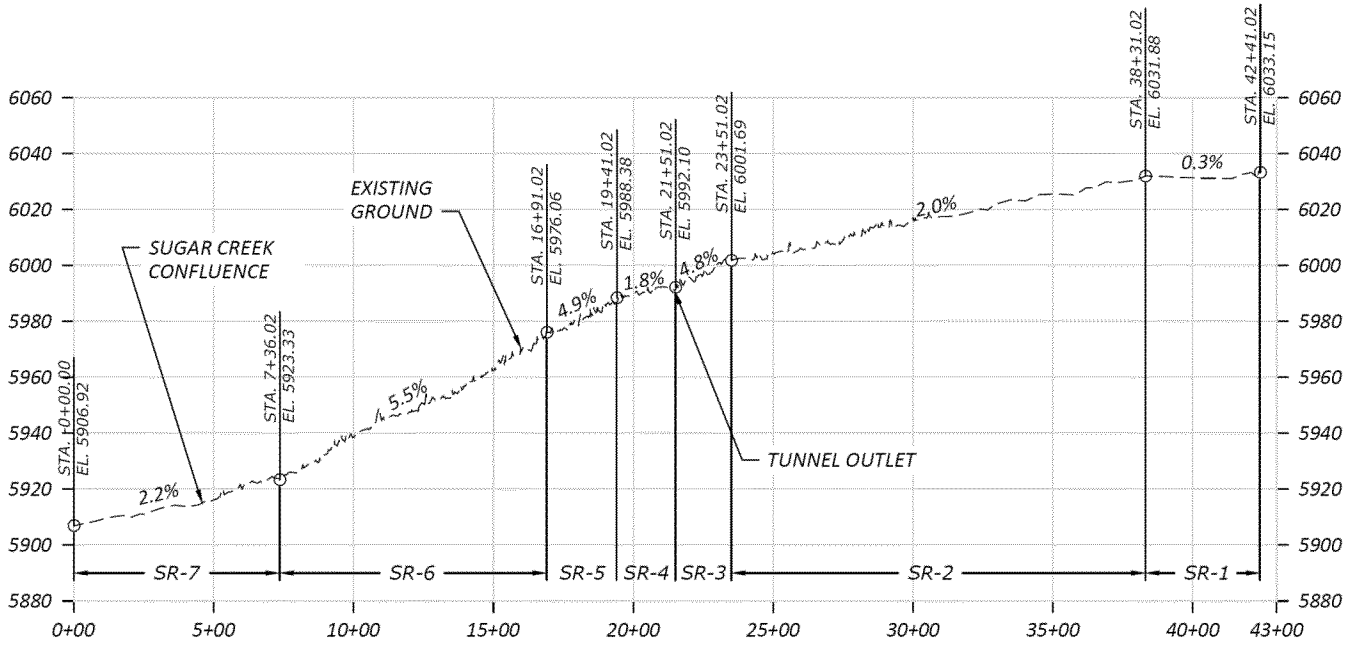
Hydraulic Model Development

Development of any HEC-RAS 1D model requires a reach centerline, topographic cross section information, designation of hydraulic roughness (Manning's n values), and designation of boundary conditions specifying the inflow(s) hydrology and conditions for inflow(s) and outflows(s). Each of these major components of the hydraulic model are discussed in greater detail in subsequent sections.

River Reach

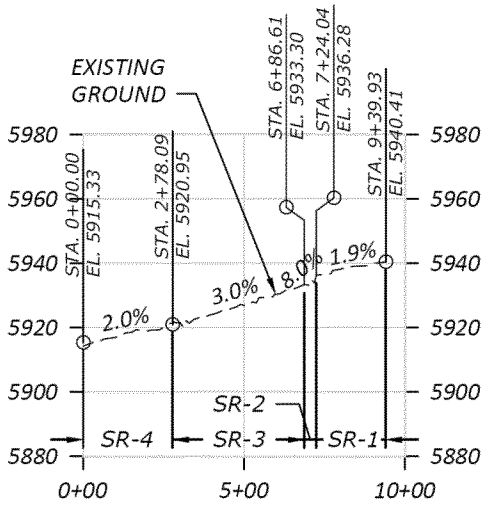
The hydraulic model begins at the outlet of the Yellow Pine Pit Lake, immediately above an existing weir structure composed of rock and concrete, approximately 2,100 feet upstream of the reach of interest (proposed tunnel outlet to the confluence with Sugar Creek). The reach of interest is approximately 1,700 feet in length (station 5+00 to 22+00). The model ends approximately 500 feet downstream of the Sugar Creek confluence for a total length on the EFSFSR of 4,300 feet. A portion of Sugar Creek (approximately 940 feet) is included in the hydraulic model, with the upstream extent beginning at the downstream side of the Stibnite Road bridge crossing. Attachment A includes a series of maps showing the full model extent, including model cross section locations. Figure 1 and Figure 2 show the channel profiles within the hydraulic model extents. Subreaches were delineated based on channel slope ranging from 0.3% in the upstream-most subreach to 5.5% in the steepest subreach. The outlet of the proposed tunnel is located at the upstream extent of Subreach 4.

The EFSFSR portion of the hydraulic model upstream of the reach of interest, along with the Sugar Creek reach, are not necessary for this passage evaluation and therefore associated model results are not discussed or included in this memo. These portions are included in the model only in case the model is used for future analyses or to support the design of future projects associated with the SGP.



Notes:
1. "SR" = Subreach.
2. Station and elevation callouts represent reach break locations.

Figure 1. Channel Slopes and Delineated Subreaches on the EFSFSR in the Hydraulic Model.



Notes:
1. "SR" = Subreach.
2. Station and elevation callouts represent reach break locations.

Figure 2. Channel Slopes and Delineated Subreaches on Sugar Creek in the Hydraulic Model.

Cross Sections

Rio ASE created a composite existing conditions surface using AutoCAD Civil 3D version 2022 by supplementing the surveyed topographic and bathymetric survey data with the 2009 LiDAR. Topographic information was then extracted from the surface at each surveyed cross section (exported from AutoCAD Civil 3D in the form of a *.geo file extension) and imported into HEC-RAS. The existing conditions surface was also exported from AutoCAD Civil 3D as a 1-foot by 1-foot gridded raster (*.geotiff) which was used to create a HEC-RAS terrain model. Surveyed cross sections were spaced a maximum of 1.5 channel widths apart. Most cross sections were more tightly spaced to capture hydraulic controls such as riffle crests, step-pool crests, or constrictions caused by boulders, and the deepest location within pool features, where possible. The average distance between surveyed cross sections in the reach of interest is 7.5 feet. Interpolated cross sections were added to the model between surveyed sections at 5-ft spacing to increase the resolution of the model. The cross section topography information for many interpolated cross sections did not represent existing ground conditions very well because of meander bends or presence of hydraulic controls (such as boulders) at surveyed sections. Therefore, the topography for all interpolated cross sections was extracted/resampled from the existing conditions terrain within HEC-RAS for improved accuracy. Locations of surveyed and interpolated cross sections are shown in Attachment A.

Hydraulic Roughness and Model Calibration

The hydraulic model was calibrated to the water surface elevation (WSE) surveyed during the bathymetric surveys on September 7, 2022, and September 14, 2021 (summer/fall baseflow/low flow). The EFSFSR reach of interest was calibrated to the flows from September 7, 2022, and the EFSFSR upstream of the reach of interest (Subreach 1) and downstream of Sugar Creek (lower portion of Subreach 7) were calibrated to the flows from September 14, 2021. Discharges during these time periods are shown in Table 4 and are based on analysis of USGS gages 13311250 – EFSFSR Above Sugar Creek near Stibnite, ID and 13311450 – Sugar Creek near Stibnite, ID. The flow for the EFSFSR downstream of Sugar Creek was developed by summing the two upstream discharges.

Table 4. Hydraulic Model Calibration Flows

Location	Flow on September 7, 2022 (cfs)	Flow on September 14, 2021 (cfs)
EFSFSR Downstream of Yellow Pine Pit	10.5	9.8
Sugar Creek	11.3	7.5
EFSFSR Downstream of Sugar Creek	21.8	17.3

To begin the calibration process, hydraulic roughness (Manning's n) values for the channel used in the model were assigned to cross sections within each of the subreaches using the "low flow" regression equation shown in Figure 3 and using the subreach average slopes. The regression equations in Figure 3 were created by developing a stage-discharge relationship at five nearby USGS streamflow gages which was then used to correlate existing roughness values at low and high flow (bankfull flow) relative to channel slope. The results of the modeled water surface elevations were compared to the surveyed water surface elevations to determine whether the model was over- or under-predicting water surface elevations. The reach roughness values were then adjusted to correct the modeled water surface elevations to better approximate the surveyed water surface elevations. This iterative process was repeated until the average errors were within 0.02 ft for the 2021 calibration and 0.01 ft for the 2022 calibration. The more stringent calibration average error of 0.01 ft was targeted for the reach of interest because it is of higher importance for this analysis.

Manning's n values for select cross sections within the uppermost portion of Subreach 1 were modified to account for localized changes in slope at the existing weir structure and extending downstream approximately 100 feet. Channel Manning's n values for the calibration flows used in the model are summarized in Table 5 and Table 6. Overbank Manning's n values are summarized in Table 7 and are applied to all model simulations regardless of the flow because overbank flow is only expected to occur at two of the species-specific 5% exceedance flows. Overbank Manning's n values (Table 7) were spatially assigned using high-resolution aerial imagery as reference and estimated using the Arcement and Schneider (1989) method, which uses a base floodplain value determined by the bare floodplain surface, and adds adjustment factors based on surface irregularities, floodplain cross section, obstructions, vegetation, and sinuosity. Calibration results within the reach of interest (at the low flow WSE observed at the time of the ground survey) are shown in Table 8.

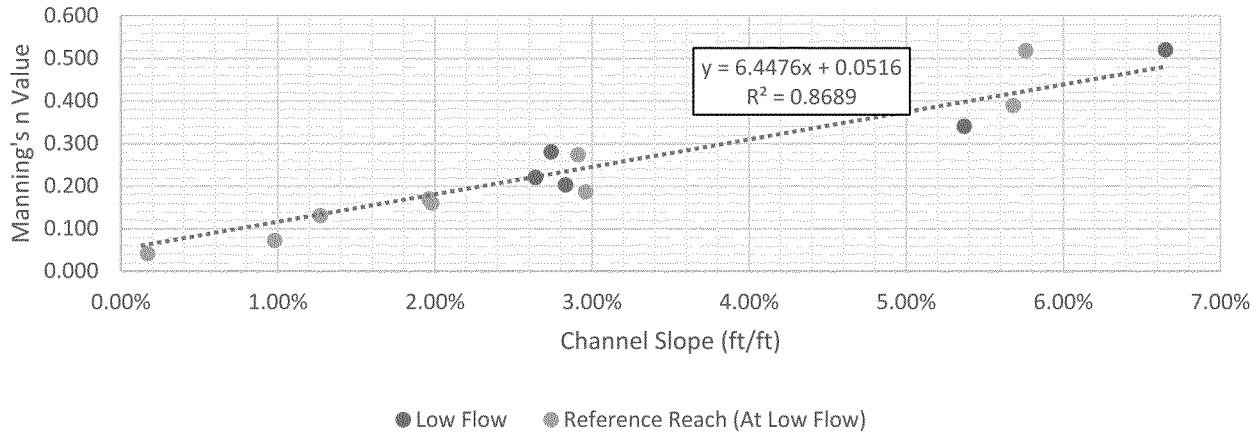


Figure 3. Channel Manning's n Value Estimation for the Reach of Interest Based on Channel Slope at Low Flow.

Note: Reference reach data are plotted for comparison purposes only, since they were not computed specifically at the 95% exceedance daily flow as were the USGS gaging sites. These values were not used in the development of the trendline and regression equation for estimating low flow channel roughness.

Table 5. Hydraulic Model Channel Manning's n Values for the EFSFSR at Calibration Flow

Description	Manning's n Value							
	SR1 (0.3%)	SR2 (2.0%)	SR3 (4.8%)	SR4 (1.8%)	SR5 (4.9%)	SR6 (5.5%)	SR7 US of Sugar (2.2%)	SR7 DS of Sugar (2.2%)
Channel at the Calibration Flow (low flow)	0.113	0.148	0.322	0.134	0.226	0.225	0.197	0.248

Table 6. Hydraulic Model Channel Manning's n Values for Sugar Creek at Calibration Flow

Description	Manning's n Value for Sugar Creek			
	SR1 (1.9%)	SR2 (8.0%)	SR3 (3.0%)	SR4 (2.0%)
Channel at the Calibration Flow (low flow)	0.183	0.486	0.200	0.129

Table 7. Hydraulic Model Overbank Manning's n Values (all flows)

Overbank Character	Manning's n Value
No Vegetation	0.04
Light Vegetation	0.06
Moderate Vegetation	0.09
Heavy Vegetation	0.11
Boulders with Limited Vegetation	0.10

Table 8. Hydraulic Model Calibration Summary

Description	WSE Difference Between Modeled and Observed WSE at Time of Survey in the Reach of Interest (feet)
Minimum	-0.77
Average of Absolute Values	0.21
Maximum	+0.91

Once the model was calibrated, the flows identified in Table 1 were simulated in the hydraulic model. Manning's n values for these modeled flows were developed by adjusting the Manning's n values by a dimensionless ratio of discharge/(bankfull discharge) correlated to (Manning's n)/(bankfull discharge Manning's n) as shown in Figure 4. This relationship was based on the five nearby USGS gaging stations in the EFSFSR basin.

The final adjusted Manning's n values for the existing and proposed species-specific 95%, 5% exceedance, and bankfull flows by subreach are presented in Table 9 and Table 10. The bankfull Manning's n values are provided

in case the model is used to evaluate peak flows to support the design of future projects associated with the SGP (flows equal to and greater than the 1.5-year flow would use the bankfull Manning's n values).

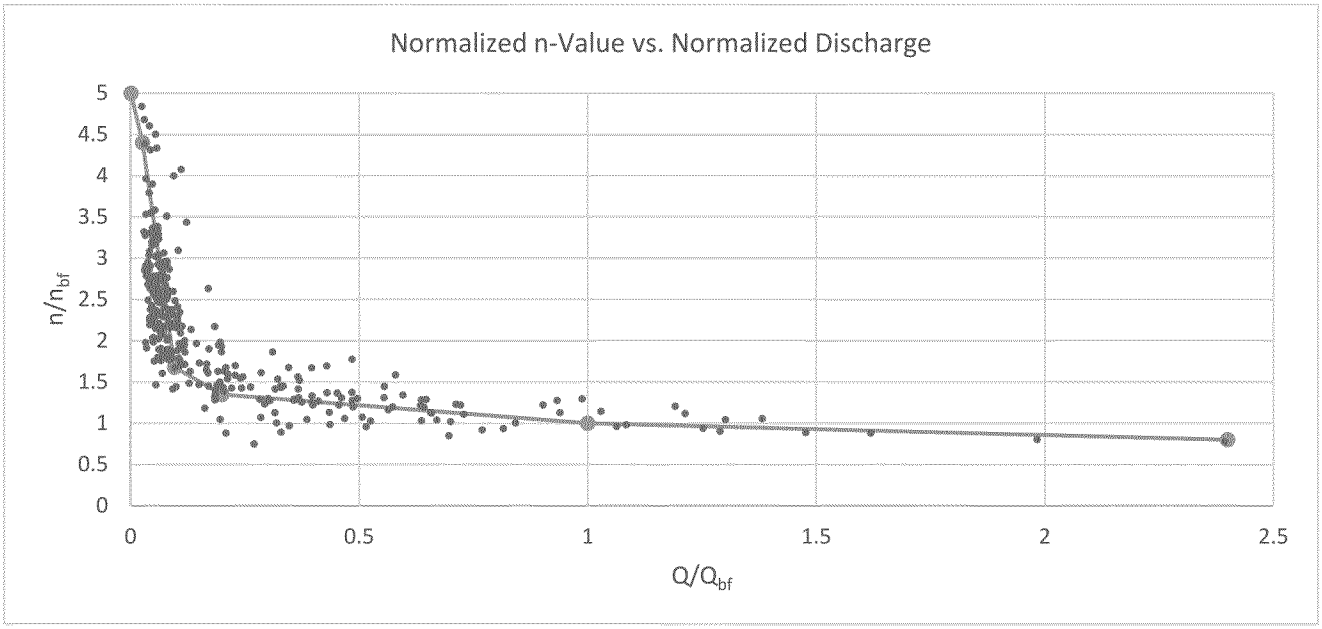


Figure 4. $Q/Q_{bankfull}$ vs Manning's n/Manning's $n_{bankfull}$ Based on USGS Stream Gaging Stations Within the EFSFSR Near the Project Site.

Table 9: Hydraulic Model Roughness Values (Manning's n) by Subreach and Flow for the EFSFSR

Manning's n Values																
	Existing Conditions at 95% Exceedance Discharge					Proposed Conditions at 95% Exceedance Discharge					Existing Conditions and Proposed Conditions at 5% Exceedance Discharge					Bankfull (1.5-year) Discharge
	Adult Chinook Salmon	Adult Steelhead	Adult Bull Trout	Adult Westslope Cutthroat	Juvenile Salmonids	Adult Chinook Salmon	Adult Steelhead	Adult Bull Trout	Adult Westslope Cutthroat	Juvenile Salmonids	Adult Chinook Salmon	Adult Steelhead	Adult Bull Trout	Adult Westslope Cutthroat	Juvenile Salmonids	
Discharge Above Sugar Creek (cfs)	**9.9**	**9.8**	**9.9**	**22.7**	**8.5**	**6.6**	**6.4**	**6.6**	**18.1**	**5.8**	**57.4**	**245**	**41.5**	**256**	**143**	**229-236**
Subreach 1	0.112	0.113	0.112	0.050	0.119	0.129	0.130	0.129	0.072	0.132	0.039	0.029	0.042	0.029	0.035	0.030
Subreach 2	0.151	0.152	0.151	0.067	0.160	0.173	0.175	0.173	0.097	0.177	0.053	0.040	0.057	0.039	0.047	0.040
Subreach 3	0.330	0.331	0.330	0.146	0.350	0.379	0.381	0.378	0.212	0.387	0.116	0.087	0.124	0.086	0.102	0.087
Subreach 4	0.138	0.138	0.138	0.061	0.146	0.158	0.159	0.158	0.089	0.162	0.048	0.036	0.052	0.036	0.043	0.036
Subreach 5	0.231	0.232	0.231	0.102	0.245	0.265	0.267	0.265	0.148	0.271	0.081	0.061	0.087	0.060	0.071	0.061
Subreach 6	0.230	0.231	0.230	0.102	0.244	0.264	0.266	0.264	0.148	0.270	0.081	0.060	0.087	0.060	0.071	0.061
Subreach 7	0.202	0.203	0.202	0.090	0.215	0.232	0.234	0.232	0.130	0.237	0.071	0.053	0.076	0.053	0.063	0.053
Discharge Below Sugar Creek (cfs)	**17.4**	**17.9**	**17.4**	**38.8**	**14.2**	**14.0**	**14.4**	**14.0**	**34.1**	**11.5**	**97.9**	**383**	**70.9**	**398**	**226**	**372-379**
Subreach 7	0.216	0.213	0.216	0.099	0.236	0.237	0.234	0.237	0.113	0.253	0.079	0.059	0.083	0.059	0.070	0.059

Table 10: Hydraulic Model Roughness Values (Manning's n) by Subreach and Flow for Sugar Creek

Manning's n Values																
	Existing Conditions at 95% Exceedance Discharge					Proposed Conditions at 95% Exceedance Discharge					Existing Conditions and Proposed Conditions at 5% Exceedance Discharge					Bankfull (1.5-year) Discharge
	Adult Chinook Salmon	Adult Steelhead	Adult Bull Trout	Adult Westslope Cutthroat	Juvenile Salmonids	Adult Chinook Salmon	Adult Steelhead	Adult Bull Trout	Adult Westslope Cutthroat	Juvenile Salmonids	Adult Chinook Salmon	Adult Steelhead	Adult Bull Trout	Adult Westslope Cutthroat	Juvenile Salmonids	
Discharge (cfs)	**7.5**	**8.1**	**7.4**	**16.1**	**5.7**	**7.5**	**8.1**	**7.4**	**16.1**	**5.7**	**40.5**	**138**	**29.3**	**143**	**83.6**	**143**
Subreach 1	0.183	0.175	0.184	0.088	0.210	0.183	0.175	0.184	0.088	0.210	0.071	0.055	0.073	0.054	0.064	0.054
Subreach 2	0.488	0.464	0.488	0.234	0.557	0.488	0.464	0.488	0.234	0.557	0.188	0.146	0.193	0.144	0.170	0.143
Subreach 3	0.201	0.191	0.201	0.096	0.229	0.201	0.191	0.201	0.096	0.229	0.078	0.060	0.080	0.059	0.070	0.059
Subreach 4	0.130	0.124	0.131	0.063	0.149	0.130	0.124	0.131	0.063	0.149	0.050	0.039	0.052	0.038	0.045	0.038

Boundary Conditions

Model boundary conditions consist of steady-state inflows at the upstream extents of the EFSFSR and Sugar Creek, with upstream and downstream boundary conditions set to normal depth. The model was run using a "mixed" flow regime (combination of subcritical and supercritical flow). Contraction and expansion coefficients for all cross sections were set to 0.1 and 0.3, respectively. Contraction and expansion coefficients were not altered for cross sections immediately upstream of the Stibnite Road bridge (on the EFSFSR) because flows of interest (all less than bankfull) do not interact with the bridge structure and there is not a substantial change in flow area between upstream and bridge cross sections.

Hydraulic Model Results and Conclusions

Hydraulic model results in the form of water surface profiles, cross sections, depth and velocity profiles, and output tables (maximum depth, average depth, average velocity, water surface elevation, etc.) are included for the reach of interest in Attachment B (output tables and cross sections plots exclude interpolated sections). The reach of interest within the hydraulic model is limited to the EFSFSR from the proposed tunnel outlet downstream to the confluence with Sugar Creek. Passage criteria were only evaluated at surveyed cross sections to remove potential issues with how cross section topography can be interpolated, which could result in erroneous results at interpolated sections.

FISH PASSAGE ANALYSIS

95% Exceedance Flows

Average maximum depth on a reach basis (average maximum depth of all surveyed cross sections within the reach of interest) is shown in Table 11 for the species-specific 95% exceedance flows for existing and proposed conditions. Table 11 also includes the average percent of the channel width meeting the minimum depth criteria.

Table 11. Hydraulic Model Results Comparison to Fish Passage Criteria per Species within the Reach of Interest at the 95% Exceedance Flows

Species and Life Stage	Minimum Depth Passage Criteria (ft)[1]	Existing Conditions at 95% Exceedance Flows		Proposed Conditions at 95% Exceedance Flows	
		Average Maximum Depth (ft)[2]	Average Percentage of Channel Width Meeting Minimum Depth[3]	Average Maximum Depth (ft)[2]	Average Percentage of Channel Width Meeting Minimum Depth[3]
Adult Chinook Salmon	0.9	1.3	32%	1.2	26%
Adult Steelhead	0.7	1.3	47%	1.2	40%
Adult Bull Trout	0.7	1.3	47%	1.2	40%
Adult Westslope Cutthroat Trout	0.4	1.4	73%	1.4	75%
Juvenile Salmonids	0.3	1.3	77%	1.1	72%

[1] *CDFW, 2017.*

[2] *Average maximum depth calculated by a weighted average of the maximum depth at all surveyed cross sections (excludes interpolated cross sections) weighted by the length of channel represented by each cross section.*

[3] *Percentage of channel width calculated by width of channel within depth criteria (measured from a depth raster output in GIS) divided by total wetted width of channel at each surveyed cross section (excludes interpolated cross sections) and weighted by the length of channel represented by each cross section.*

At the reach-scale (evaluating all cross sections within the reach of interest) average conditions show that the flow depth is greater than minimum depth criteria at all species-specific 95% exceedance flows for existing and proposed conditions. Also, average reach conditions indicate the channel width meeting minimum depth criteria for existing and proposed conditions is greater than 32% and 26%, respectively, meeting requirements of a minimum 10% of the wetted width, as historically required by NMFS. Average cross-sectional velocities throughout the whole reach for all species and flows range between 1.1 to 2.4 feet per second, which are below cruise swim speeds for all species.

Passage was also evaluated at each surveyed cross section within the reach of interest (excluding interpolated sections). For the purposes of this analysis, when the maximum flow depth at a surveyed cross section (or multiple sequential cross sections) in the hydraulic model is below the species-specific minimum depth criterion, the cross section is considered out of compliance with the depth criterion. Table 12 summarizes the number of cross sections (locations) that are out of compliance for both existing and proposed conditions. Table 12 shows that for steelhead and bull trout, locations out of depth compliance occur over relatively short distances (average length of 7 feet for each species with a range from 4 to 9 feet under existing conditions and range of 3 to 12 feet for proposed conditions). For Chinook salmon, locations out of depth compliance have a slightly larger average length of 8 feet and wider range of 3 to 30 feet. Spatially, most cross sections that are out of depth compliance are located within step-pool dominated subreaches at the step-pool drop/crest. The overall cumulative percentage of channel length that meets minimum flow depth requirements for both existing and proposed conditions is summarized in Table 13. Overall, the majority (greater than 85%) of the reach meets minimum depth requirements for all species of interest.

Table 12. Hydraulic Model Results of Locations Out of Compliance per Species within the Reach of Interest at 95% Exceedance Flows

Species and Life Stage	Minimum Depth Passage Criteria (ft)[1]	Existing Conditions at 95% Exceedance Discharge			Proposed Conditions at 95% Exceedance Discharge		
		Out of Compliance Locations	Average (Range) of Maximum Depth (ft)[2,3]	Average (Range) of Longitudinal Length (ft)[2,4]	Out of Compliance Locations	Average (Range) of Maximum Depth (ft)[2]	Average (Range) of Longitudinal Length (ft)[2,4]
Adult Chinook Salmon	0.9	20	0.7 (0.5-0.8)	8 (3-30)	26	0.7 (0.4-0.8)	9 (3-30)
Adult Steelhead	0.7	5	0.6 (0.5-0.6)	7 (4-9)	13	0.6 (0.4-0.6)	7 (3-12)
Adult Bull Trout	0.7	5	0.6 (0.5-0.6)	7 (4-9)	11	0.6 (0.4-0.6)	7 (4-12)
Adult Westslope Cutthroat Trout	0.4	0	N/A	N/A	0	N/A	N/A
Juvenile Salmonids	0.3	0	N/A	N/A	0	N/A	N/A

[1.] *CDFW, 2017.*

[2.] *Values represent the average and the range (minimum – maximum).*

[3.] *Average maximum depth calculated by averaging the maximum depth at all out of compliance cross sections.*

[4.] *Average length calculated by averaging the total distance (reach length) from the cross section that is out of compliance to half the distance to adjacent upstream and downstream surveyed cross sections at all out of compliance cross sections.*

Table 13. Hydraulic Model Results Showing Percentage of Reach Meeting Minimum Flow Depth Criteria (%) at 95% Exceedance Flows

Species and Life Stage	Reach Length (ft)	Existing Conditions Length Meeting Depth Criteria (%)	Proposed Conditions Length Meeting Depth Criteria (%)
Adult Chinook Salmon	1,709	91%	87%
Adult Steelhead	1,709	98%	95%
Adult Bull Trout	1,709	98%	96%
Adult Westslope Cutthroat Trout	1,709	100%	100%
Juvenile Salmonids	1,709	100%	100%

5% Exceedance Flows

Although there is no change in 5% exceedance flows (high flows) between existing and proposed conditions, results were compared to passage criteria and known swim speeds of each fish species of concern. Table 14 summarizes depths and velocities through the reach of interest for each fish species. The values reported in Table 14 are reach averages, which may be a more accurate proxy for passage, as opposed to evaluating individual cross sections, with the reach of interest having no known or acknowledged passage barriers to the fish species of concern.

Table 14. Hydraulic Model Results Comparison to Fish Specific Swim Speeds within the Reach of Interest at the 5% Exceedance Flows

Species and Life Stage	Minimum Depth Passage Criteria (ft)[1]	Swim Speeds			Existing and Proposed Conditions at 5% Exceedance	
		NMFS Nature-Like Fishway Max Velocity (ft/s)[2]	Sustained Swim Speed (ft/s)[3,4]	Burst Swim Speed (ft/s)[3,4]	Average Maximum Depth (ft)[5]	Average Cross-Sectional Velocity (ft/s)[6]
Adult Chinook Salmon	0.9	5	<11	<22	1.8	3.4
Adult Steelhead	0.7	5	<15	<26	2.9	6.0
Adult Bull Trout	0.7	5	<2.5	<6.6	1.6	3.0
Adult Westslope Cutthroat Trout	0.4	5	<6.4	<13.5	3.0	6.0

[1] *CDFW, 2017.*
[2] *NMFS, 2022.*
[3] *McMillen Jacobs, 2018.*
[4] *Bell, 1991.*
[5] *Average maximum depth calculated by using a length weighted average of the maximum depth at all surveyed cross sections (excludes interpolated cross sections) weighted by the channel length each cross section represents.*
[6] *Average cross-sectional velocity calculated by using a length weighted average of the cross-sectional velocity at all surveyed cross sections weighted by the channel length each cross section represents.*

At the reach-scale (evaluating all cross sections within the reach of interest), average conditions show that the average maximum flow depths are greater than minimum flow depth requirements at all species-specific 5%

exceedance flows for existing and proposed conditions and that average cross-sectional velocities are below species-specific sustained swim speed, with the exception of bull trout. Table 15 summarizes the reach length percentage that meets both minimum flow depth and the NMFS velocity, sustained swim speeds, and burst swim speeds in Table 14 at the 5% exceedance flows. As previously stated, burst speeds may be a more appropriate metric for evaluating passage than cruising or sustained speeds. At sustained swim speeds, there is no velocity issue associated with Chinook salmon and steelhead. Bull trout and westslope cutthroat can swim 42% and 58% of the channel length at sustained swim speeds, respectively. At the modeled conditions the velocity areas exceeding sustained swim speeds show up as disconnected short segments ranging in length from 3 to 94 feet for bull trout and 3 to 70 feet for cutthroat. The average velocity in these zones for bull trout is 3.9 ft/s with an average zone length of 17 feet. The average velocity in these zones for cutthroat is 7.6 ft/s with an average zone length of 14 feet. These average flow velocities are below the burst speed of both species. Comparing average flow velocity to burst speed 99 to 100% of the stream length has flow velocities below burst speed. Bull trout have 99%, where the 1% consists of three segments that range from 3 to 6 feet in length with velocities ranging from 8.5 to 9.4 ft/s. Where average flow velocities exceed burst speeds, it is expected that fish will utilize that portion of the cross section that falls below their maximum burst speed. Species-specific velocity profiles annotated with NMFS velocity criteria for fishways, sustained swim speeds, and burst speeds are provided in Appendix B and show the location and nature of the velocity variations.

Table 15. Hydraulic Model Results Showing Percentage of Reach Meeting Minimum Flow Depth and Various Velocity Criteria at the 5% Exceedance Flows

Species and Life Stage	Reach Length (ft)	Existing and Proposed Conditions at 5% Exceedance		
		Length Meeting Minimum Depth Criteria and Average Velocities Less than NMFS Velocity Criteria for Fishways	Length Meeting Minimum Depth Criteria and Average Velocities Less than Sustained Swim Speeds	Length Meeting Minimum Depth Criteria and Average Velocities Less than Burst Swim Speeds
Adult Chinook Salmon	1,709	91%	100%	100%
Adult Steelhead	1,709	38%	100%	100%
Adult Bull Trout	1,709	96%	42%	99%
Adult Westslope Cutthroat Trout	1,709	37%	58%	100%

FISH PASSAGE ANALYSIS LIMITATIONS

It is important to note that the cross sections predicted by the hydraulic model to be out of compliance with accepted depths and velocities could be a result of the inability to accurately represent the highly variable topography associated with large boulder bedforms that exist in the reach of interest through traditional bathymetric surveying techniques using RTK GPS rovers. Generalizations due to surveyed cross sections may eliminate narrow, deep passages between boulders and do not account for areas of ineffective flow or eddies located upstream and downstream of boulder formations. Cross section frequency could also impact depth at some sections. For example, to accurately model the presence of a single large boulder, cross sections are ideally needed upstream of any hydraulic influence, at the upstream face of the boulder, through the middle of the boulder, at the downstream face, and at a distance downstream of any hydraulic effects. This density of surveyed cross sections is difficult to achieve in the reach of interest because it is dominated by large boulders and step-

pools. Lastly, the terrain between surveyed cross sections is interpolated. Breaklines are used (as described above) to improve terrain accuracy; however, the results may not be representative of actual bathymetric conditions. Therefore, the topographic information for interpolated cross sections include varying degrees of error which may or may not result in skewed hydraulic results at adjacent surveyed cross sections. Literature states that these type of rough channel characteristics help aid fish in passage through them by providing resting areas between zones of higher velocity (NRCS, 2007).

ANALYSIS CONCLUSIONS

Conclusions are as follows:

- Due to limitations of ground survey and 1D hydraulic modeling, there will always exist some inherent error in the hydraulic model results. Natural channels are topographically and hydraulically complex and variable and therefore 1D hydraulic model results may not be accurately estimating hydraulic conditions at all locations.
- Hydrology at the 95% exceedance flows were updated for the proposed conditions, which include proposed water withdrawals required for proposed mine activities, as modified by proposed water rights restrictions.
- Hydrology at the 5% exceedance flows were assumed to be equal for both the existing and proposed conditions. This is conservative, given the proposed conditions would slightly reduce flows and therefore reduce flow velocities.
- Hydraulic model results for existing conditions at the 5% and 95% exceedance flows indicate that portions of the reach of interest do not meet depth and velocity passage criteria typically established for man-made hydraulic structures. Regardless of these hydraulic studies, no barriers have been historically identified within this reach by National Oceanic and Atmospheric Administration (NOAA) and the U.S. Forest Service (USFS) (NMFS, 2017; Nelson, 2009). Natural channels and the capabilities of fish are variable and complex.
- Reviewers and/or regulatory agencies should consider if the depth and velocity passage criteria typically established for man-made hydraulic structures are suitable in the reach of interest, which is topographically and hydraulically complex and variable.
- Despite numerous out of compliance locations estimated by the hydraulic model (cross sections not meeting depth criteria at low flow or exceeding velocity criteria at high flow), PIT tag array data suggests that all species of interest are able to successfully pass through the reach, travelling upstream to Yellow Pine pit during flows ranging from the 95% up to the 5% exceedance during the time periods reported in Table 1. This suggests the following:
    - Fish may be able to perform above the depth and velocity criteria used in this analysis.
    - Model errors may be occurring at some cross sections due to topographic inaccuracies/survey limitations, thereby resulting in inaccurate estimates of maximum depth and velocity.
    - Additional calibration/alternate method of calibration (selection of Manning's n roughness) may be needed for cross sections at step-pool drop/crest locations, which is where most non-compliant sections occur and where the largest difference between modeled and observed water surface elevations occur at the calibration flow.
    - Reach-scale results may be a more accurate proxy for evaluating passage potential. For example, model results for existing and proposed conditions at the 95% and 5% exceedance flows meet depth passage criteria and are well within the sustained swim speed for each species of interest, even though some individual cross section locations did not meet passage criteria.
- There is no change in hydrology between existing and proposed conditions at the species-specific 5% exceedance flows (higher flows); therefore, it is assumed there will be no impacts to fish passage at high

flow since flows and hydraulic conditions will be the same and no barriers have been historically identified within this reach.

- Comparisons of burst speeds to flow velocities at the 5% exceedance flows show that 99% to 100% of the reach length is passable for all salmonids as they move through these short segments experiencing high velocities.
- Reach-averaged maximum flow depth at all species-specific 95% exceedance flows meets or exceeds depth passage criteria for existing and proposed conditions. Reach averaged maximum flow depth and cross-sectional average velocity at all species-specific 5% exceedance flows meets or exceeds depth passage criteria and falls below sustained swimming speeds for existing and proposed conditions. In each case, non-compliant cross sections occur (for depth and/or velocity) over relatively short channel segment lengths for existing and proposed conditions. Based on these reach-scale trends, fish are expected to be able to ascend the reach of interest under both existing and proposed conditions at their respective 95% and 5% exceedance flows.

References

Arcement, G.J., Jr., & Schneider, V.R. 1989. Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains. United States Geological Survey Water-Supply Paper 2339.

Bell. 1991. Fisheries Handbook of Engineering Requirements and Biological Criteria. United States Army Corps of Engineers, 3rd edition, 1990.

BioAnalysts (BioAnalysts, Inc.). 2023. Update-YPP Interrogation Site and Key Migration Periods. Prepared for Perpetua Resources Idaho, Inc. February, 2023.

CDFW (California Department of Fish and Wildlife). 2017. Standard Operating Procedure for Critical Riffle Analysis for Fish Passage in California. CDFW-IFP-001. September, 2017.

Katopodis, C. 1992. Introduction to fish passage design. US Fish and Wildlife Service, National Conservation Training Center, Fish Passageways and Bypass Facilities-West.

McMillen Jacobs. 2018. Technical memo no. 5 15% design alternatives analysis – fish passage components of the EFSFSR tunnel. Prepared for Midas Gold May 24, 2018.

Midas Gold (Midas Gold Idaho, Inc.). 2016. Plan of Restoration and Operations: Stibnite Gold Project. Valley County, Idaho.

Nelson R. 2009. Biological Assessment for the Potential Effects of Managing the Payette National Forest in the South Fork Salmon River Section 7 Watershed on Snake River Spring/Summer Chinook Salmon, Snake River Steelhead, and Columbia River Bull Trout and Biological Evaluation for Westslope Cutthroat Trout, volume 31.

NMFS (National Marine Fisheries Service). 2017. ESA Recovery Plan for Idaho Snake River spring/summer Chinook Salmon and Snake River Basin Steelhead, Appendix C: Idaho Management Unit Chapter 6. National Marine Fisheries Service: https://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/final_idaho_mu_plan_chapter_6.pdf

NMFS. 2022. NOAA Fisheries West Coast Region Anadromous Salmonid Passage Design Manual, NMFS, WCR, Portland, Oregon.

NRCS (Natural Resources Conservation Service). 2007. Part 654 National engineering handbook Technical supplement 14N fish passage and screening design.

Perpetua (Perpetua Resources Idaho, Inc.). 2022. Request for Technical Assistance Review. Prepared for Idaho Governor's Office of Energy and Mineral Resources.

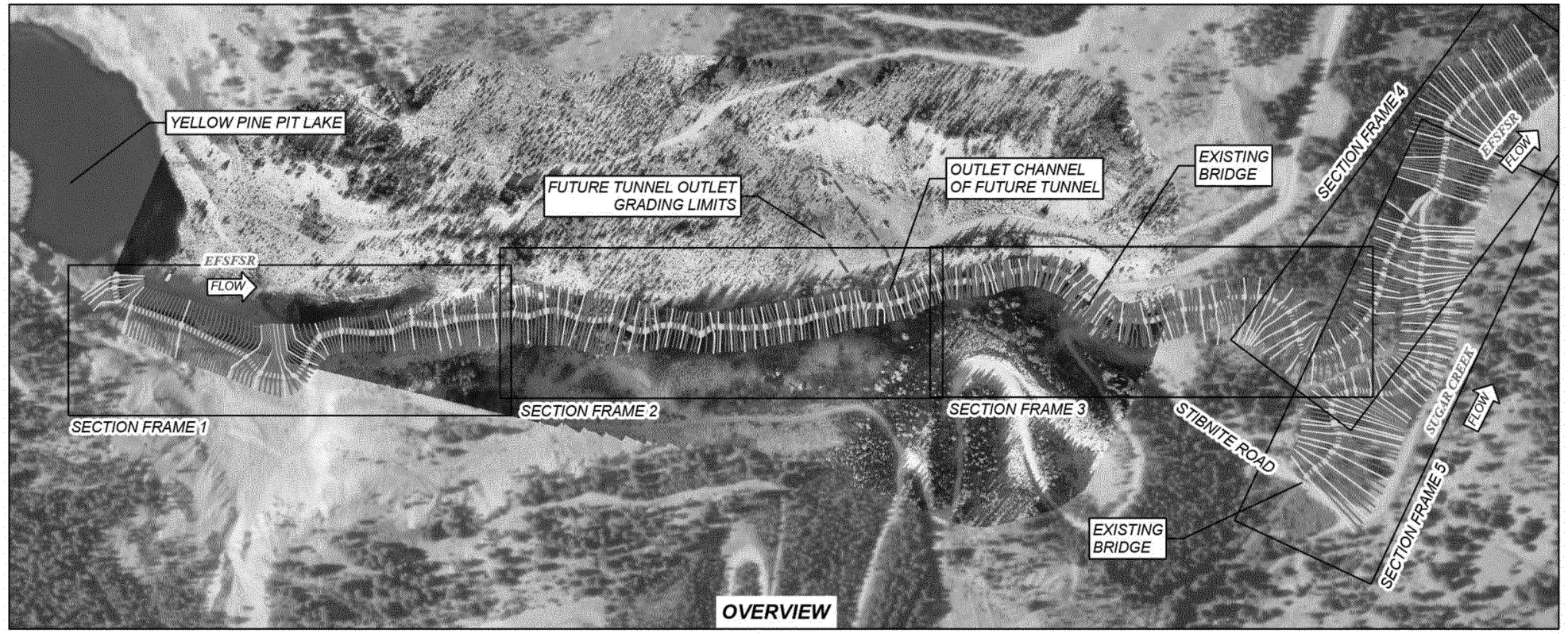
Rio ASE. 2021. Surface Water Hydrology Report for the Stibnite Gold Project. Prepared for Perpetua Resources Idaho, Inc. September 2021.

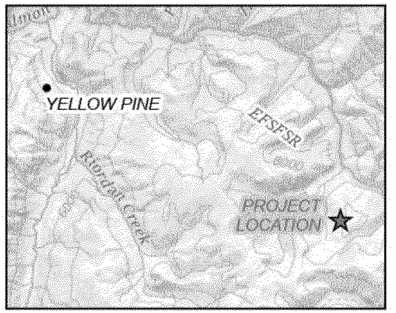
Rio ASE. 2023. Stibnite Gold Project Updated Fish Passage Flows. Prepared for Perpetua Resources Idaho, Inc. March 2023.

Attachment A

Hydraulic Model Overview Maps

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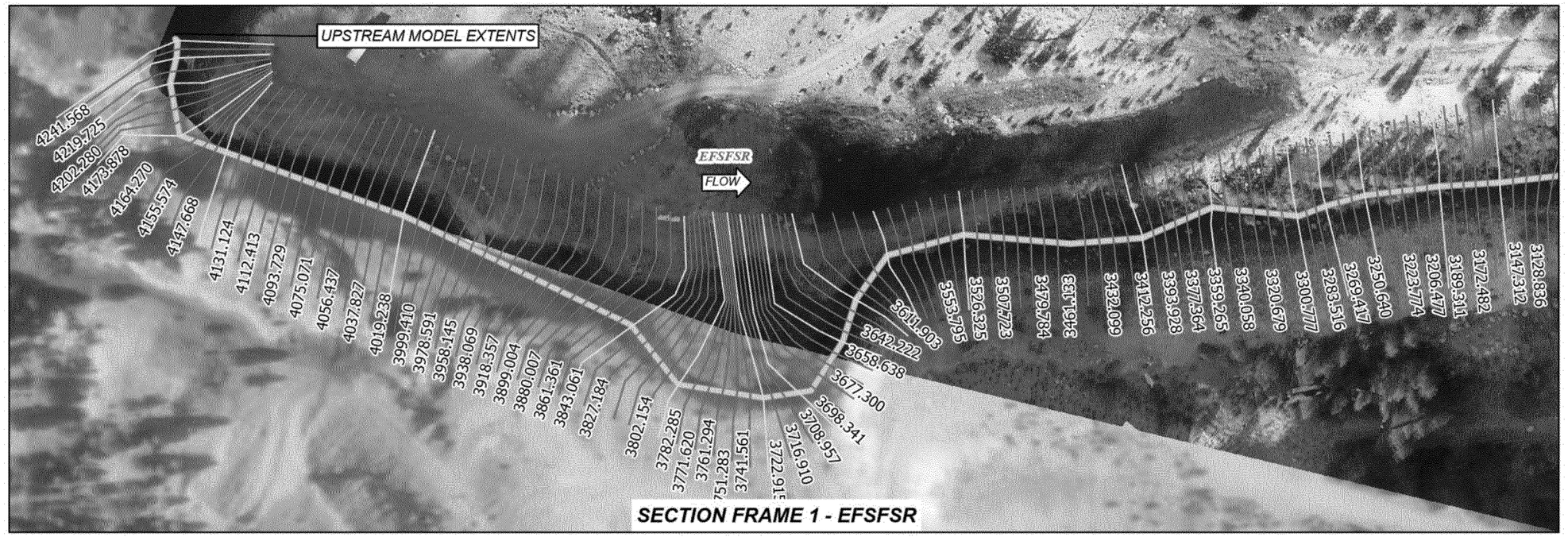
VICINITY MAP

LEGEND

- River
- 2021 Surveyed Cross Section
- 2022 Surveyed Cross Section
- Interpolated Cross Section
- Tunnel Outlet Grading Limits

0 150 300 600
Feet

Source: 2021 Drone Imagery (Rio ASE, 2022).



0 50 100 200
Feet

Applied Science & Engineering

FIGURE 1
Fish Passage Hydraulic Model Extents and Cross Section Locations
Stibnite Gold Project Fish Passage Evaluation for Perpetua Resources

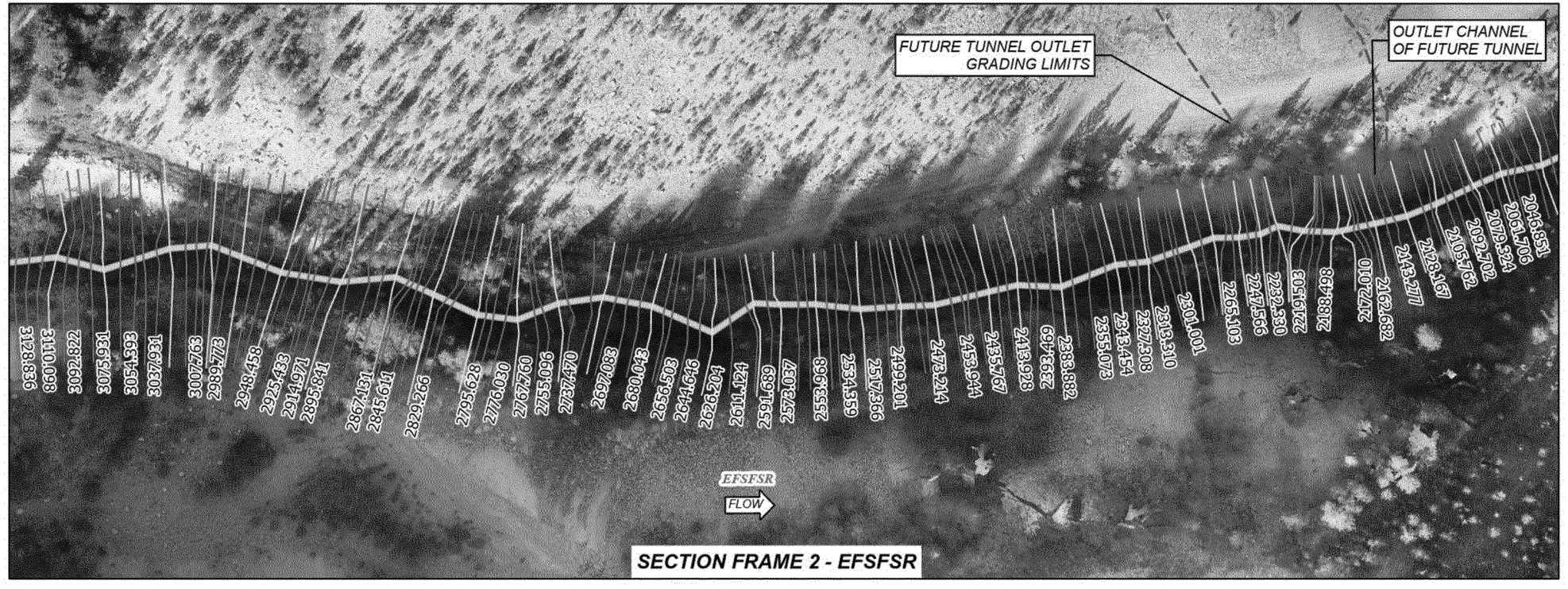
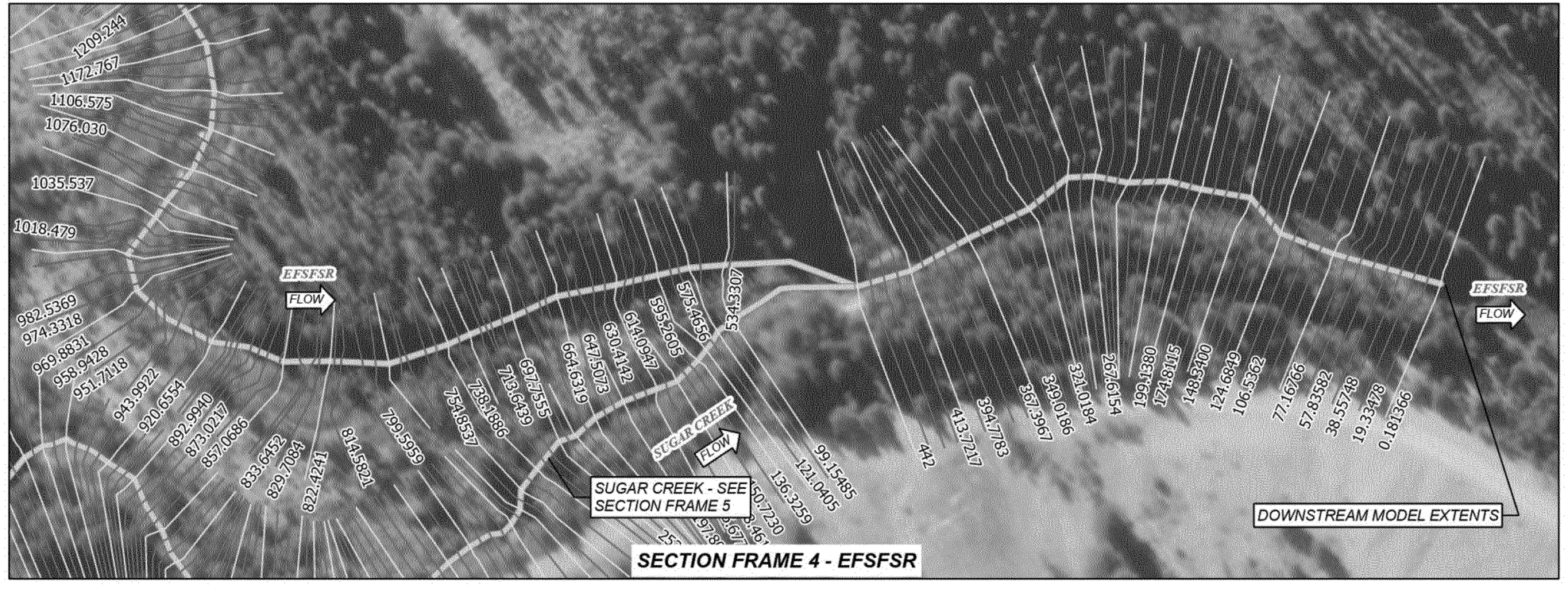
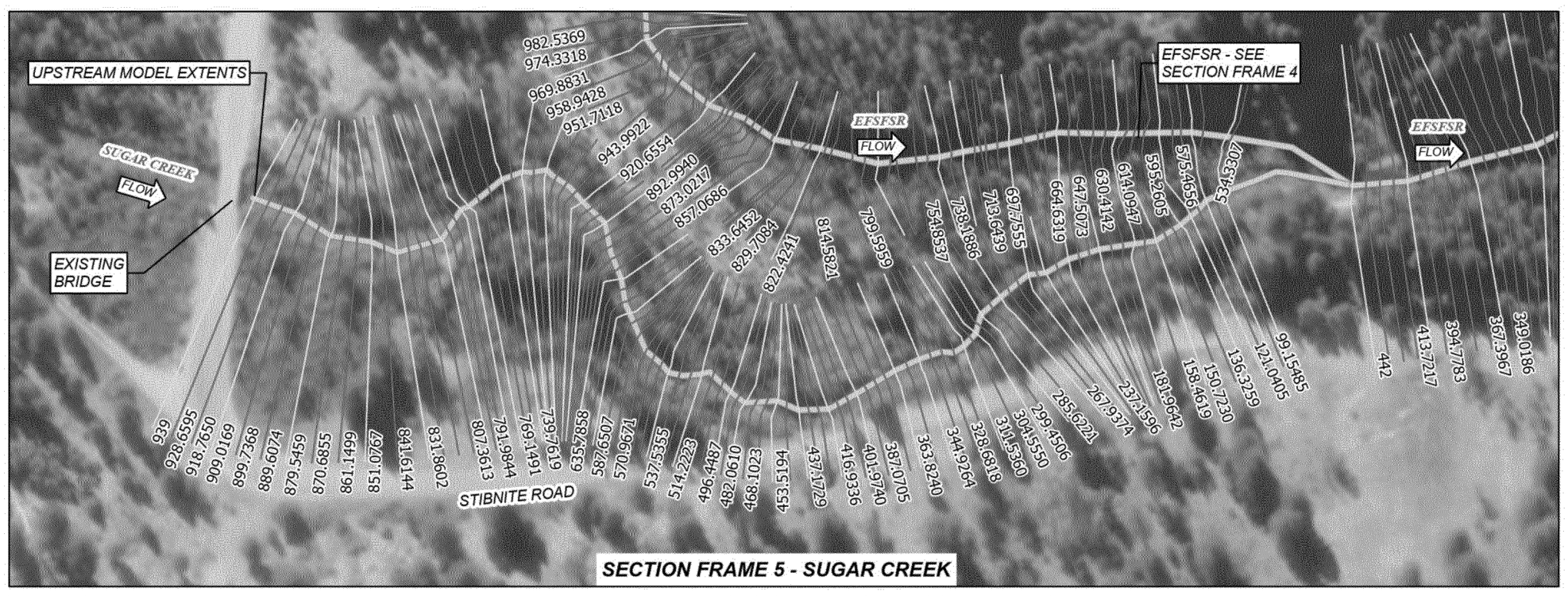
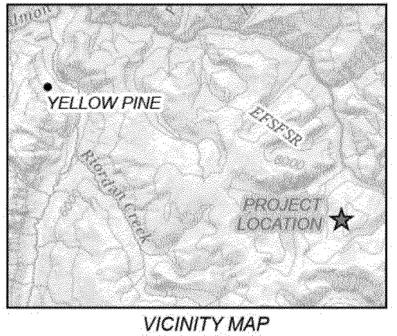


FIGURE 2
Fish Passage Hydraulic Model Extents and Cross Section Locations
Stibnite Gold Project Fish Passage Evaluation for Perpetua Resources







VICINITY MAP

LEGEND

- River
- 2021 Surveyed Cross Section
- 2022 Surveyed Cross Section
- Interpolated Cross Section
- Tunnel Outlet Grading Limits

N

0 50 100 200

Feet

Source: 2021 Drone Imagery (Rio ASE, 2022).

N

0 50 100 200

Feet

Applied Science & Engineering

FIGURE 3
Fish Passage Hydraulic Model Extents and Cross Section Locations
Stibnite Gold Project Fish Passage Evaluation for Perpetua Resources

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Attachment B

Attachment B1. HEC-RAS Channel Profile for the Area of Interest

Attachment B2. HEC-RAS Cross Section Plots for the Area of Interest

Attachment B3. HEC-RAS Depth and Velocity Profiles for the Area of Interest

Attachment B4. HEC-RAS Hydraulic Output Tables for the Area of Interest

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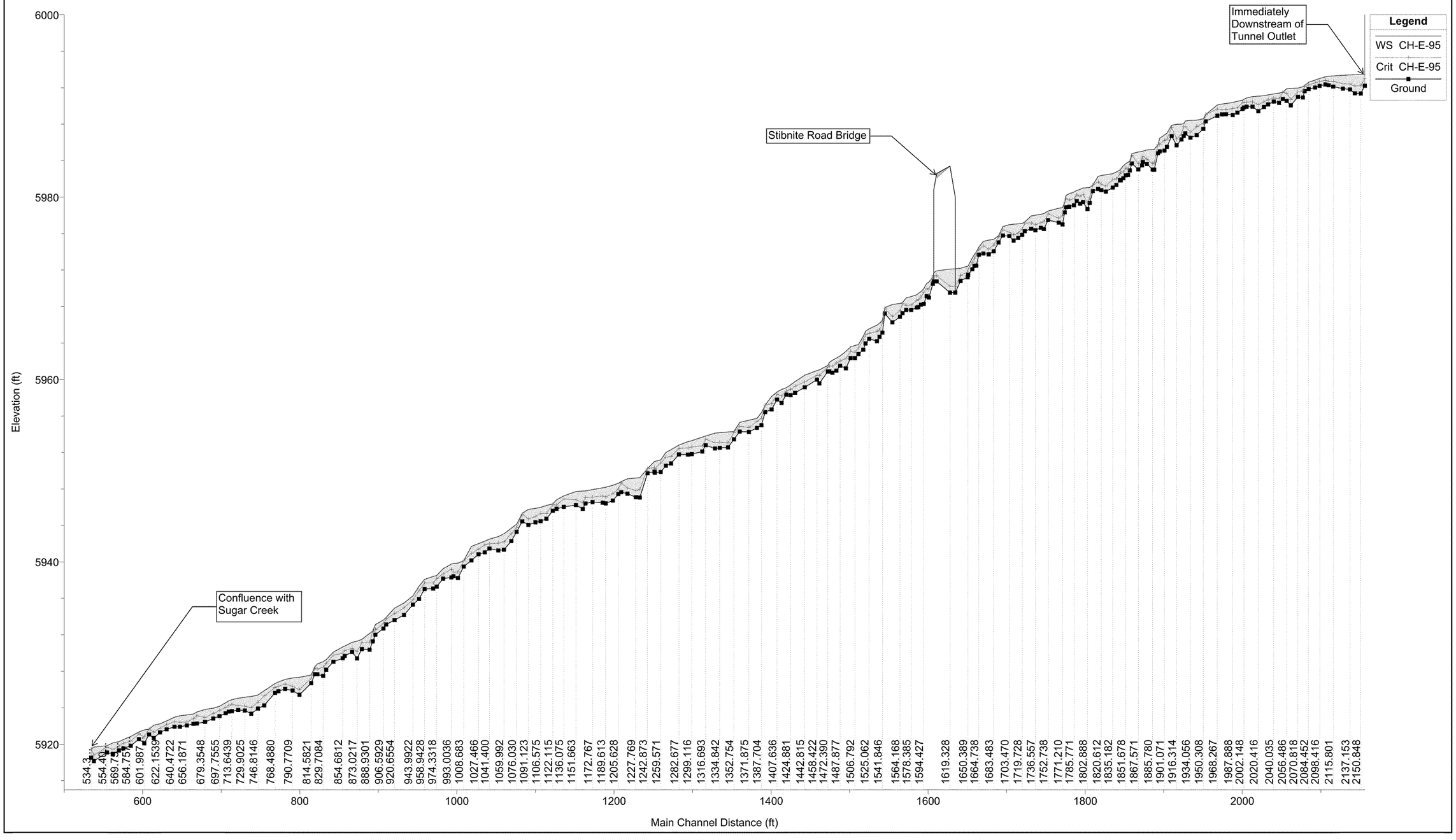
Attachment B1

HEC-RAS Channel Profile for the Area of Interest

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EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Existing Conditions for Chinook 95% Daily Average Exceedance

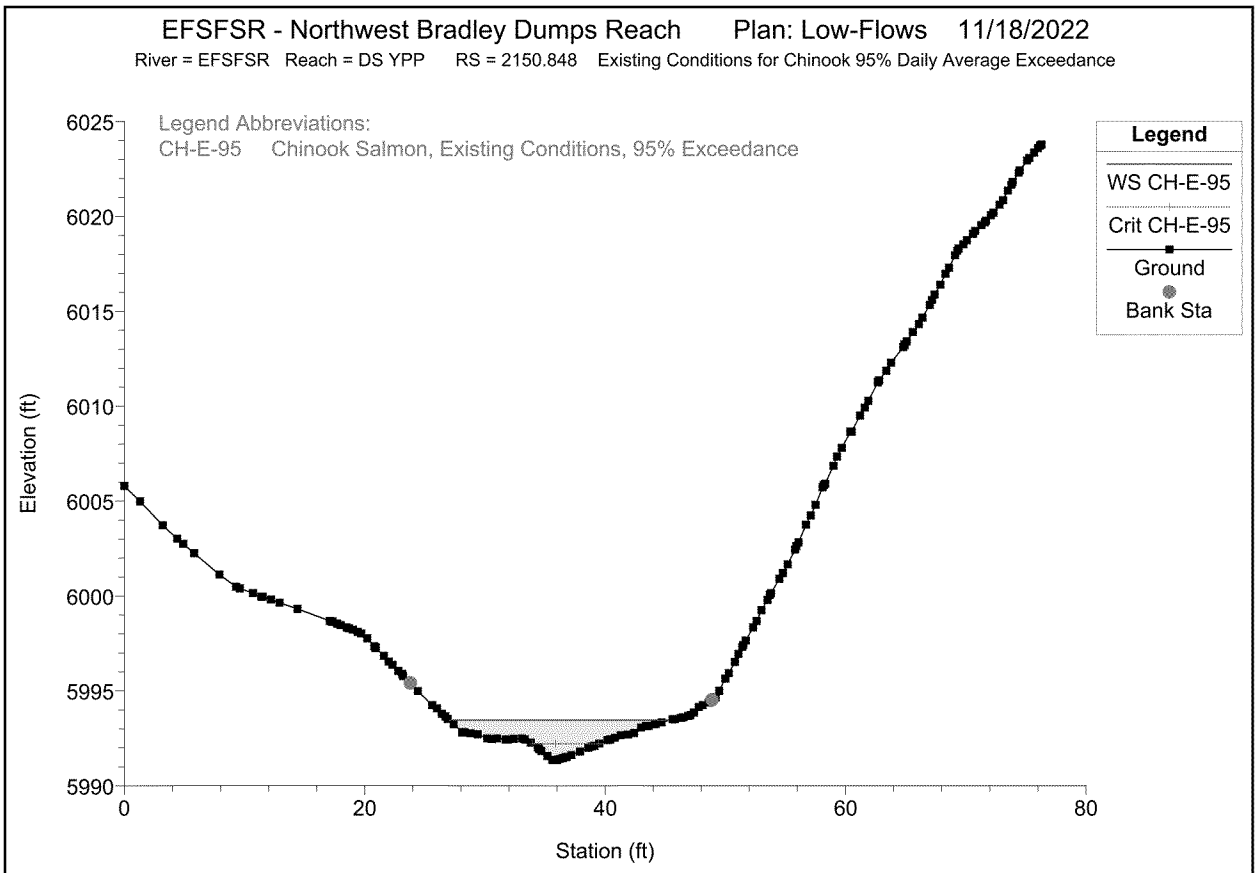


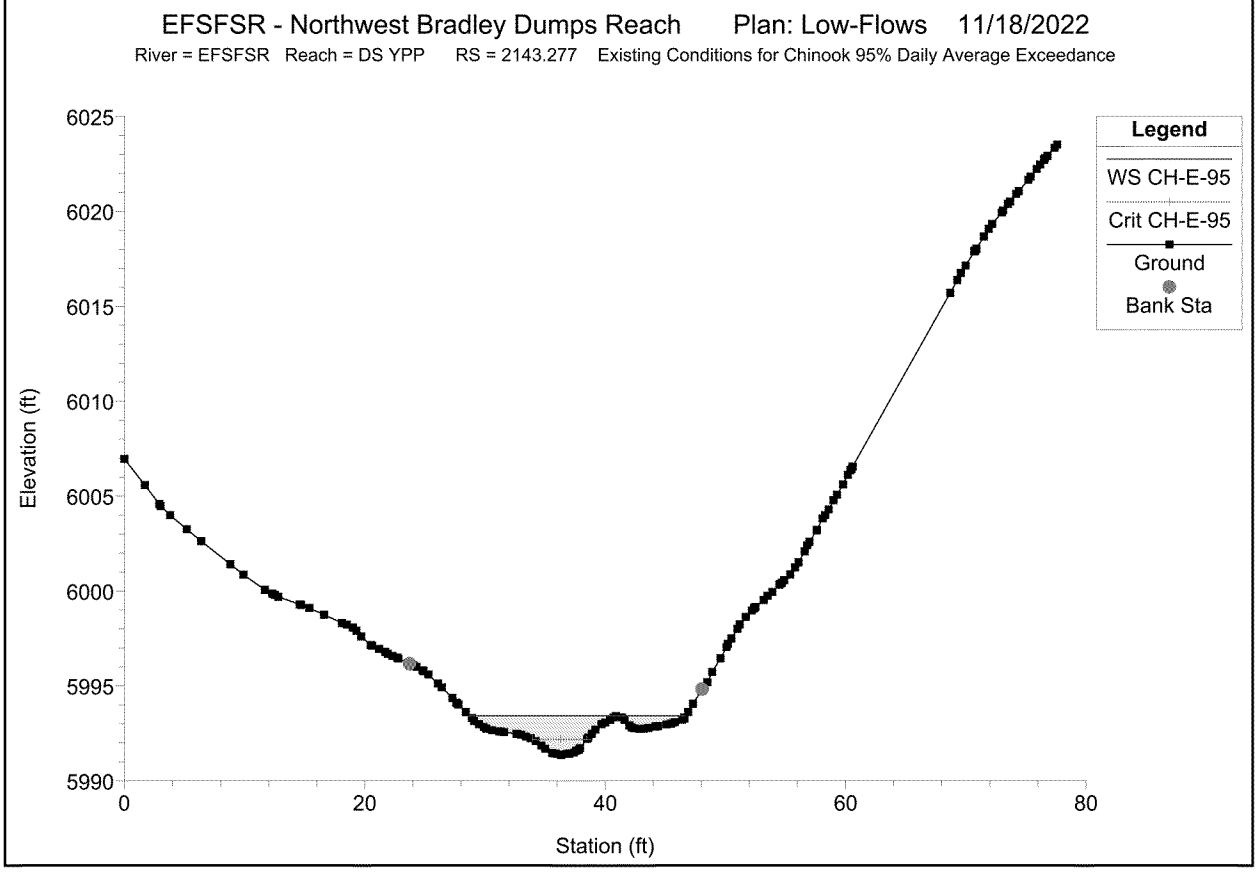
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Attachment B2

HEC-RAS Cross Section Plots for the Area of Interest

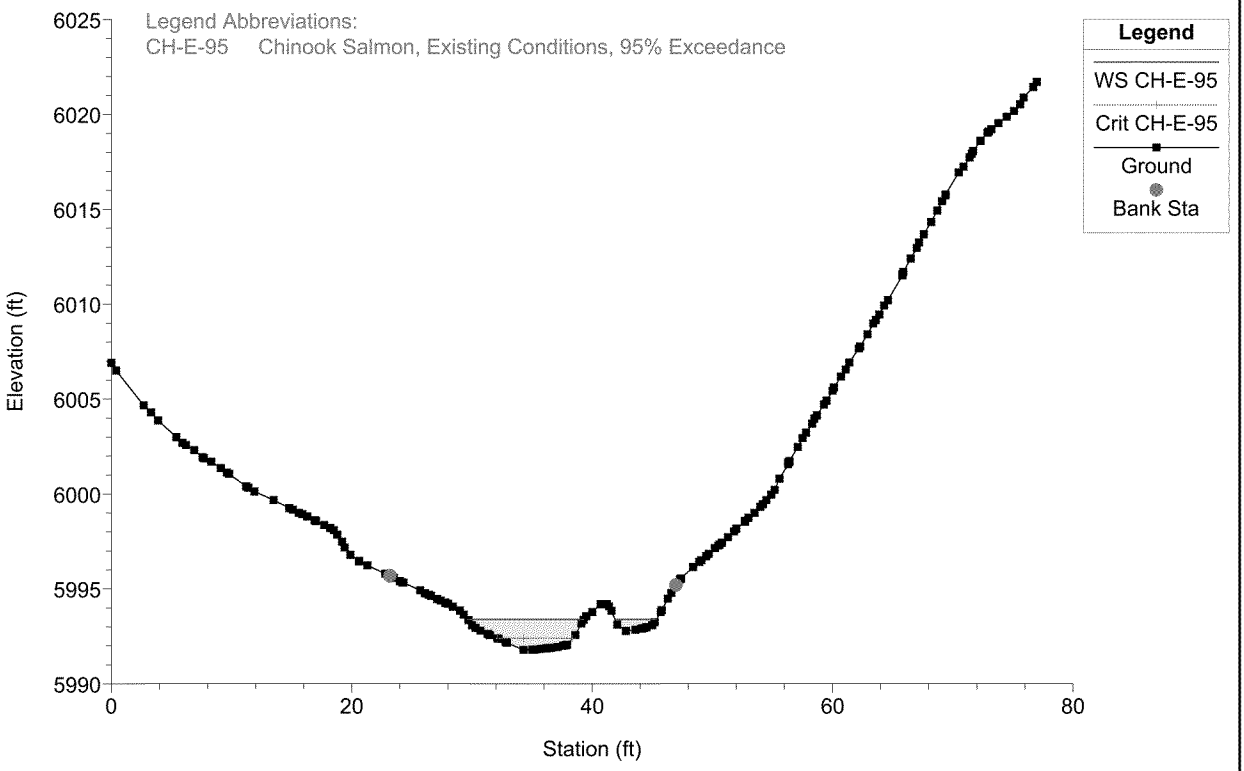
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EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2150.848 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6025
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2143.277 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6025
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80
Station (ft)

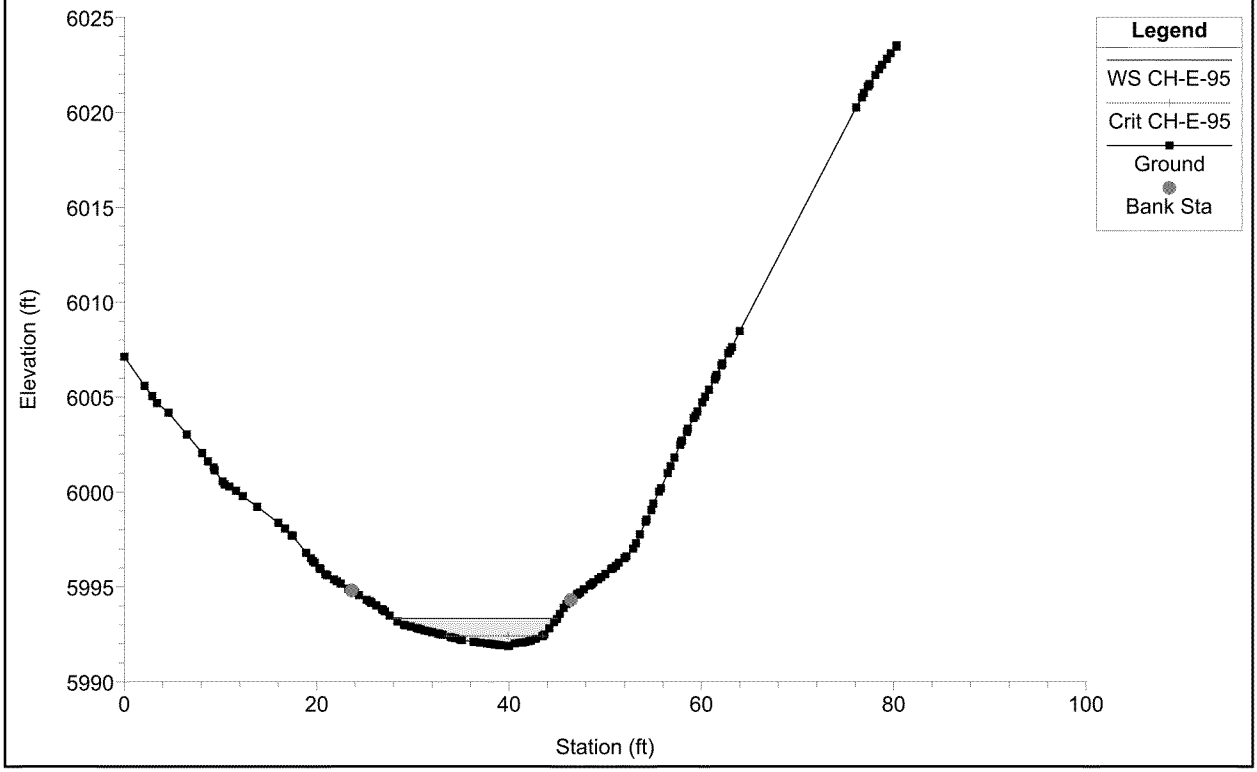
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

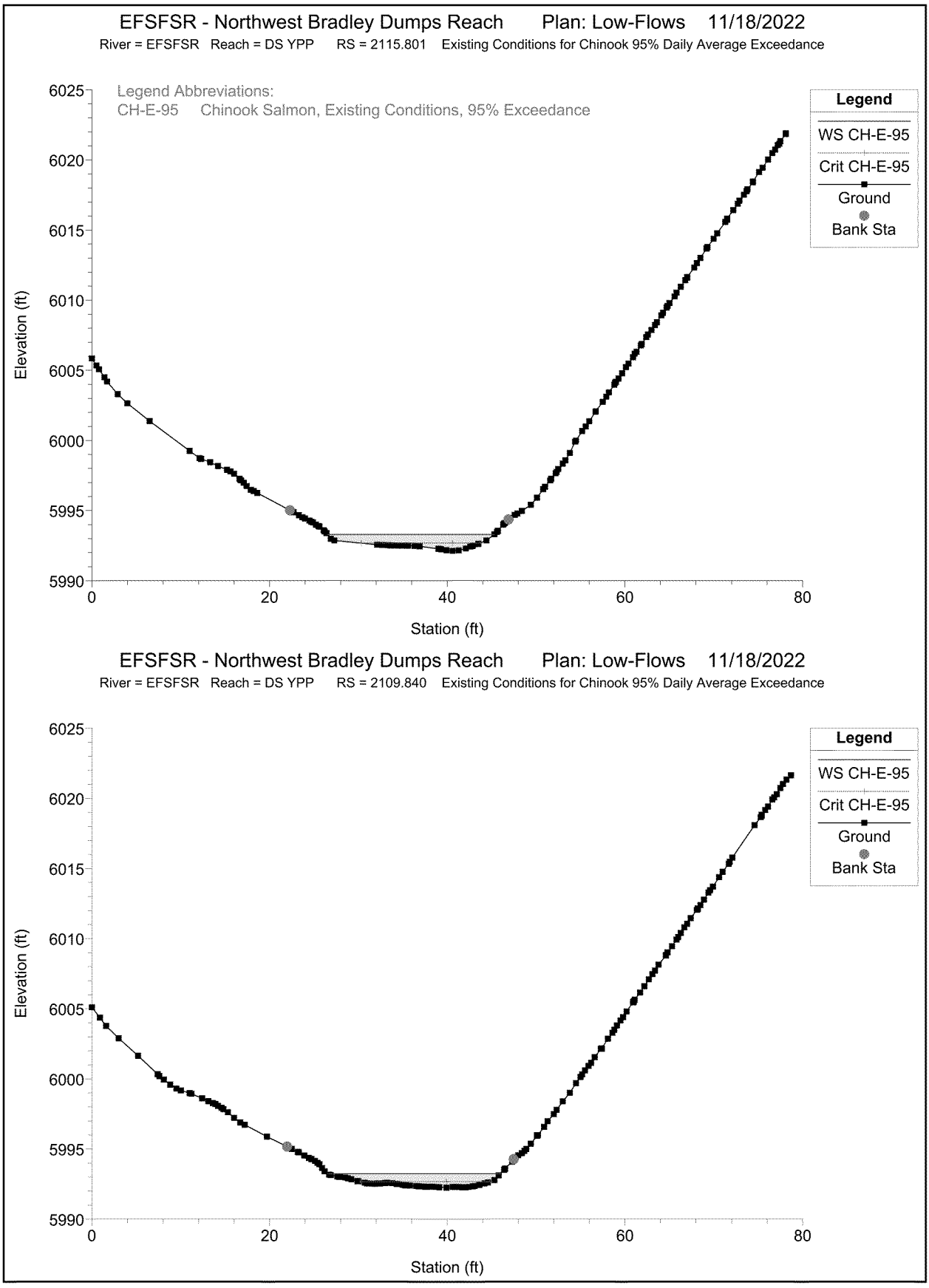
River = EFSFSR Reach = DS YPP RS = 2137.153 Existing Conditions for Chinook 95% Daily Average Exceedance

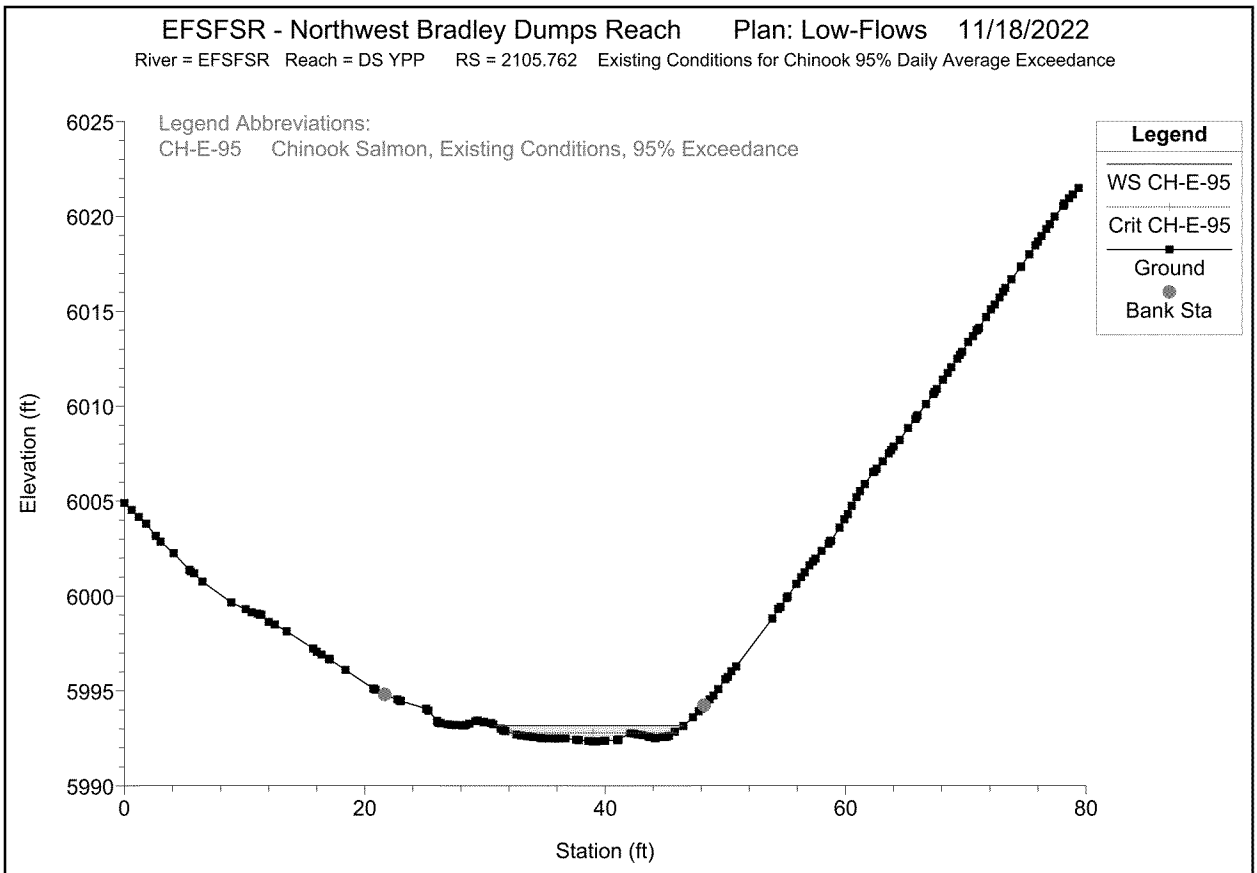


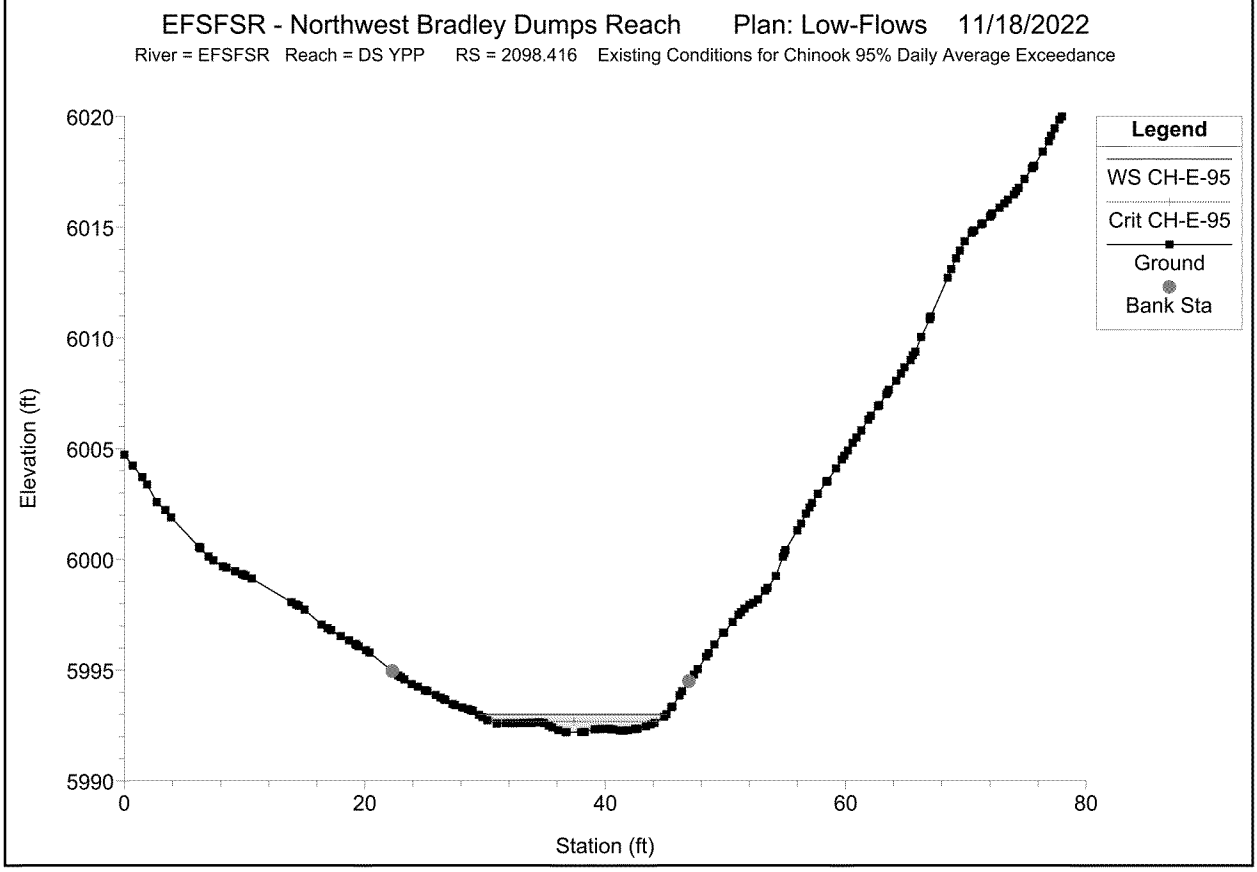
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

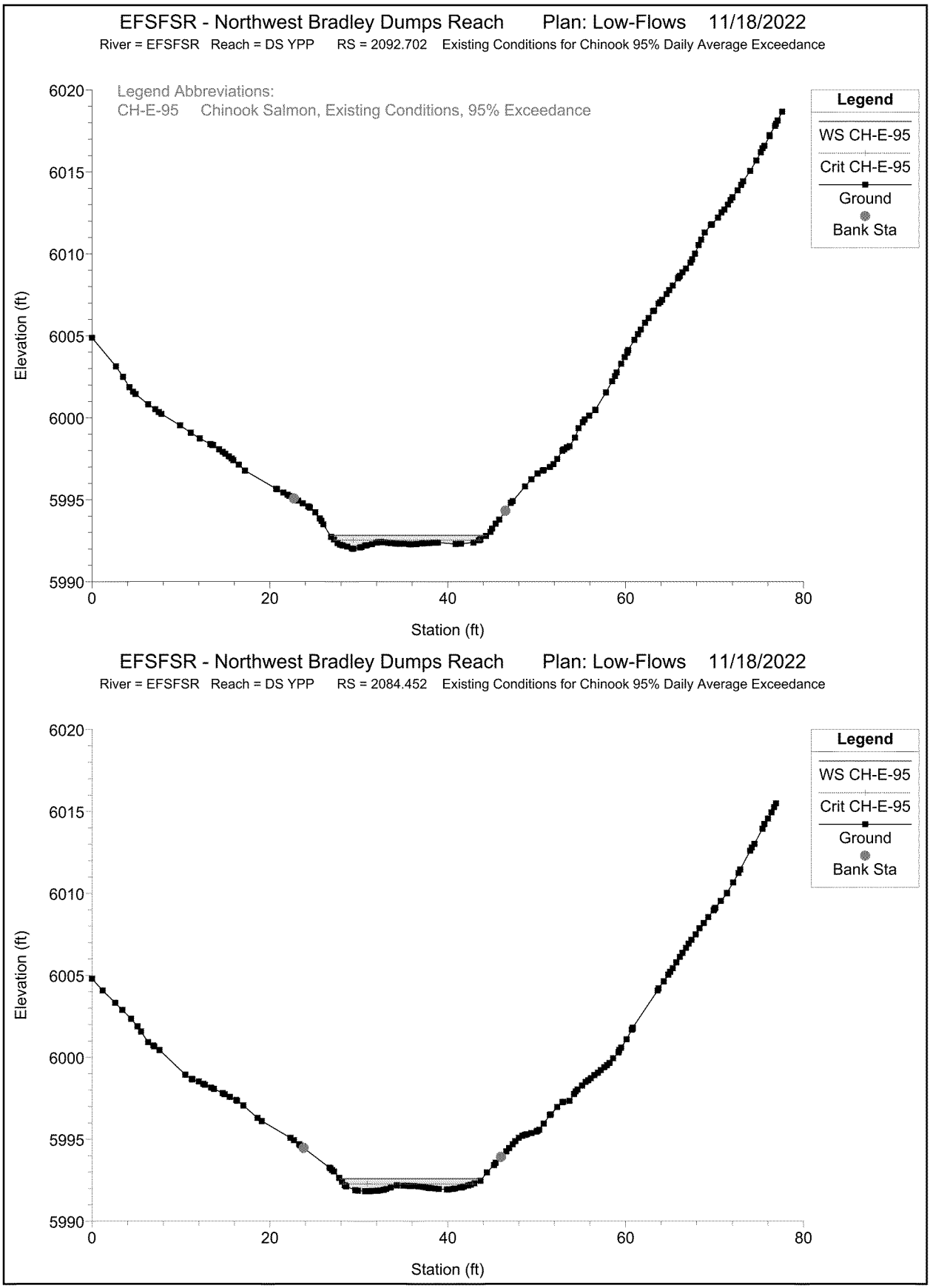
River = EFSFSR Reach = DS YPP RS = 2128.167 Existing Conditions for Chinook 95% Daily Average Exceedance

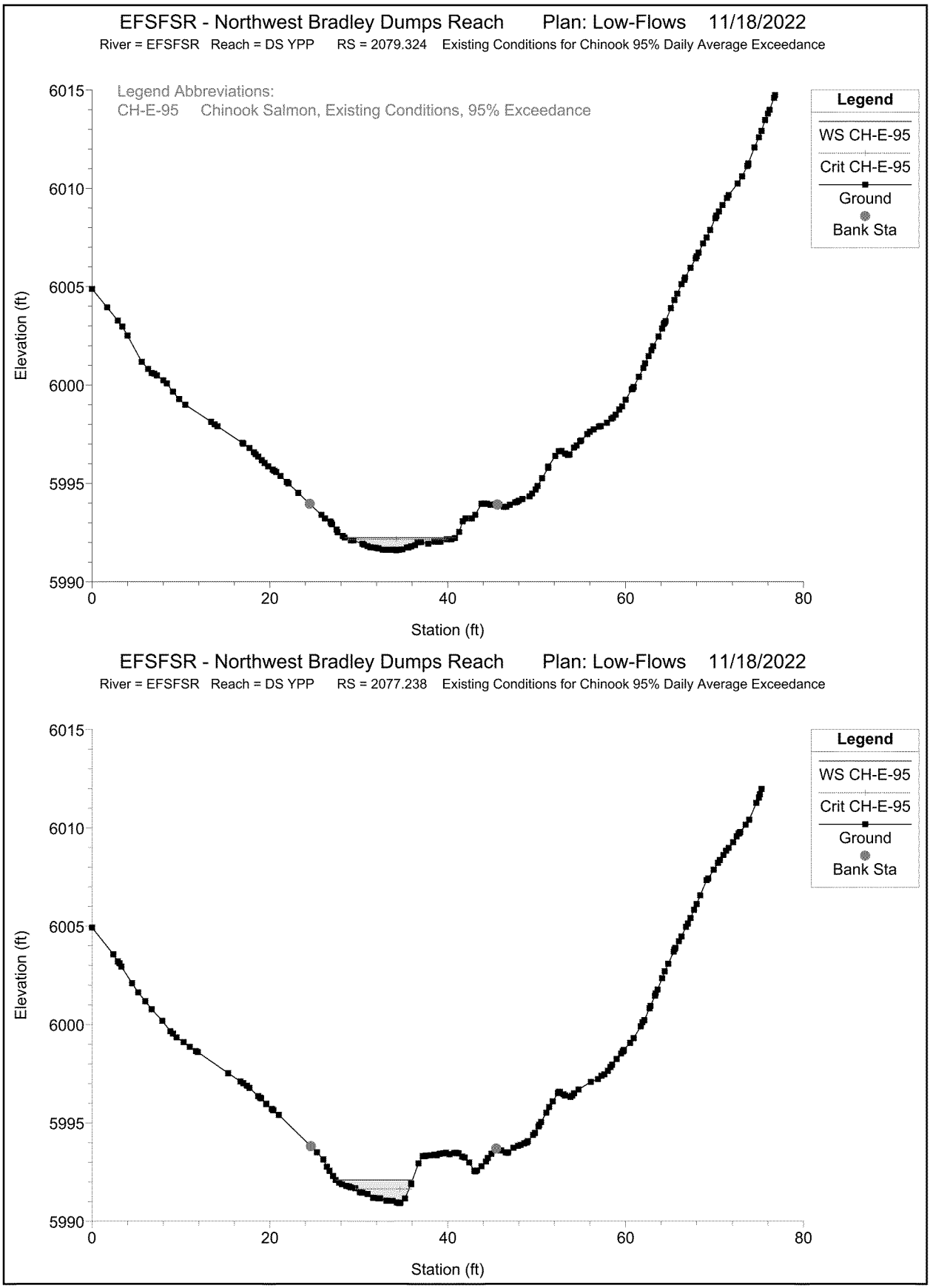


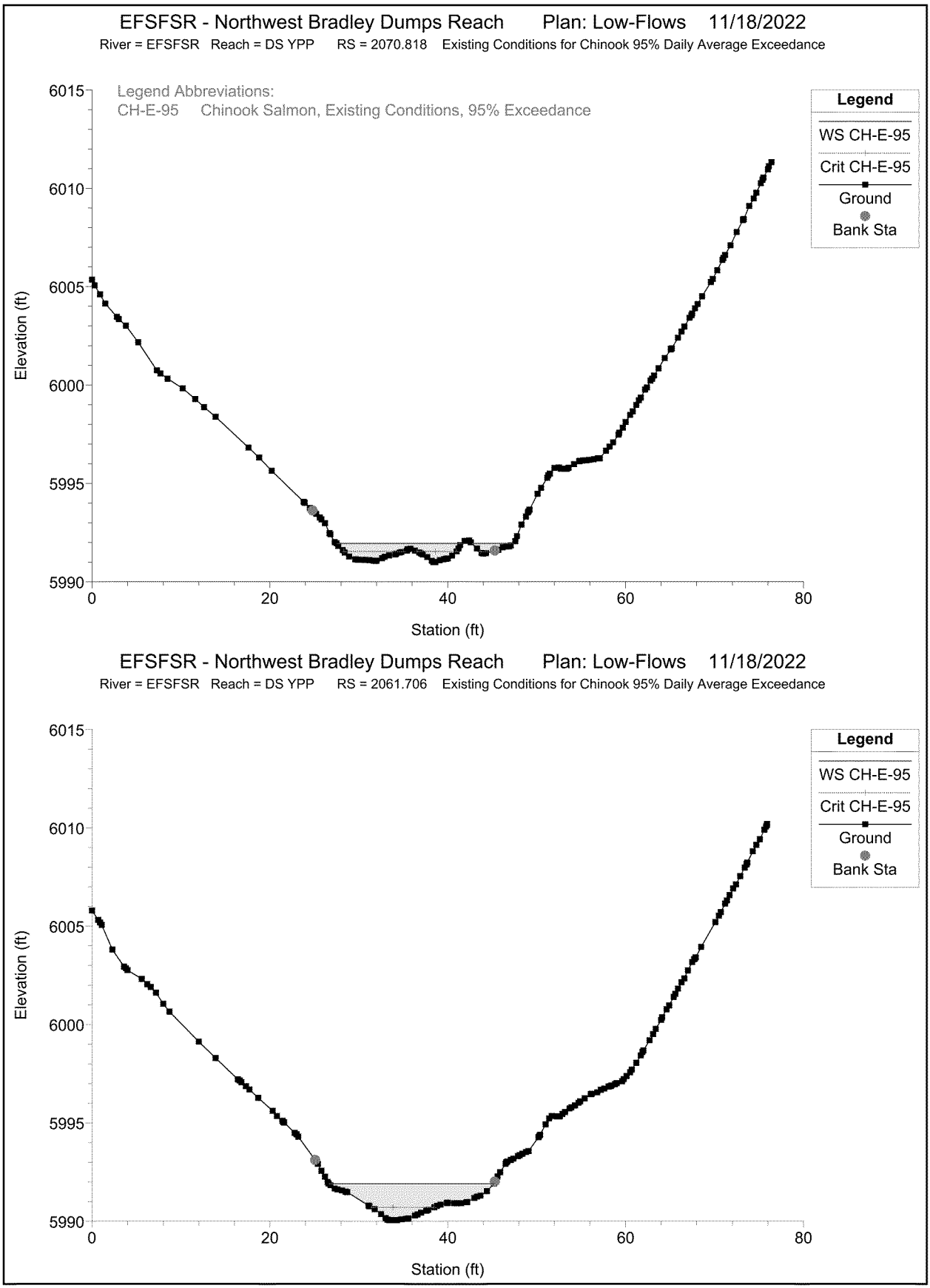

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2115.801 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6025
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2109.840 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

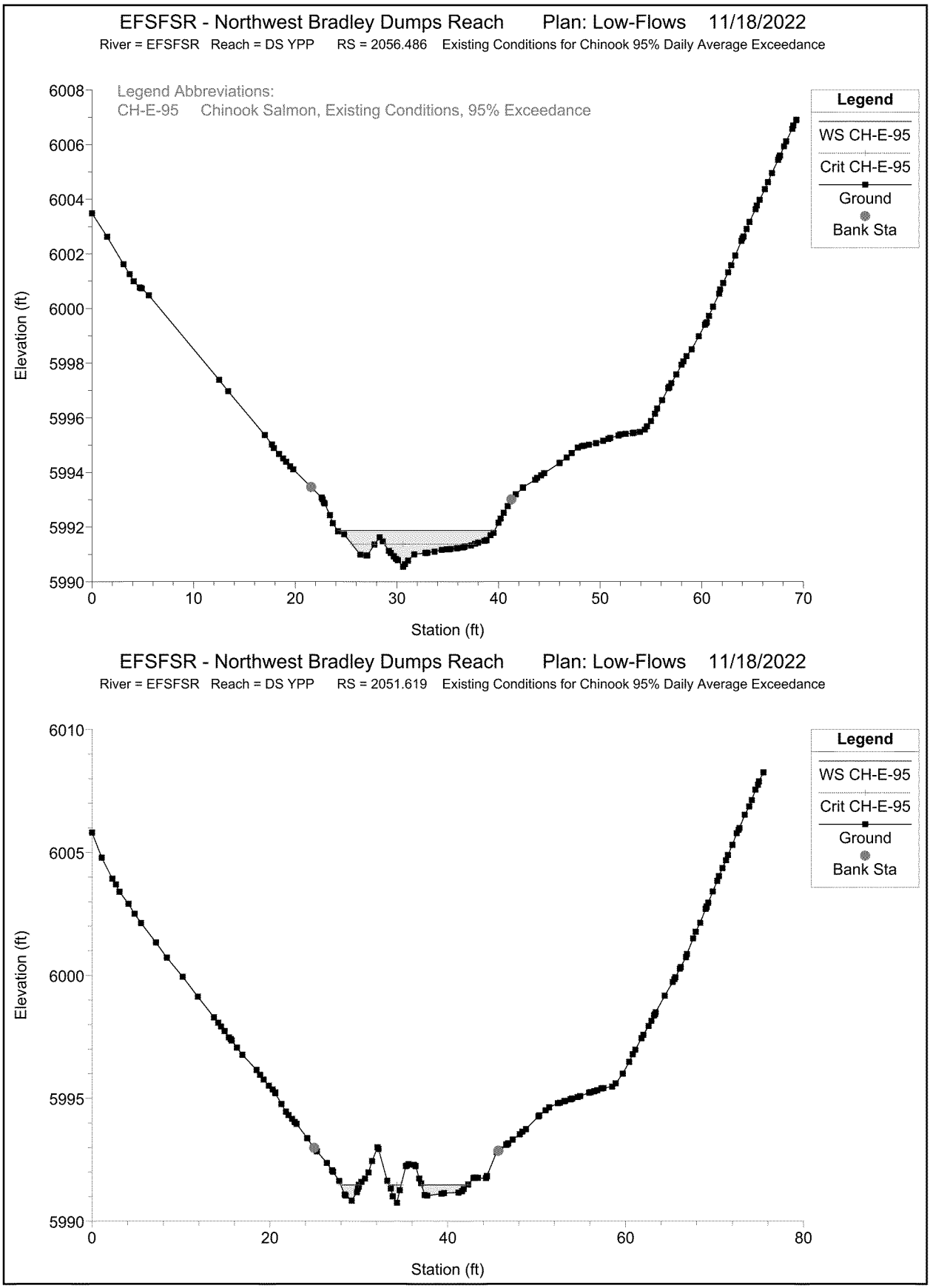

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2105.762 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6025
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80
Station (ft)

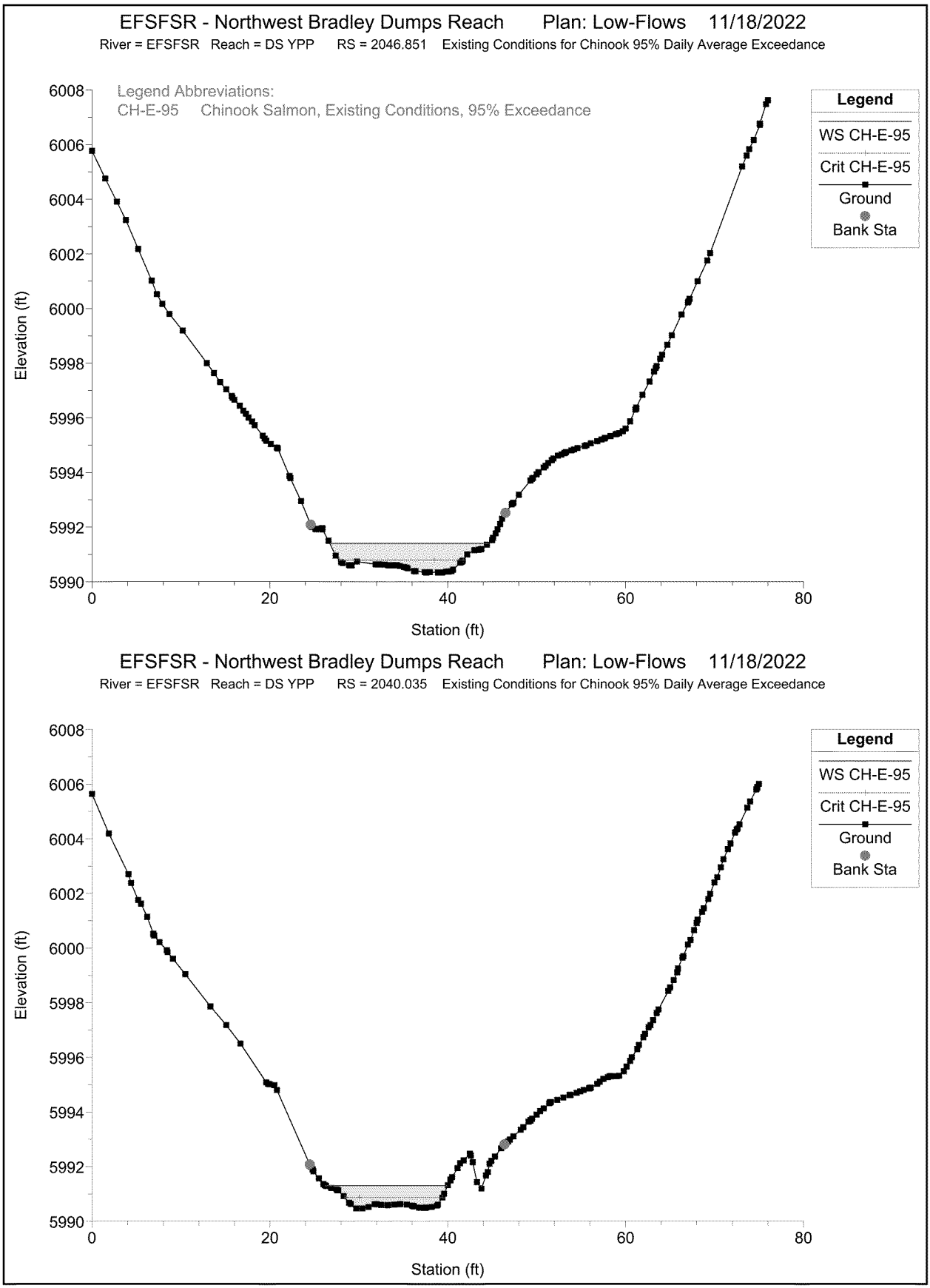

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2098.416 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80
Station (ft)

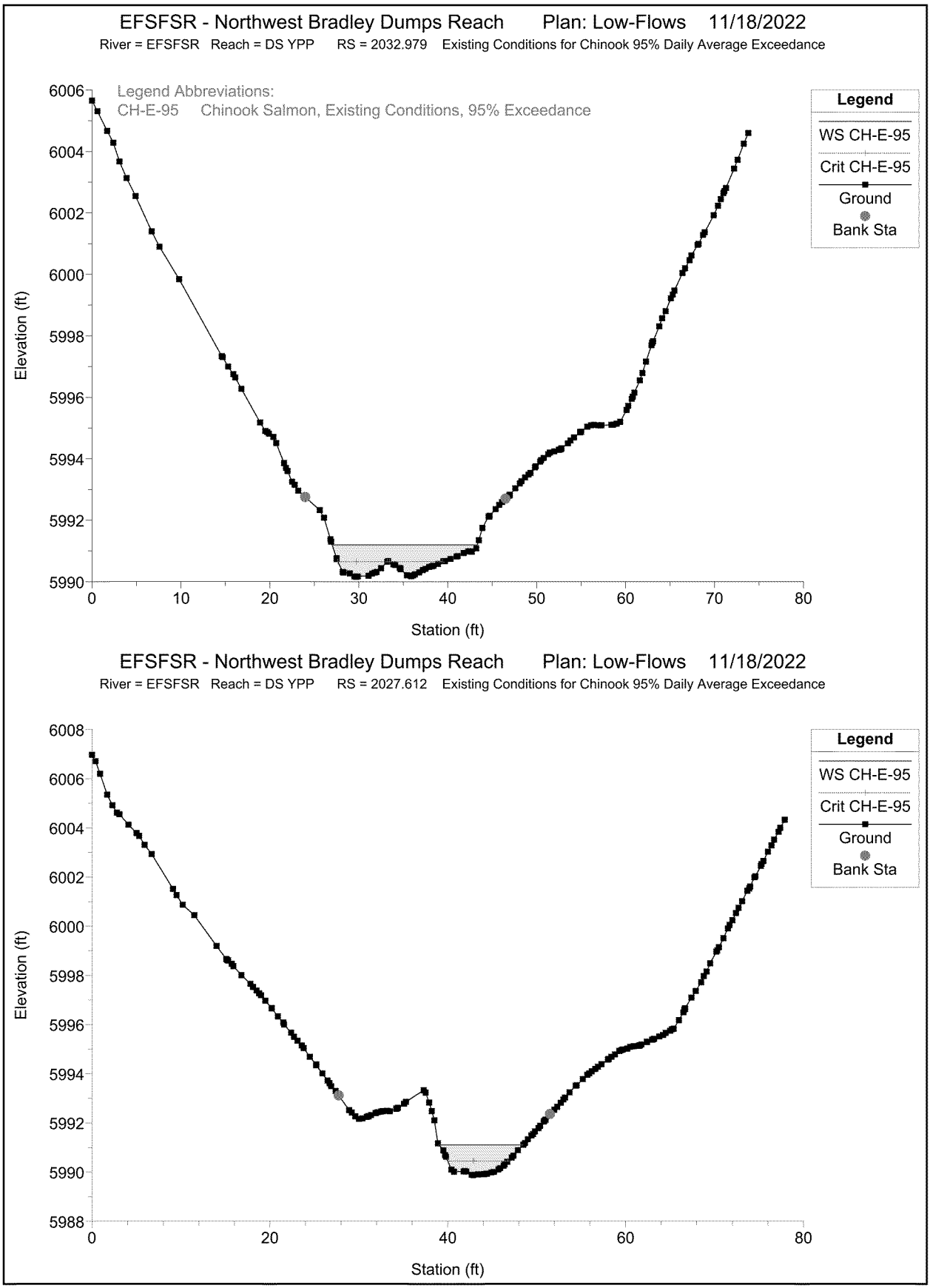

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2092.702 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2084.452 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6020
6015
6010
6005
6000
5995
5990
0
20
40
60
80

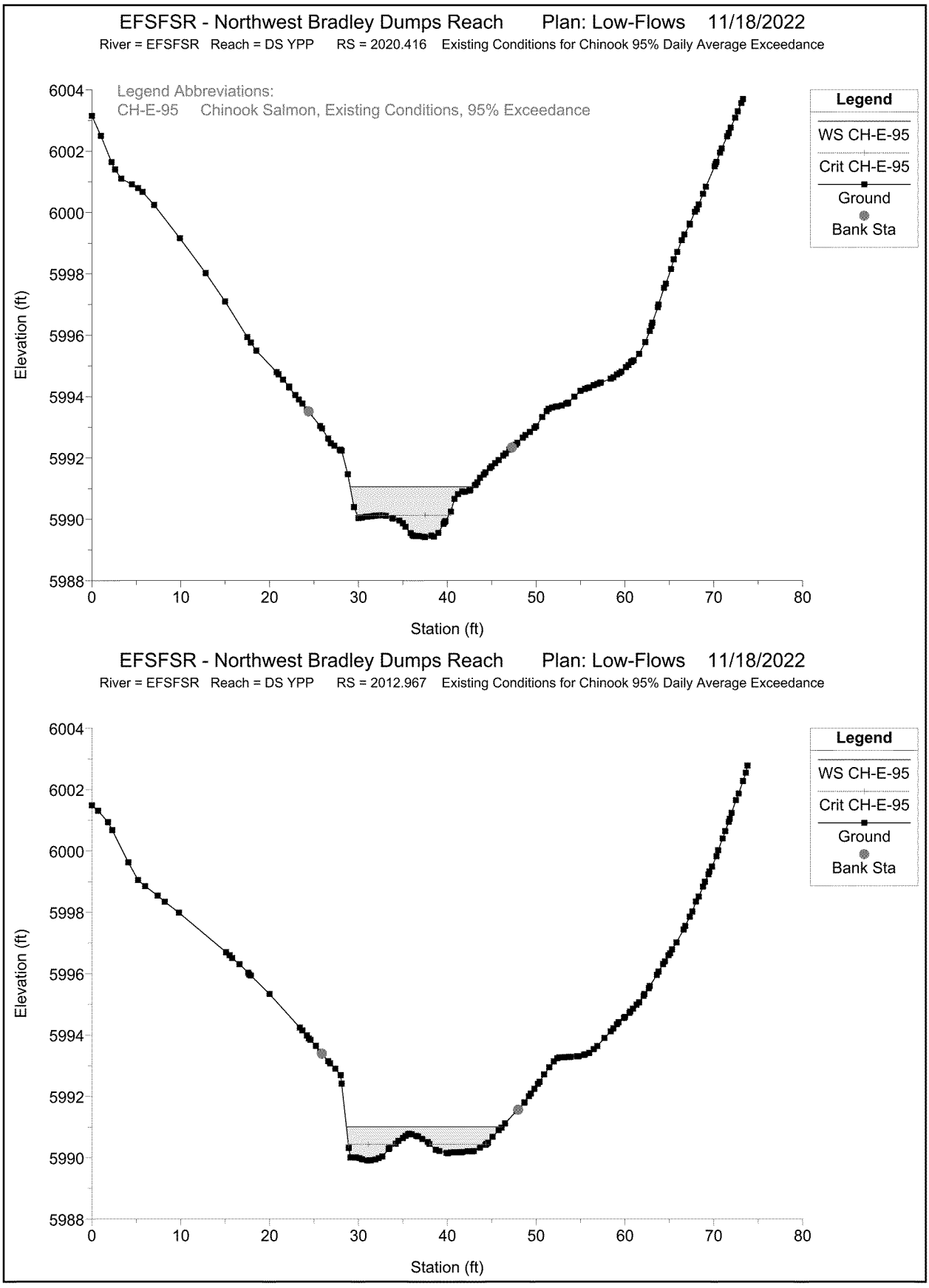

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2079.324 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6015
6010
6005
6000
5995
5990
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2077.238 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6015
6010
6005
6000
5995
5990
0
20
40
60
80

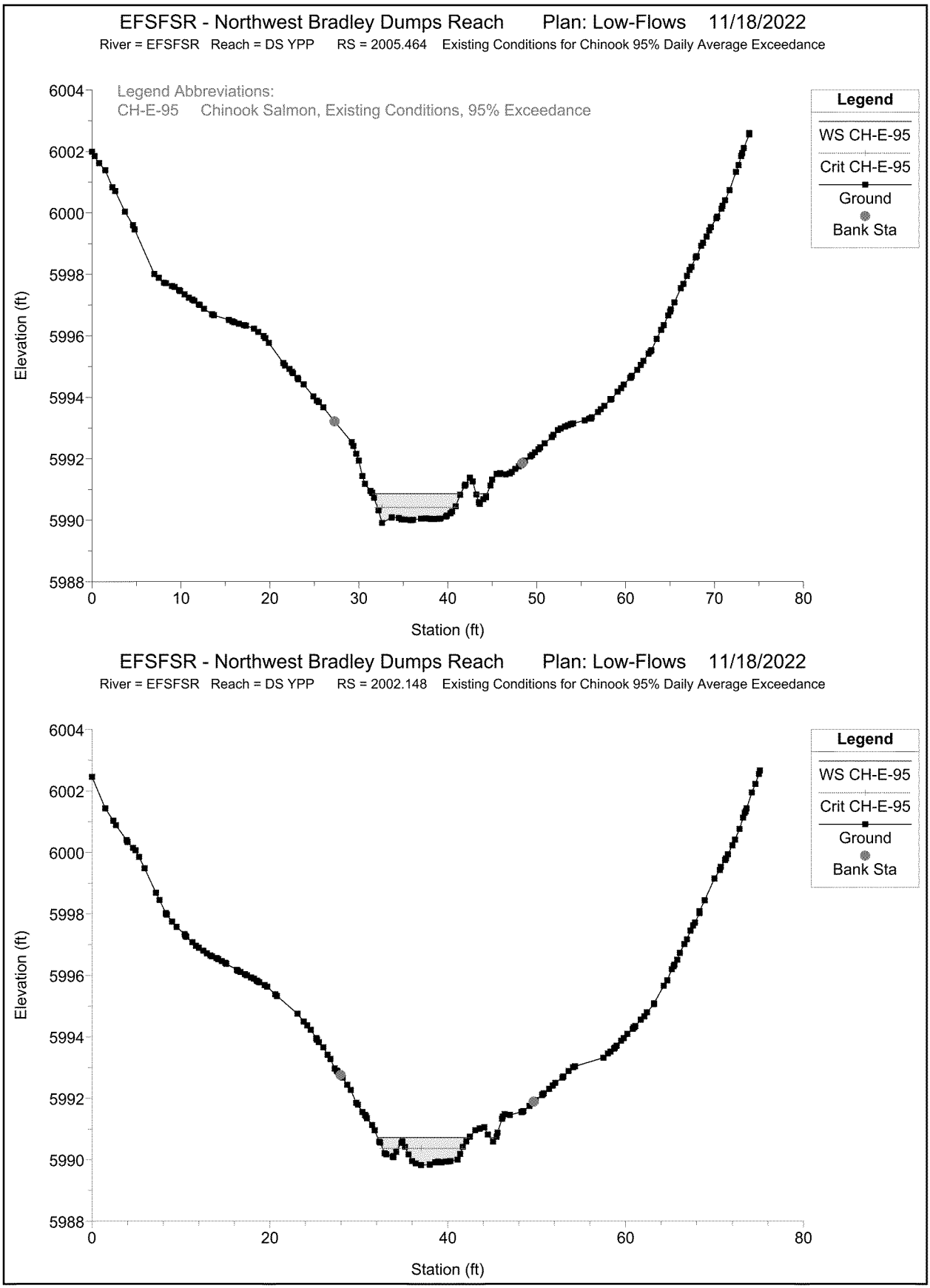

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2070.818 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6015
6010
6005
6000
5995
5990
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2061.706 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6015
6010
6005
6000
5995
5990
0
20
40
60
80

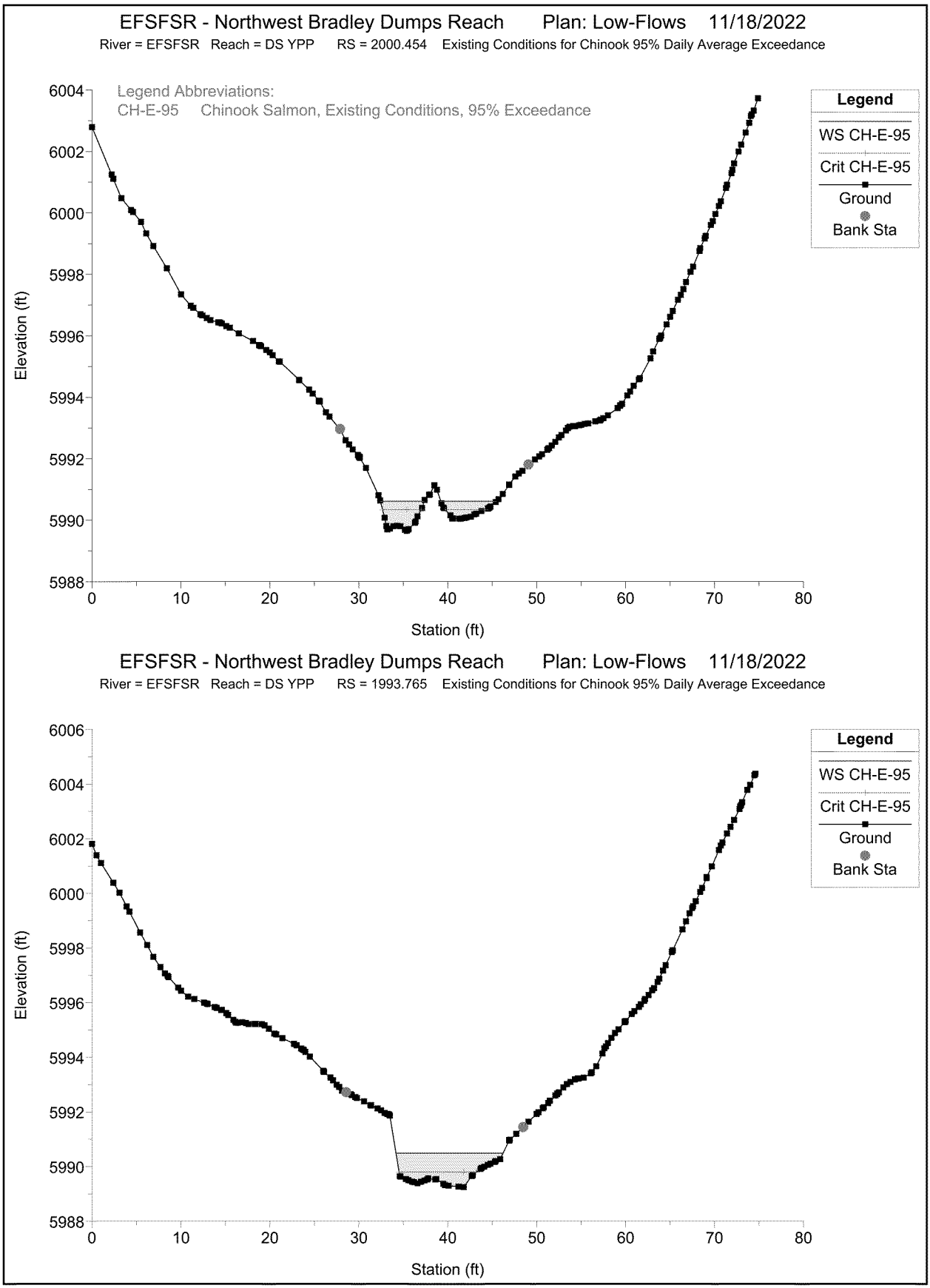

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2056.486 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6008
6006
6004
6002
6000
5998
5996
5994
5992
5990
0
10
20
30
40
50
60
70
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2051.619 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6010
6005
6000
5995
5990
0
20
40
60
80

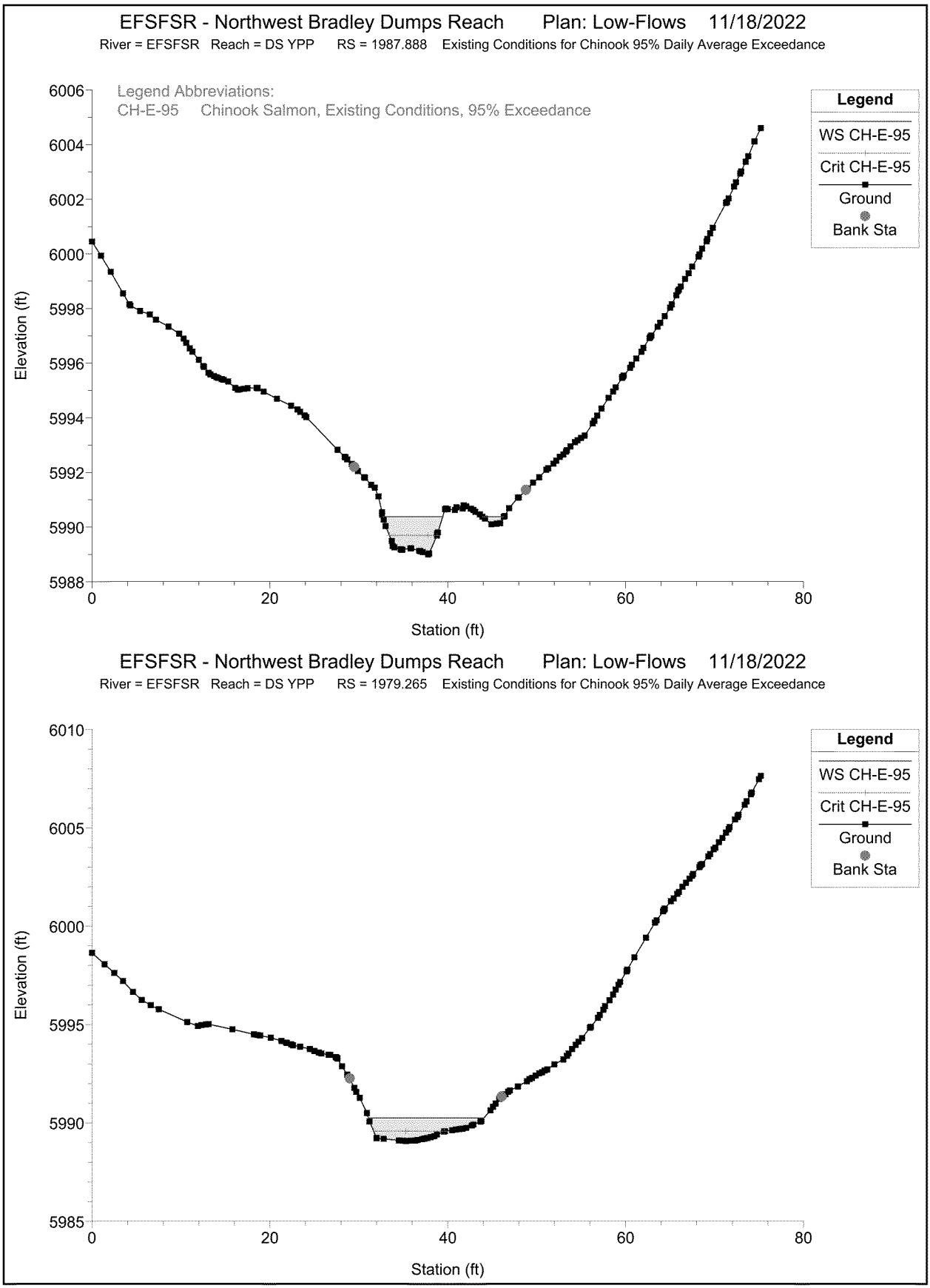

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2046.851 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6008
6006
6004
6002
6000
5998
5996
5994
5992
5990
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2040.035 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

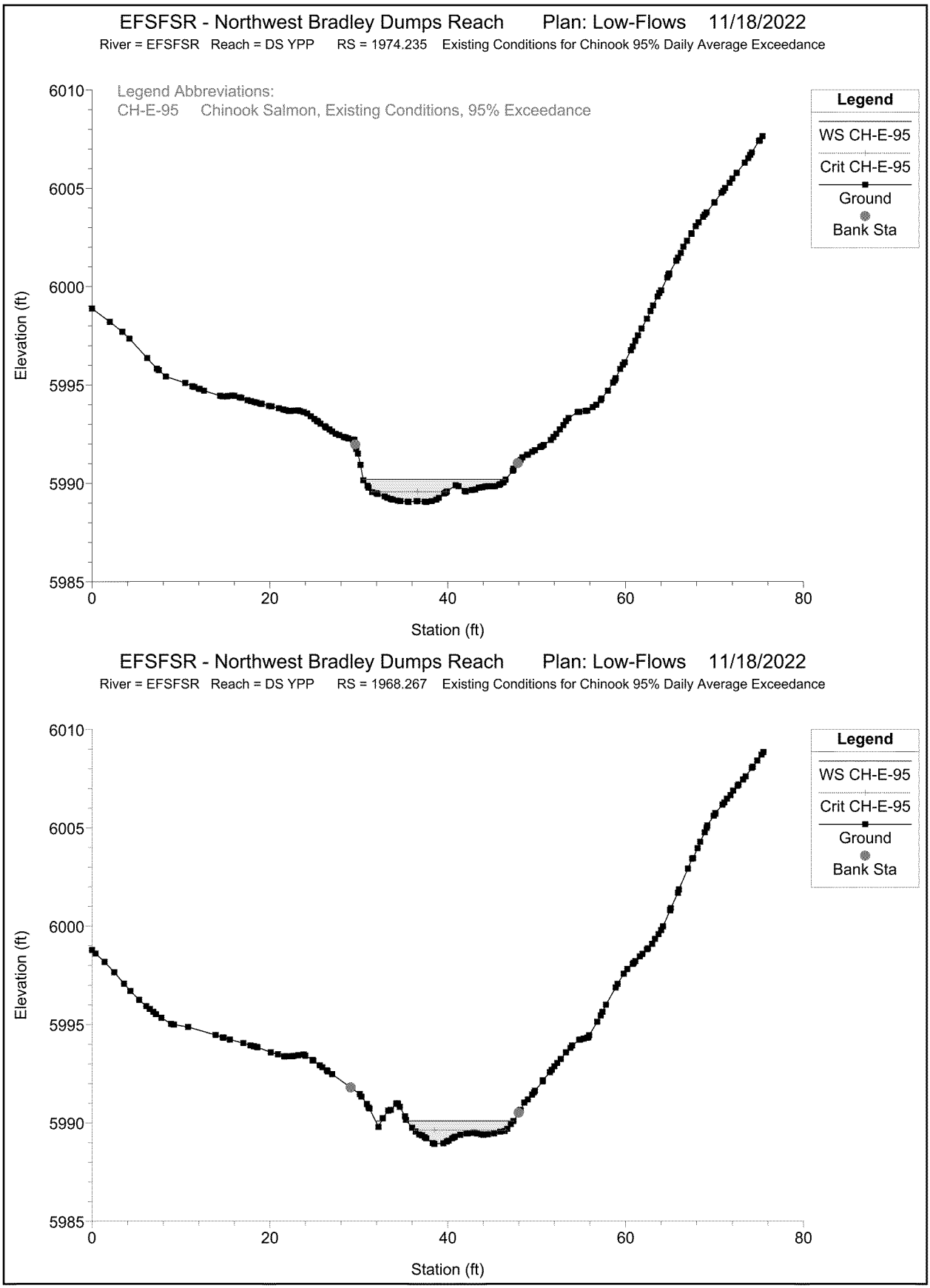

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2032.979 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6006
6004
6002
6000
5998
5996
5994
5992
5990
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2027.612 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6008
6006
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
20
40
60
80

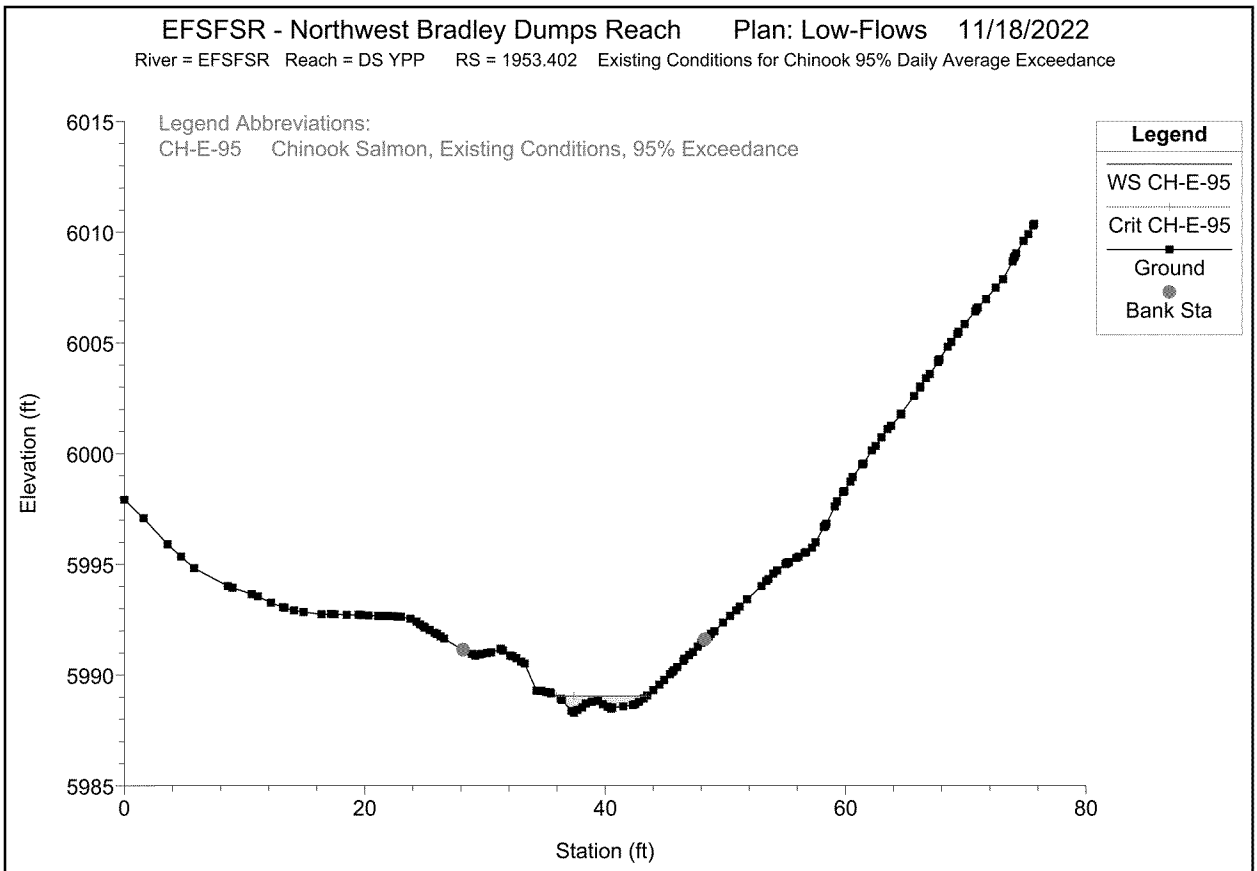

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2020.416 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2012.967 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

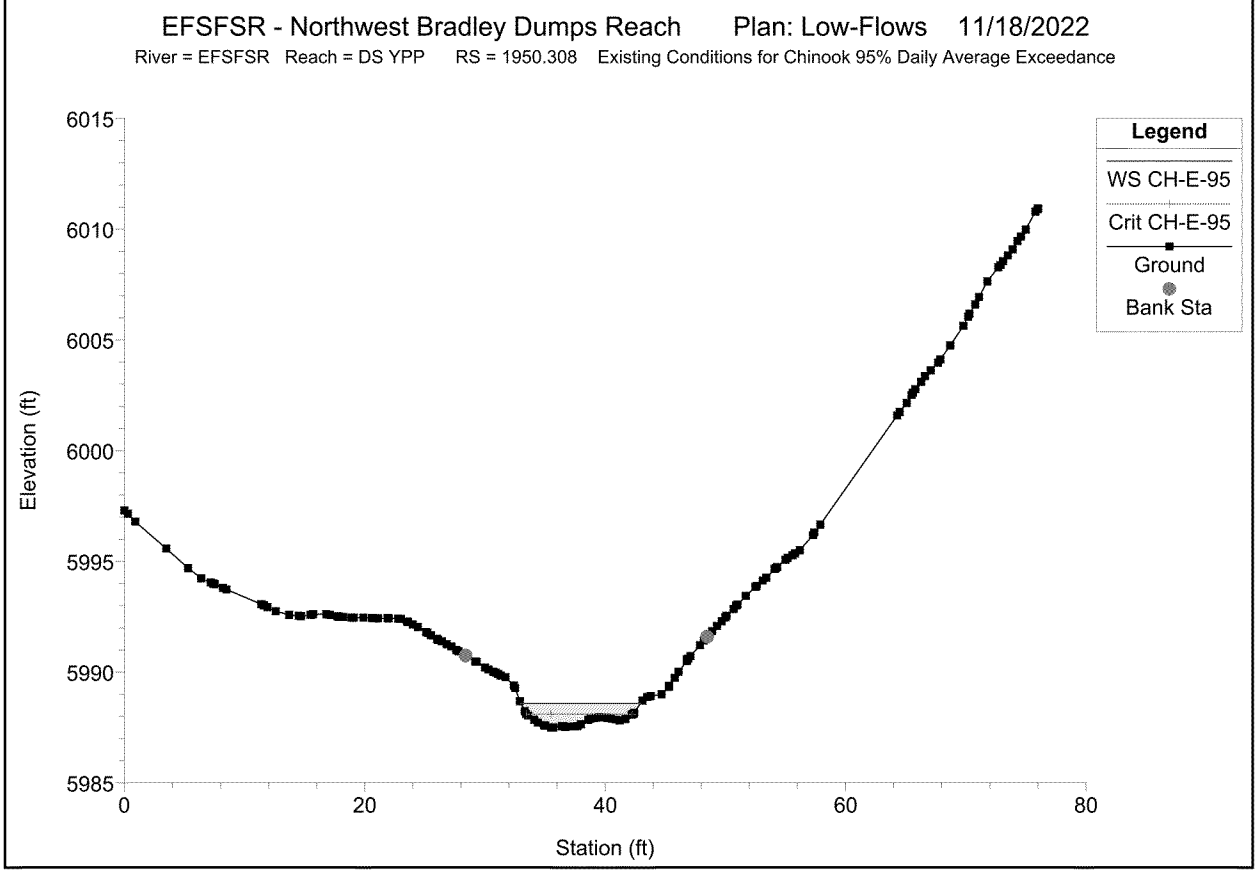

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2005.464 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2002.148 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
20
40
60
80

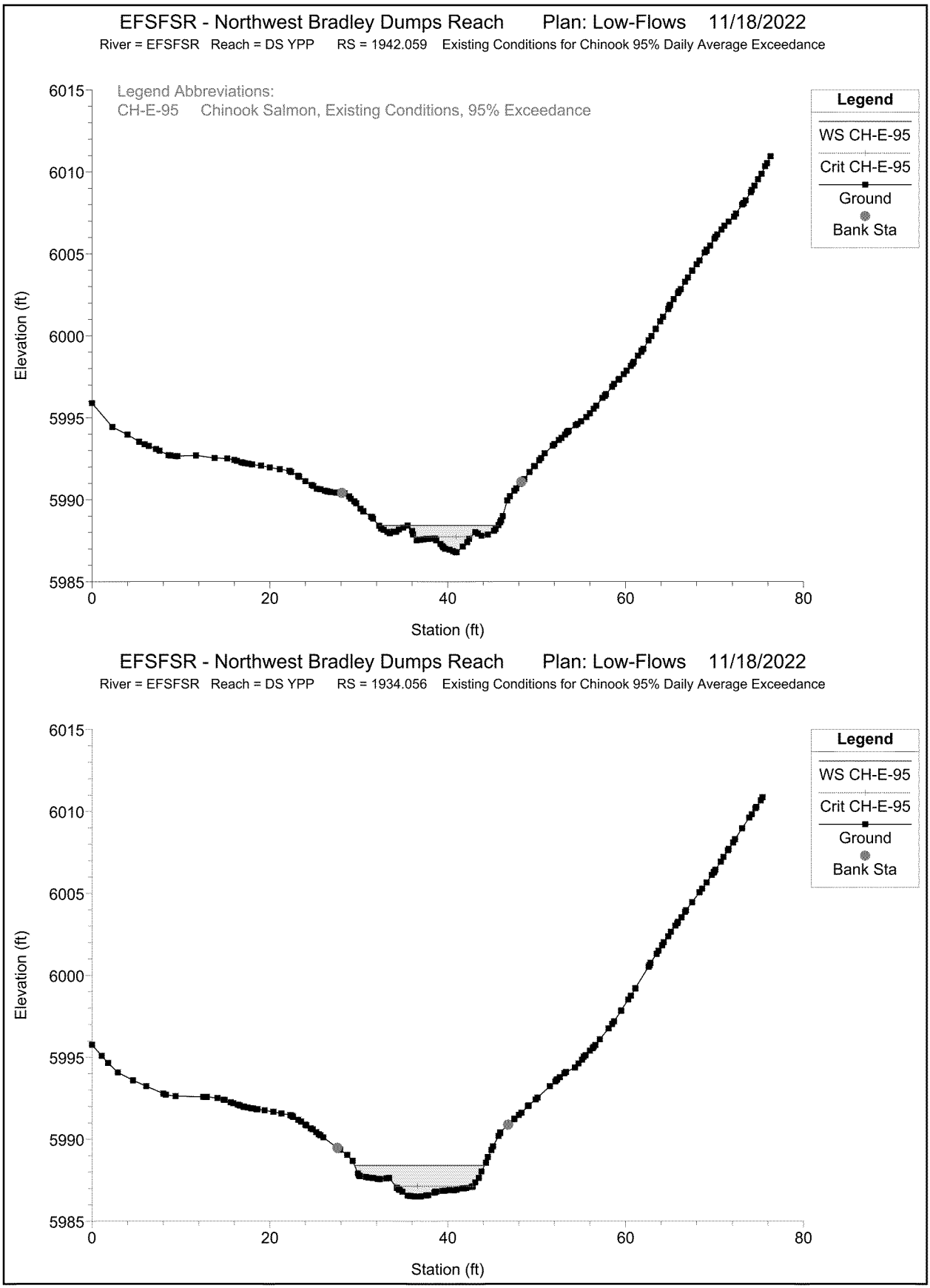

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 2000.454 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1993.765 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6006
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
10
20
30
40
50
60
70
80

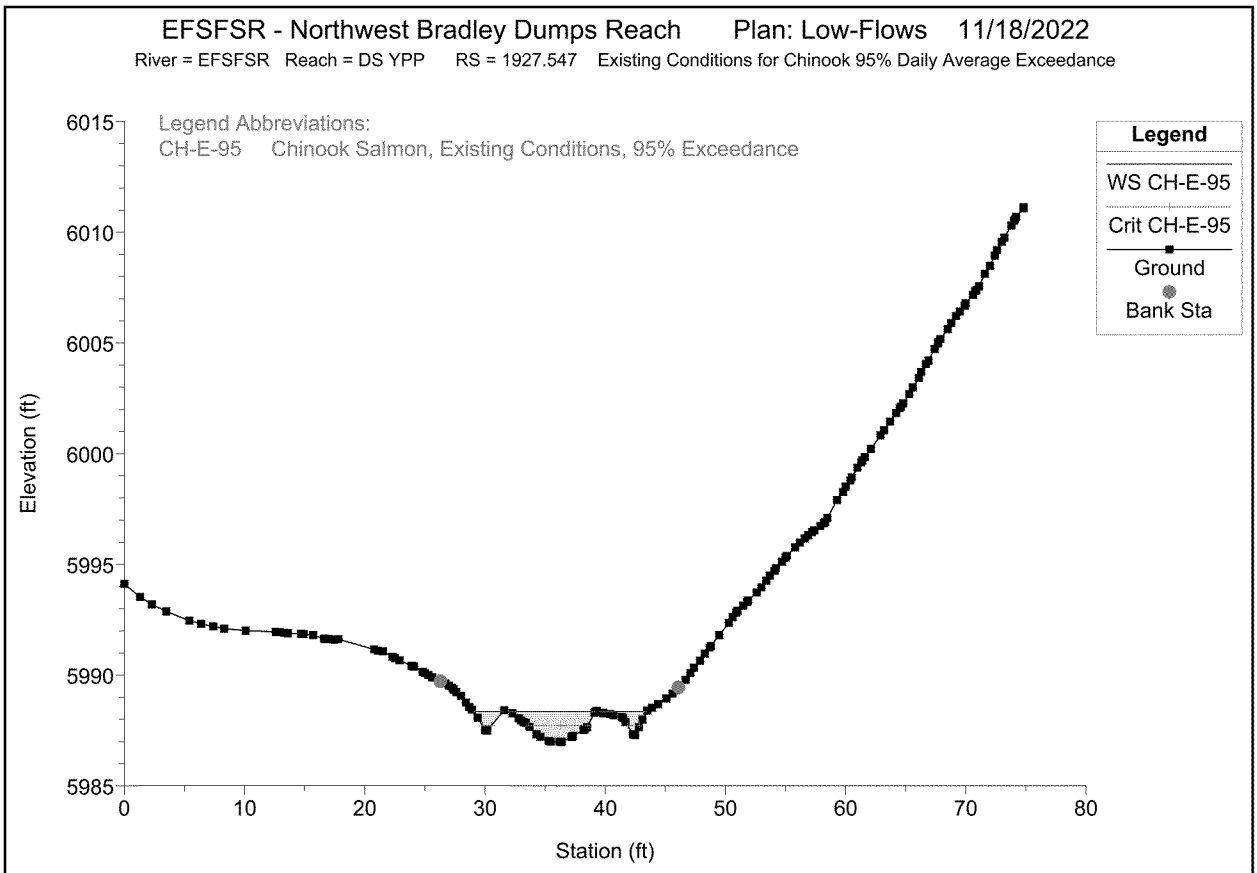

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1987.888 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6006
6004
6002
6000
5998
5996
5994
5992
5990
5988
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1979.265 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6010
6005
6000
5995
5990
5985
0
20
40
60
80

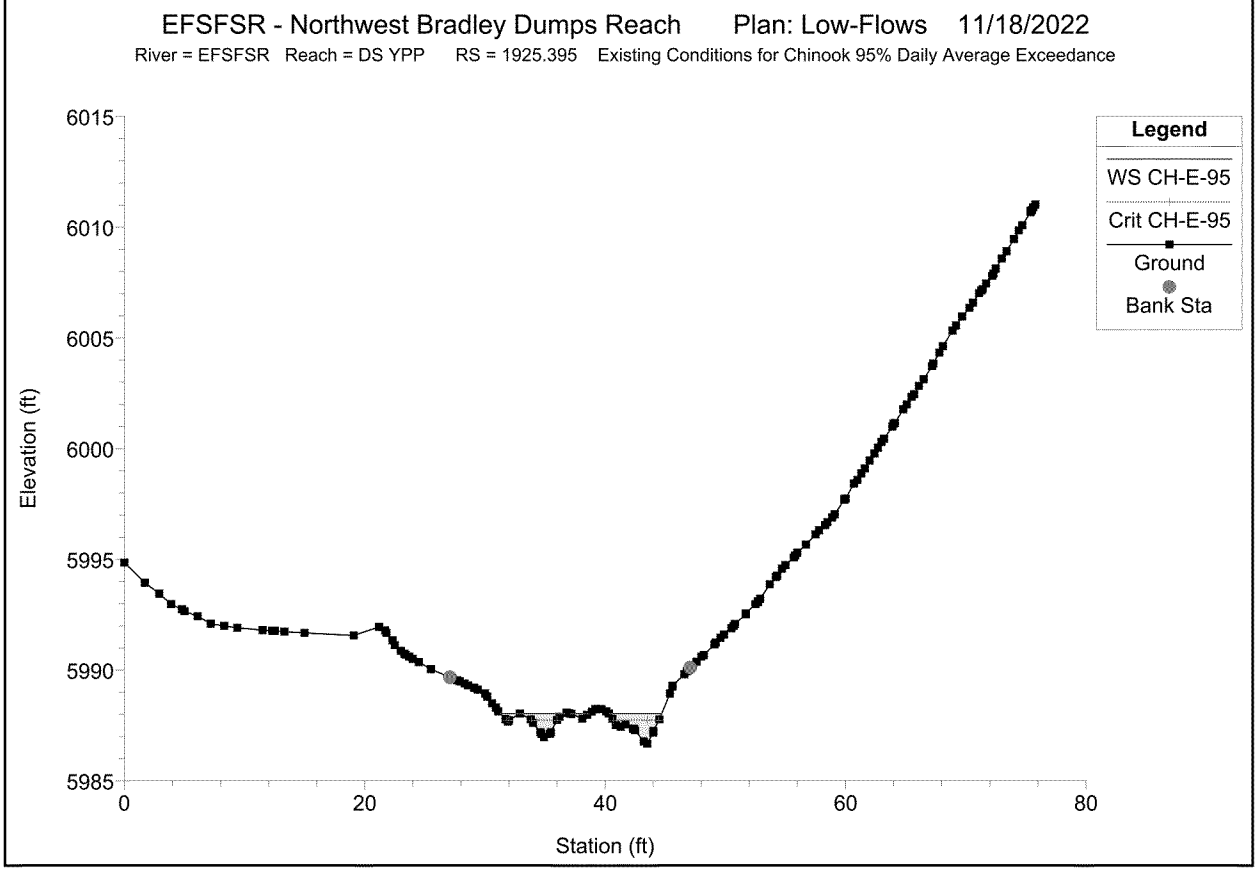

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1974.235 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6010
6005
6000
5995
5990
5985
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1968.267 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6010
6005
6000
5995
5990
5985
0
20
40
60
80

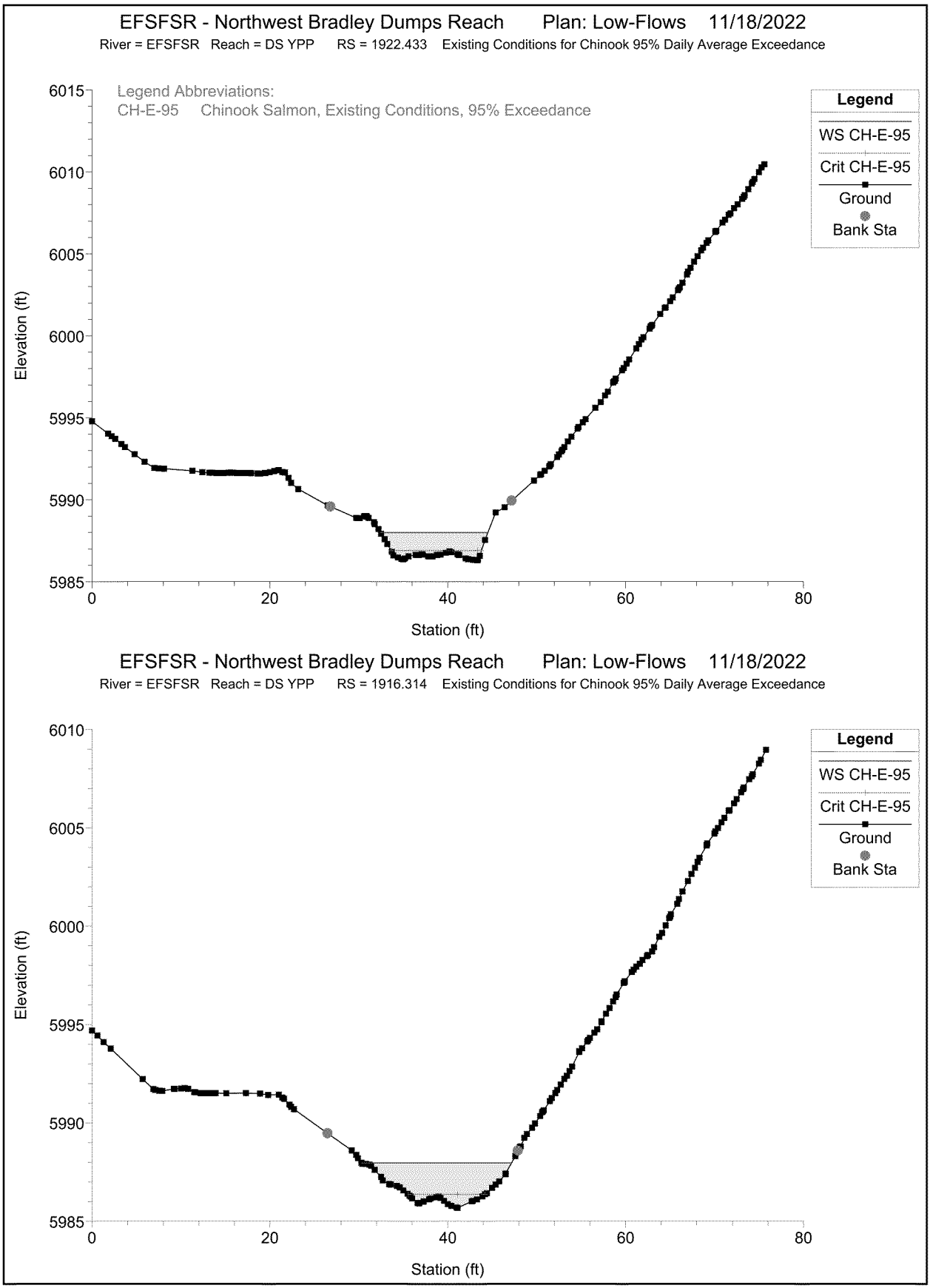

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1953.402 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6015
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)

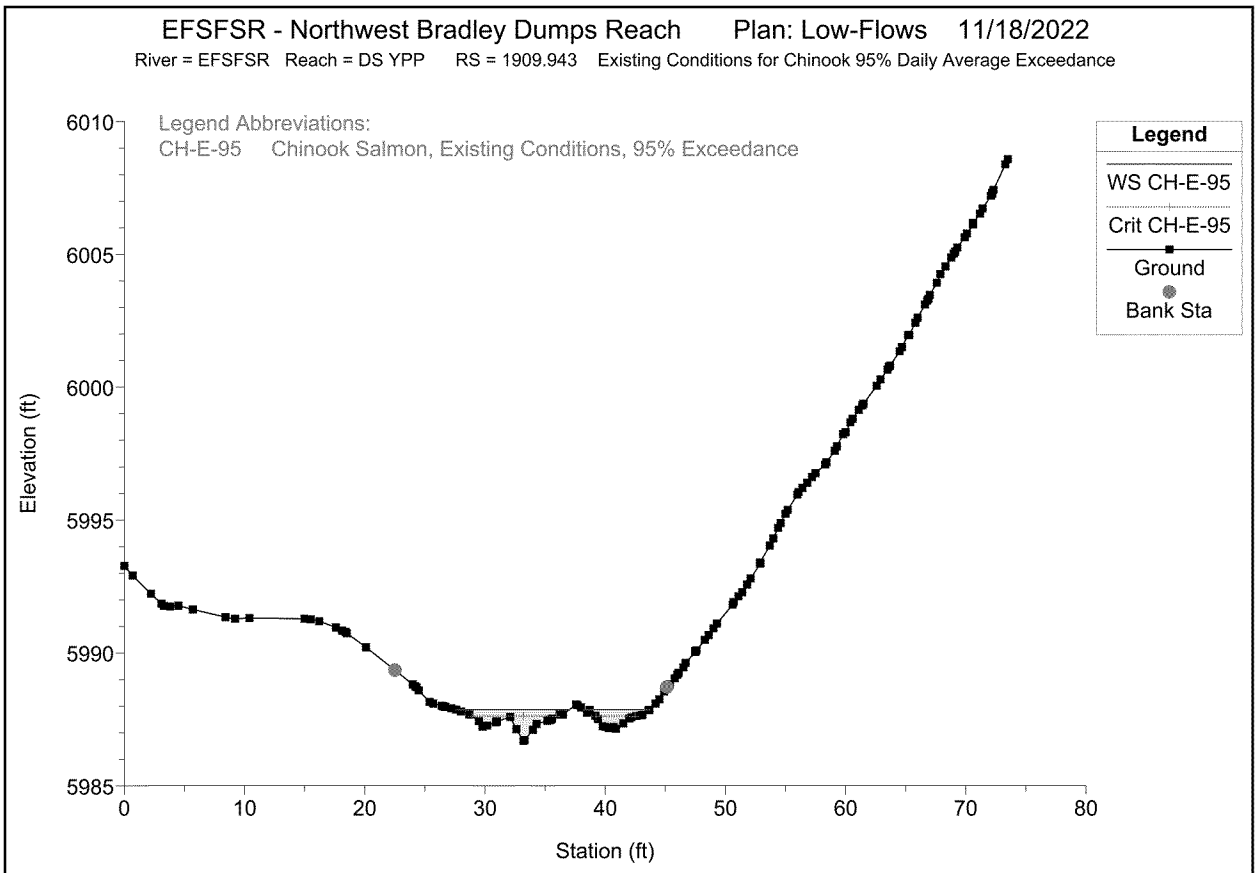

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1950.308 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6015
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)

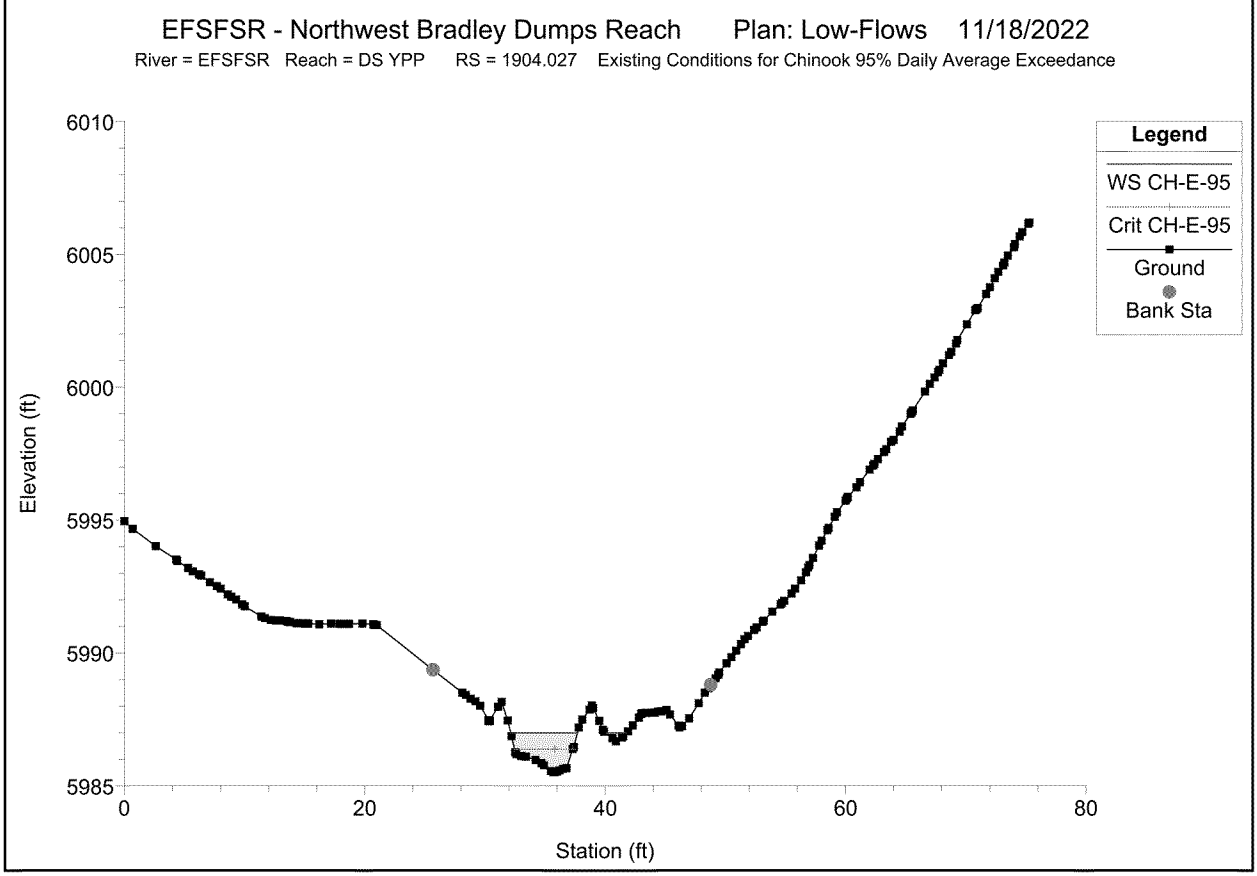

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1942.059 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6015
6010
6005
6000
5995
5990
5985
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1934.056 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6015
6010
6005
6000
5995
5990
5985
0
20
40
60
80

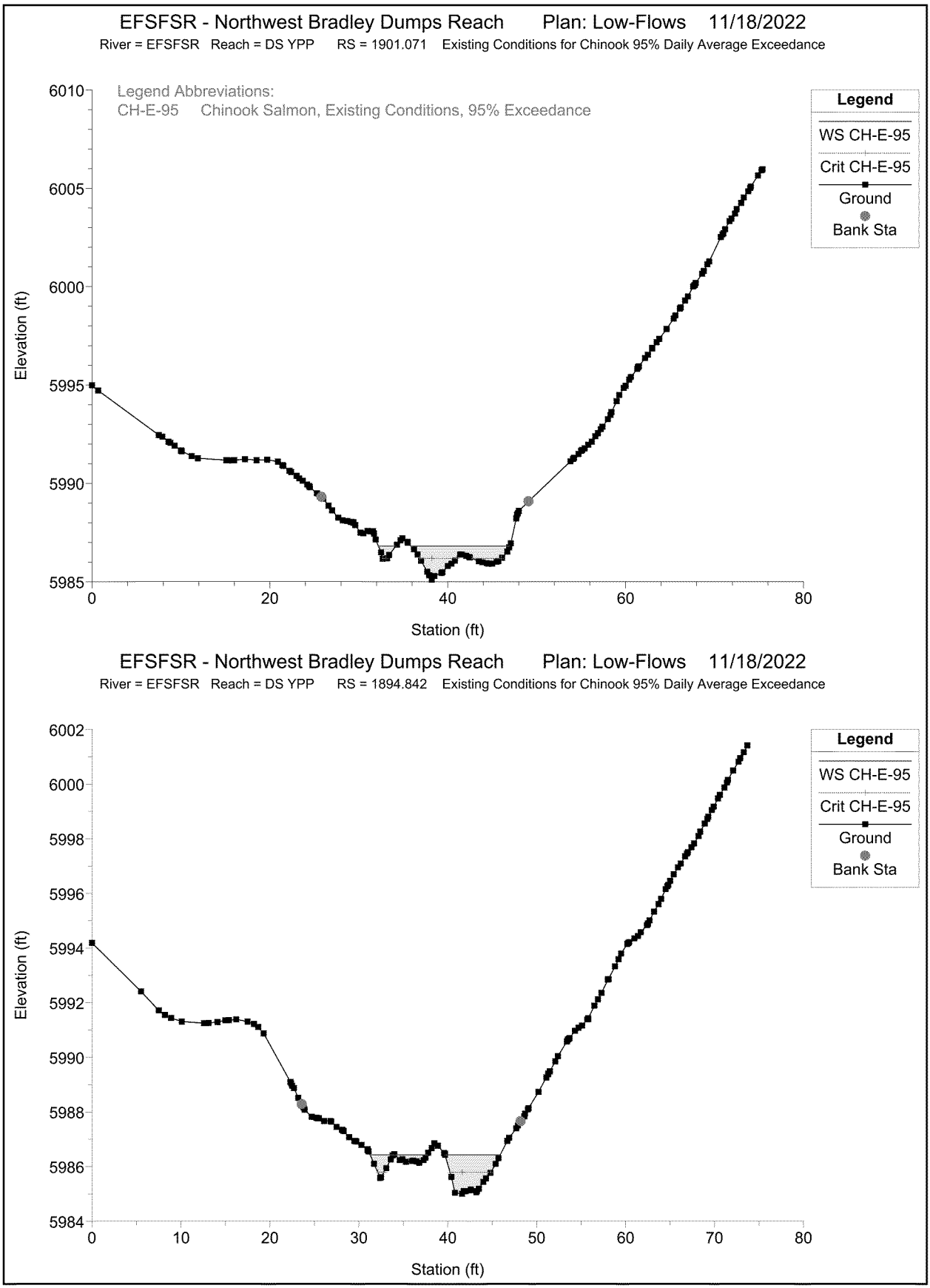

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1927.547 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6015
6010
6005
6000
5995
5990
5985
0
10
20
30
40
50
60
70
80
Station (ft)

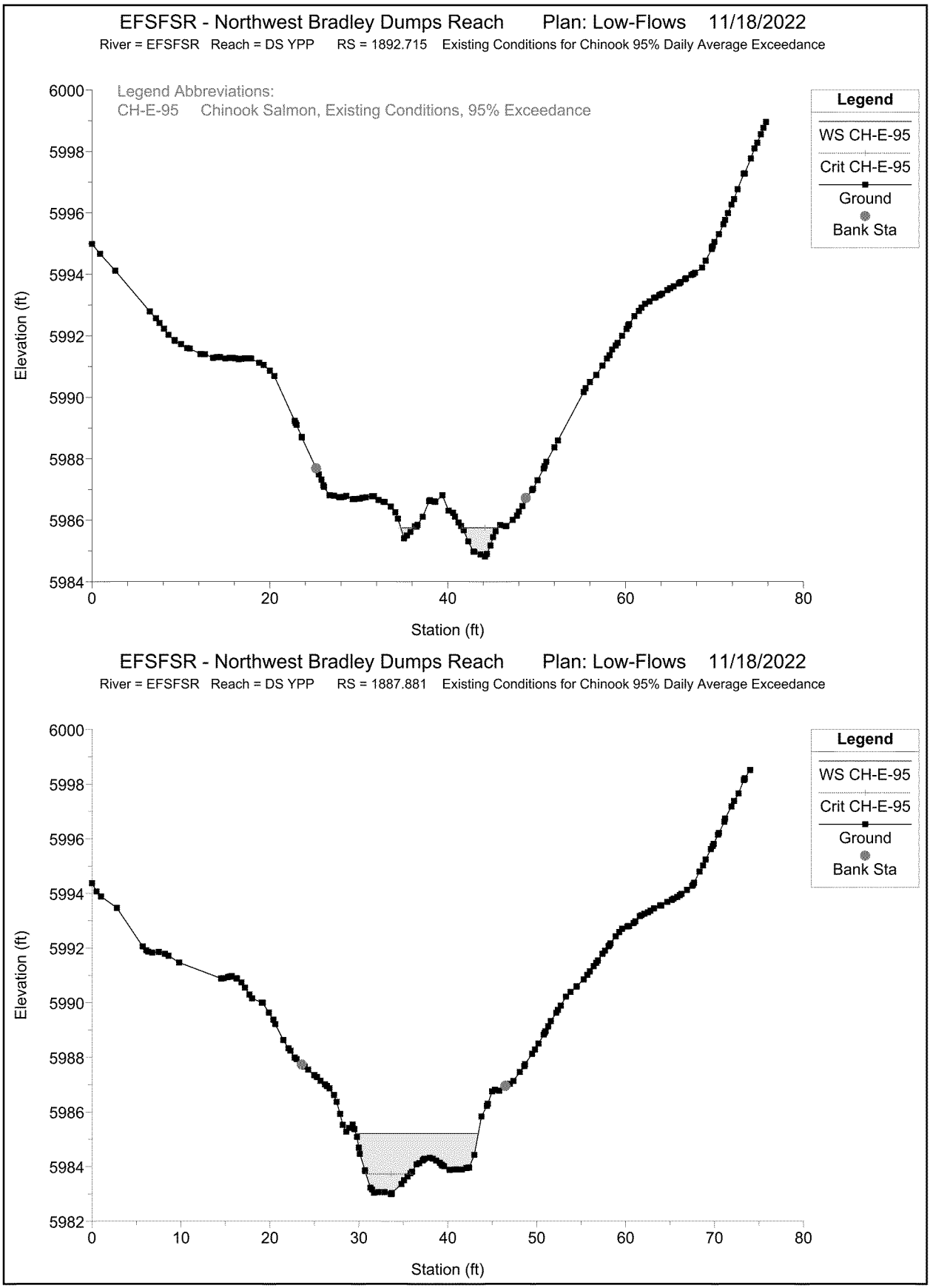

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1925.395 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6015
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)

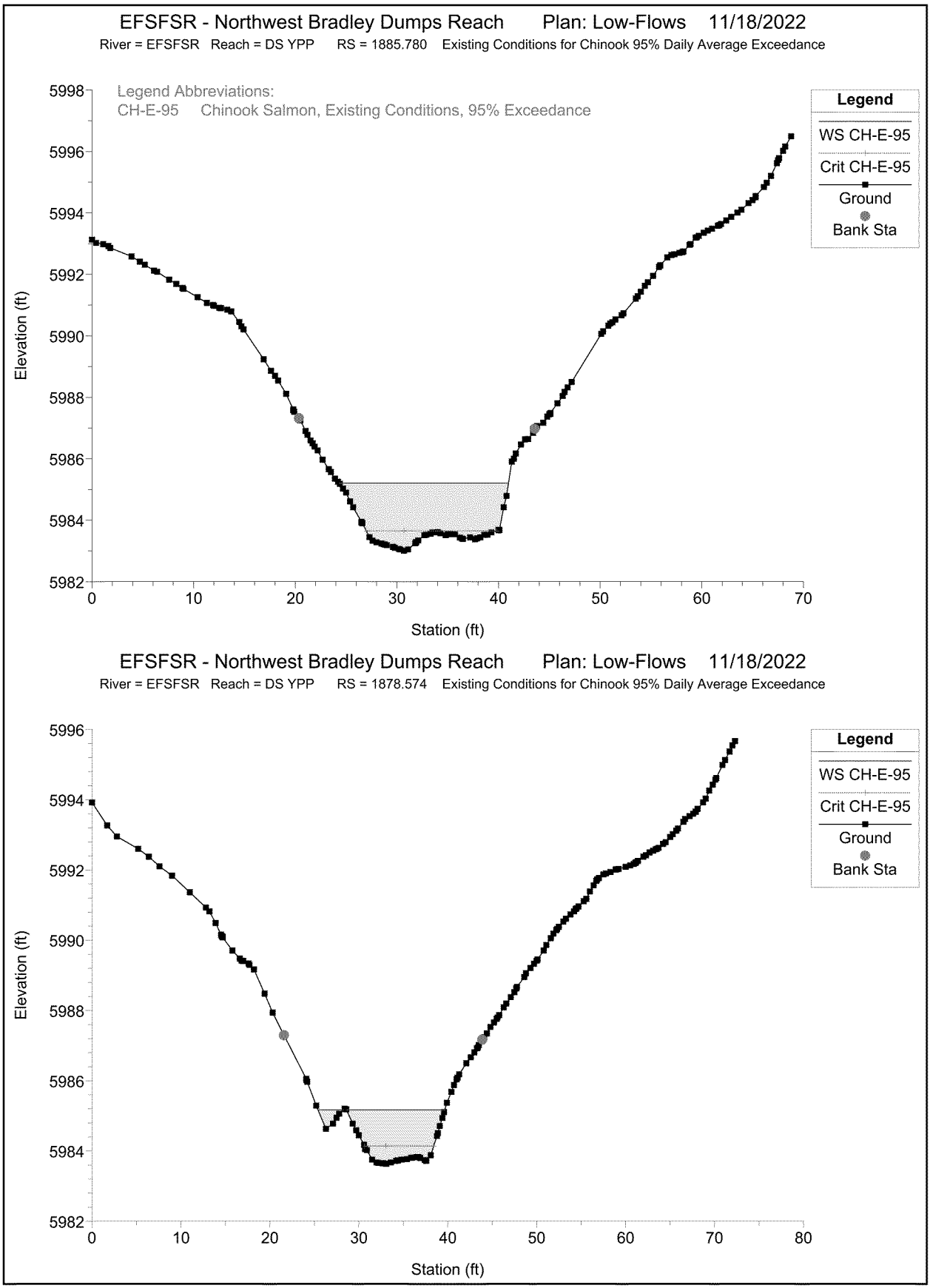

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1922.433 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6015
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1916.314 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)

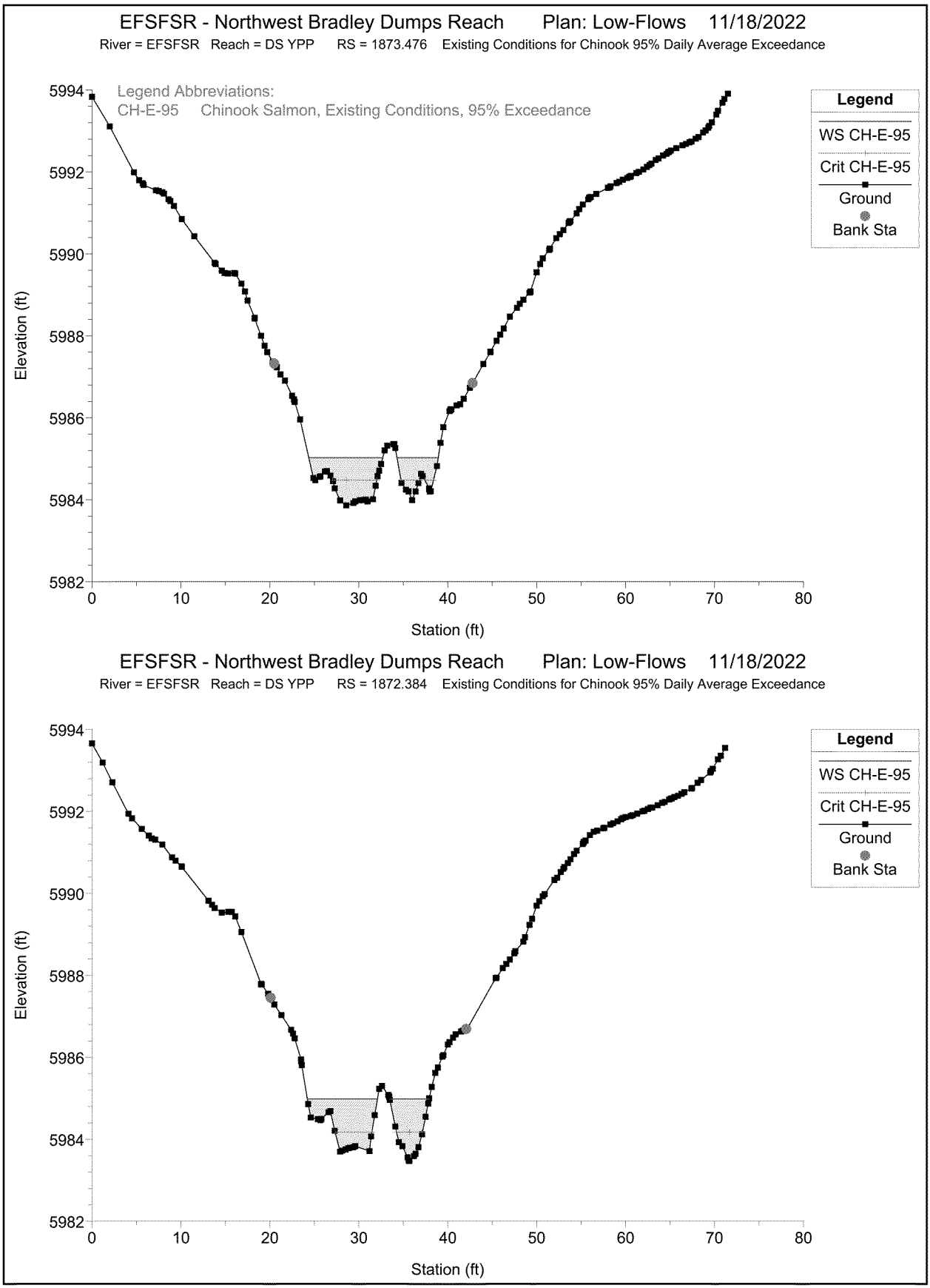

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1909.943 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6010
6005
6000
5995
5990
5985
0
10
20
30
40
50
60
70
80
Station (ft)

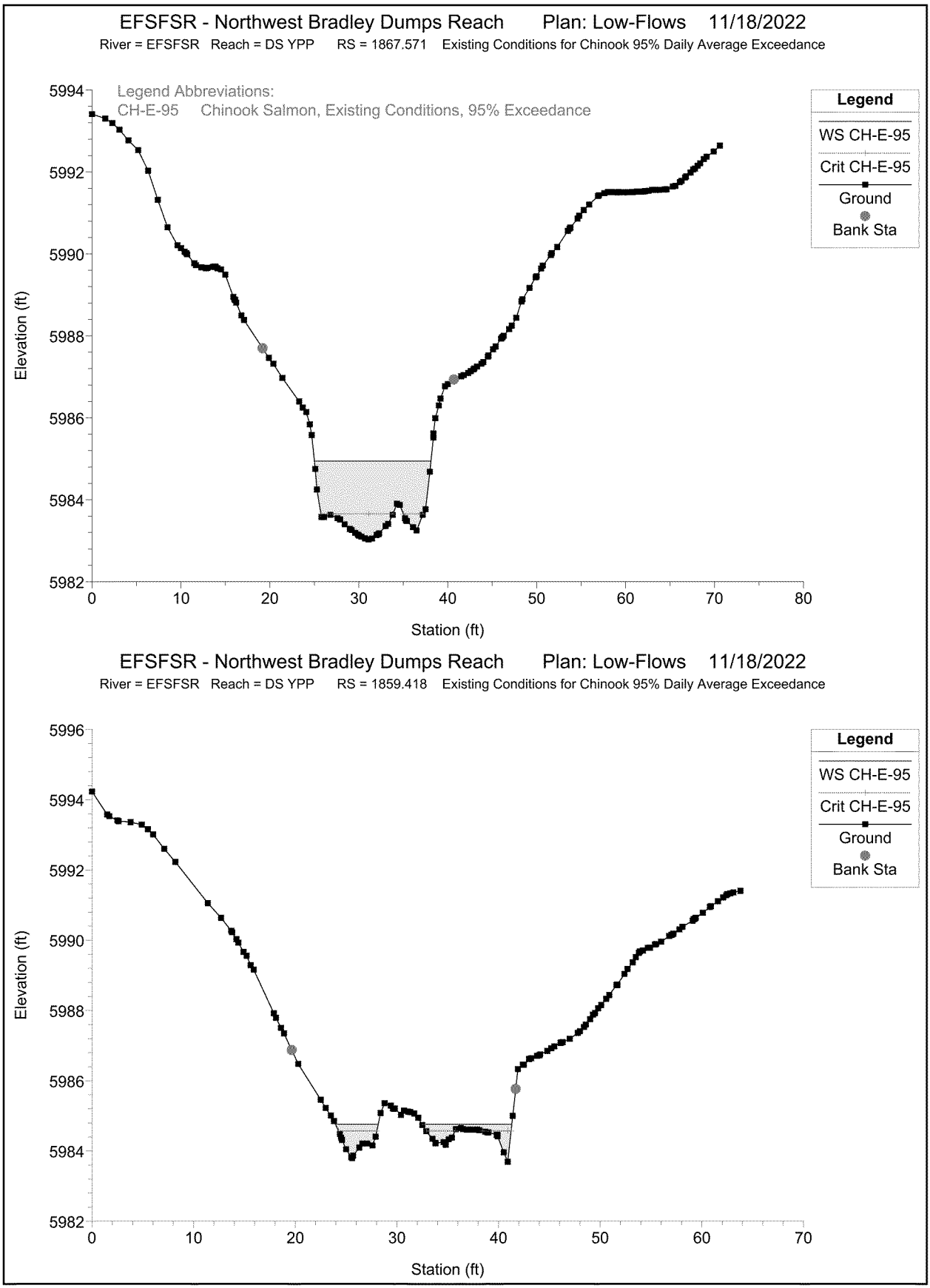

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1904.027 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)

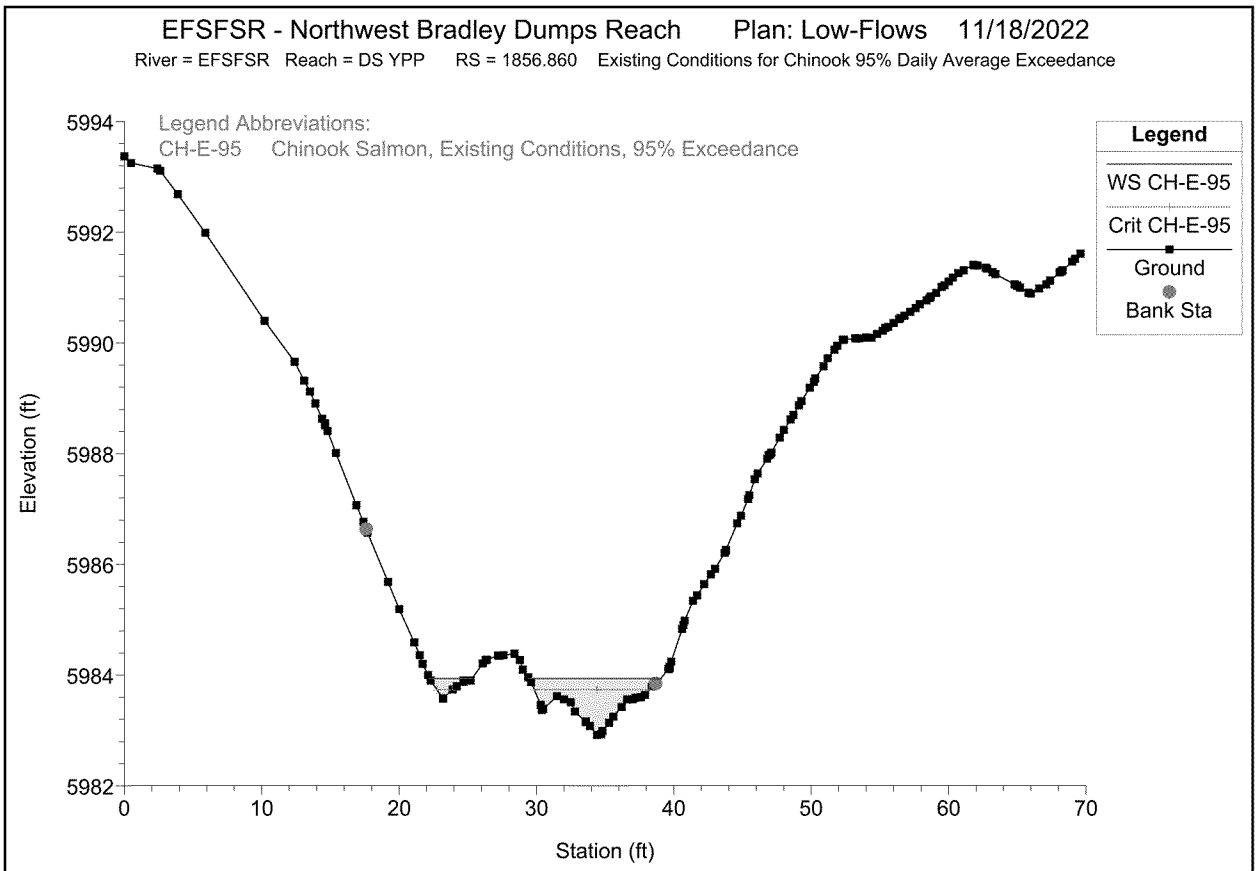

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1901.071 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6010
6005
6000
5995
5990
5985
0
20
40
60
80
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1894.842 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
6002
6000
5998
5996
5994
5992
5990
5988
5986
5984
0
10
20
30
40
50
60
70
80
Station (ft)

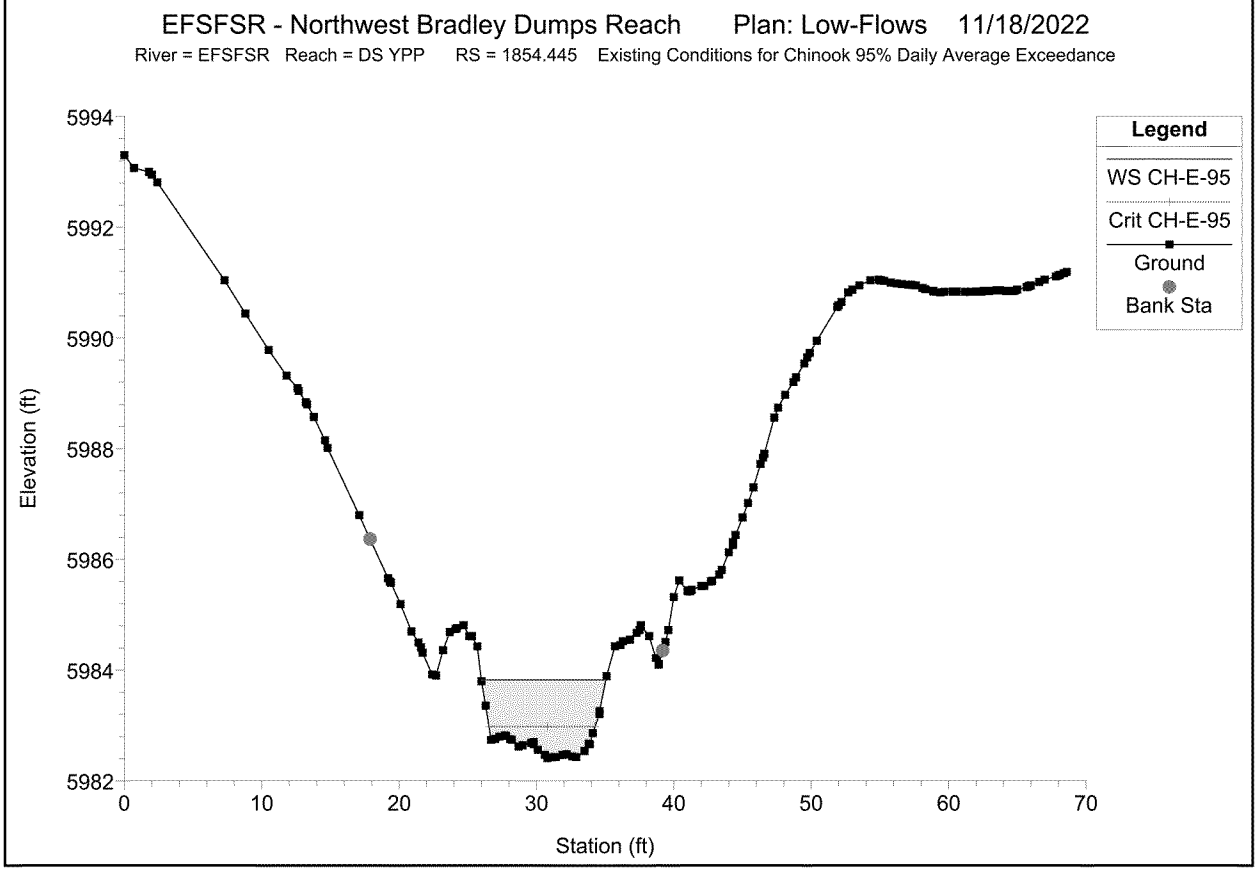

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1892.715 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6000
5998
5996
5994
5992
5990
5988
5986
5984
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1887.881 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
6000
5998
5996
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70
80

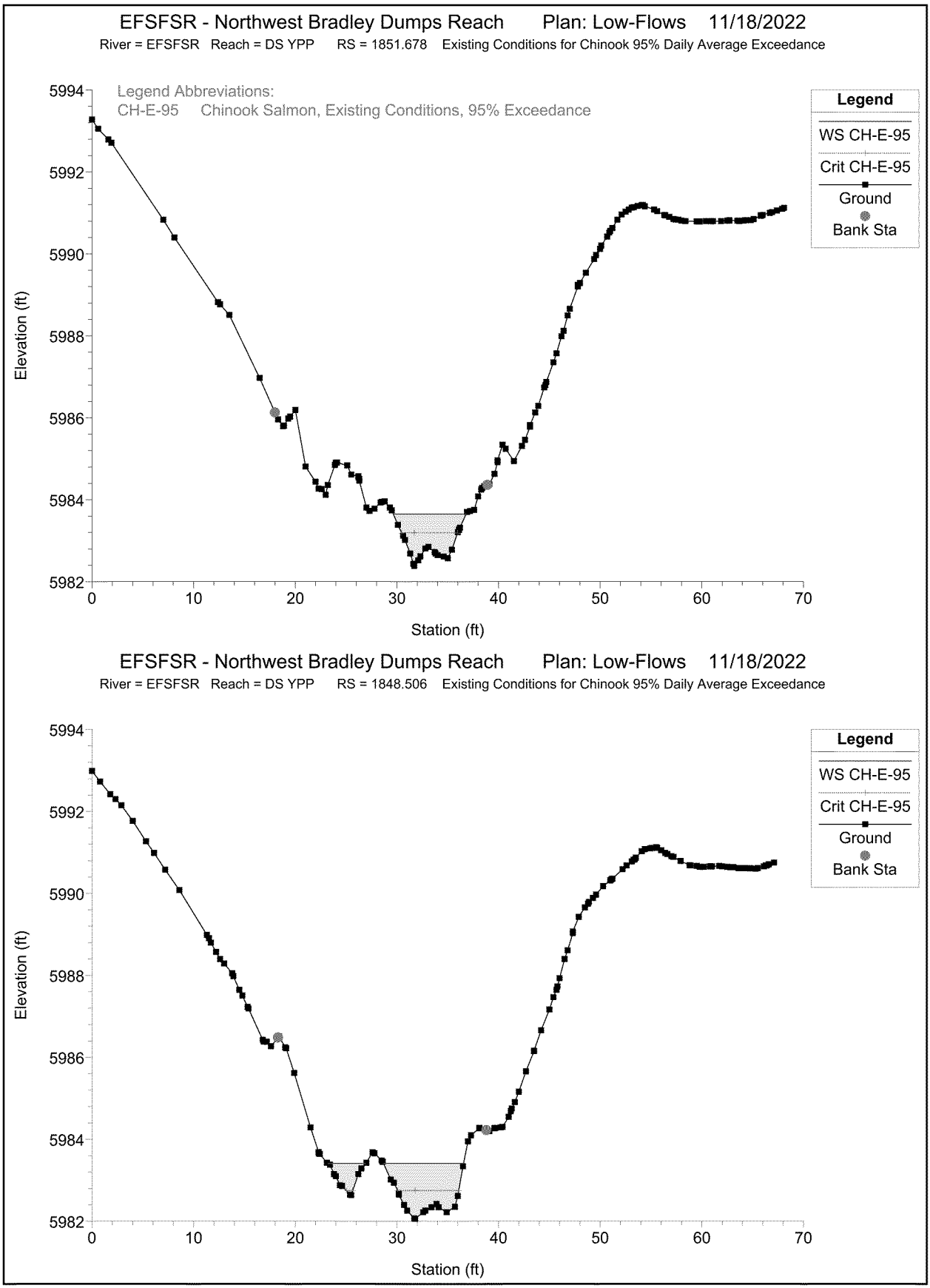

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1885.780 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5998
5996
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1878.574 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5996
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70
80


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1873.476 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1872.384 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1867.571 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1859.418 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5996
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70

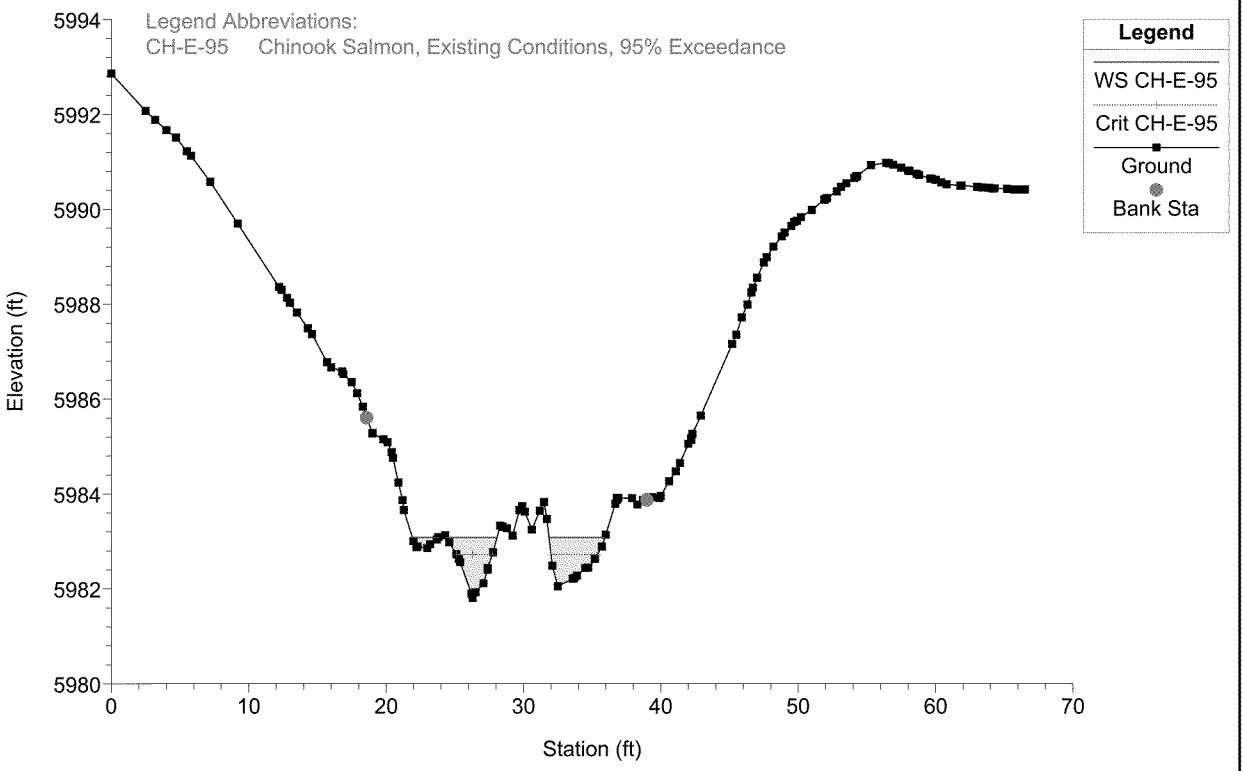

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1856.860 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1854.445 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1851.678 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1848.506 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
0
10
20
30
40
50
60
70

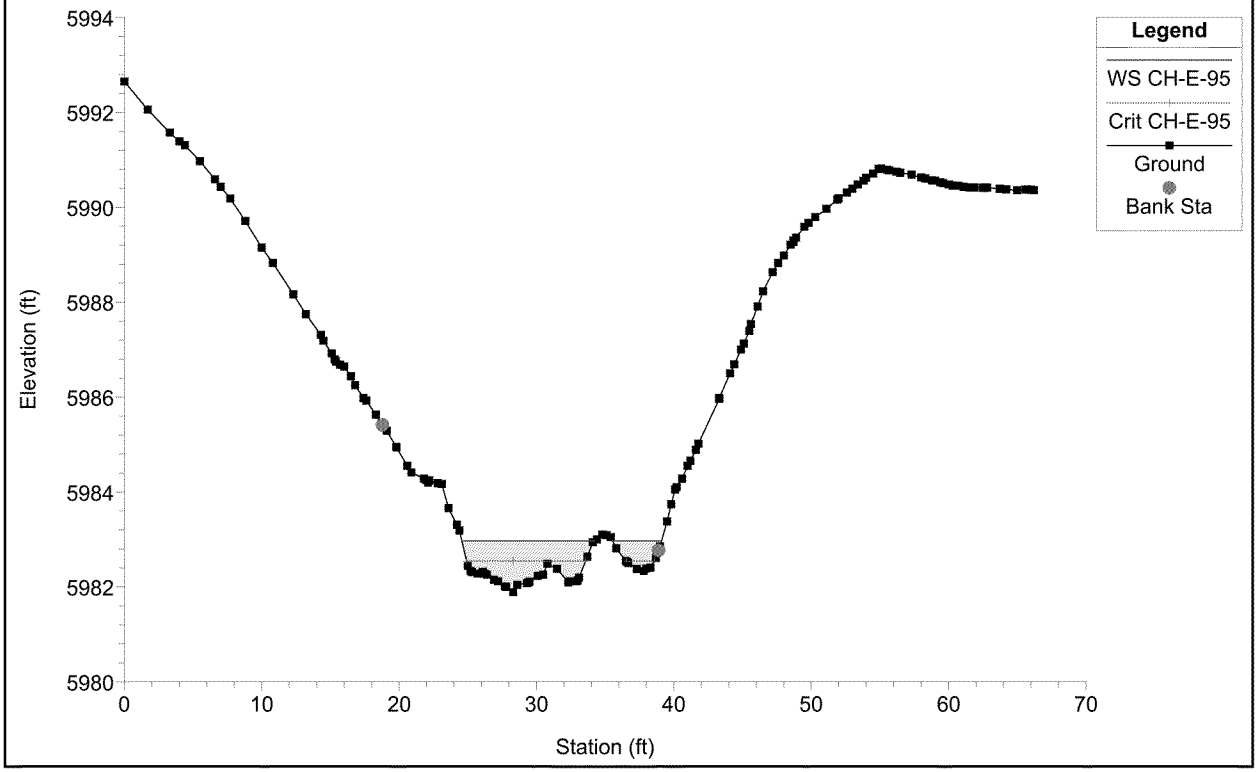
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

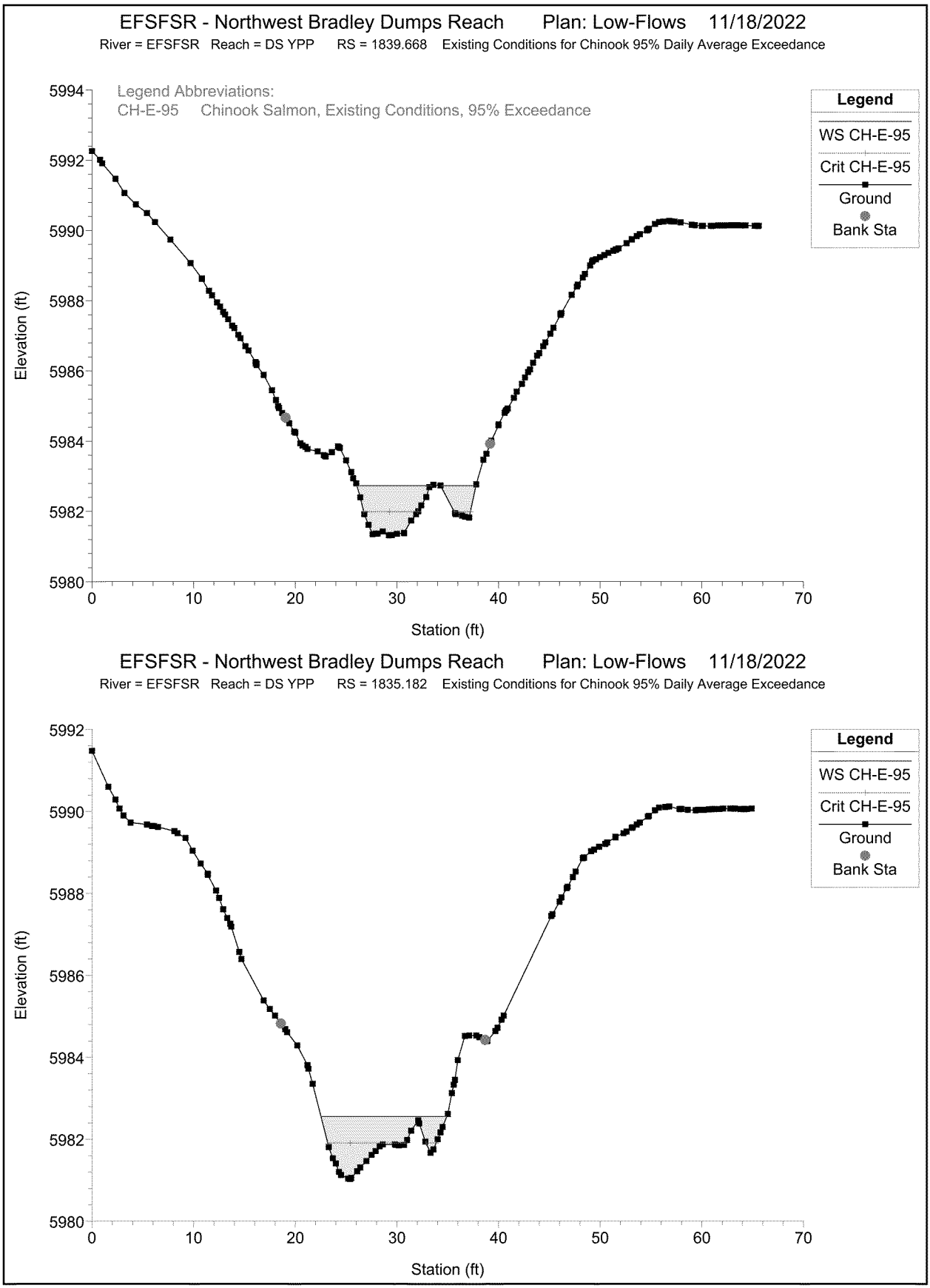
River = EFSFSR Reach = DS YPP RS = 1845.414 Existing Conditions for Chinook 95% Daily Average Exceedance

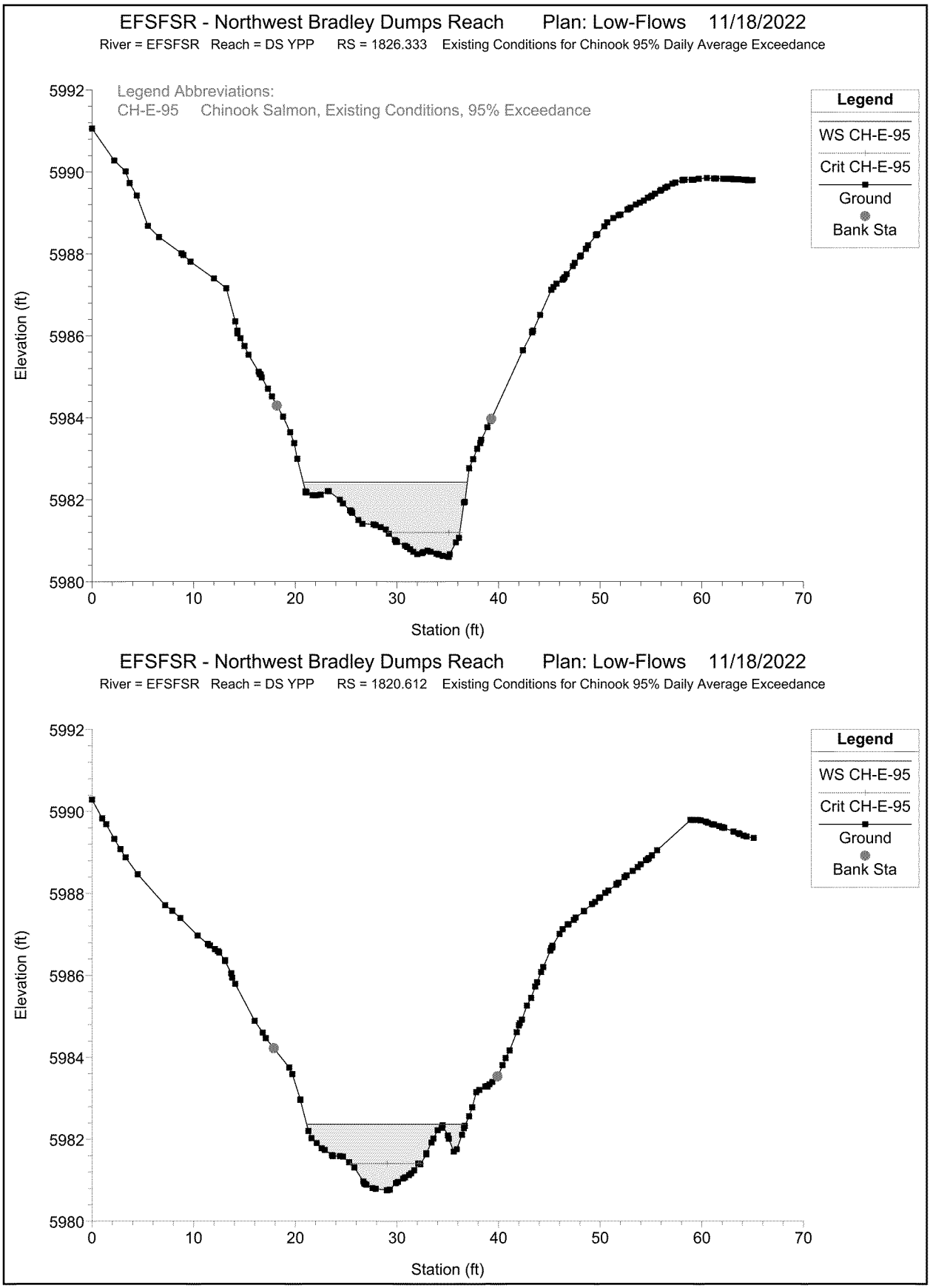


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 1844.227 Existing Conditions for Chinook 95% Daily Average Exceedance

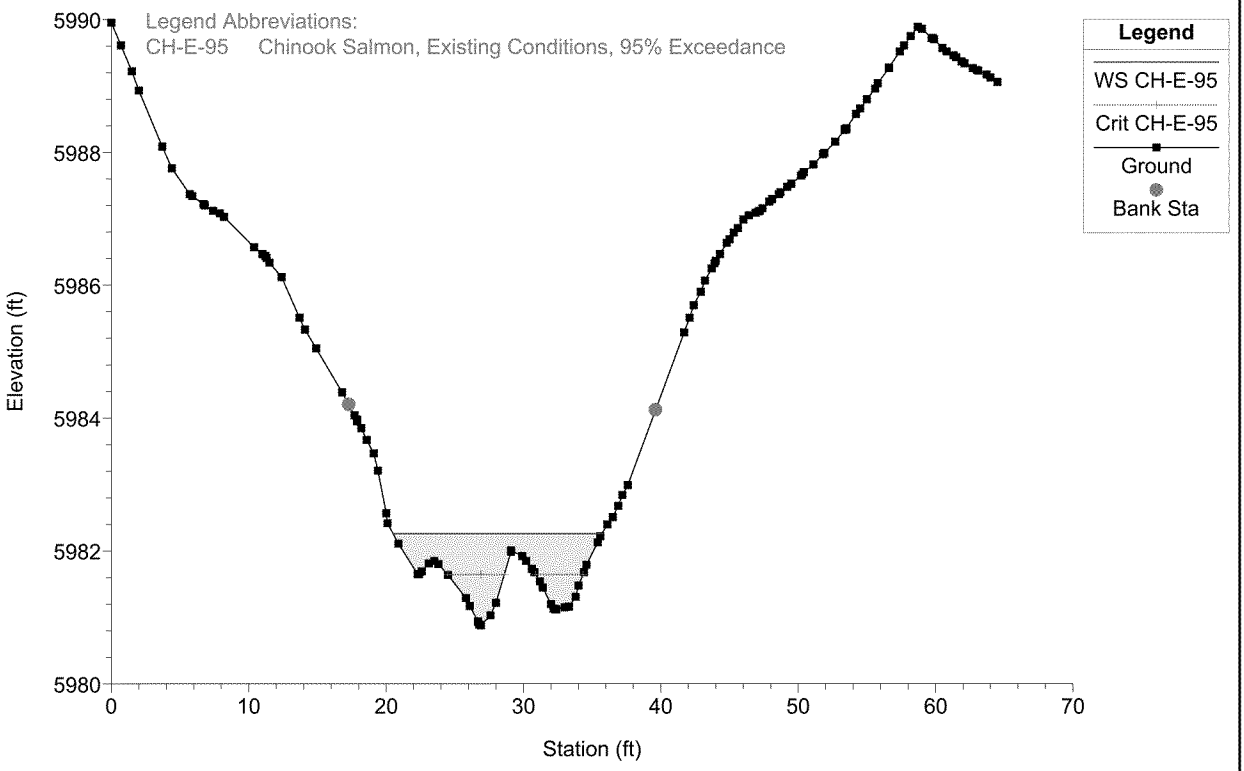



EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1839.668 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
0
10
20
30
40
50
60
70
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1835.182 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5992
5990
5988
5986
5984
5982
5980
0
10
20
30
40
50
60
70


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1826.333 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5992
5990
5988
5986
5984
5982
5980
0
10
20
30
40
50
60
70
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1820.612 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5992
5990
5988
5986
5984
5982
5980
0
10
20
30
40
50
60
70

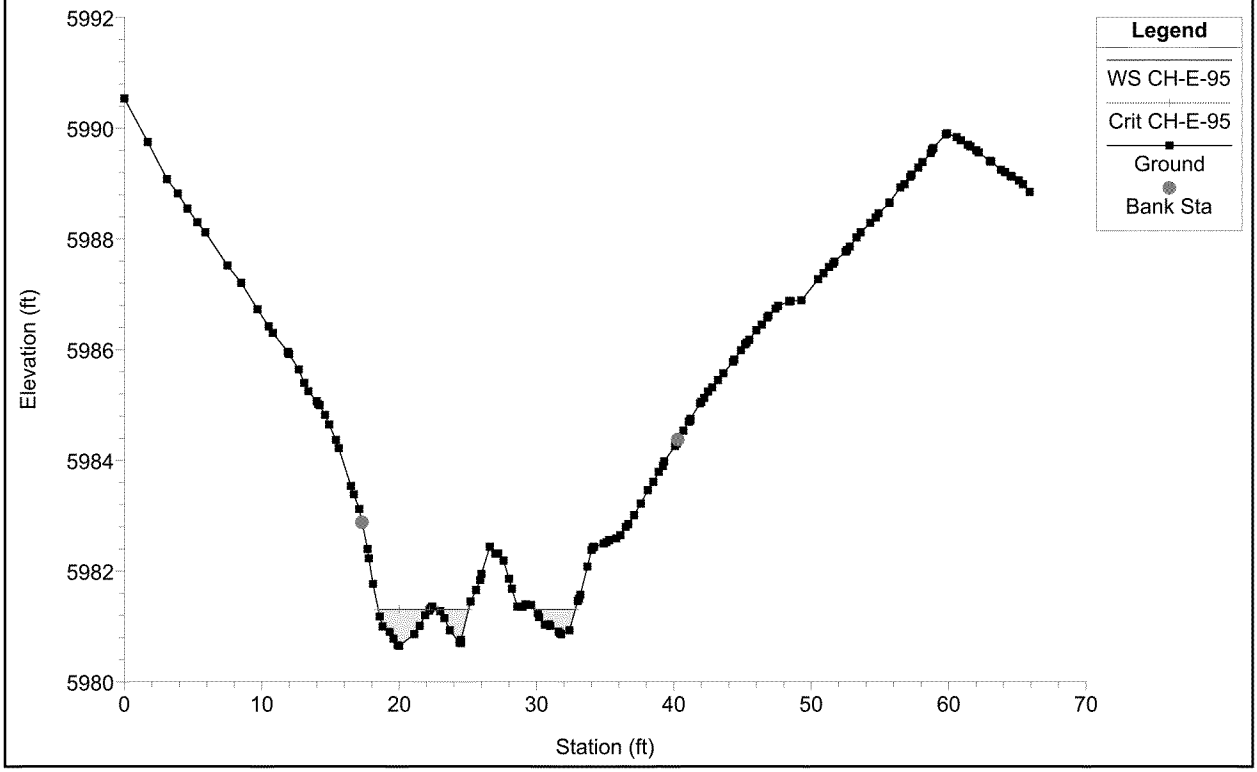
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 1816.484 Existing Conditions for Chinook 95% Daily Average Exceedance



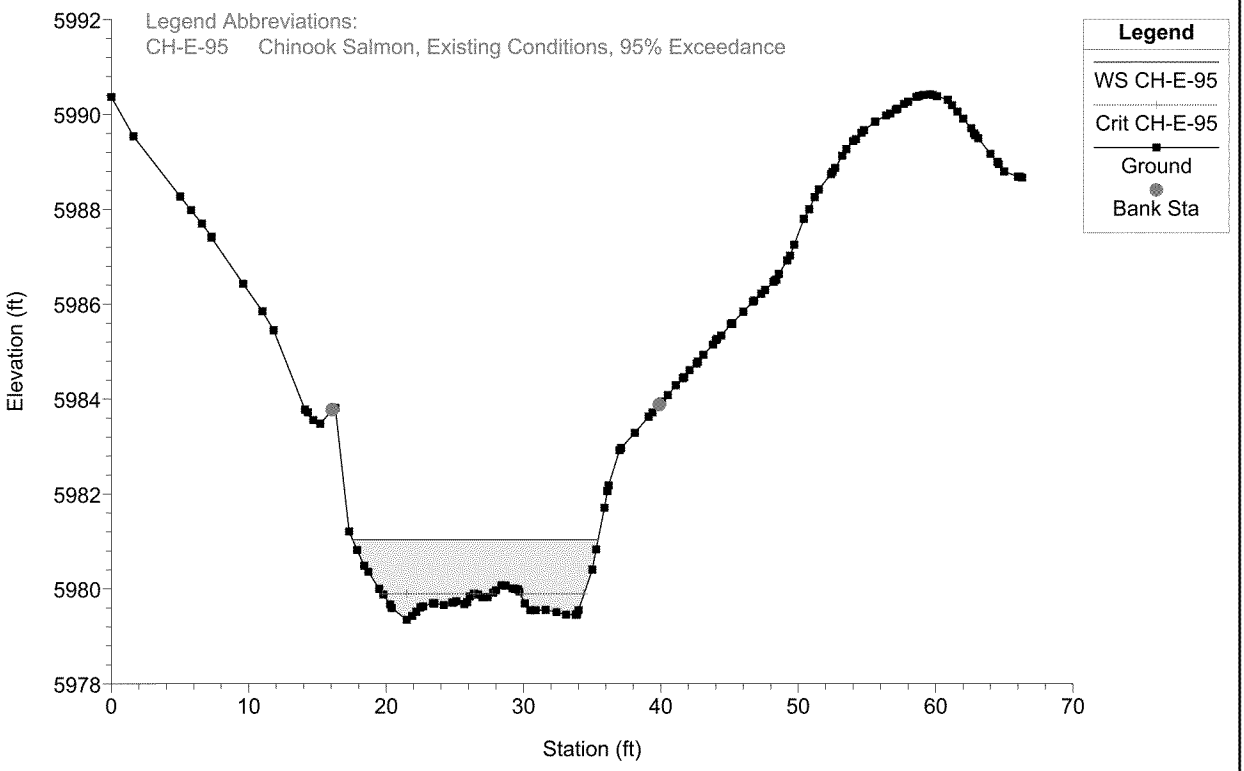
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 1809.709 Existing Conditions for Chinook 95% Daily Average Exceedance



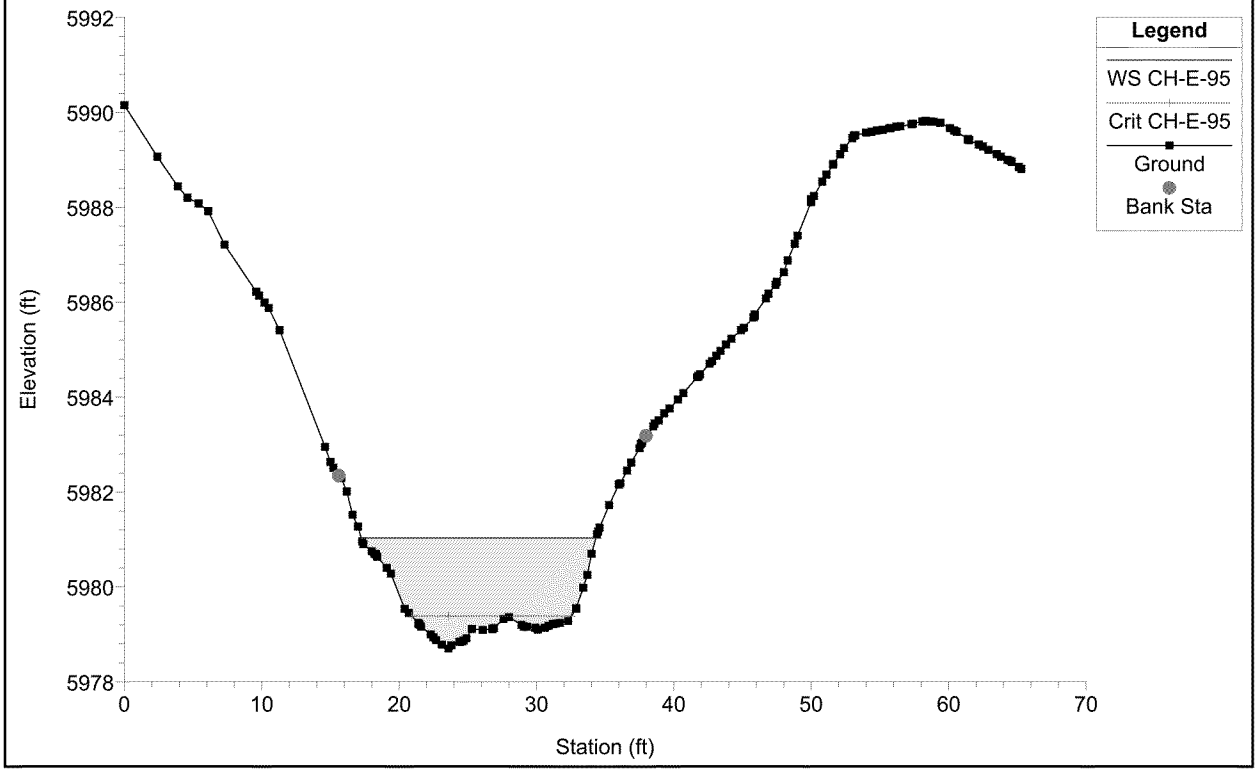
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

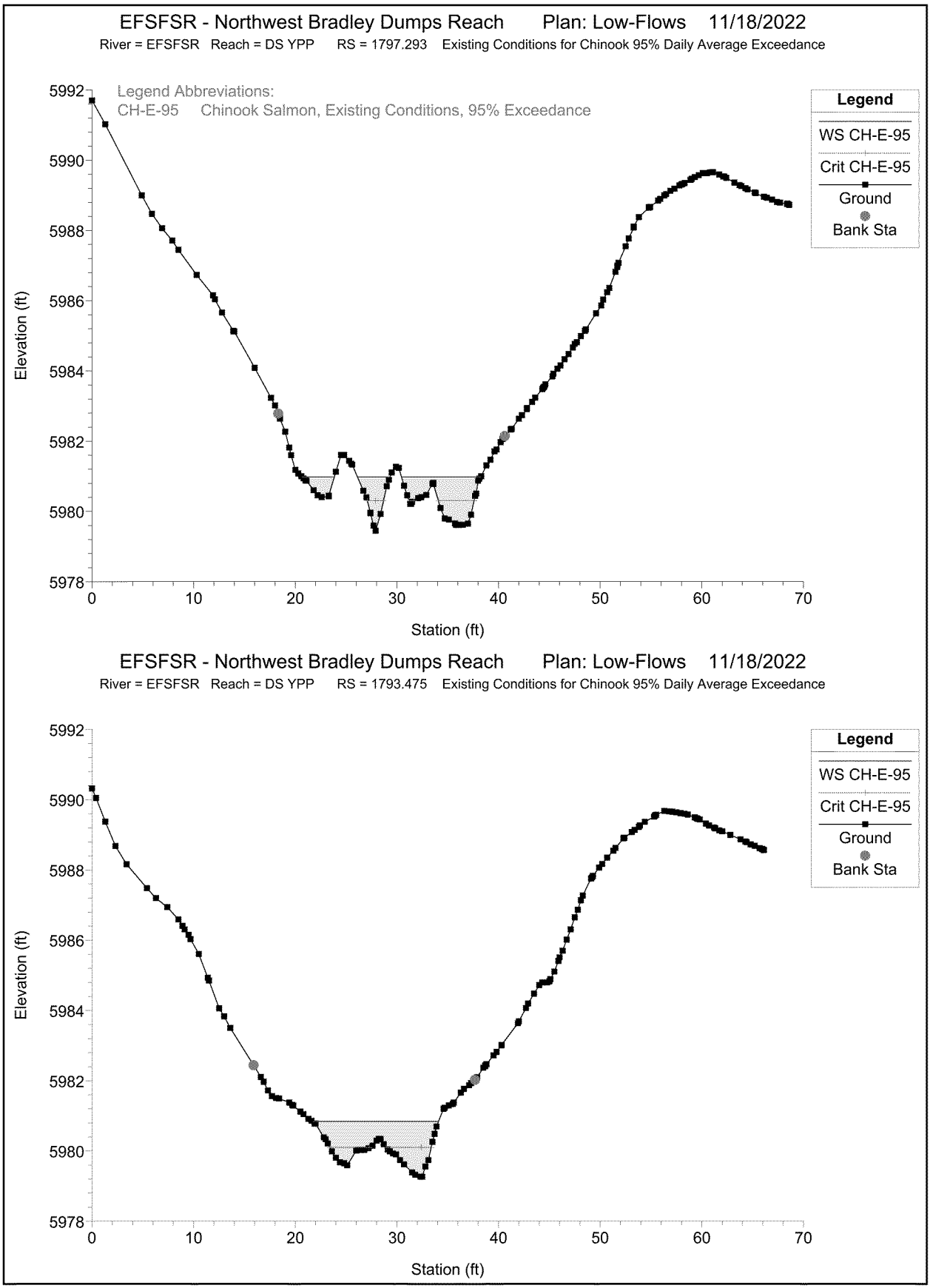
River = EFSFSR Reach = DS YPP RS = 1805.707 Existing Conditions for Chinook 95% Daily Average Exceedance



EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

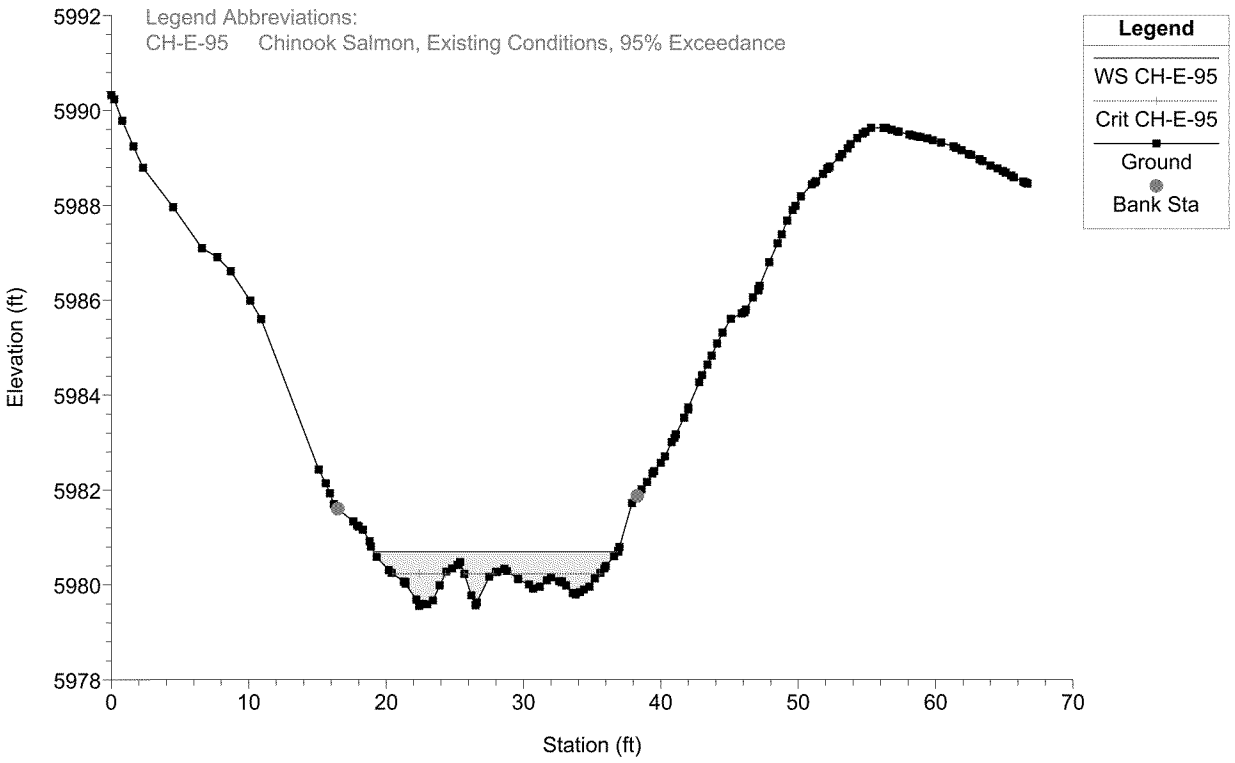
River = EFSFSR Reach = DS YPP RS = 1802.888 Existing Conditions for Chinook 95% Daily Average Exceedance




EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1797.293 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5992
5990
5988
5986
5984
5982
5980
5978
0
10
20
30
40
50
60
70
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1793.475 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5992
5990
5988
5986
5984
5982
5980
5978
0
10
20
30
40
50
60
70

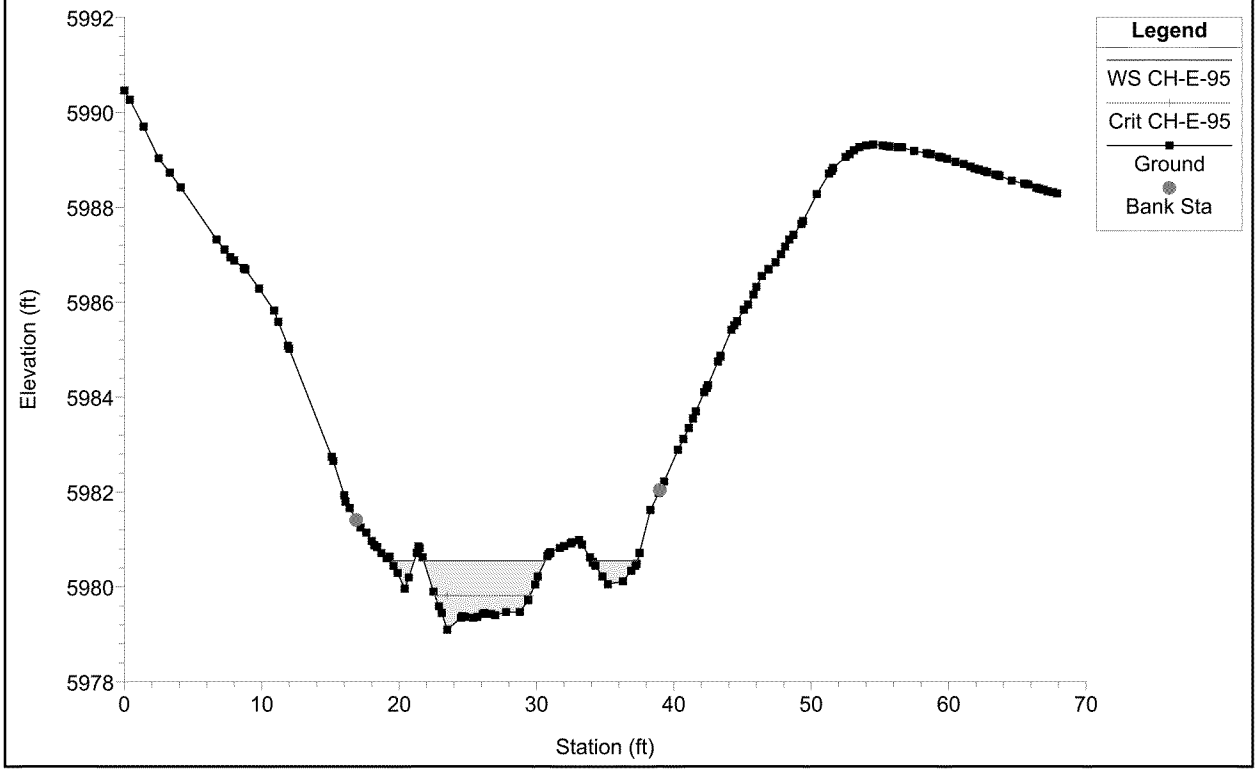
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

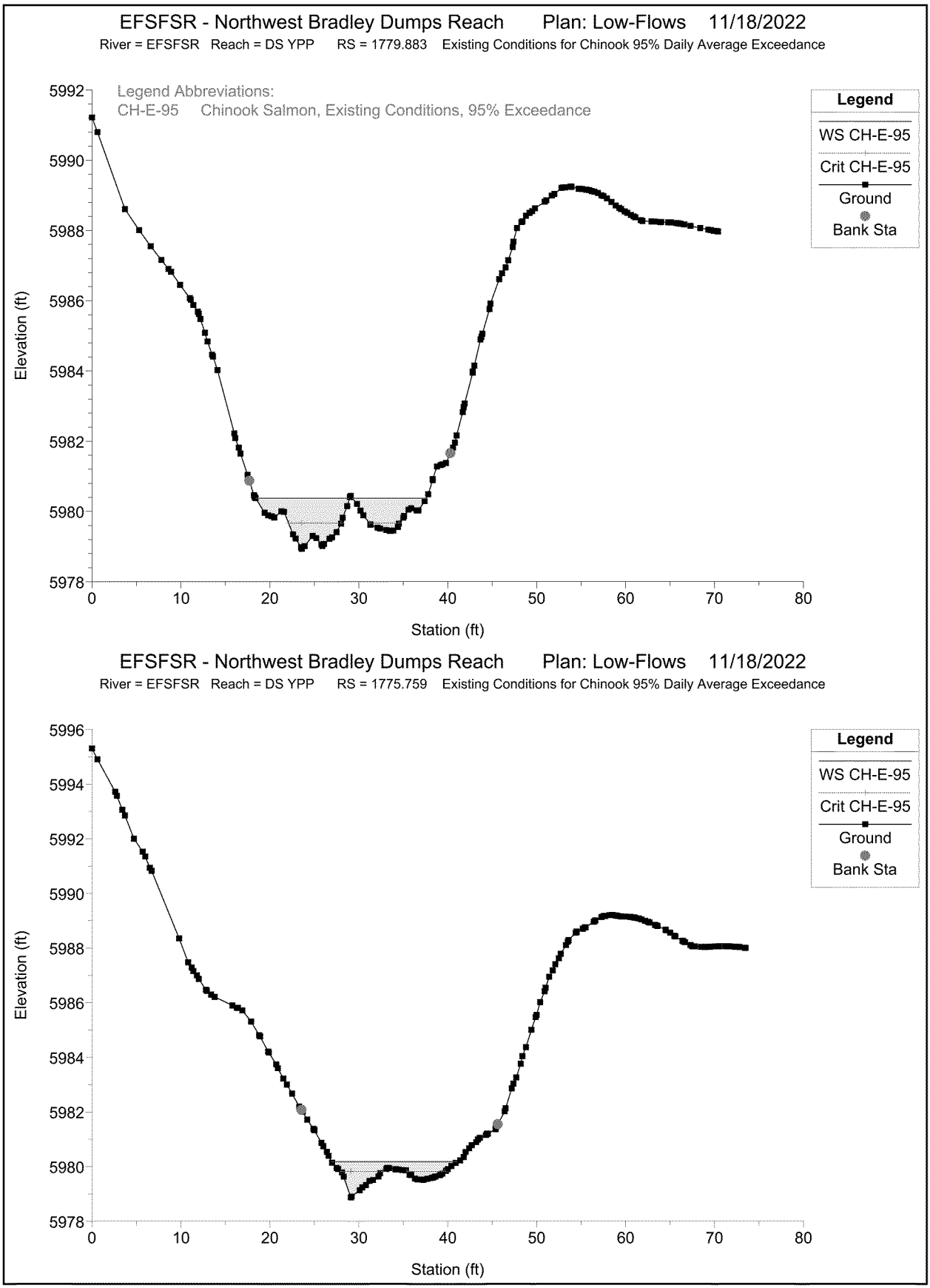
River = EFSFSR Reach = DS YPP RS = 1789.199 Existing Conditions for Chinook 95% Daily Average Exceedance

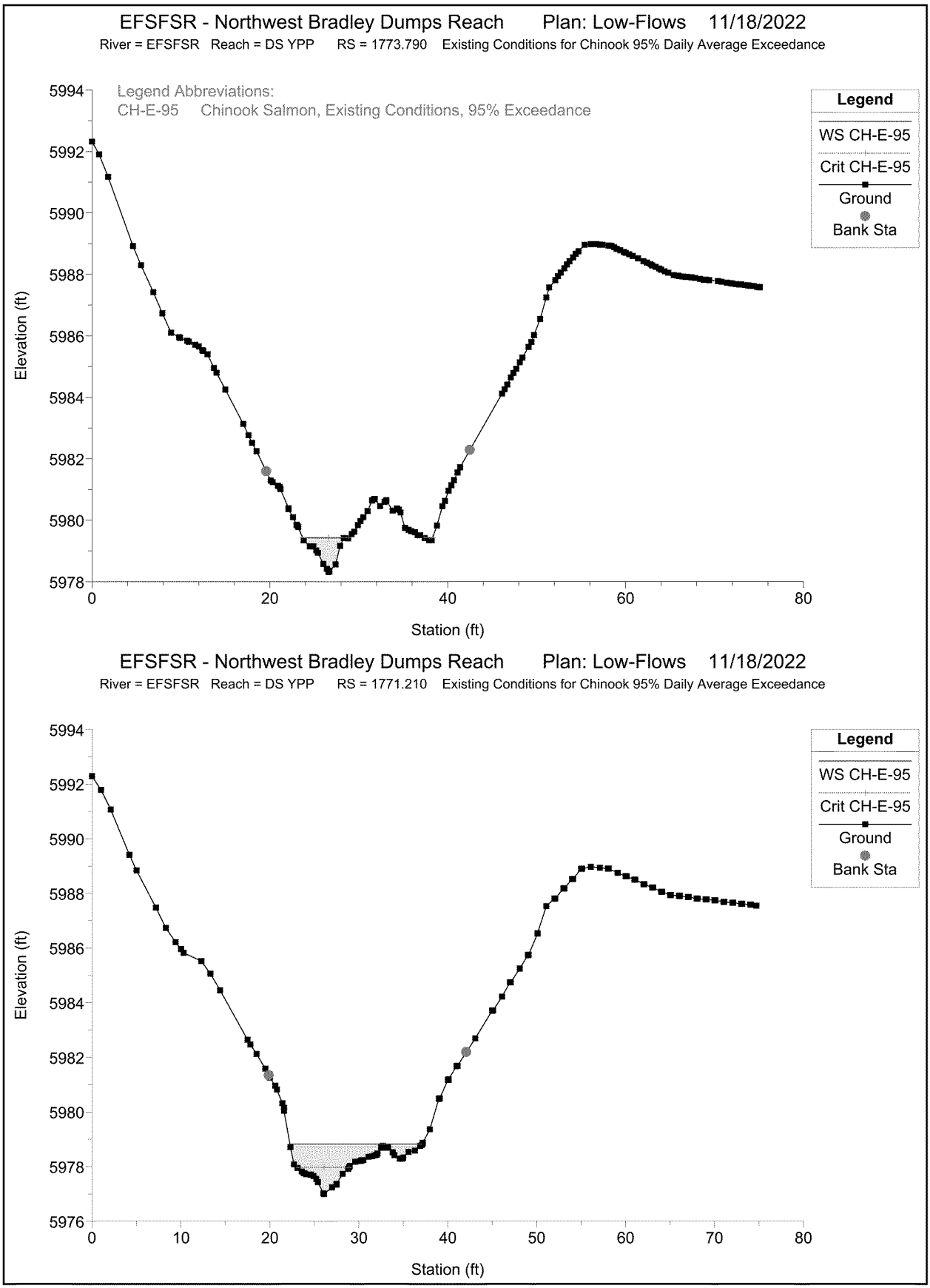


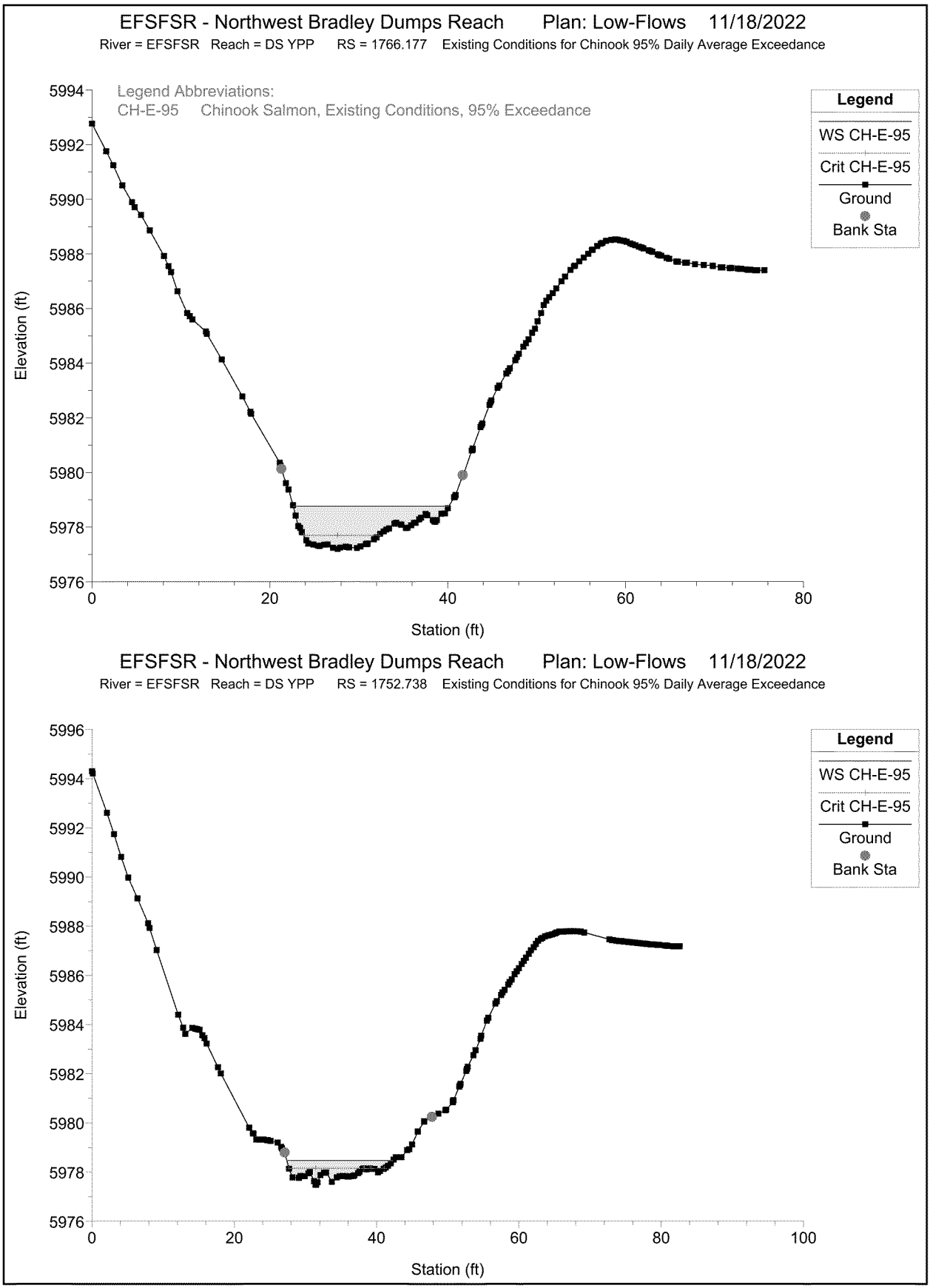
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

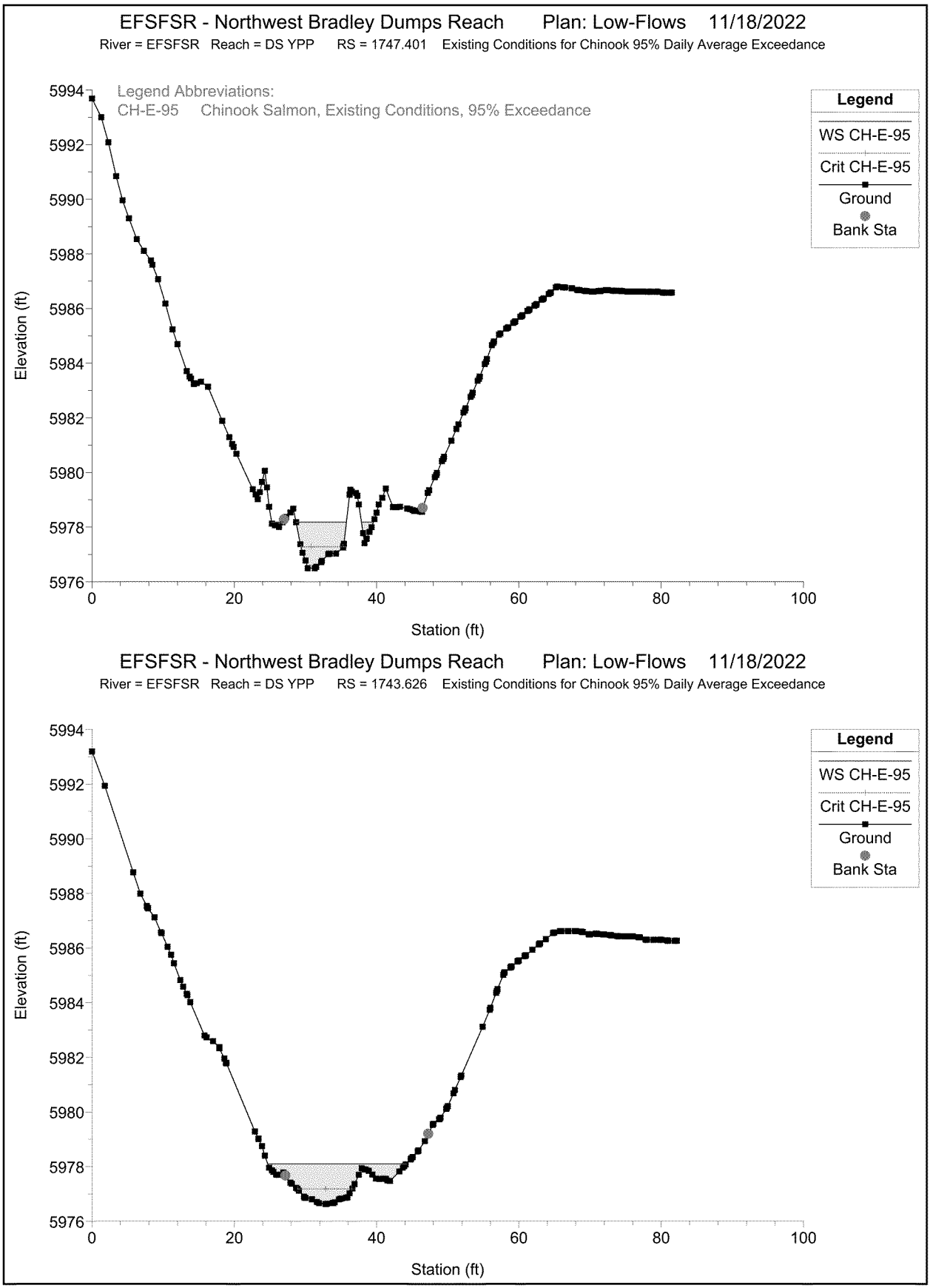
River = EFSFSR Reach = DS YPP RS = 1785.771 Existing Conditions for Chinook 95% Daily Average Exceedance

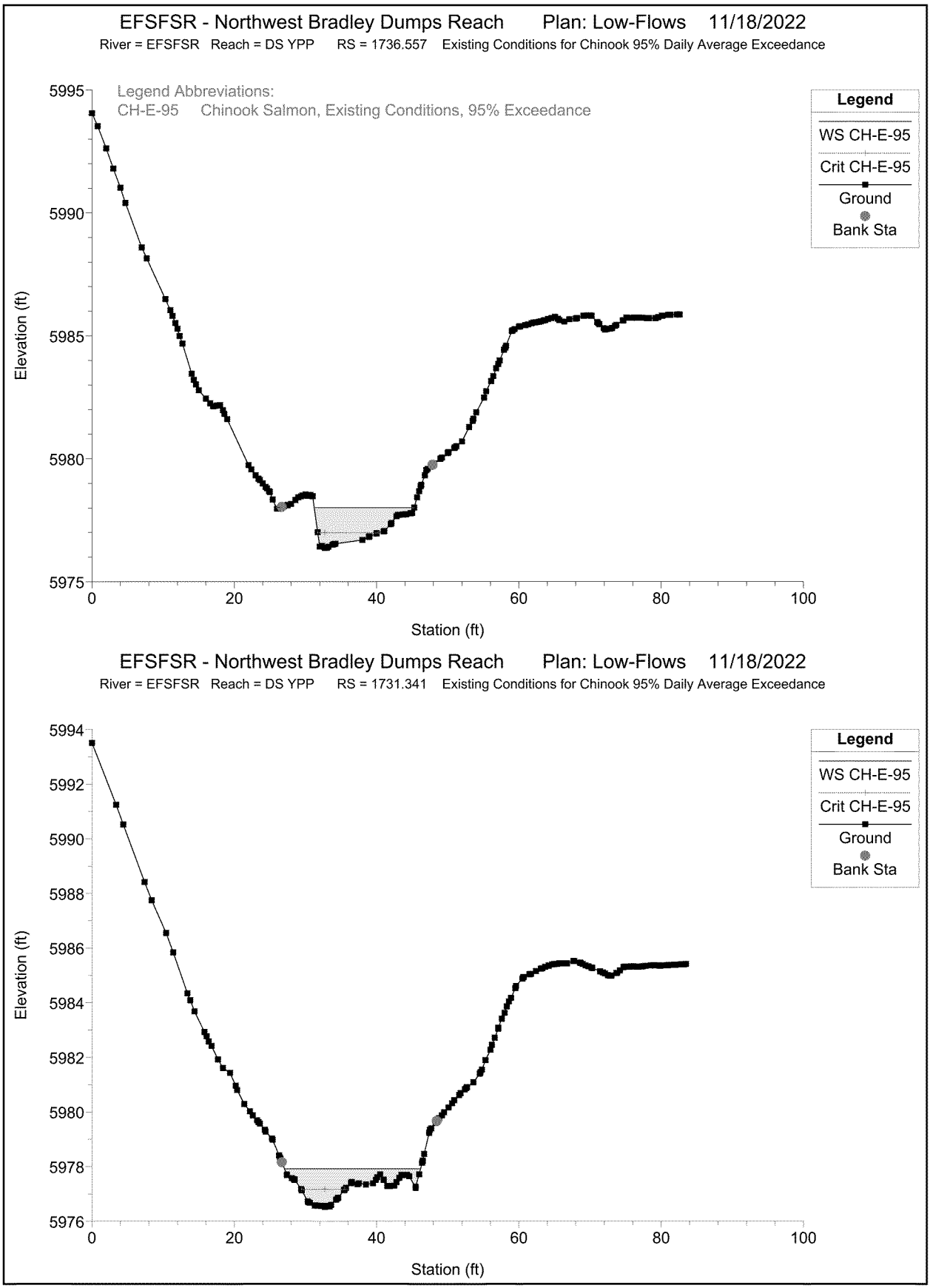


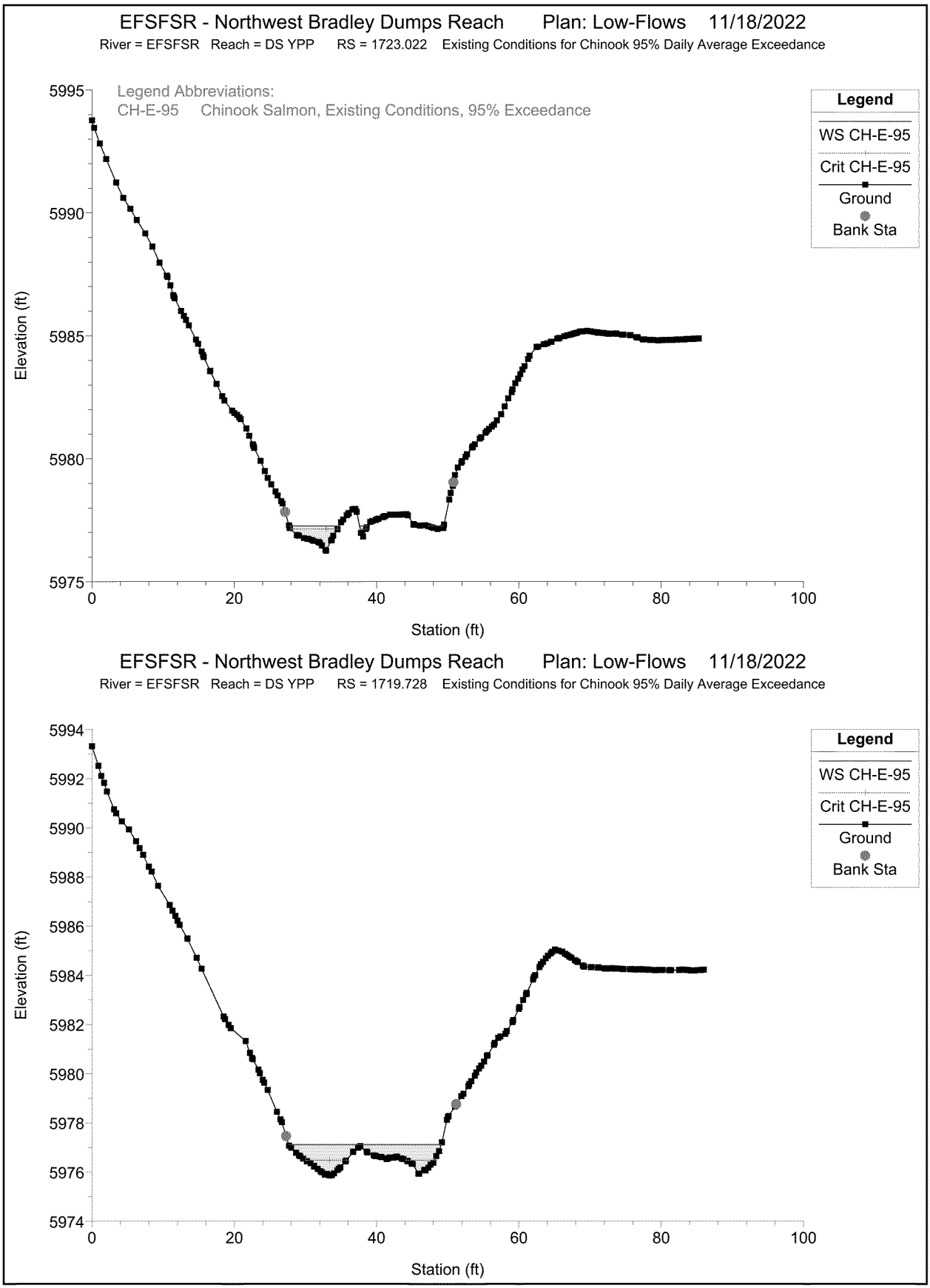

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1779.883 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5992
5990
5988
5986
5984
5982
5980
5978
0
10
20
30
40
50
60
70
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1775.759 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5996
5994
5992
5990
5988
5986
5984
5982
5980
5978
0
10
20
30
40
50
60
70
80


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1773.790 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1771.210 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
0
10
20
30
40
50
60
70
80


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1766.177 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1752.738 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5996
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
0
20
40
60
80
100

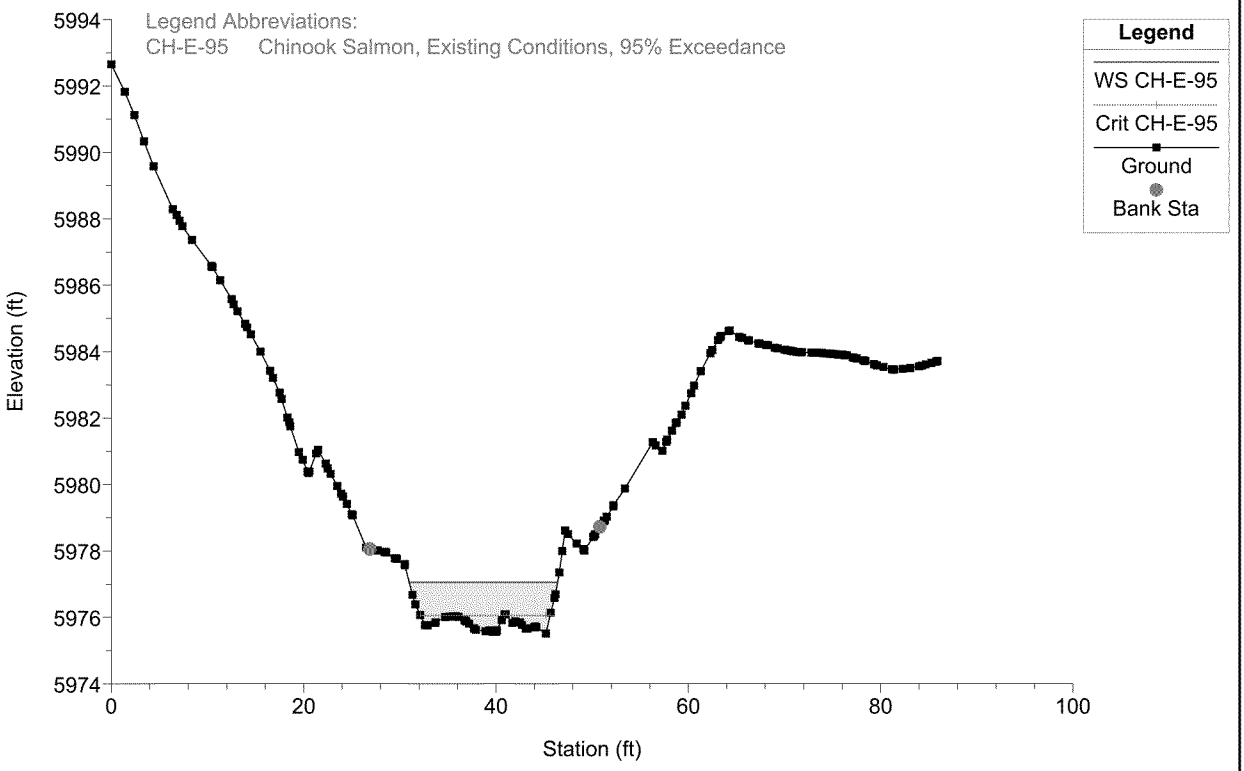

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1747.401 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1743.626 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1736.557 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5995
5990
5985
5980
5975
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1731.341 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
0
20
40
60
80
100


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1723.022 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5995
5990
5985
5980
5975
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1719.728 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
5974
0
20
40
60
80
100

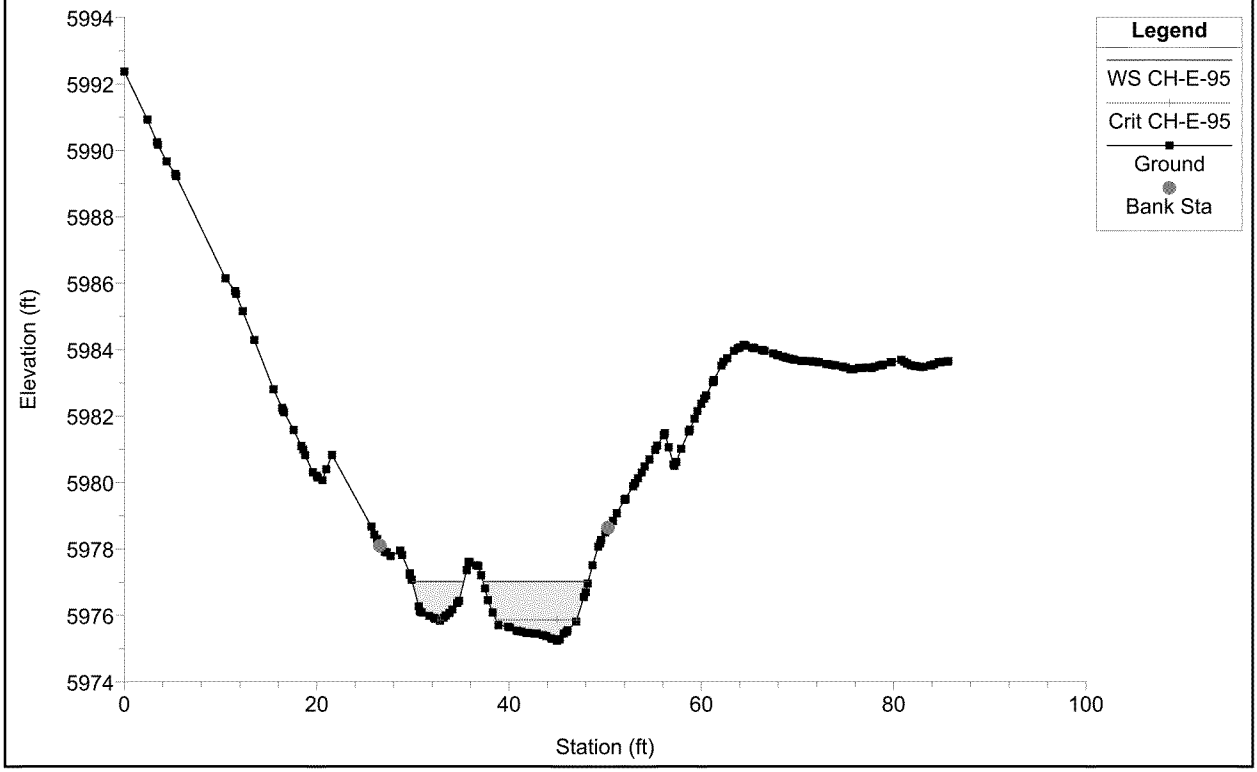
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

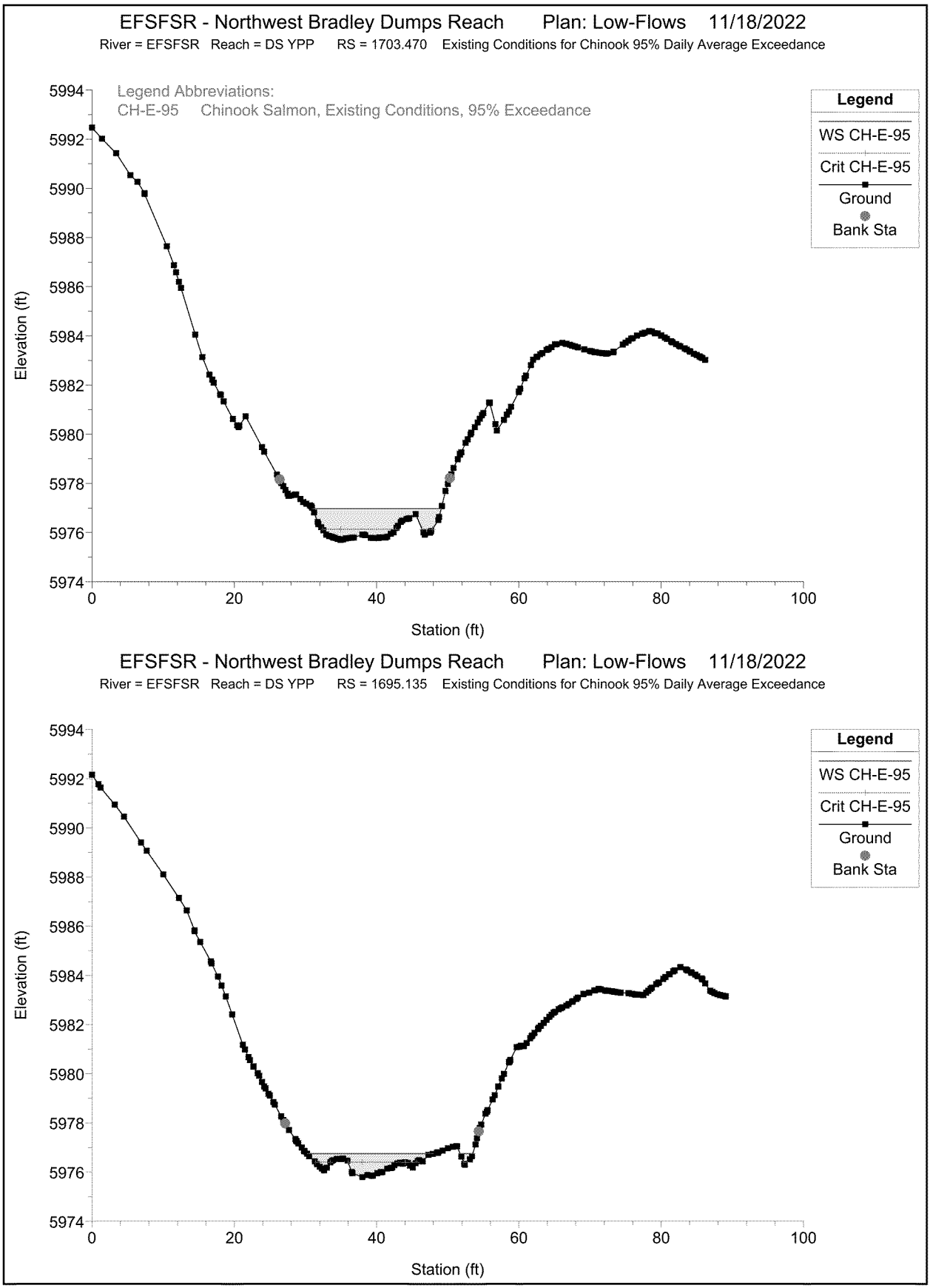
River = EFSFSR Reach = DS YPP RS = 1714.672 Existing Conditions for Chinook 95% Daily Average Exceedance

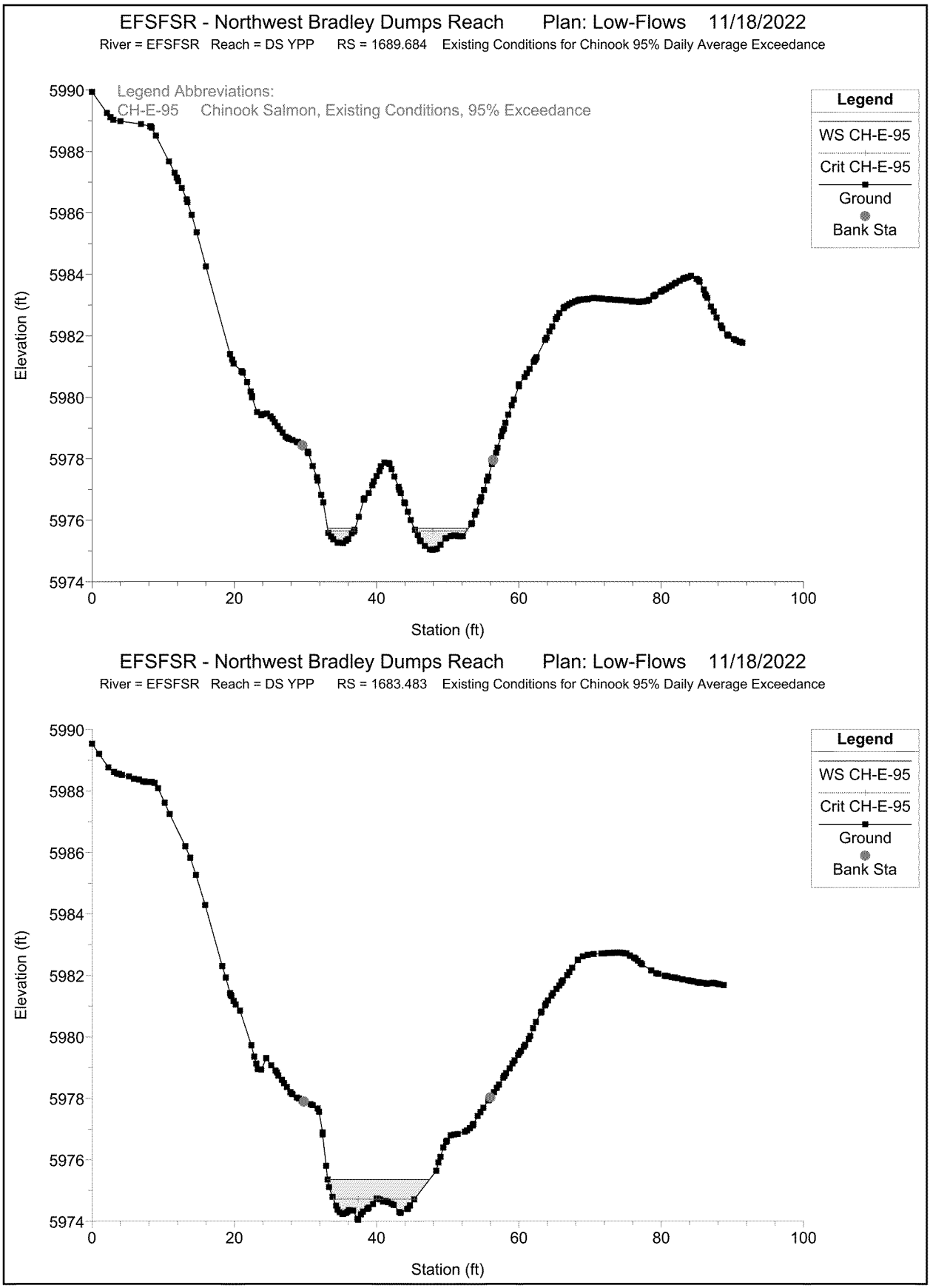


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 1709.018 Existing Conditions for Chinook 95% Daily Average Exceedance

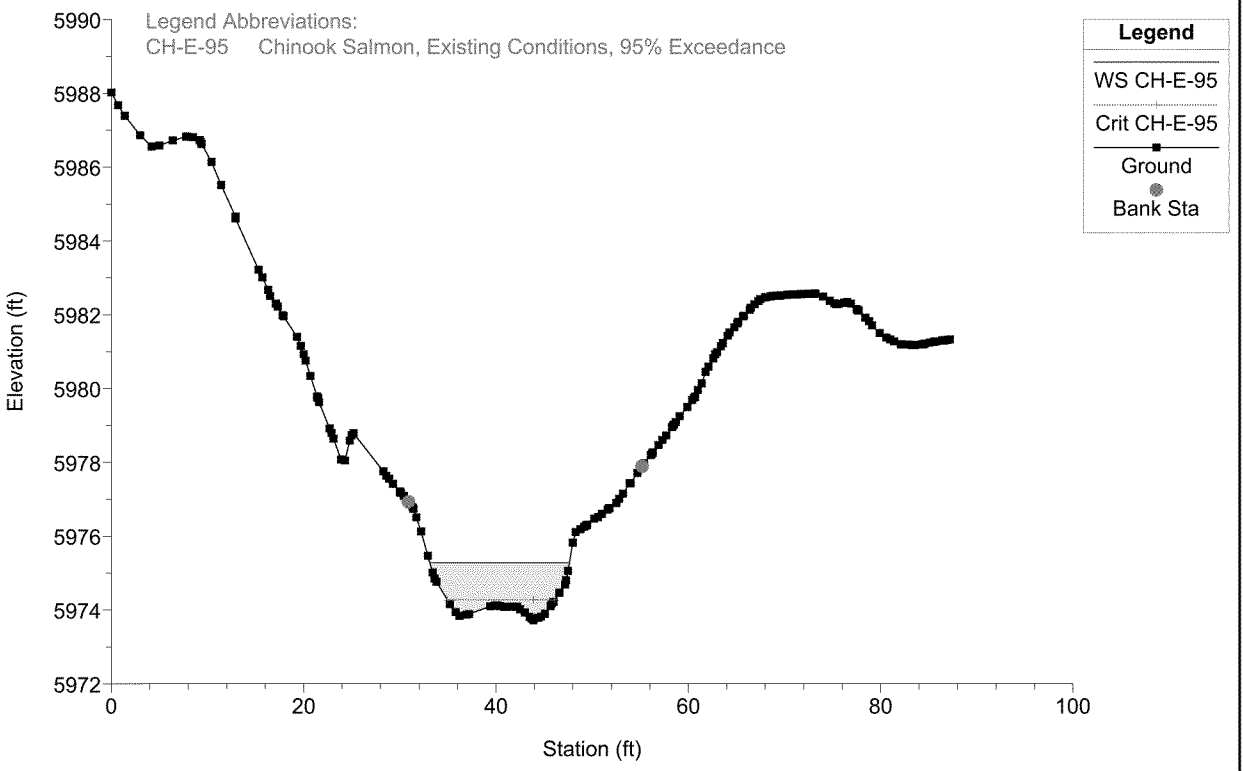



EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1703.470 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
5974
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1695.135 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5994
5992
5990
5988
5986
5984
5982
5980
5978
5976
5974
0
20
40
60
80
100


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1689.684 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5990
5988
5986
5984
5982
5980
5978
5976
5974
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1683.483 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

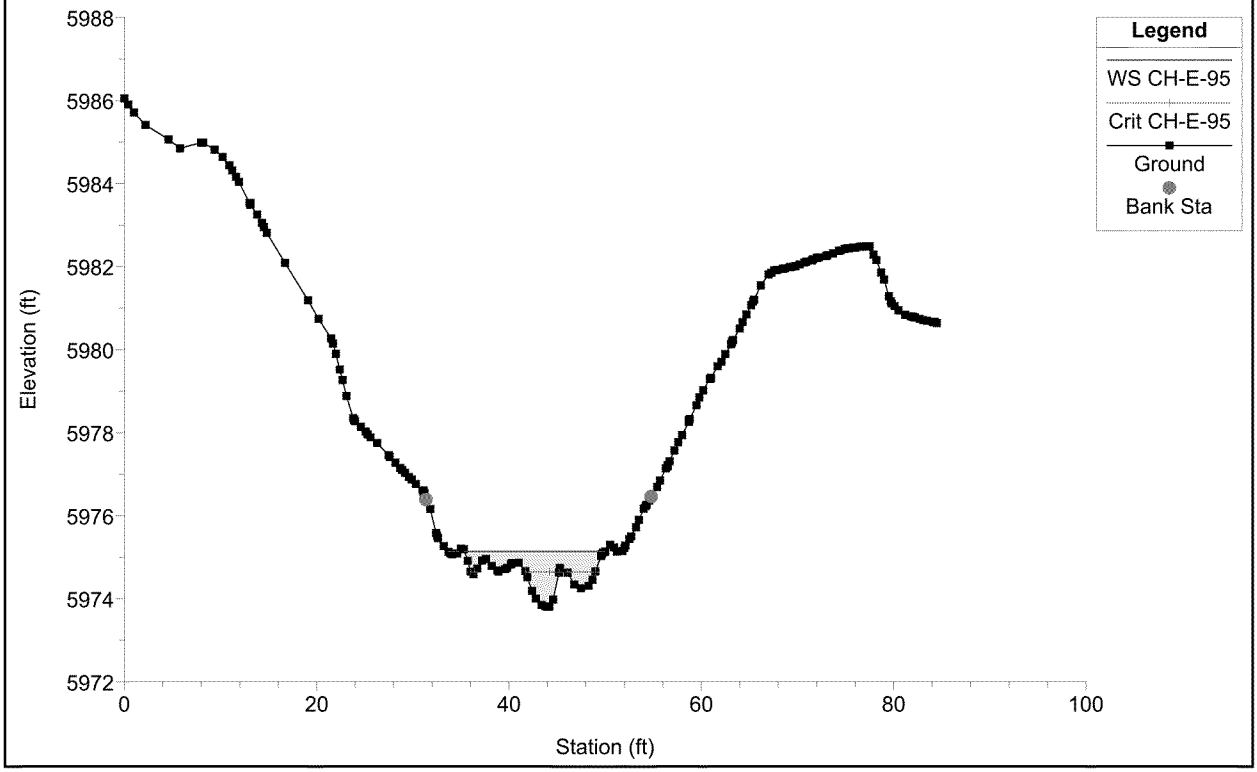
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

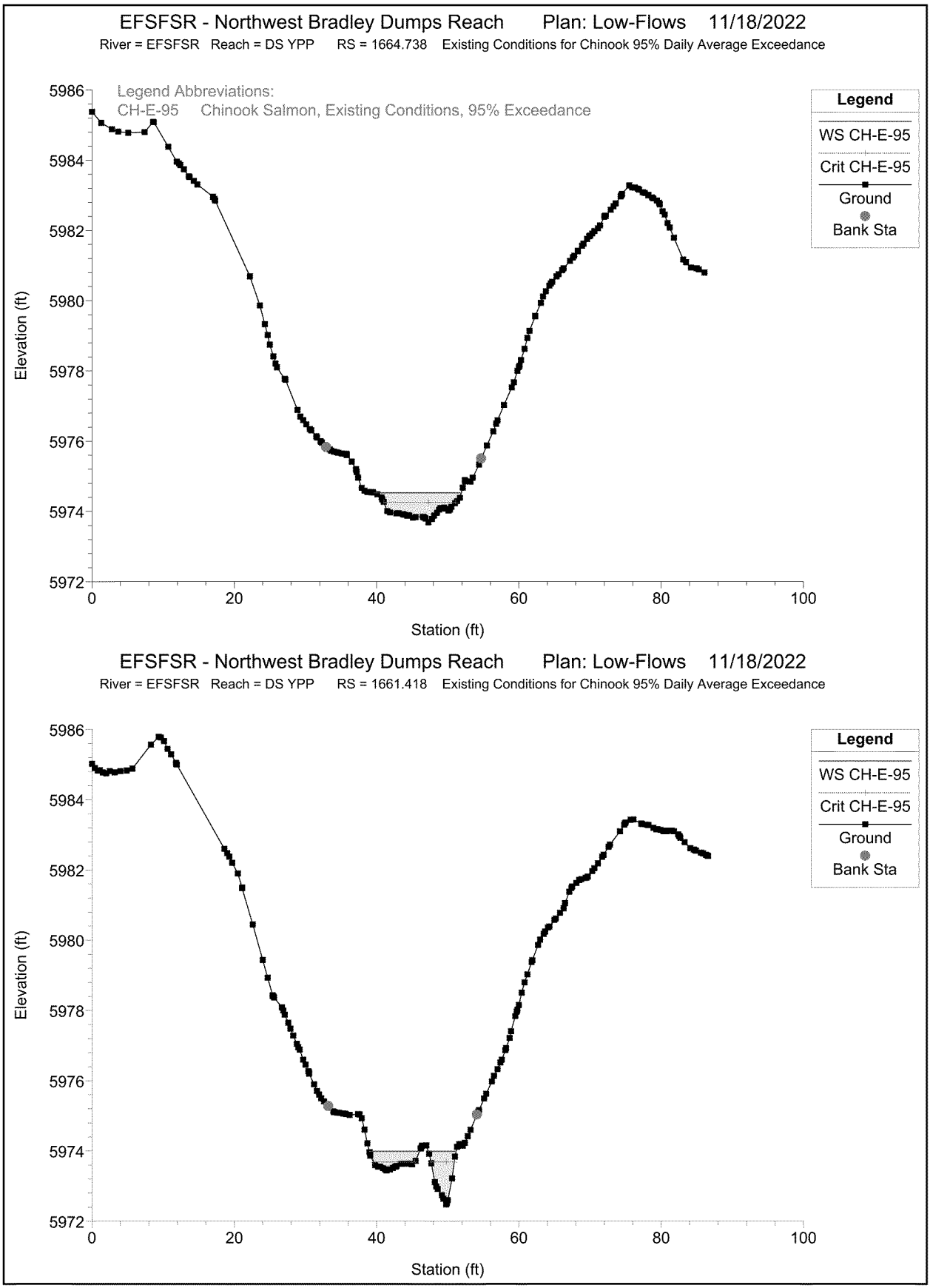
River = EFSFSR Reach = DS YPP RS = 1677.094 Existing Conditions for Chinook 95% Daily Average Exceedance

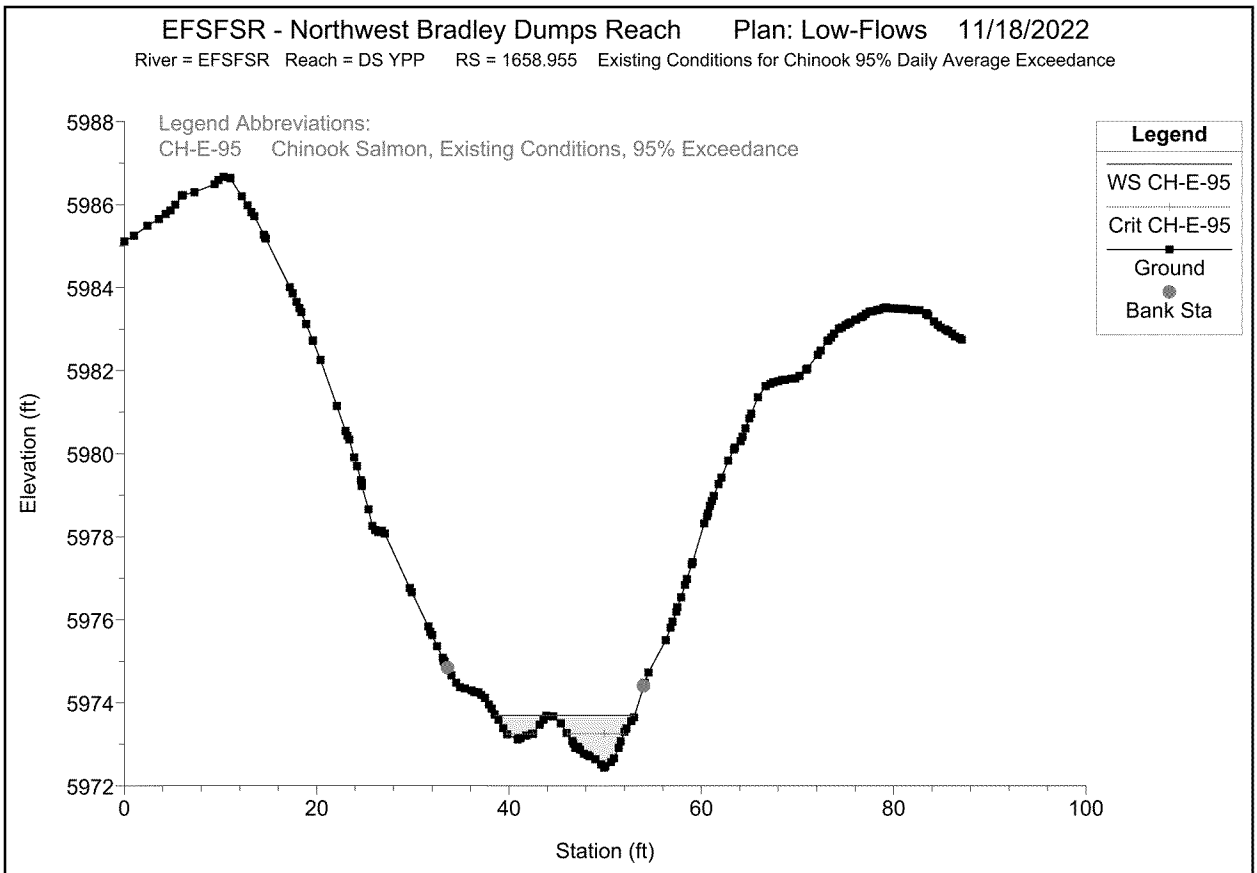


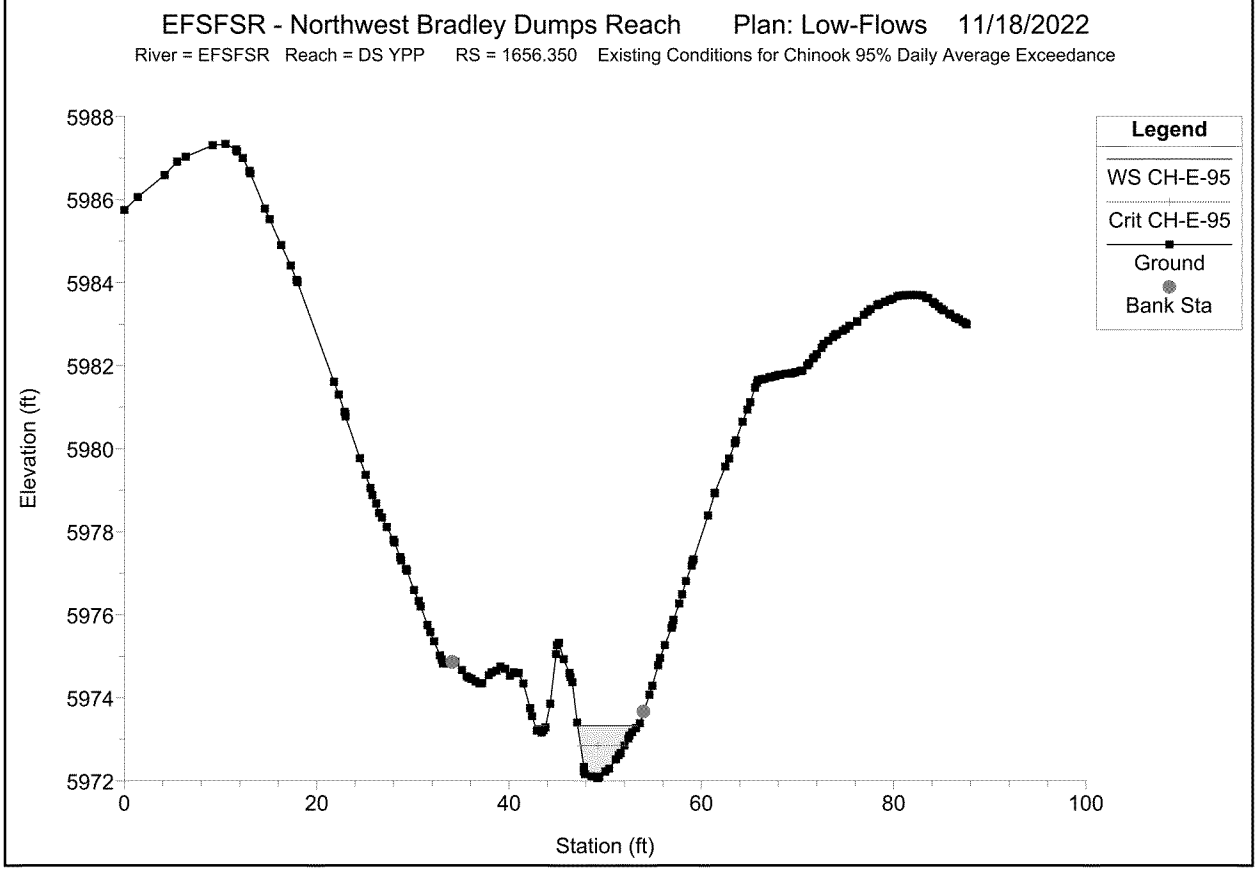
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

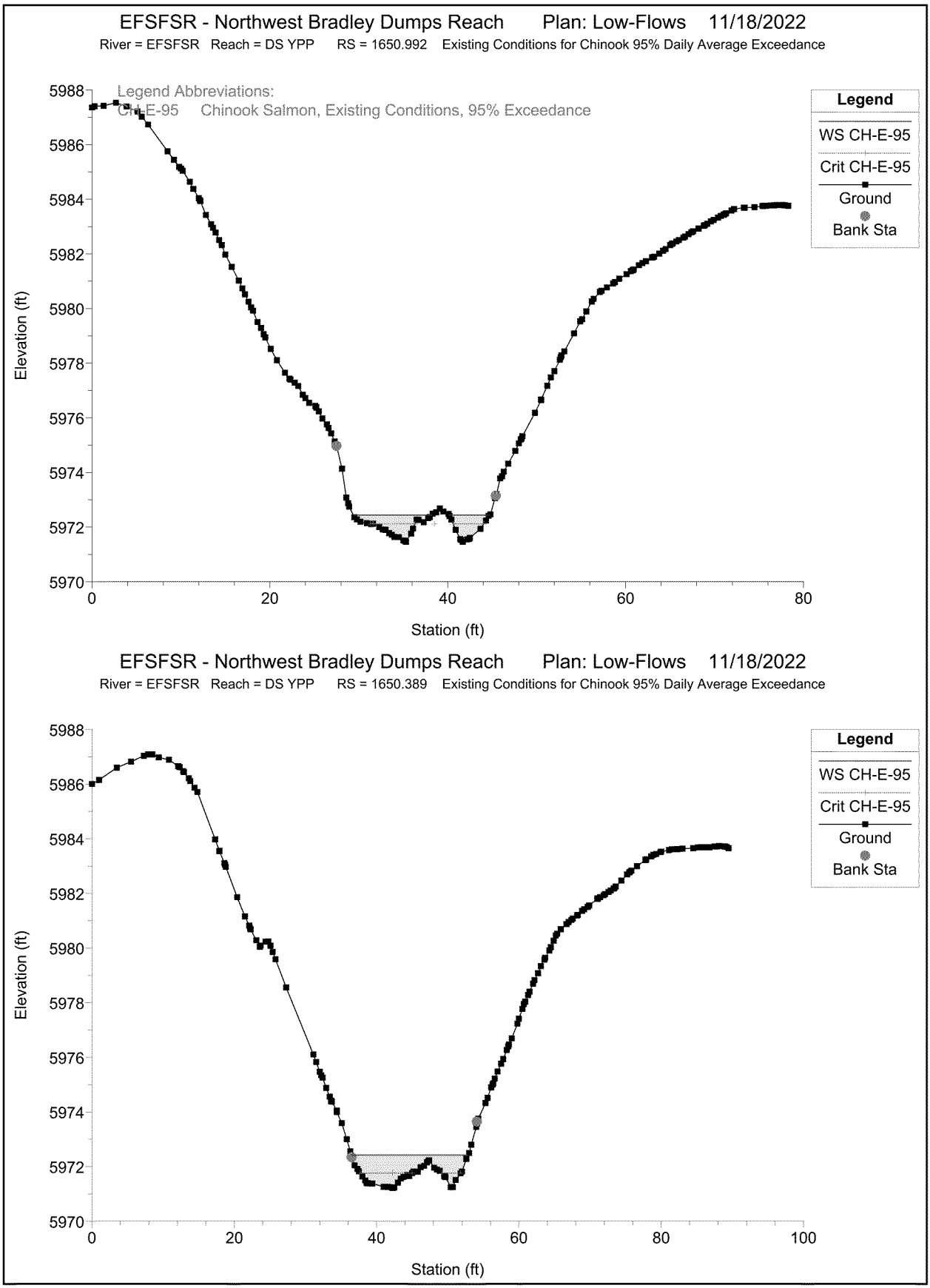
River = EFSFSR Reach = DS YPP RS = 1670.331 Existing Conditions for Chinook 95% Daily Average Exceedance

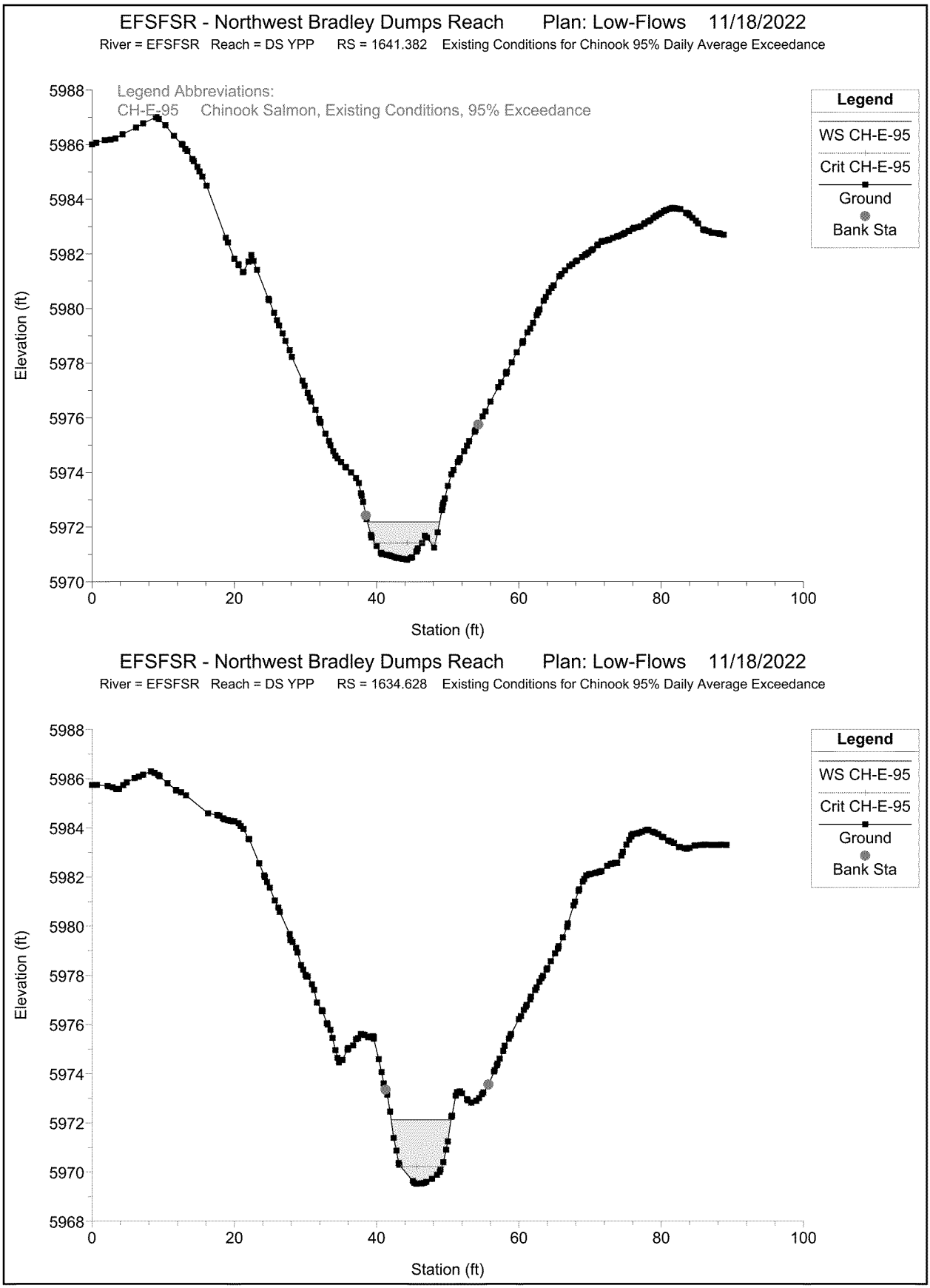


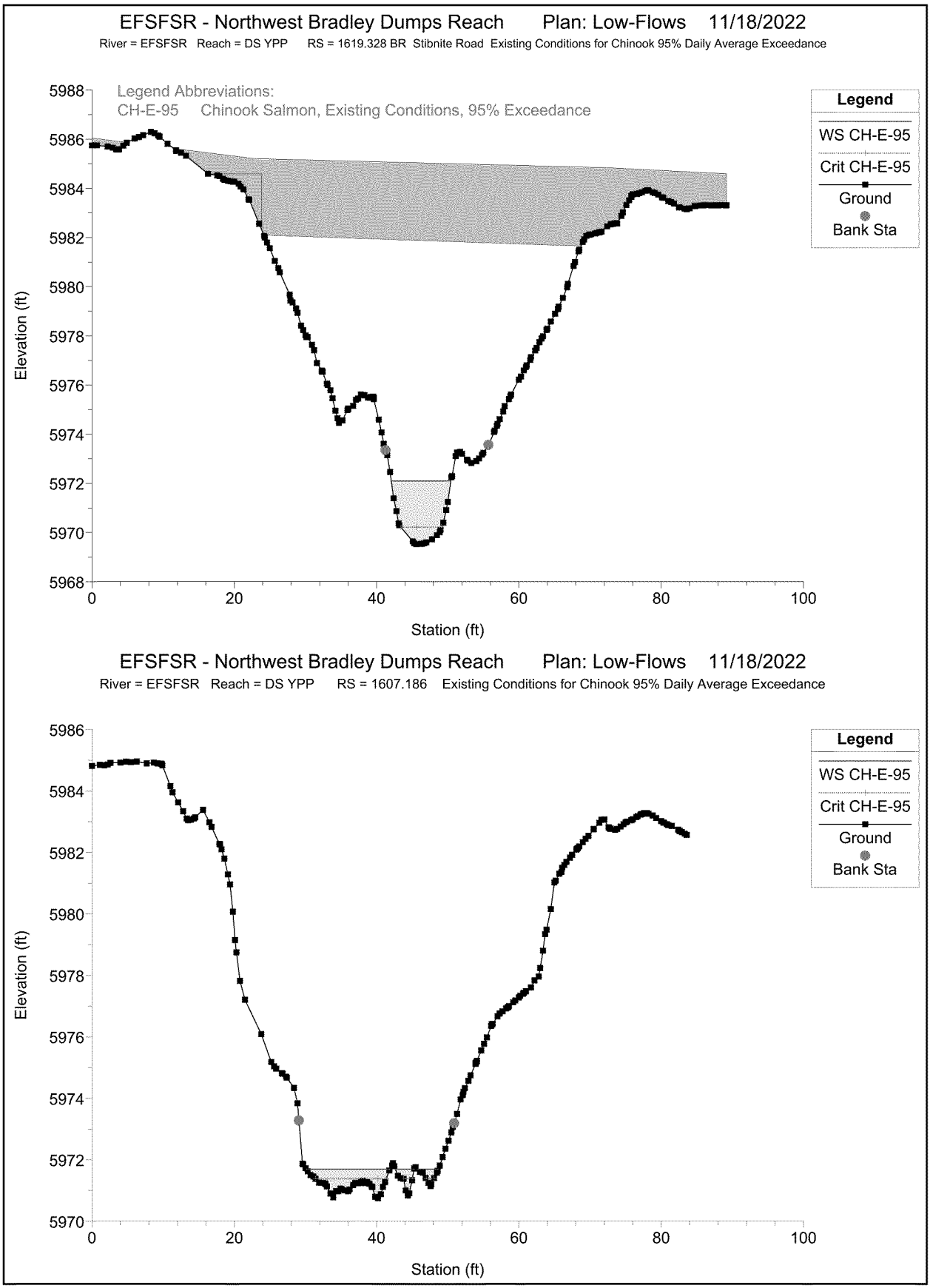

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1664.738 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5986
5984
5982
5980
5978
5976
5974
5972
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1661.418 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

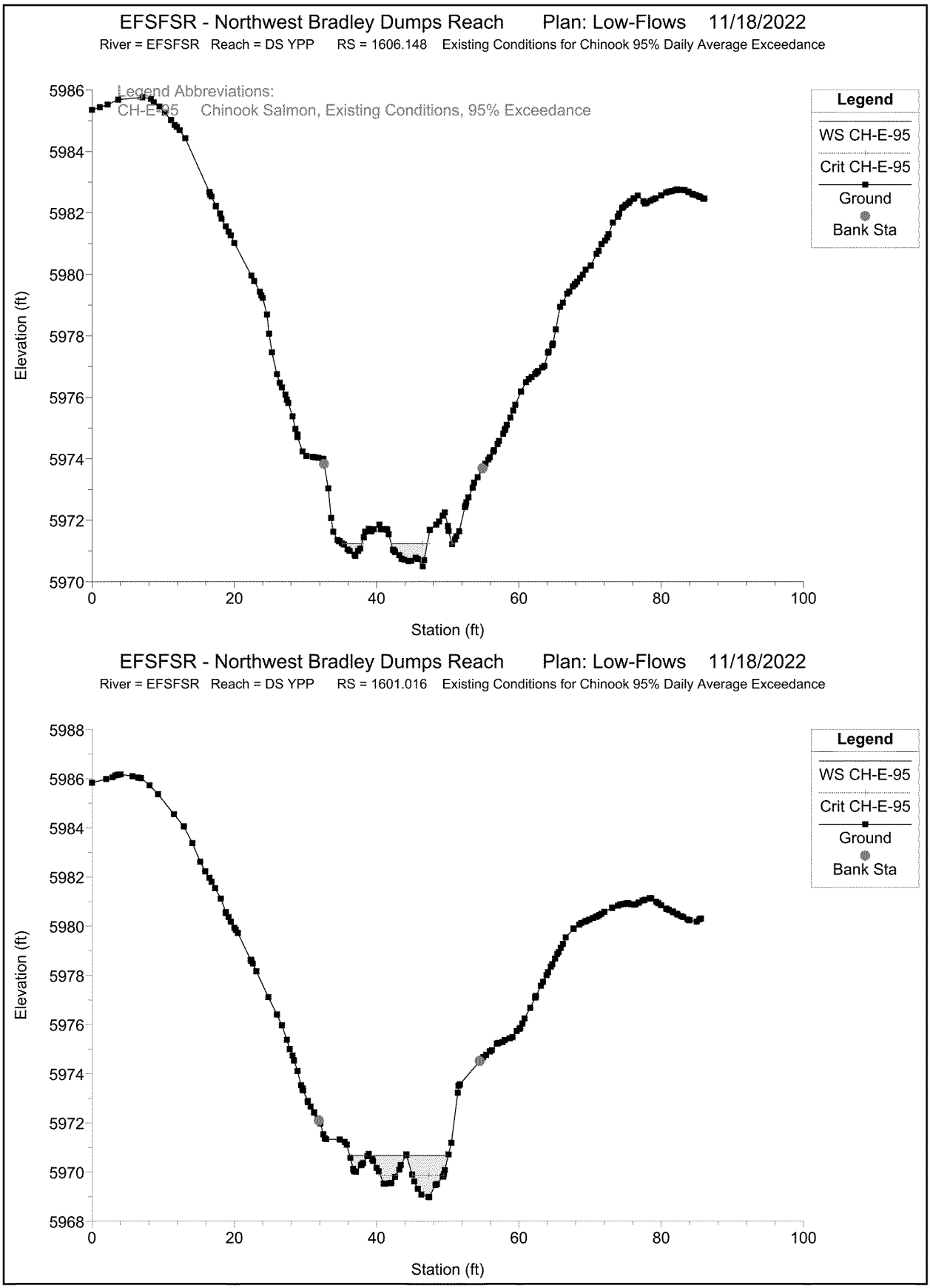

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1658.955 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
0
20
40
60
80
100

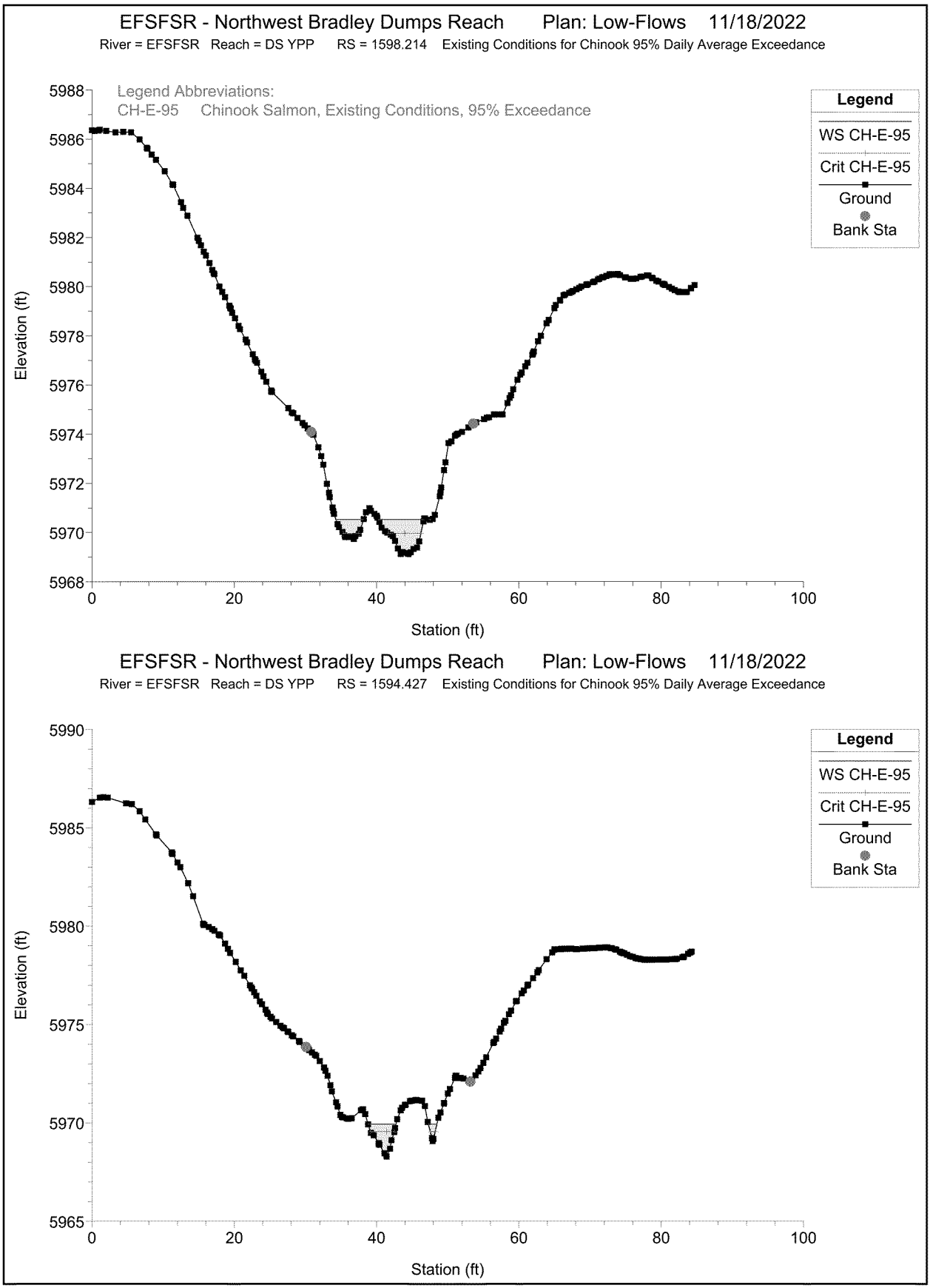

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1656.350 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
0
20
40
60
80
100

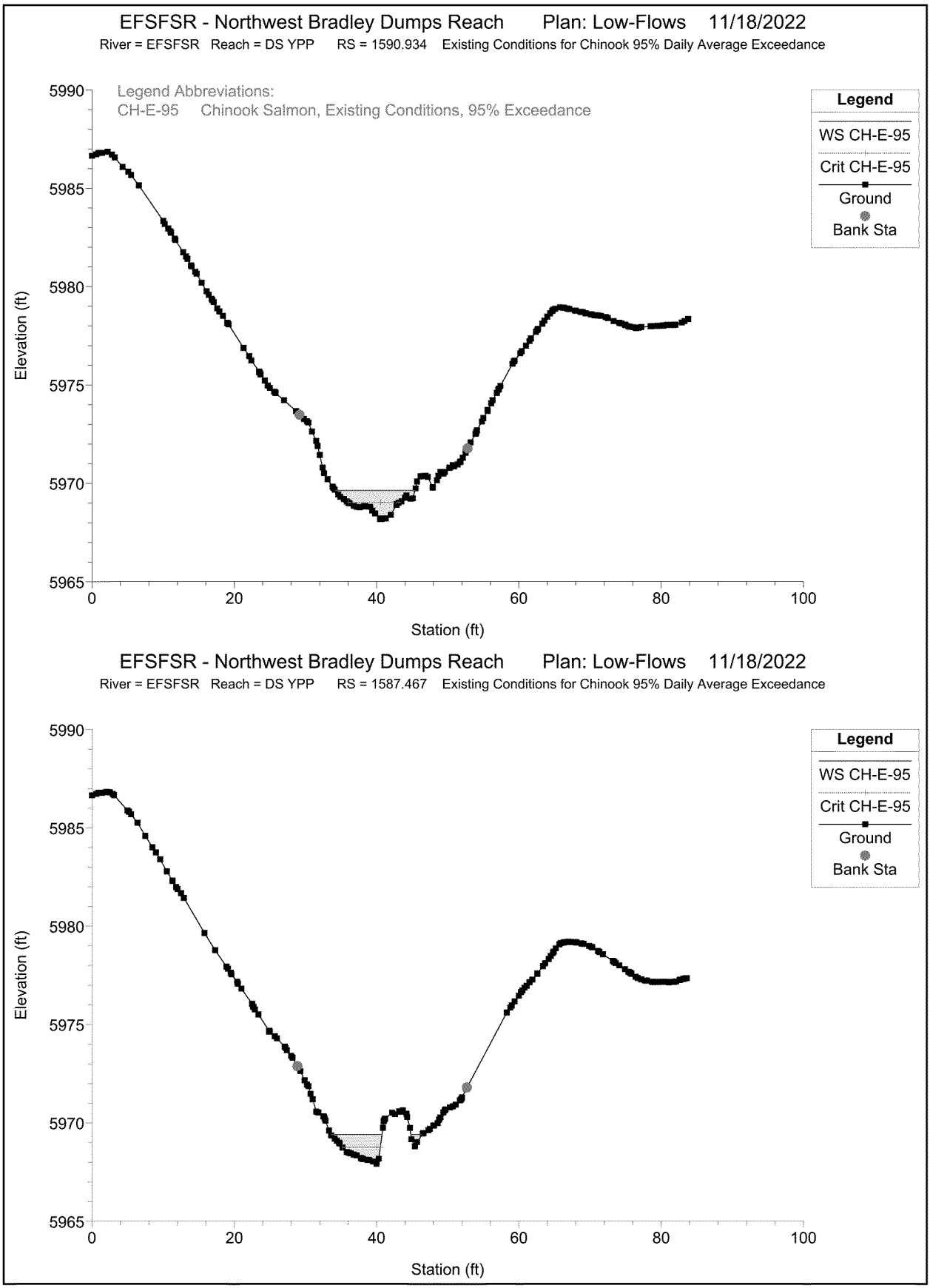

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1650.992 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1650.389 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
0
20
40
60
80
100

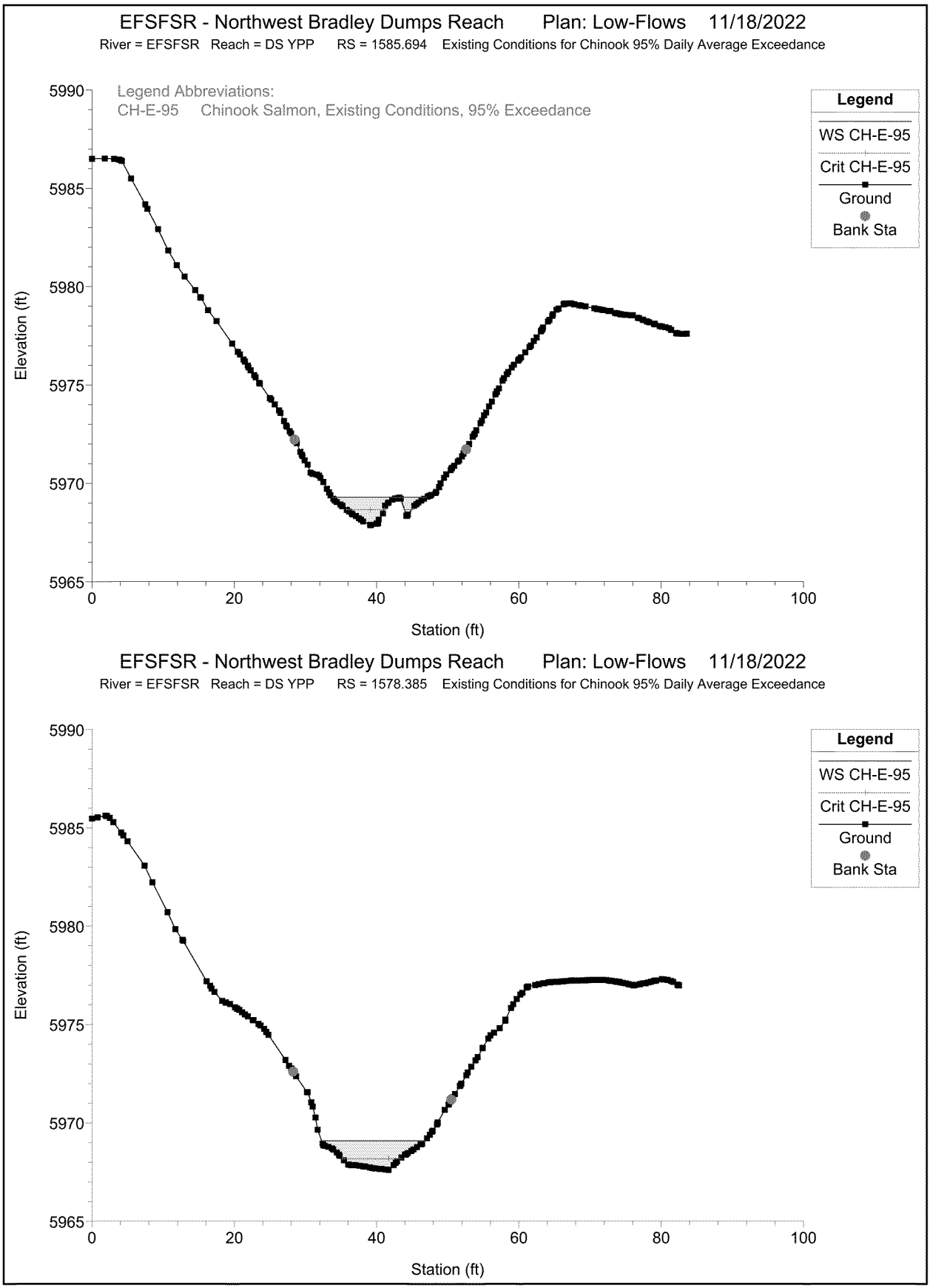

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1641.382 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1634.628 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
5968
0
20
40
60
80
100

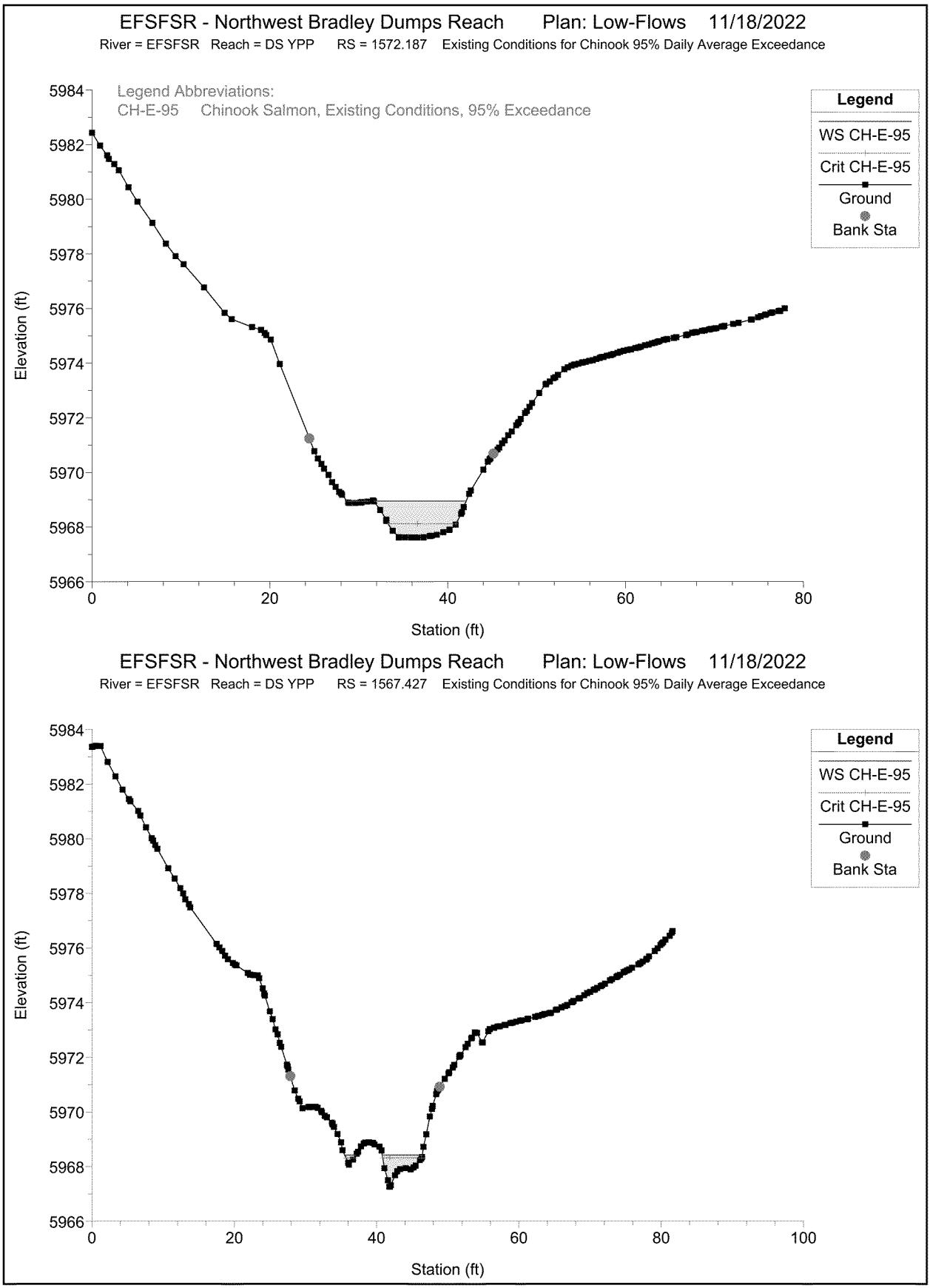

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1619.328 BR Stibnite Road Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
5968
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1607.186 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5986
5984
5982
5980
5978
5976
5974
5972
5970
0
20
40
60
80
100

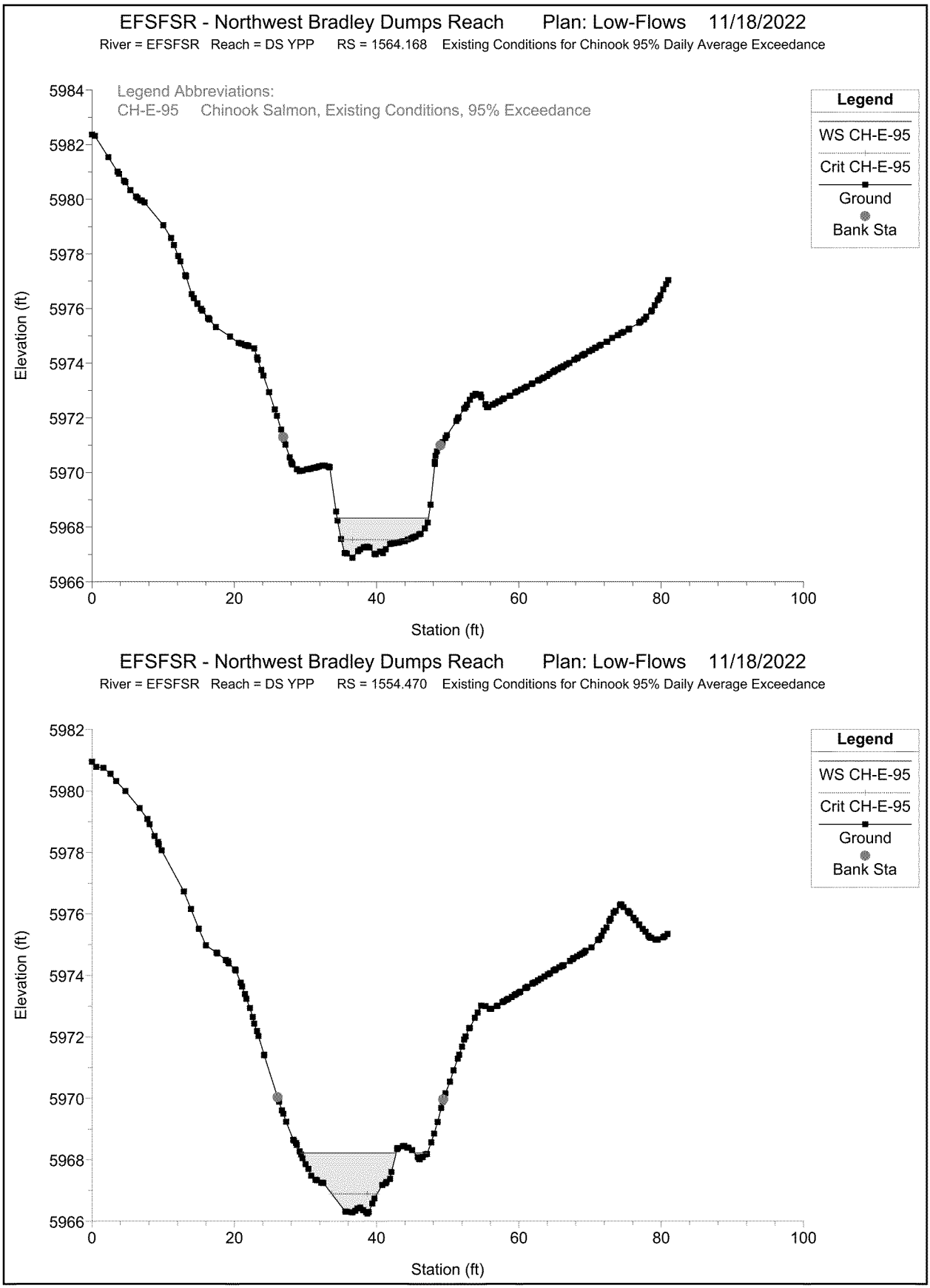

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1606.148 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5986
5984
5982
5980
5978
5976
5974
5972
5970
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1601.016 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
5968
0
20
40
60
80
100

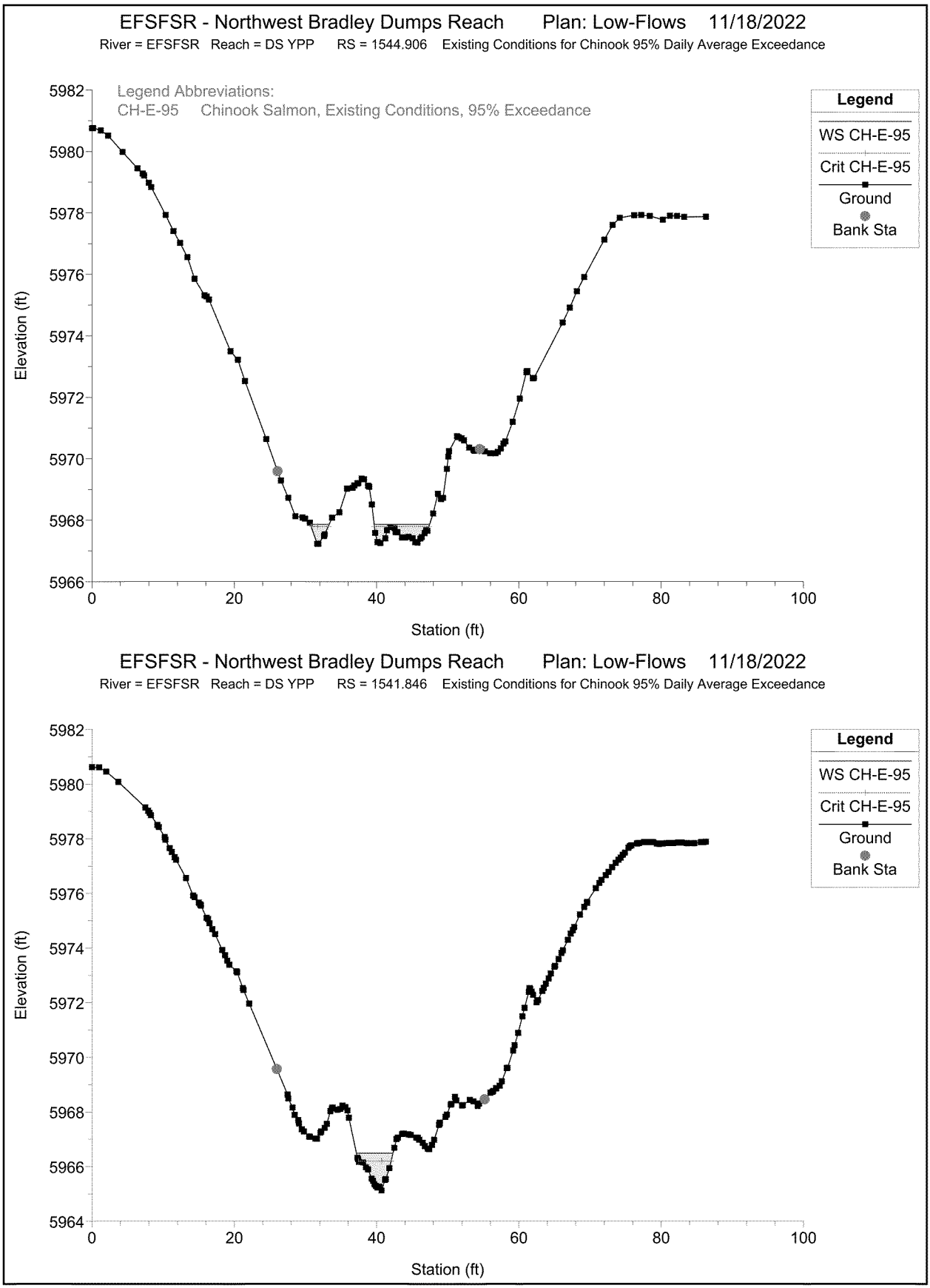

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1598.214 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5988
5986
5984
5982
5980
5978
5976
5974
5972
5970
5968
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1594.427 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5990
5985
5980
5975
5970
5965
0
20
40
60
80
100

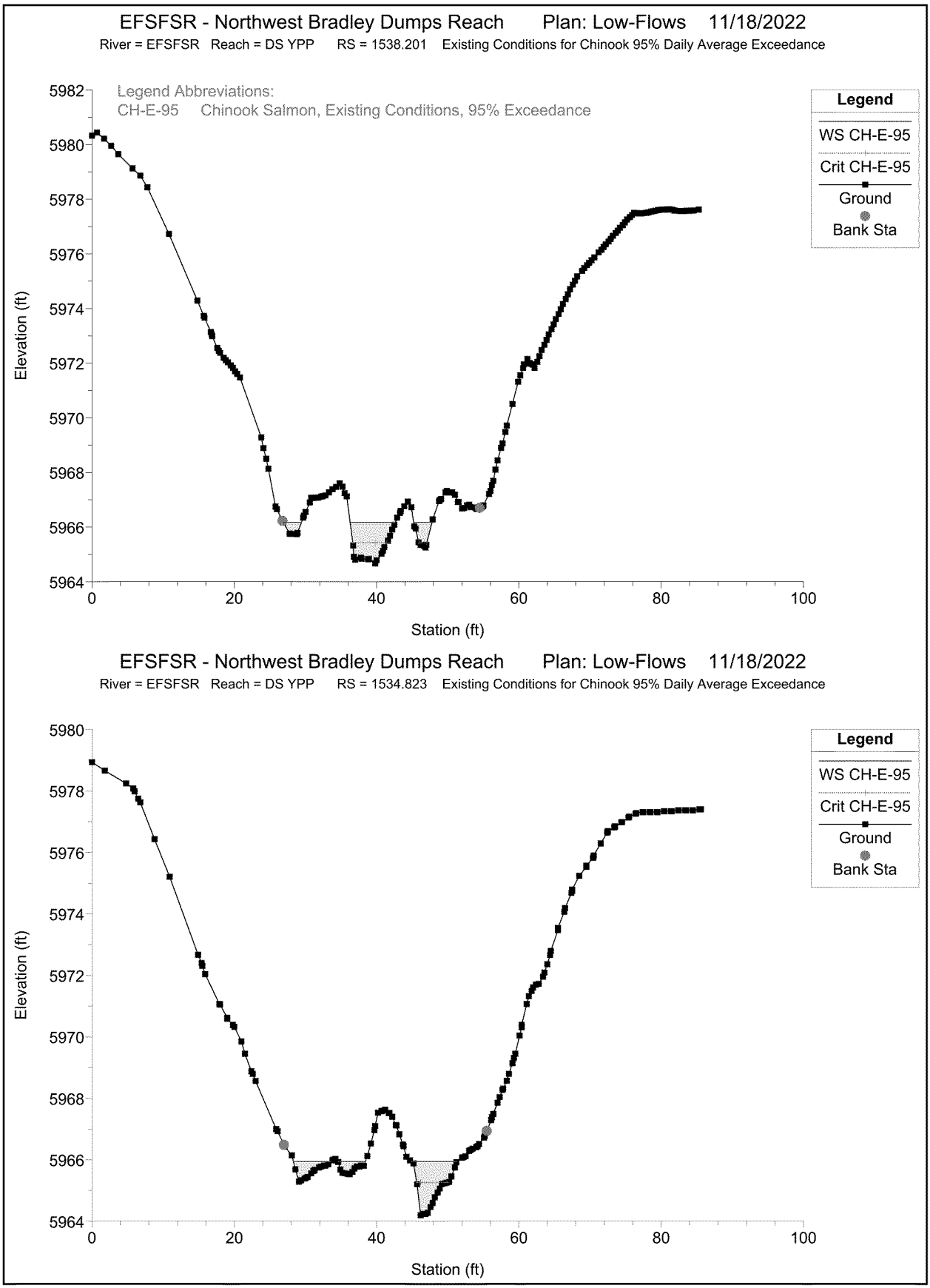

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1590.934 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5990
5985
5980
5975
5970
5965
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1587.467 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5990
5985
5980
5975
5970
5965
0
20
40
60
80
100

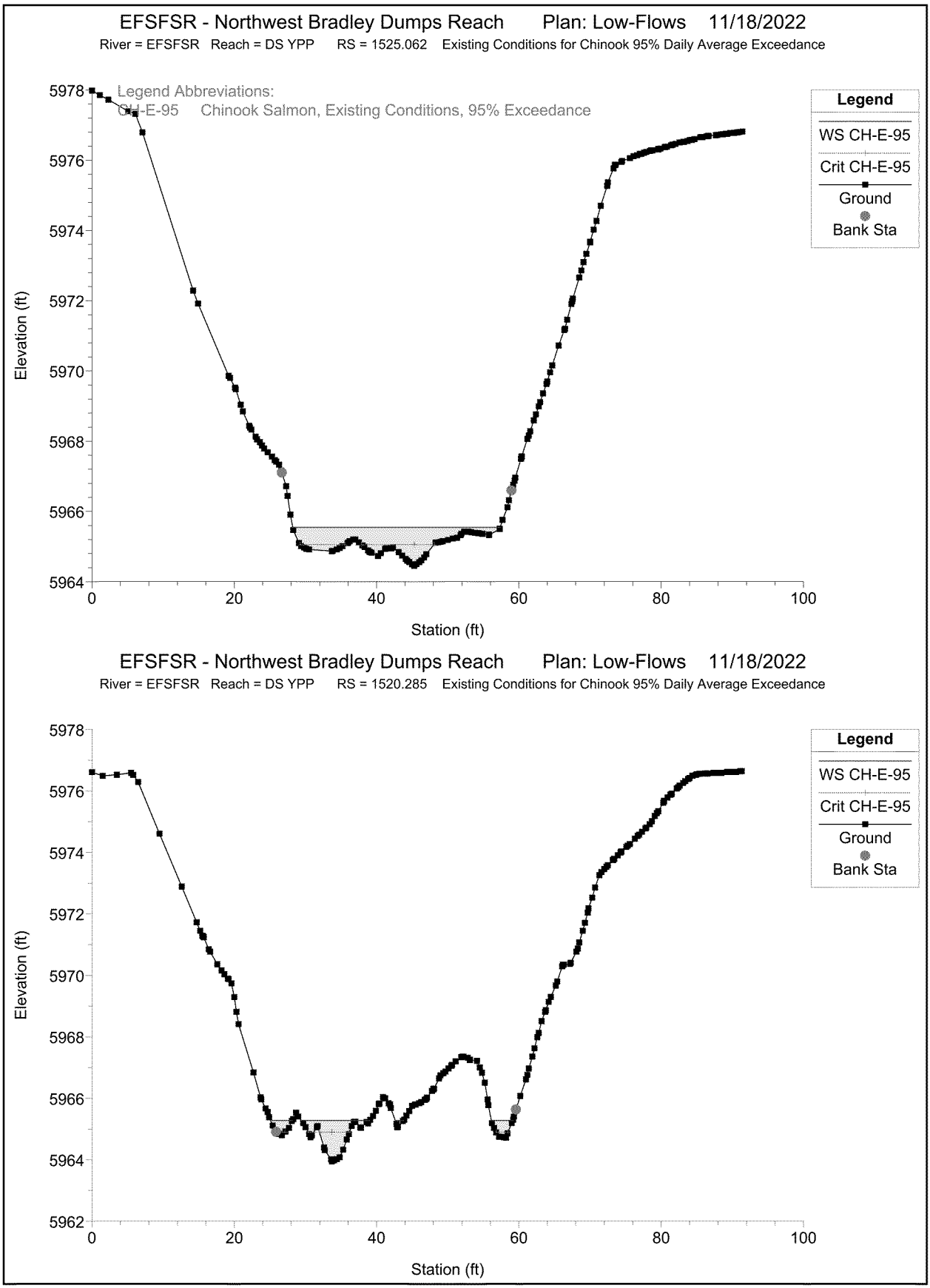

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1585.694 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5990
5985
5980
5975
5970
5965
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1578.385 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5990
5985
5980
5975
5970
5965
0
20
40
60
80
100

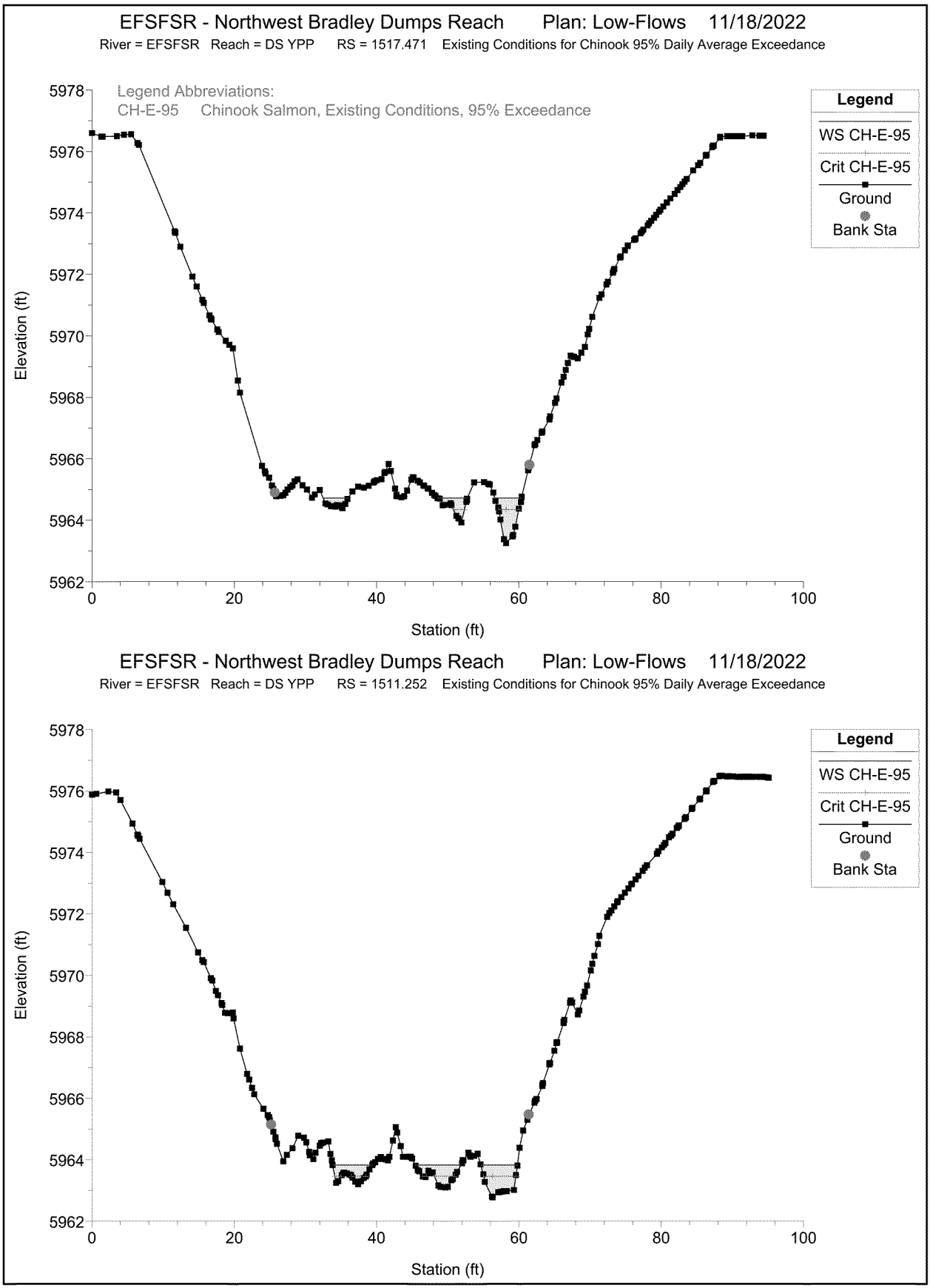

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1572.187 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5984
5982
5980
5978
5976
5974
5972
5970
5968
5966
0
20
40
60
80
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1567.427 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5984
5982
5980
5978
5976
5974
5972
5970
5968
5966
0
20
40
60
80
100

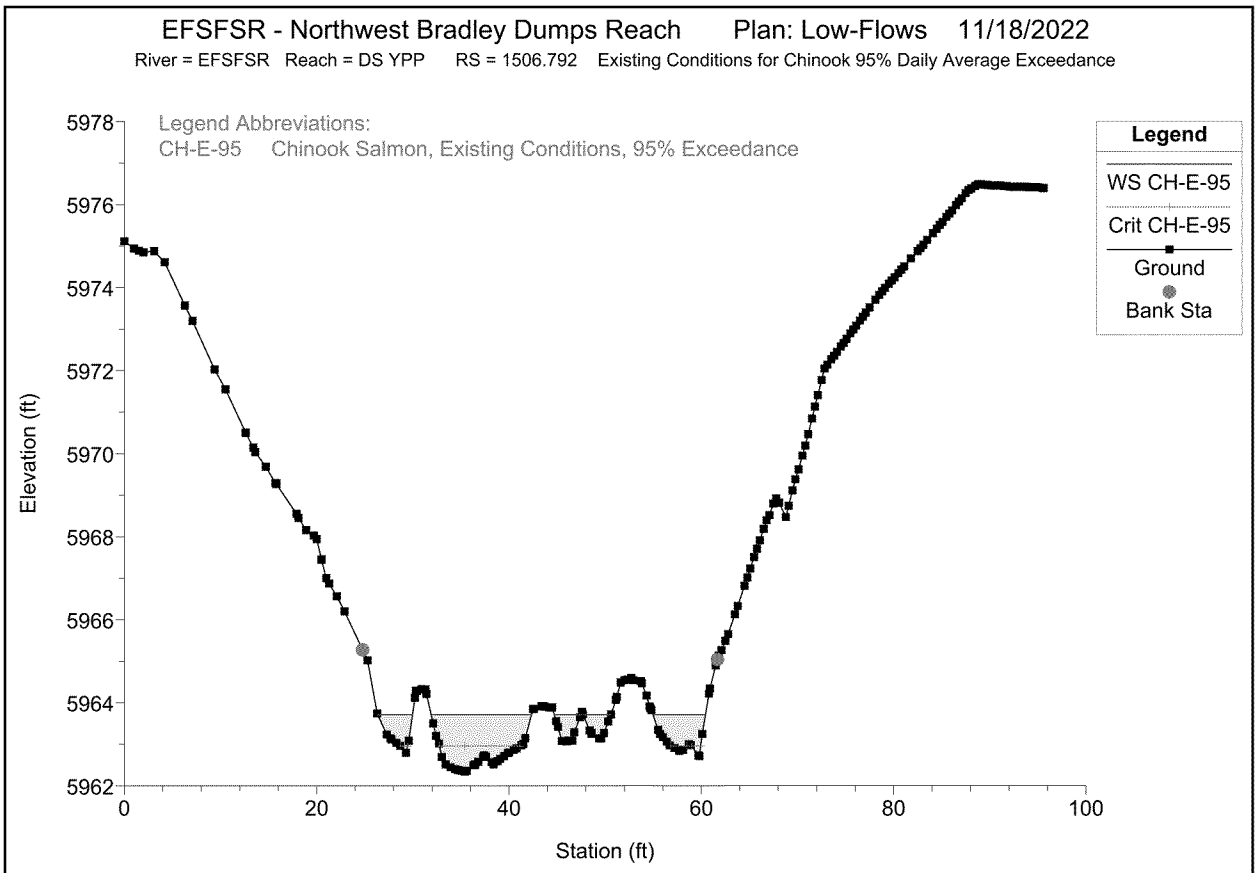

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1564.168 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5984
5982
5980
5978
5976
5974
5972
5970
5968
5966
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1554.470 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5982
5980
5978
5976
5974
5972
5970
5968
5966
0
20
40
60
80
100

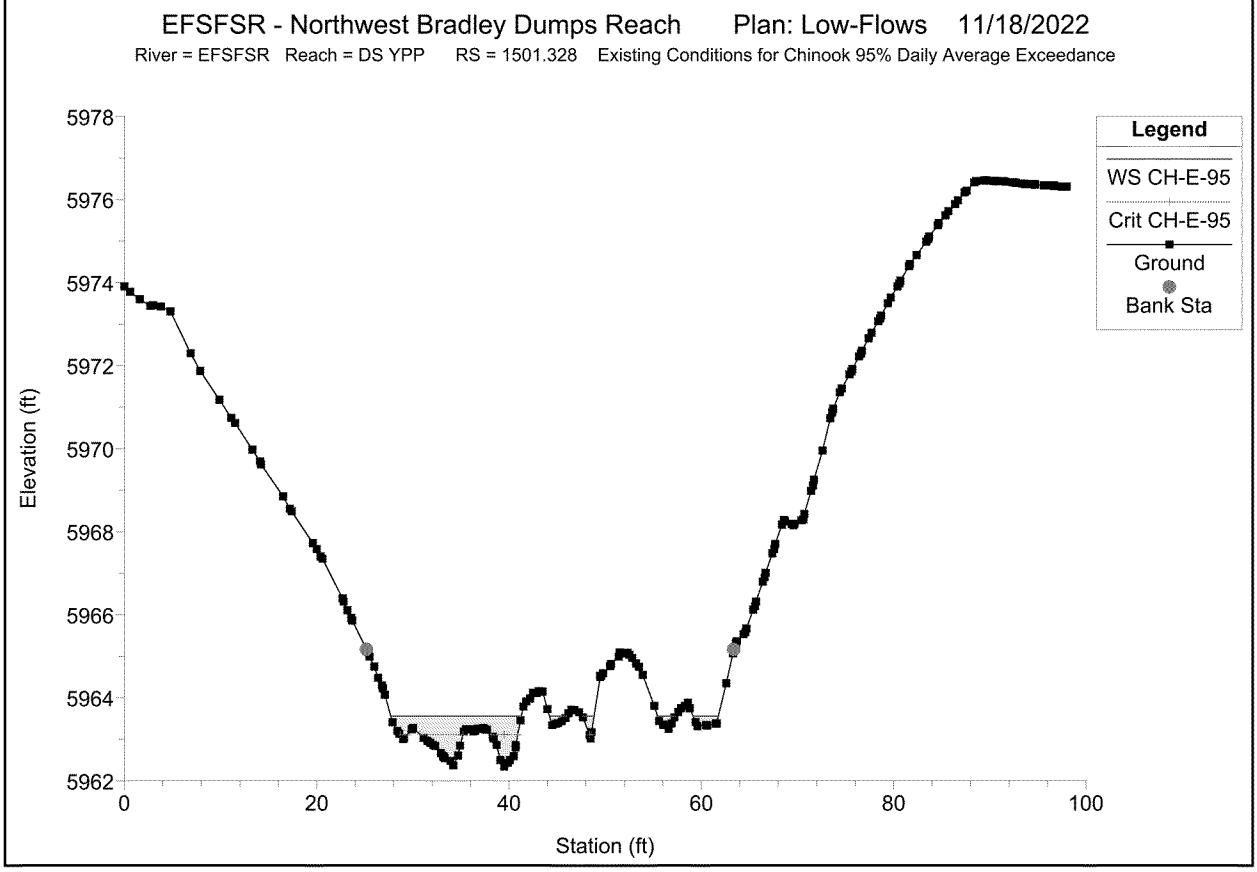

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1544.906 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5982
5980
5978
5976
5974
5972
5970
5968
5966
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1541.846 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5982
5980
5978
5976
5974
5972
5970
5968
5966
5964
0
20
40
60
80
100

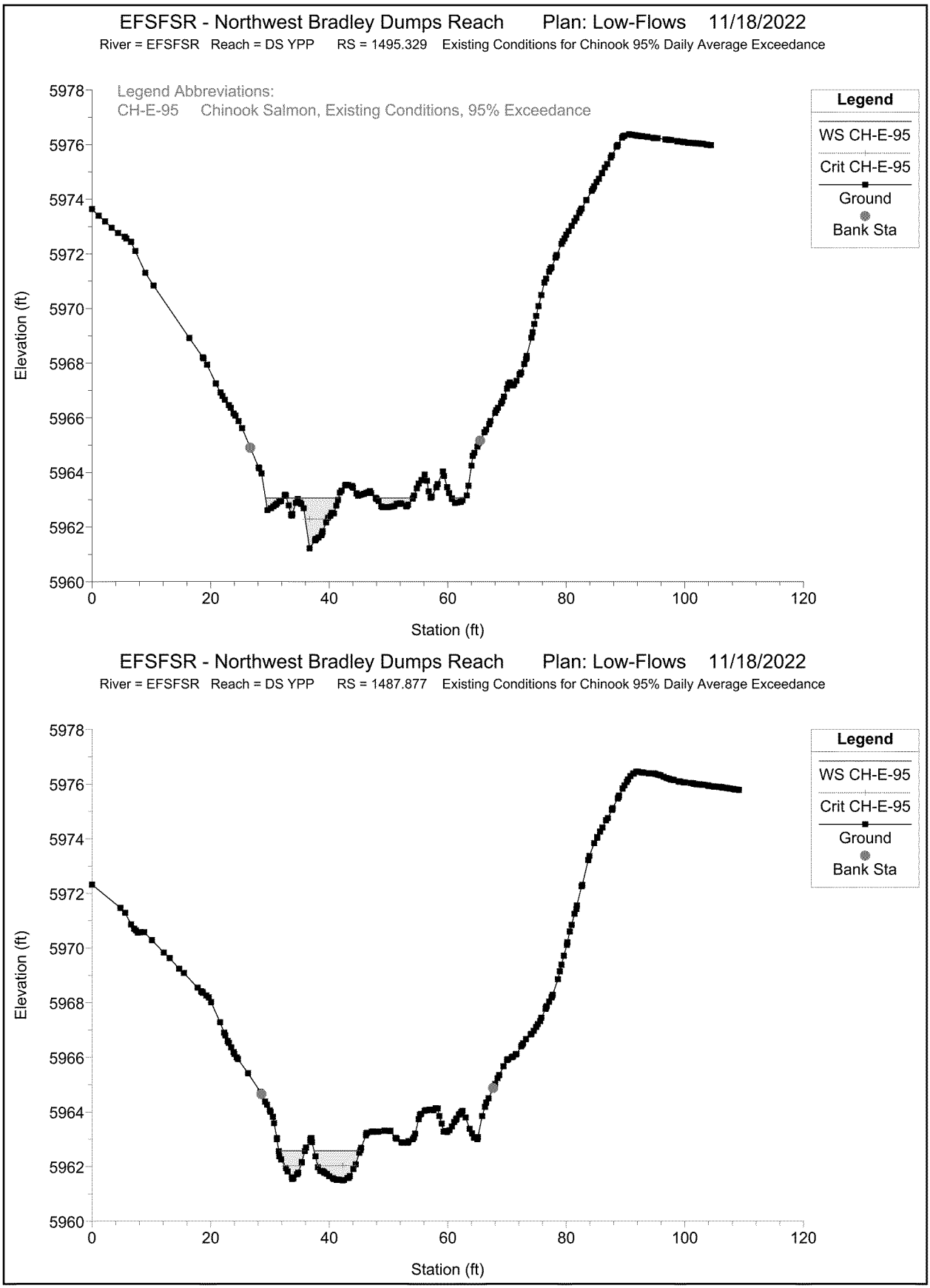

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1538.201 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5982
5980
5978
5976
5974
5972
5970
5968
5966
5964
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1534.823 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5980
5978
5976
5974
5972
5970
5968
5966
5964
0
20
40
60
80
100

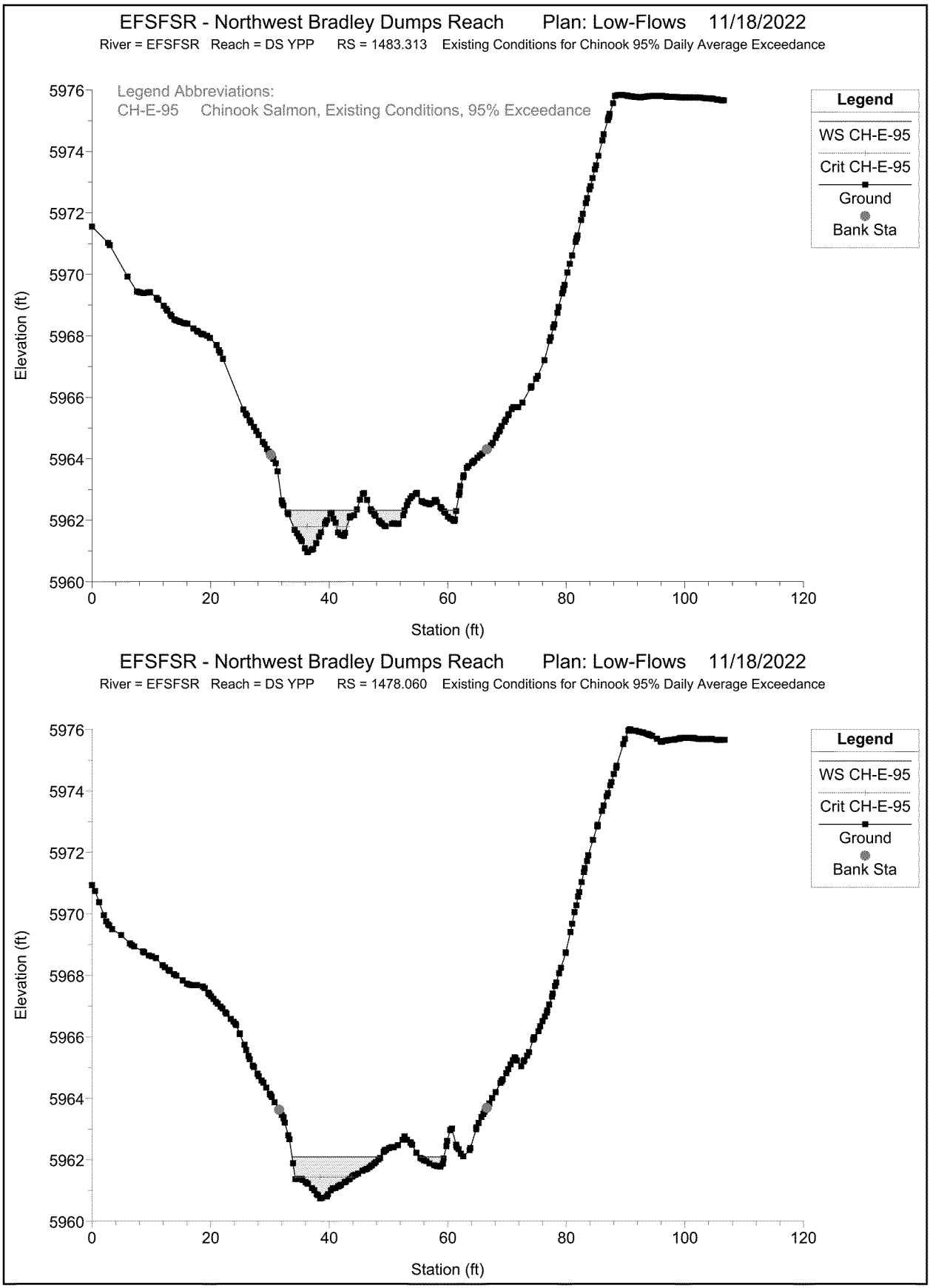

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1525.062 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1520.285 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
5962
0
20
40
60
80
100

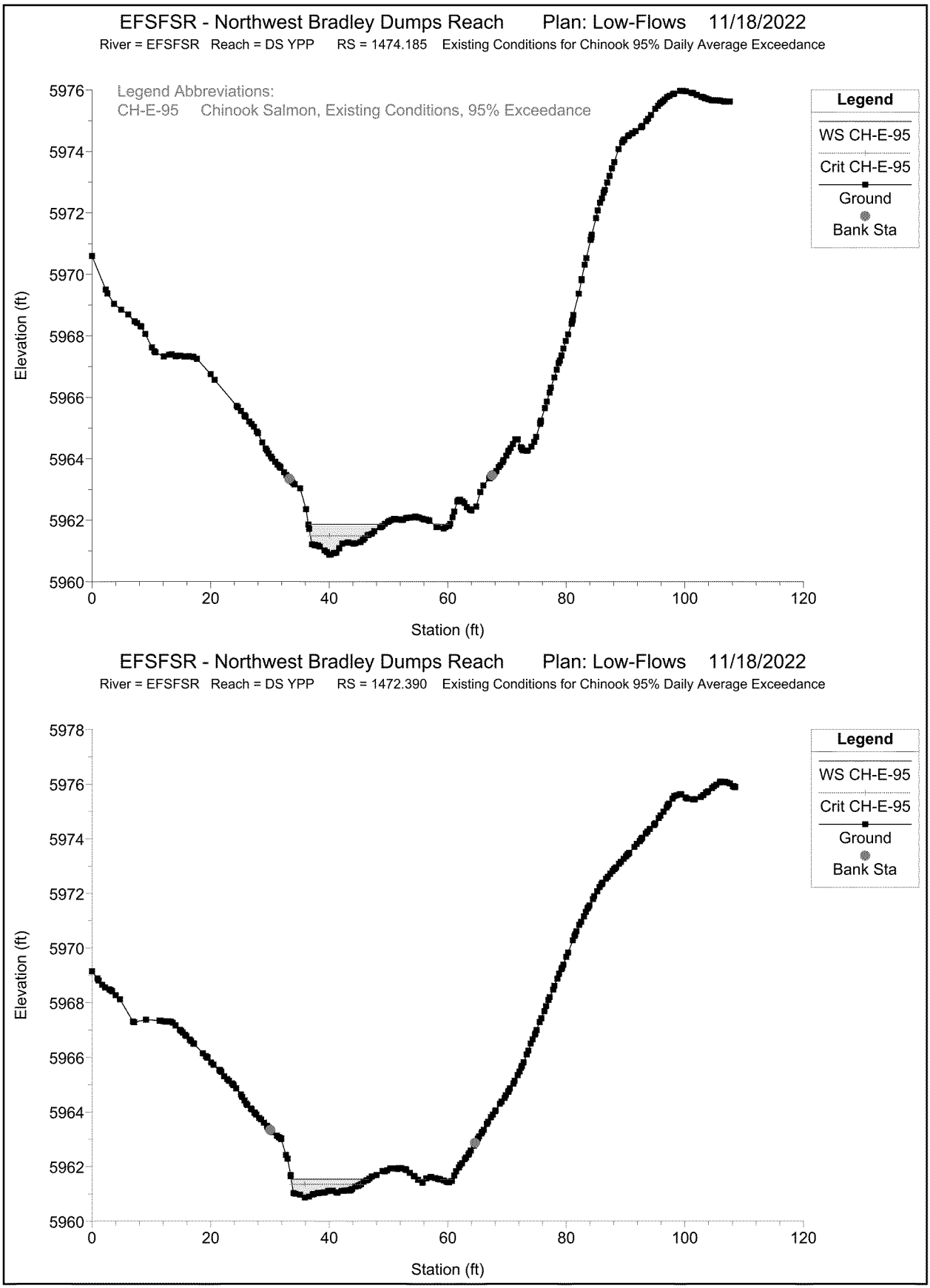

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1517.471 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
5962
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1511.252 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

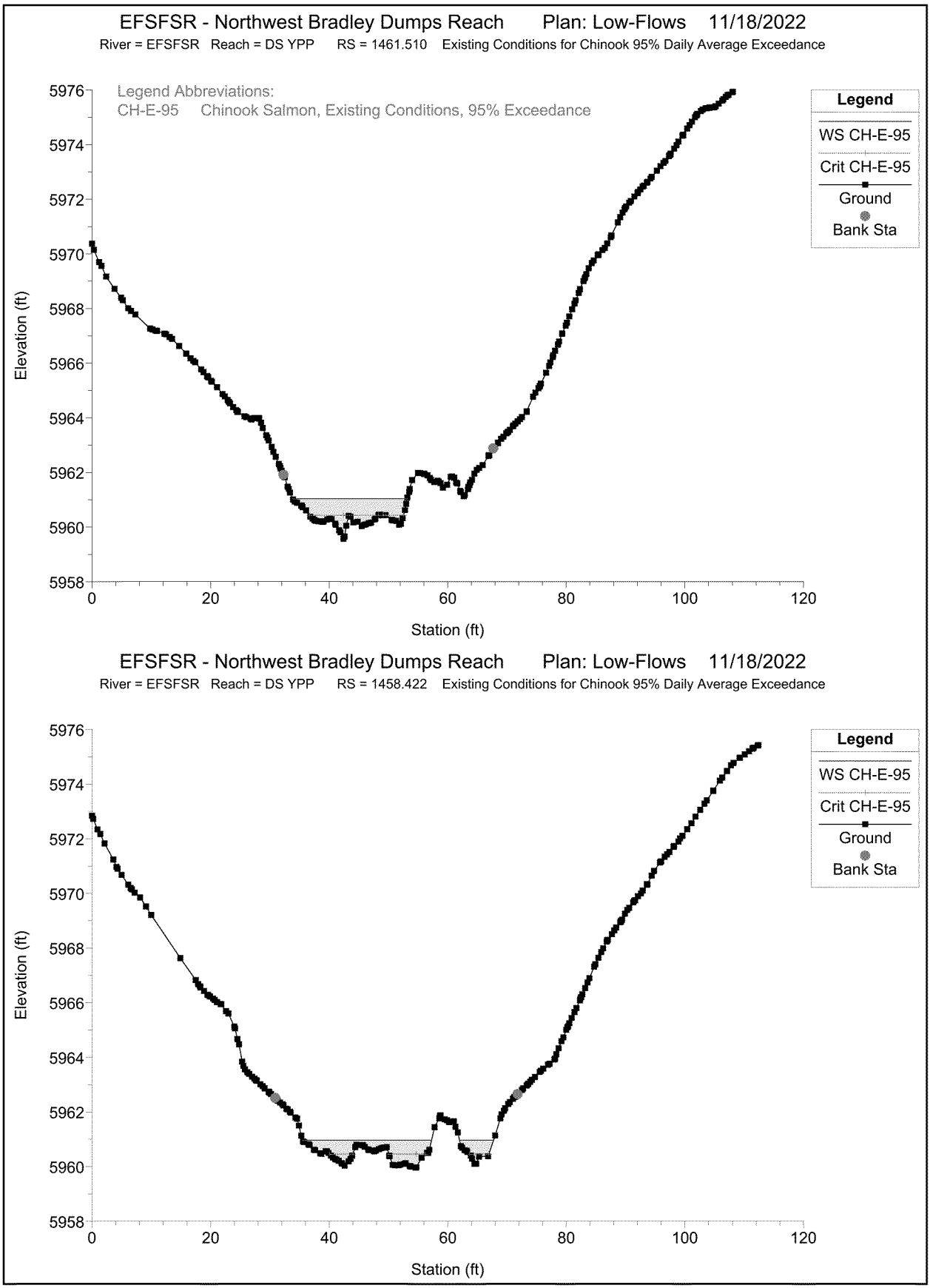

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1506.792 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
5962
0
20
40
60
80
100

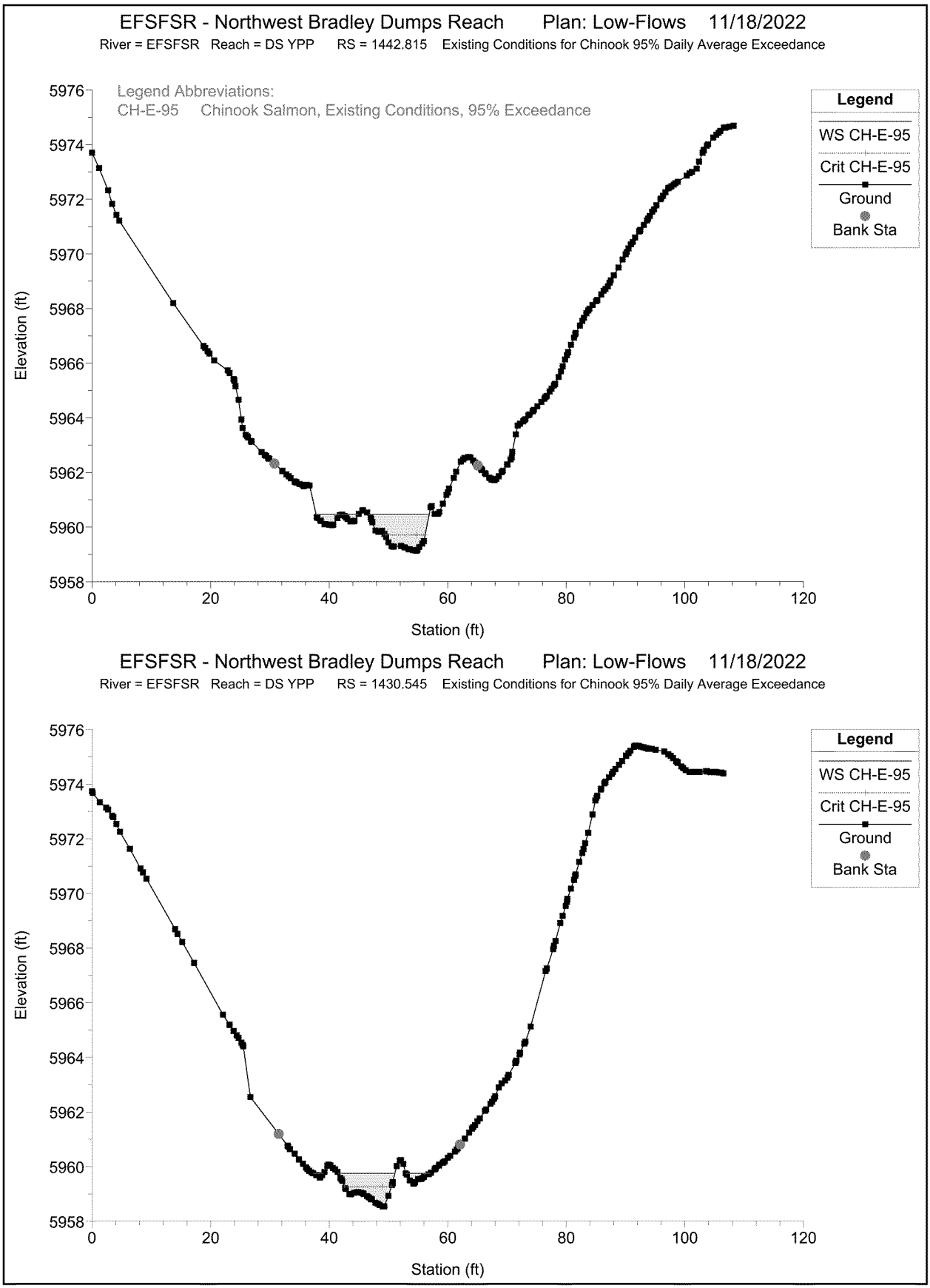

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1501.328 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
5962
0
20
40
60
80
100

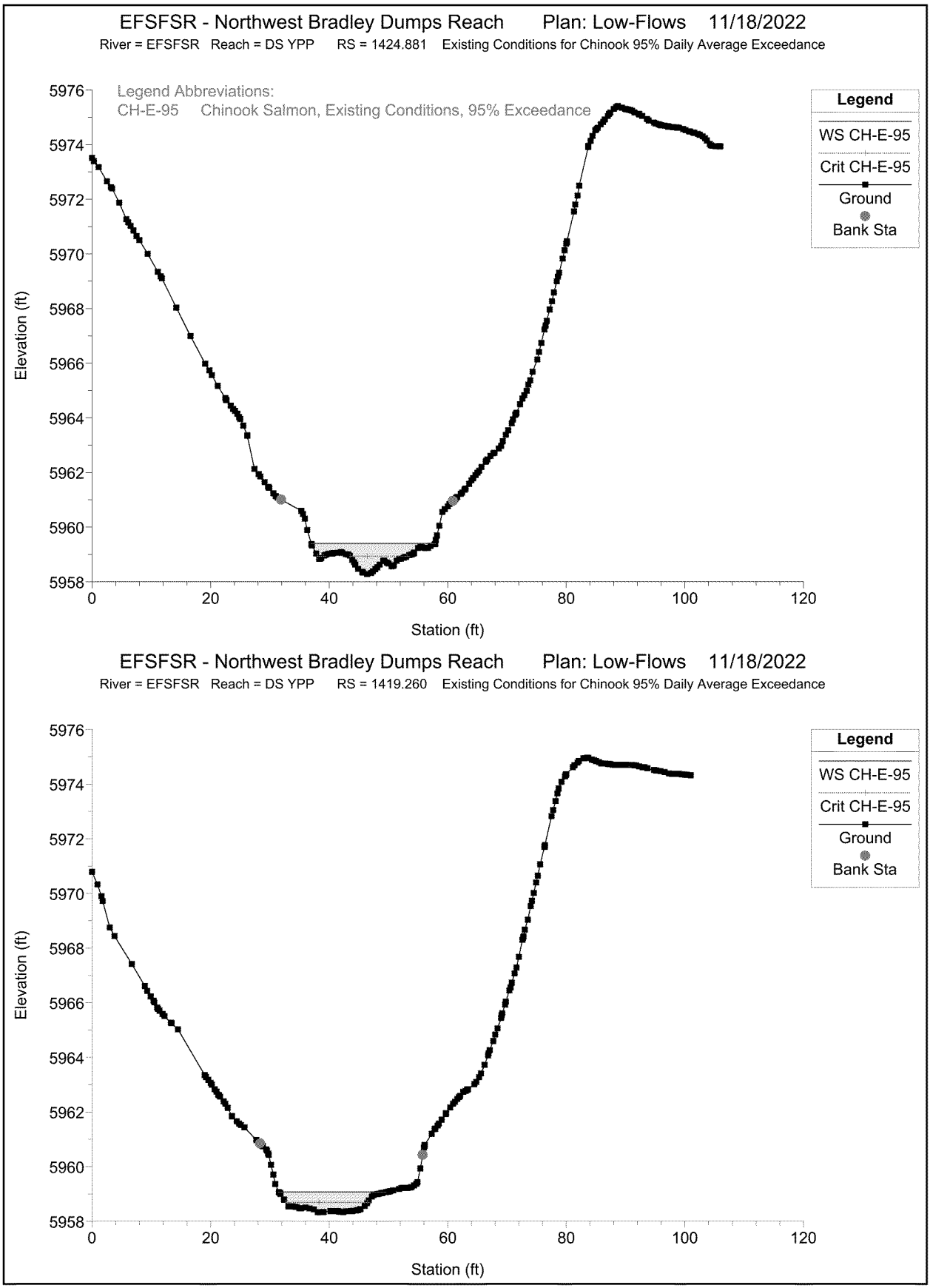

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1495.329 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
5962
5960
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1487.877 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

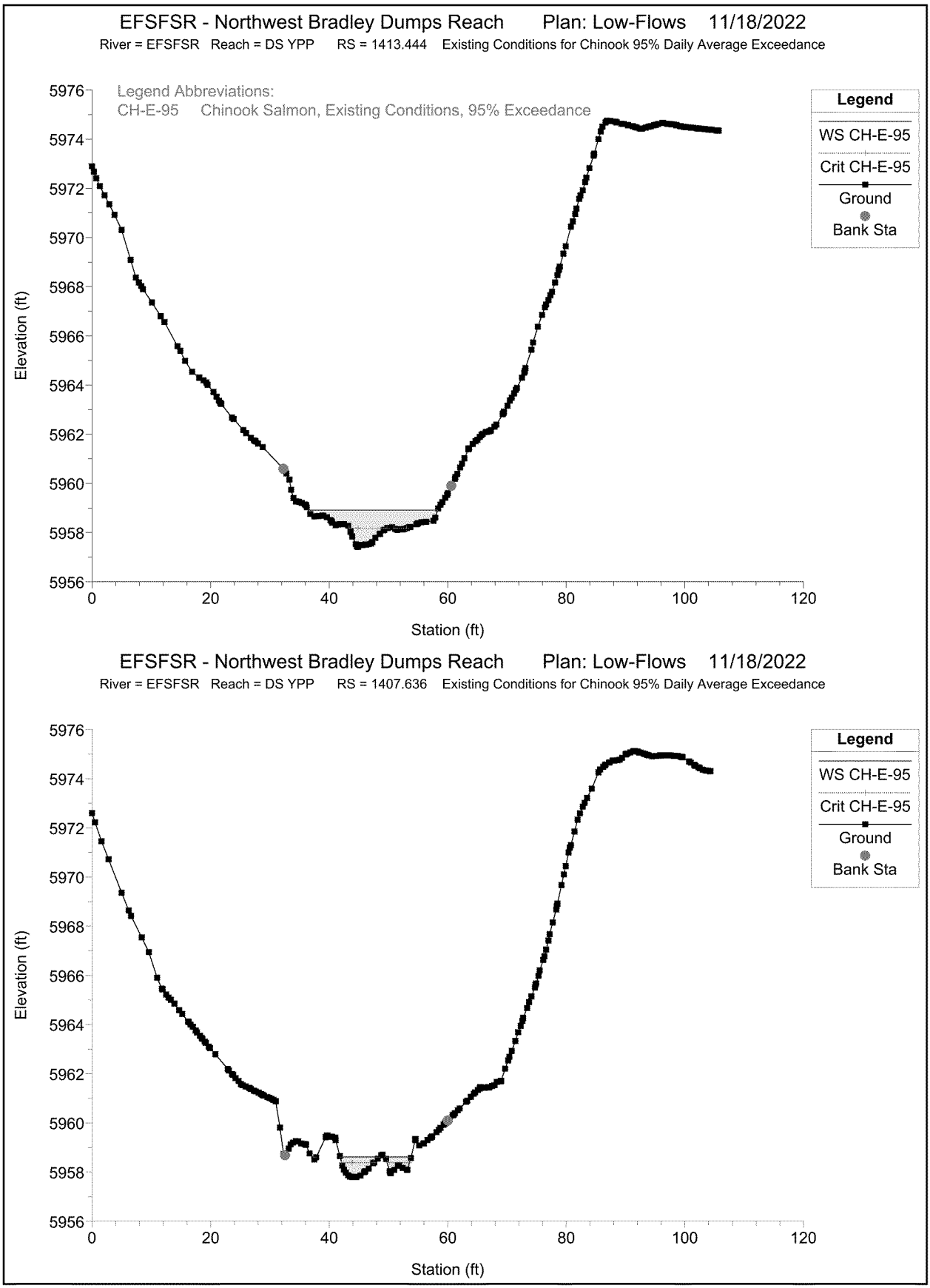

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1483.313 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5976
5974
5972
5970
5968
5966
5964
5962
5960
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1478.060 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

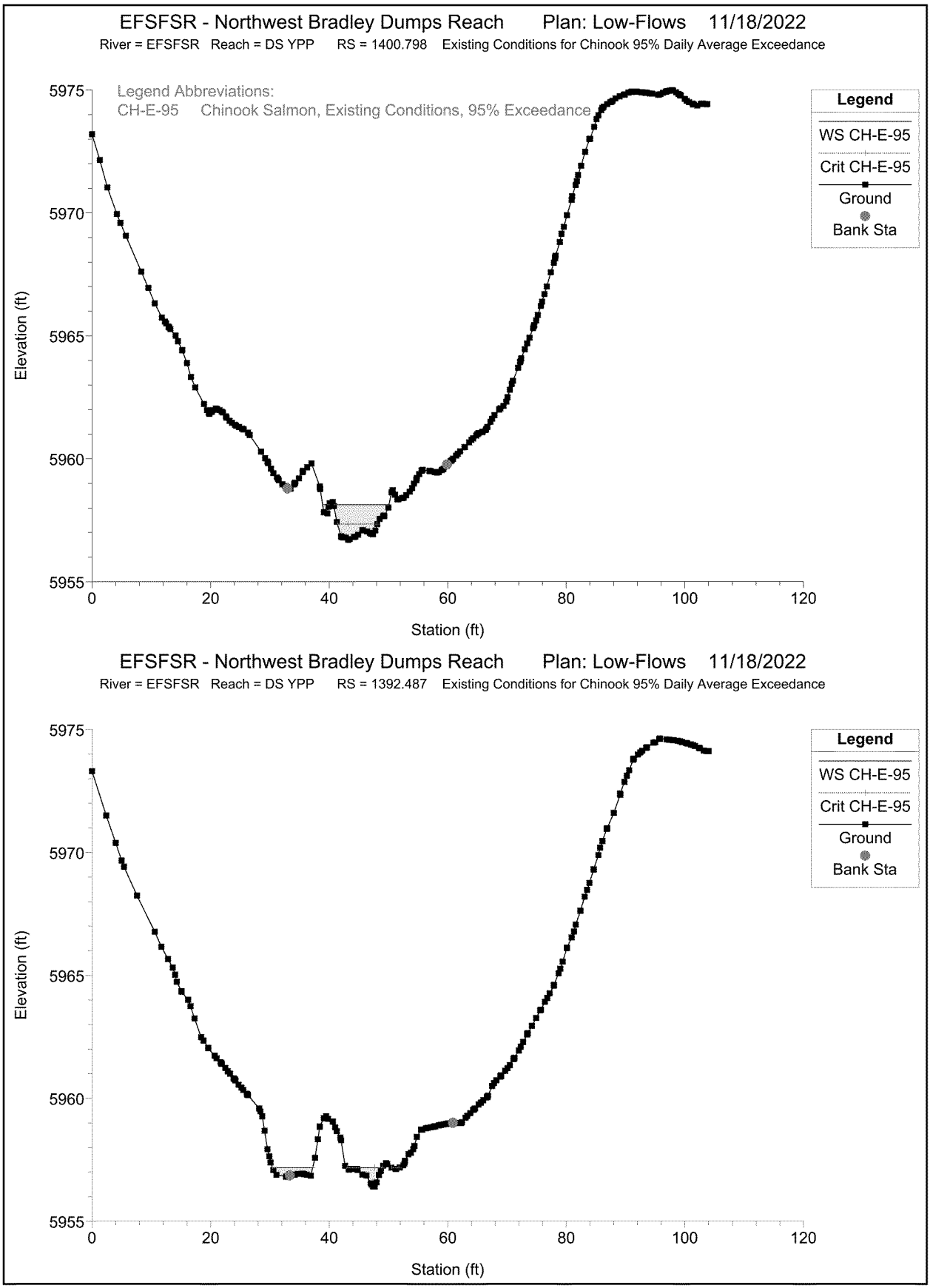

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1474.185 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5976
5974
5972
5970
5968
5966
5964
5962
5960
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1472.390 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5978
5976
5974
5972
5970
5968
5966
5964
5962
5960
0
20
40
60
80
100
120

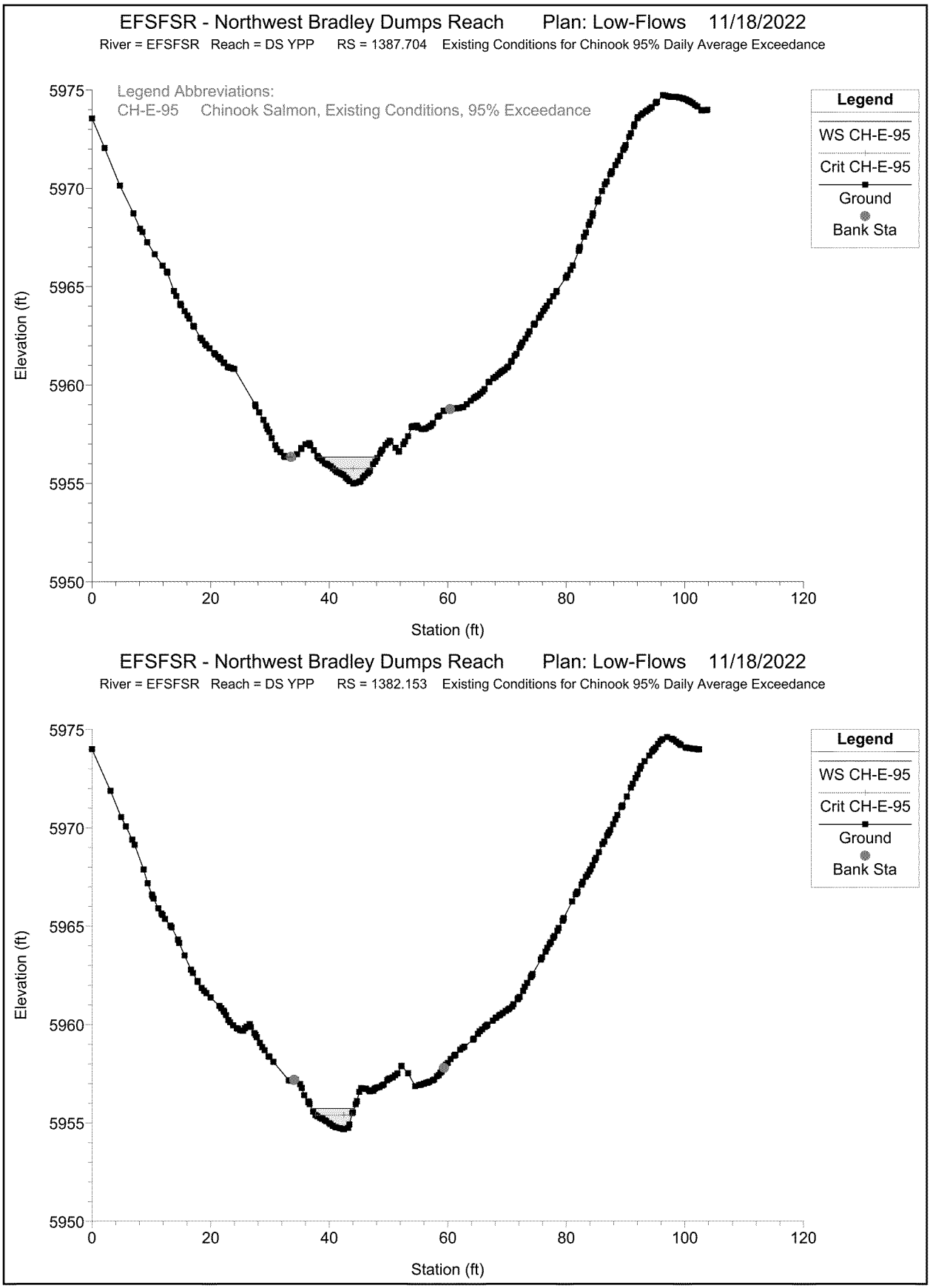

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1461.510 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5976
5974
5972
5970
5968
5966
5964
5962
5960
5958
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1458.422 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

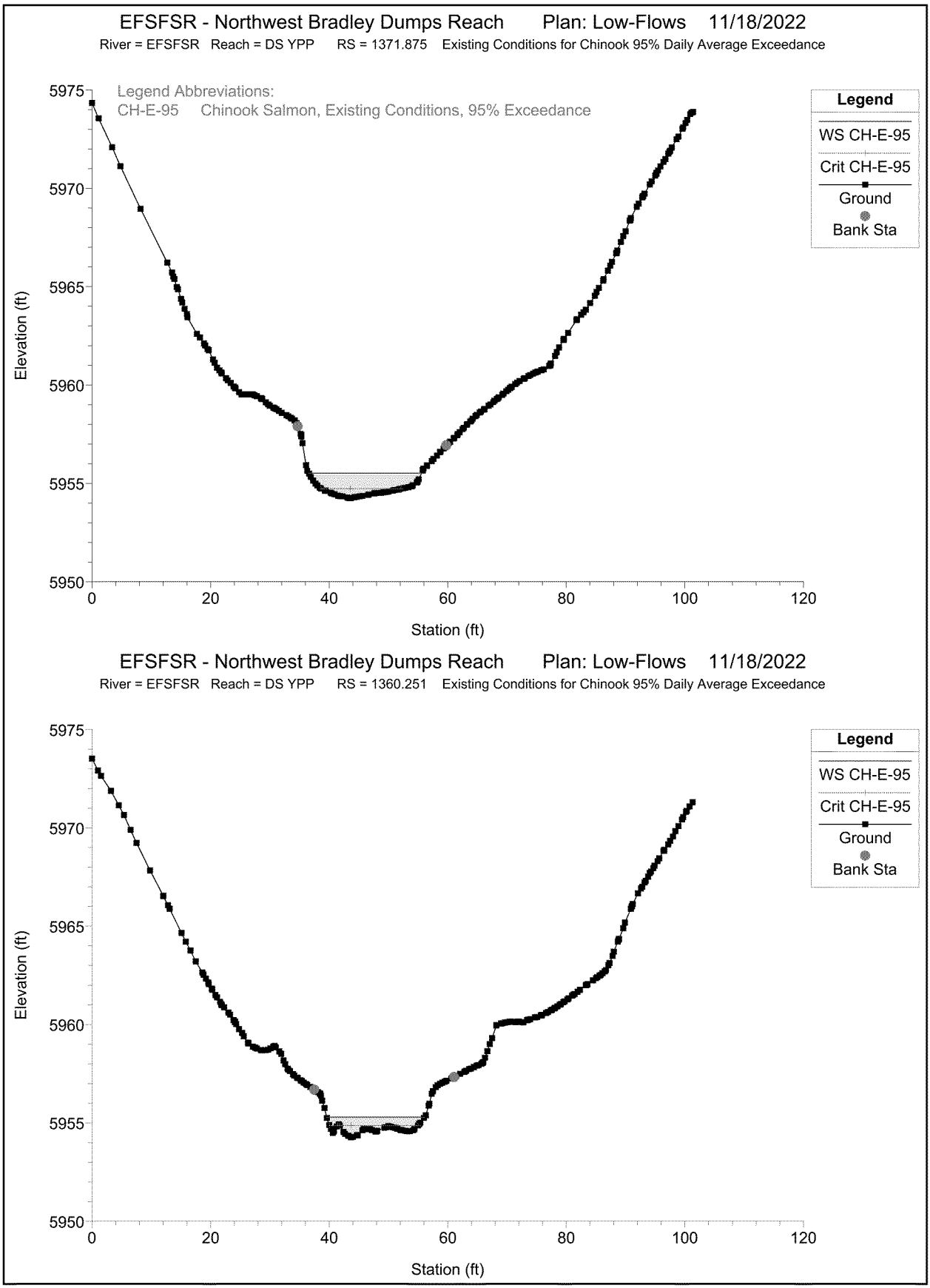

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1442.815 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5976
5974
5972
5970
5968
5966
5964
5962
5960
5958
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1430.545 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

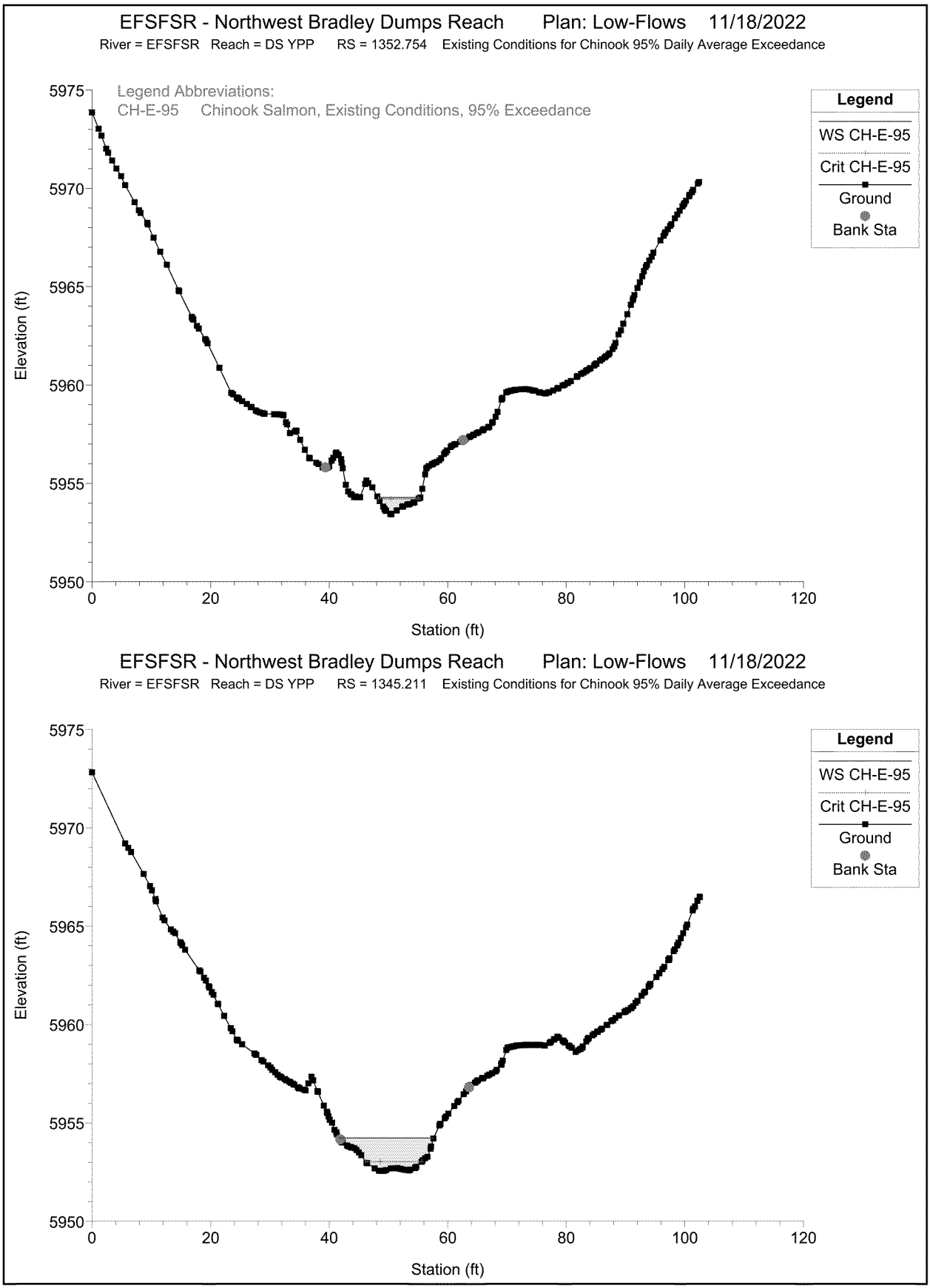

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1424.881 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5976
5974
5972
5970
5968
5966
5964
5962
5960
5958
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1419.260 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

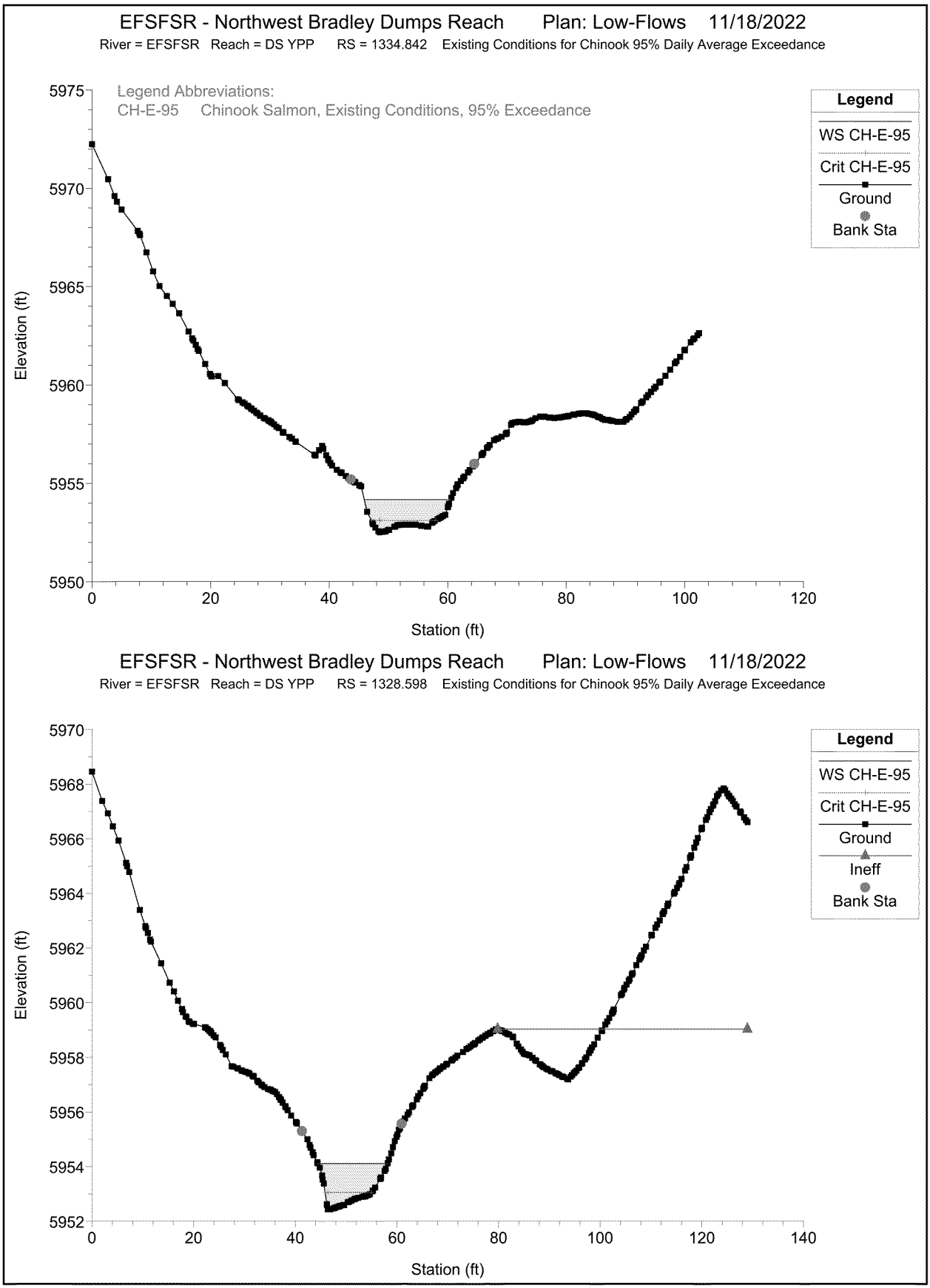

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1413.444 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5976
5974
5972
5970
5968
5966
5964
5962
5960
5958
5956
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1407.636 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1400.798 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1392.487 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
0
20
40
60
80
100
120


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1387.704 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1382.153 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)

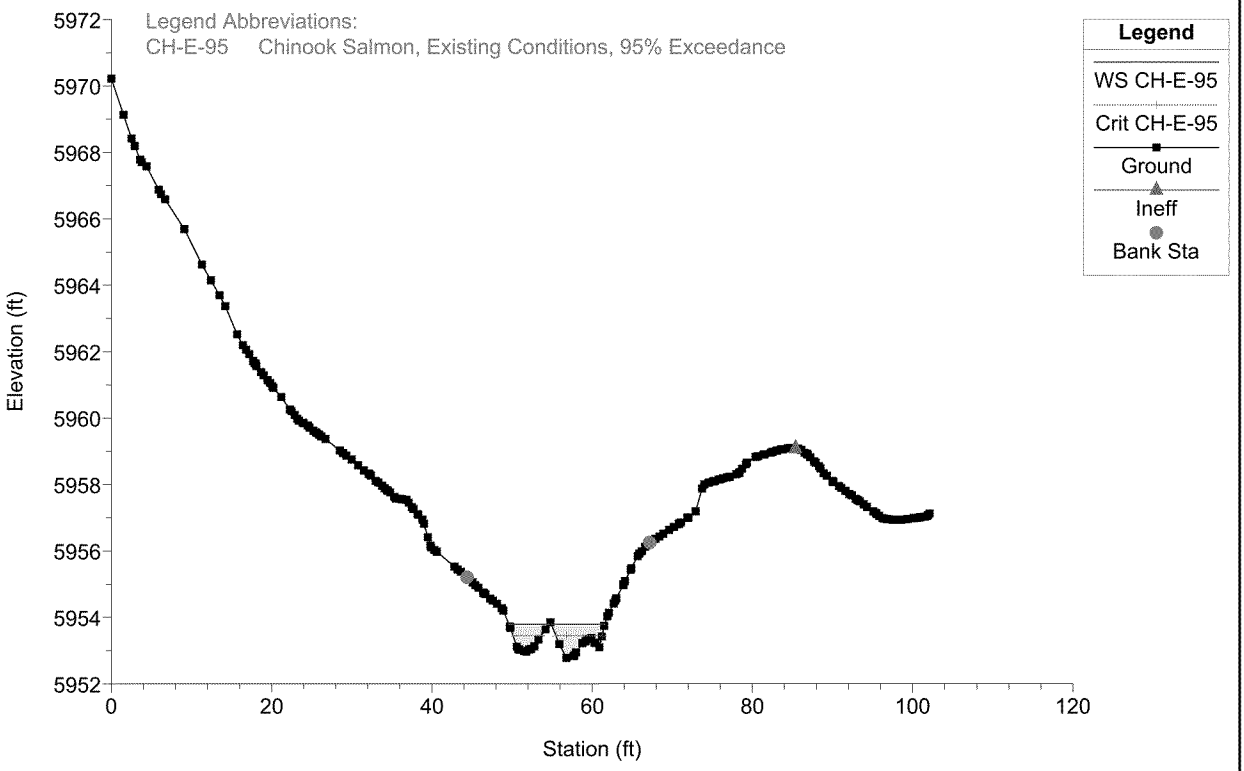

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1371.875 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1360.251 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1352.754 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1345.211 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
5950
0
20
40
60
80
100
120


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1334.842 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5975
5970
5965
5960
5955
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1328.598 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5970
5968
5966
5964
5962
5960
5958
5956
5954
5952
0
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40
60
80
100
120
140

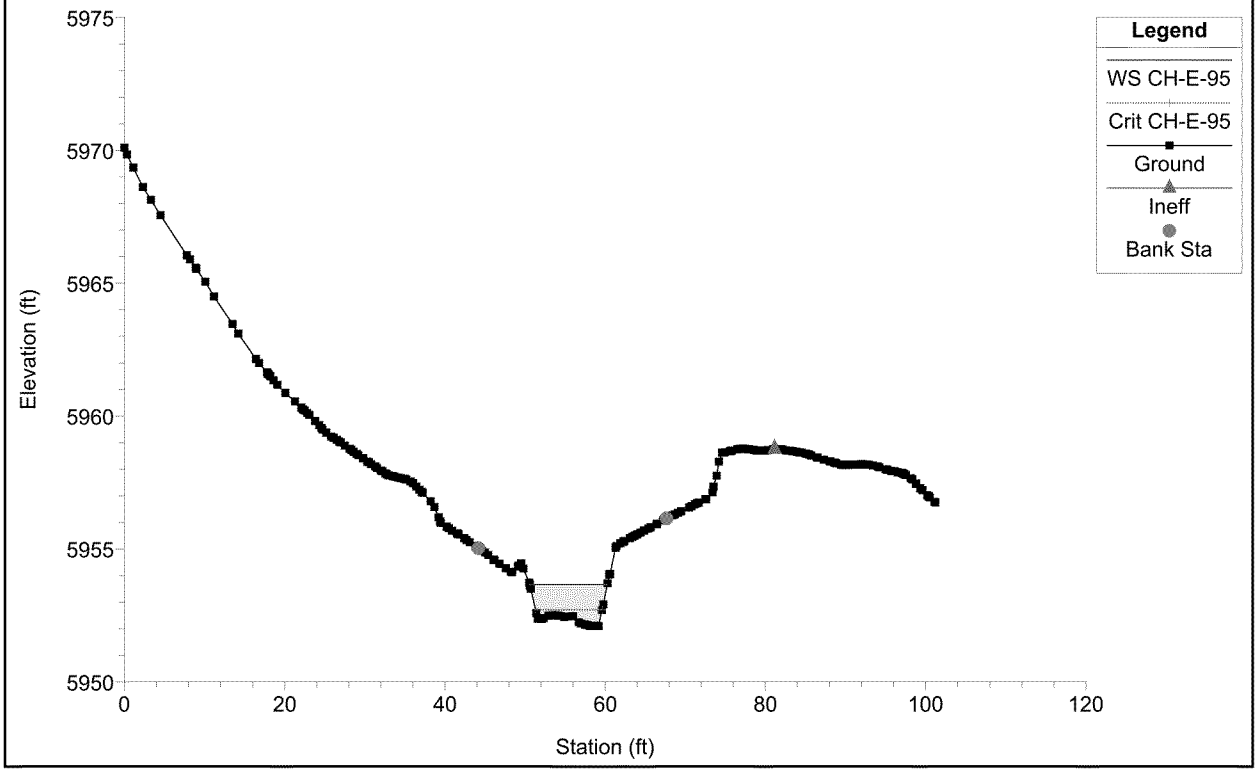
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

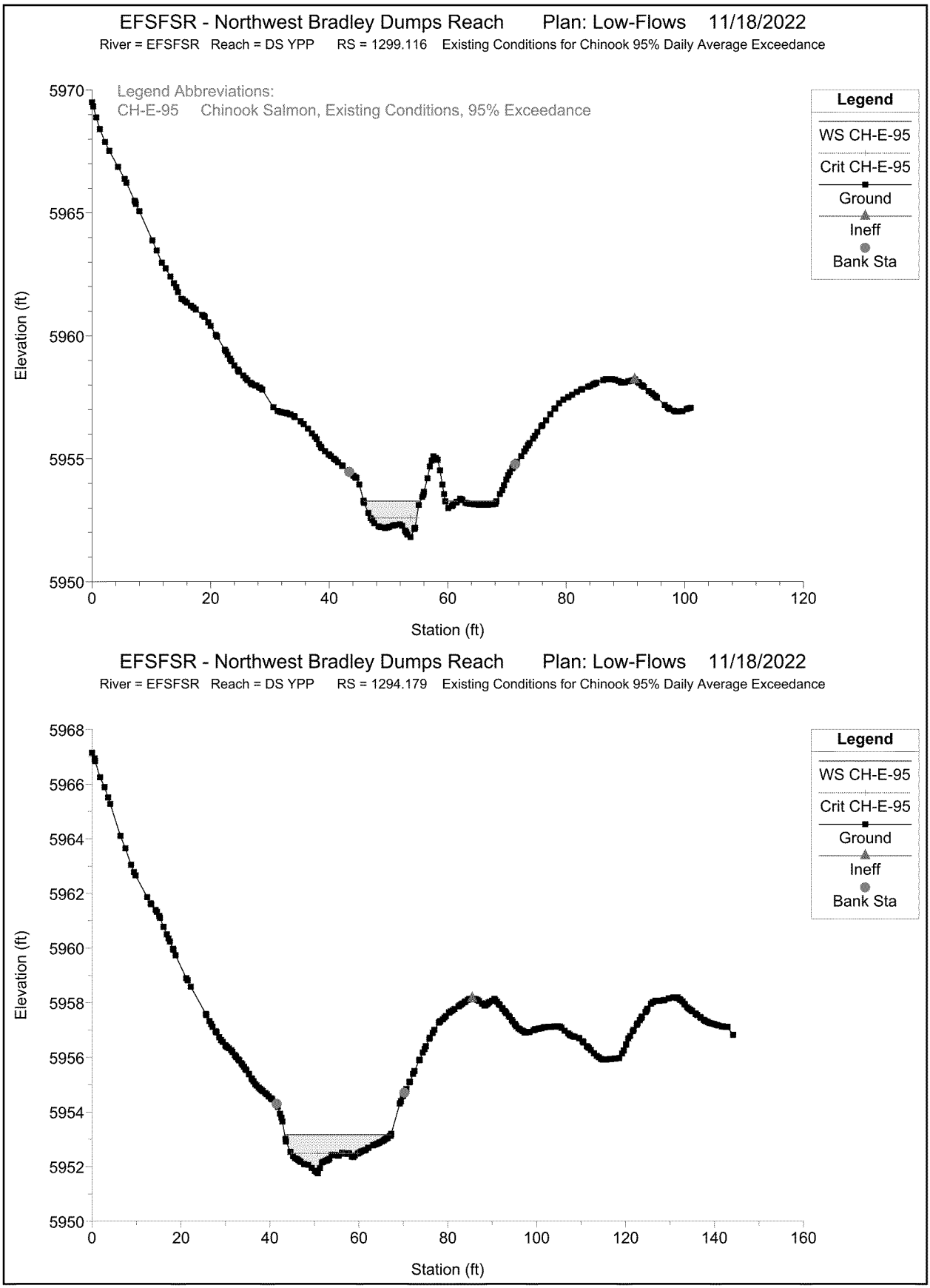
River = EFSFSR Reach = DS YPP RS = 1316.693 Existing Conditions for Chinook 95% Daily Average Exceedance

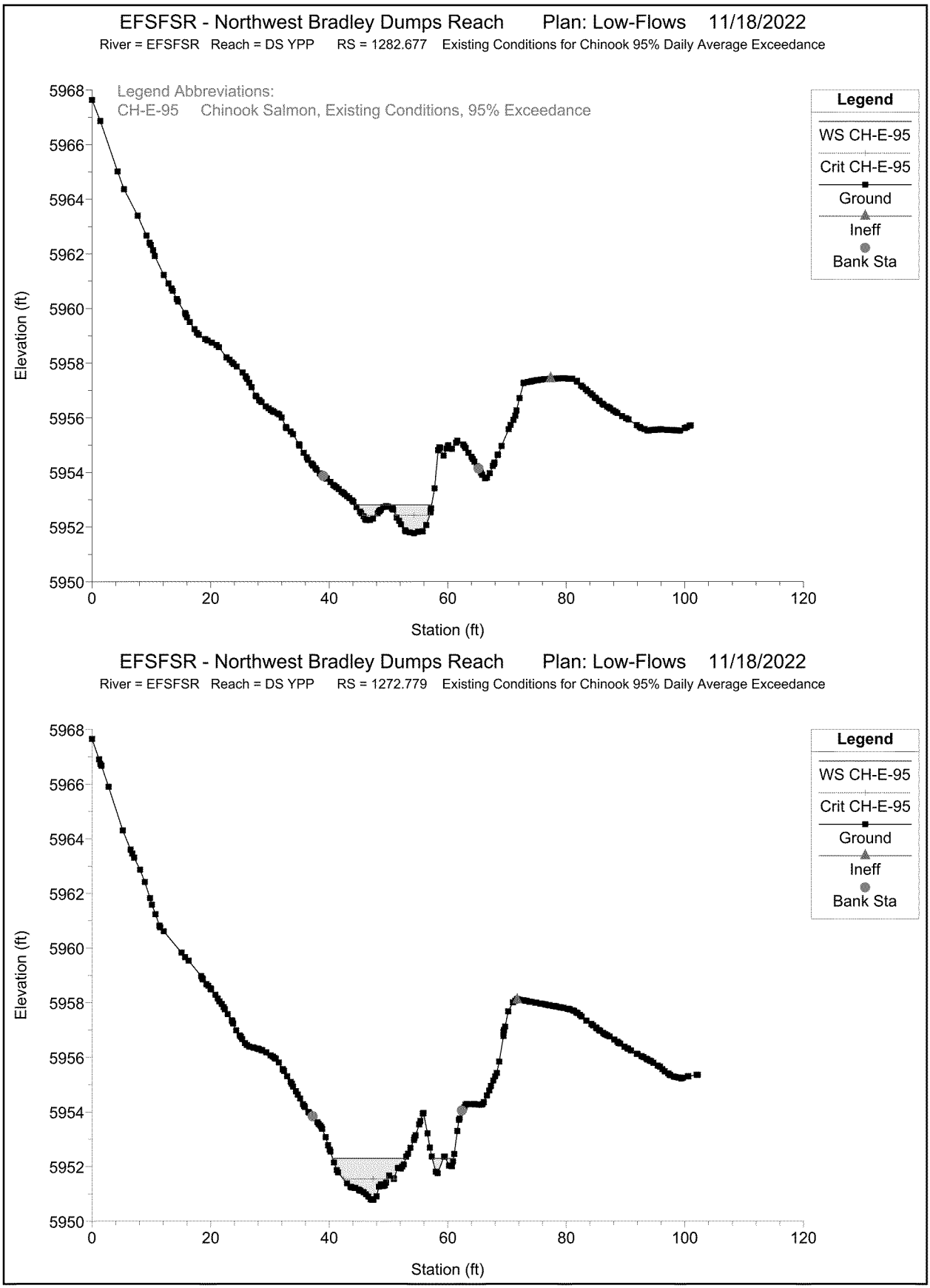


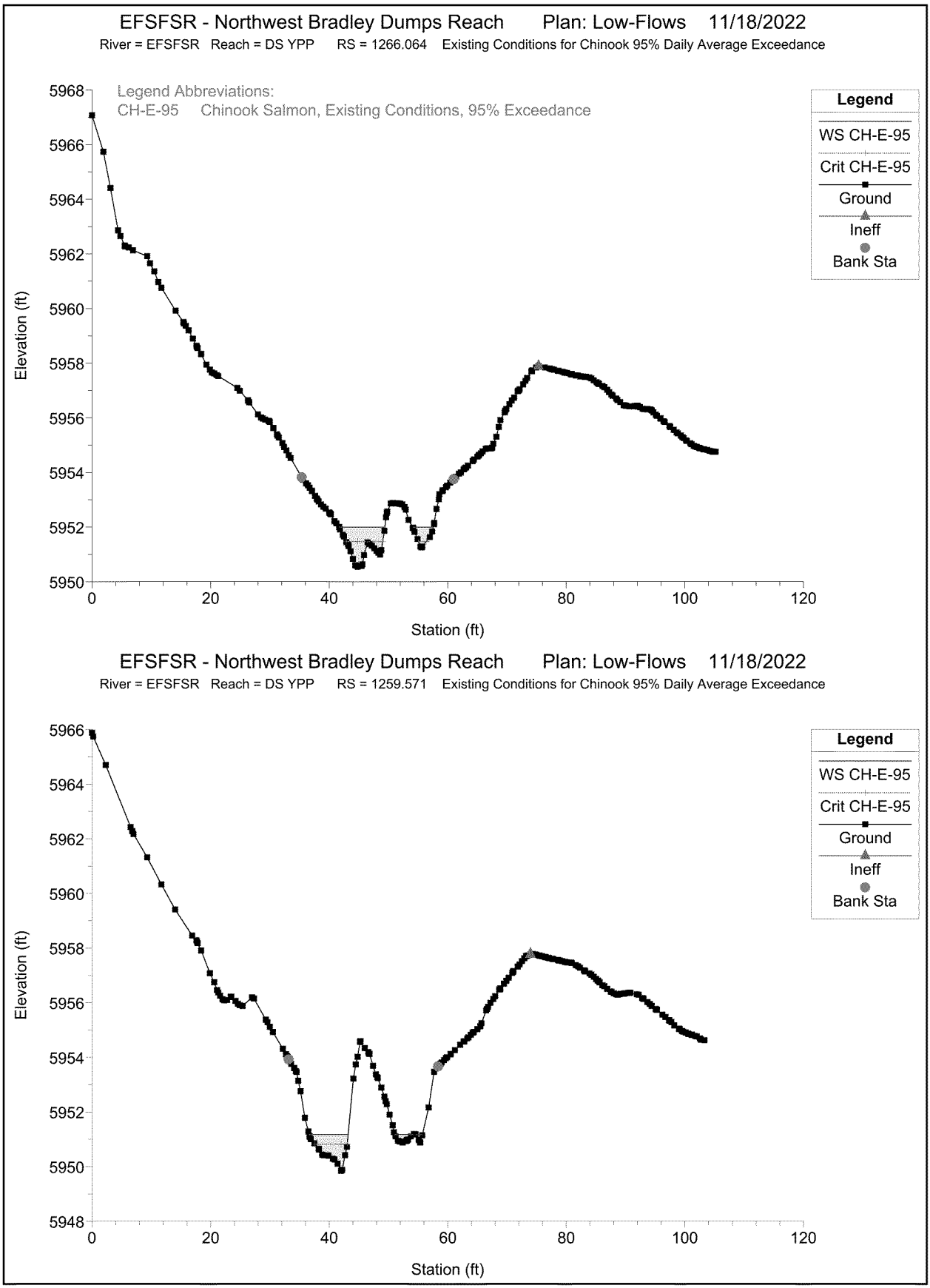
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

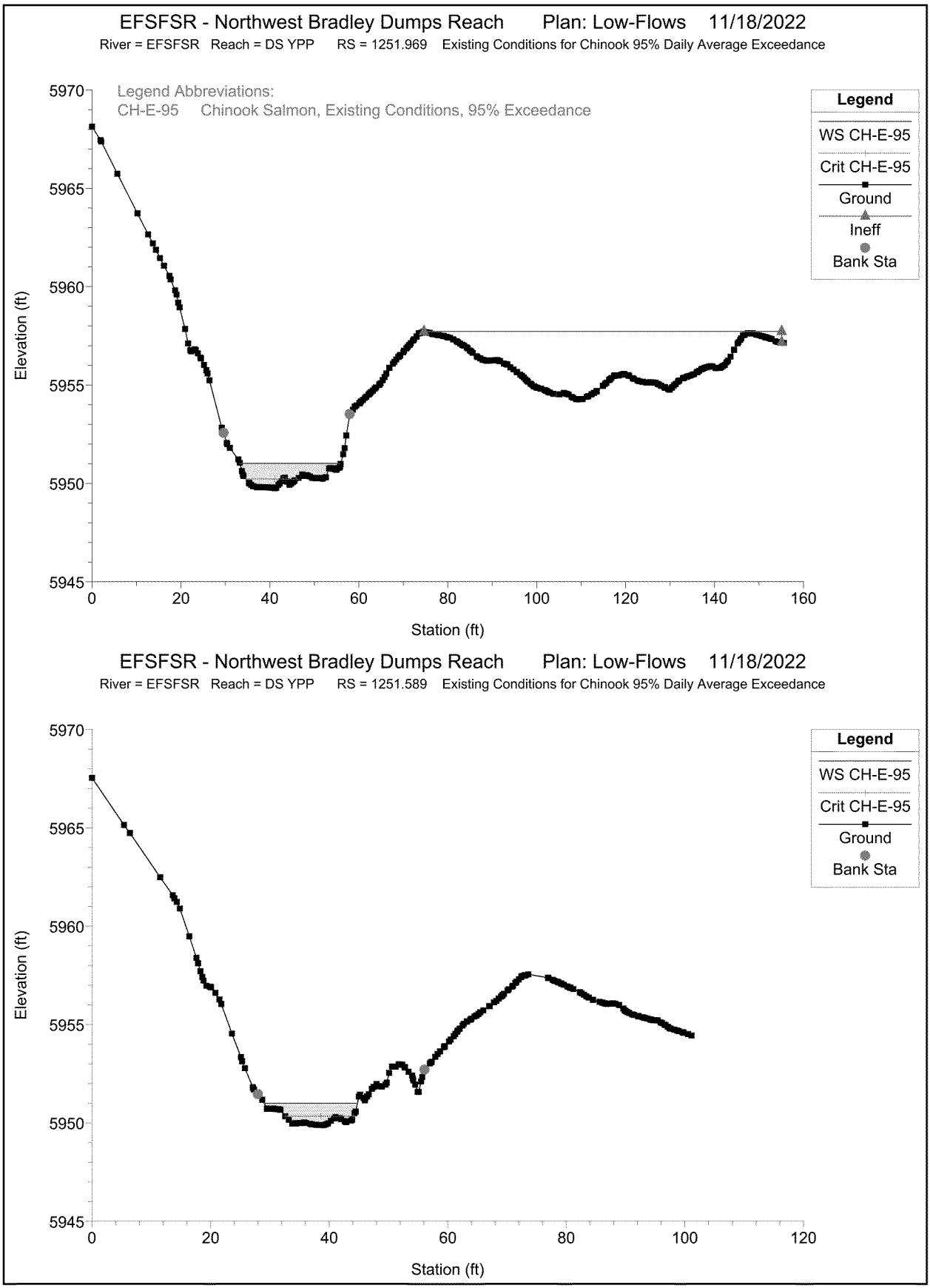
River = EFSFSR Reach = DS YPP RS = 1312.460 Existing Conditions for Chinook 95% Daily Average Exceedance

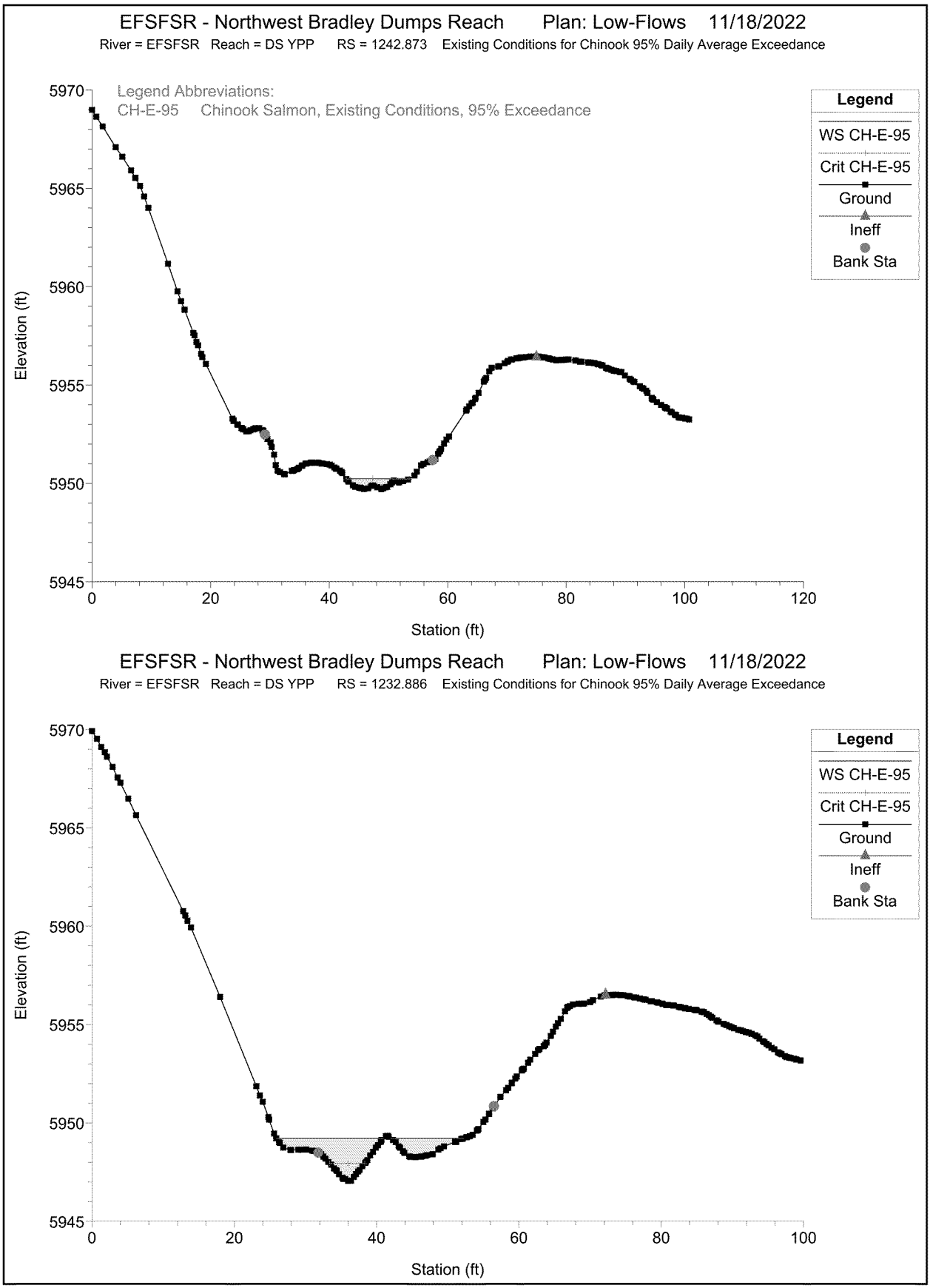


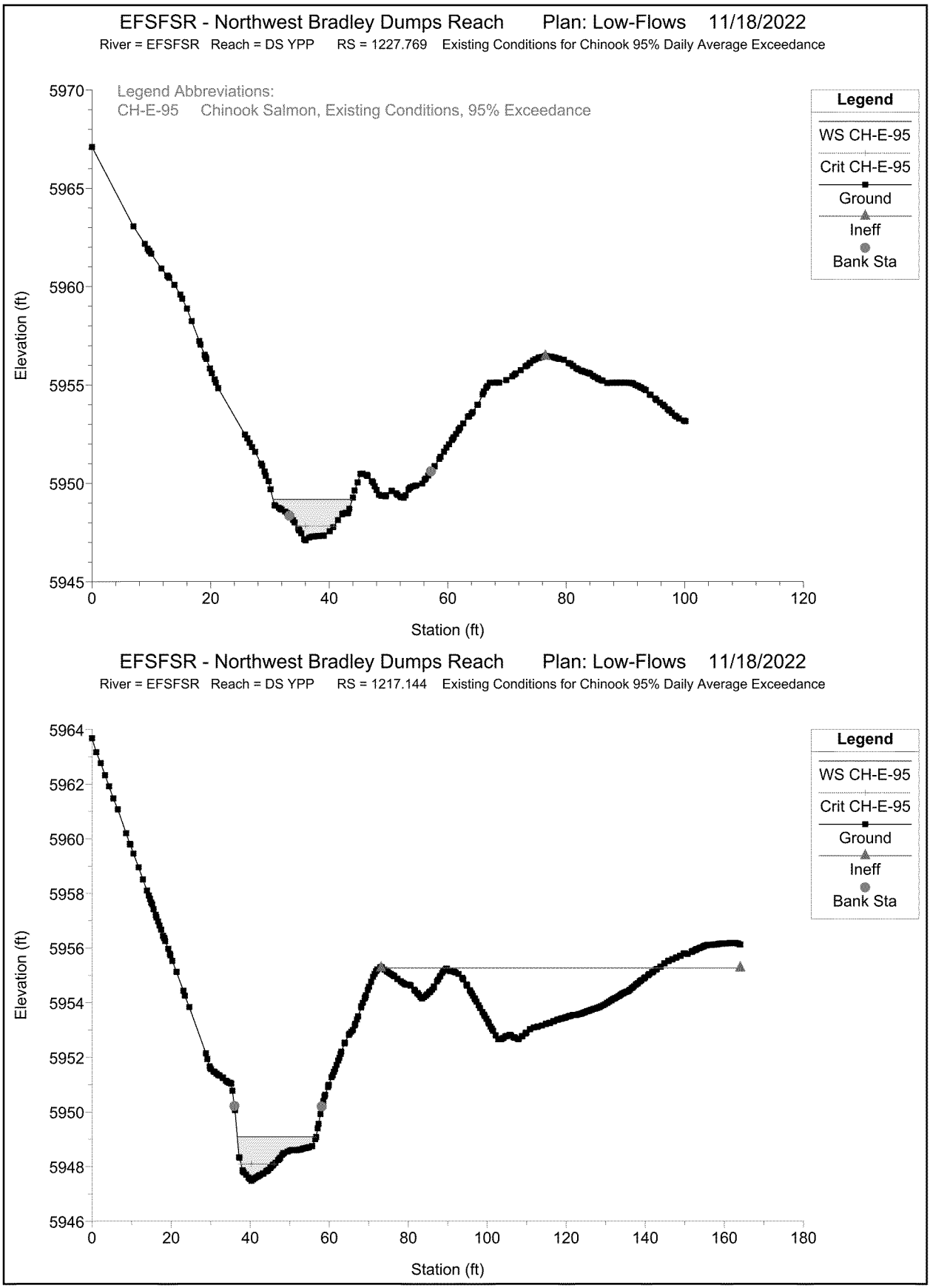

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1299.116 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5970
5965
5960
5955
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1294.179 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5968
5966
5964
5962
5960
5958
5956
5954
5952
5950
0
20
40
60
80
100
120
140
160

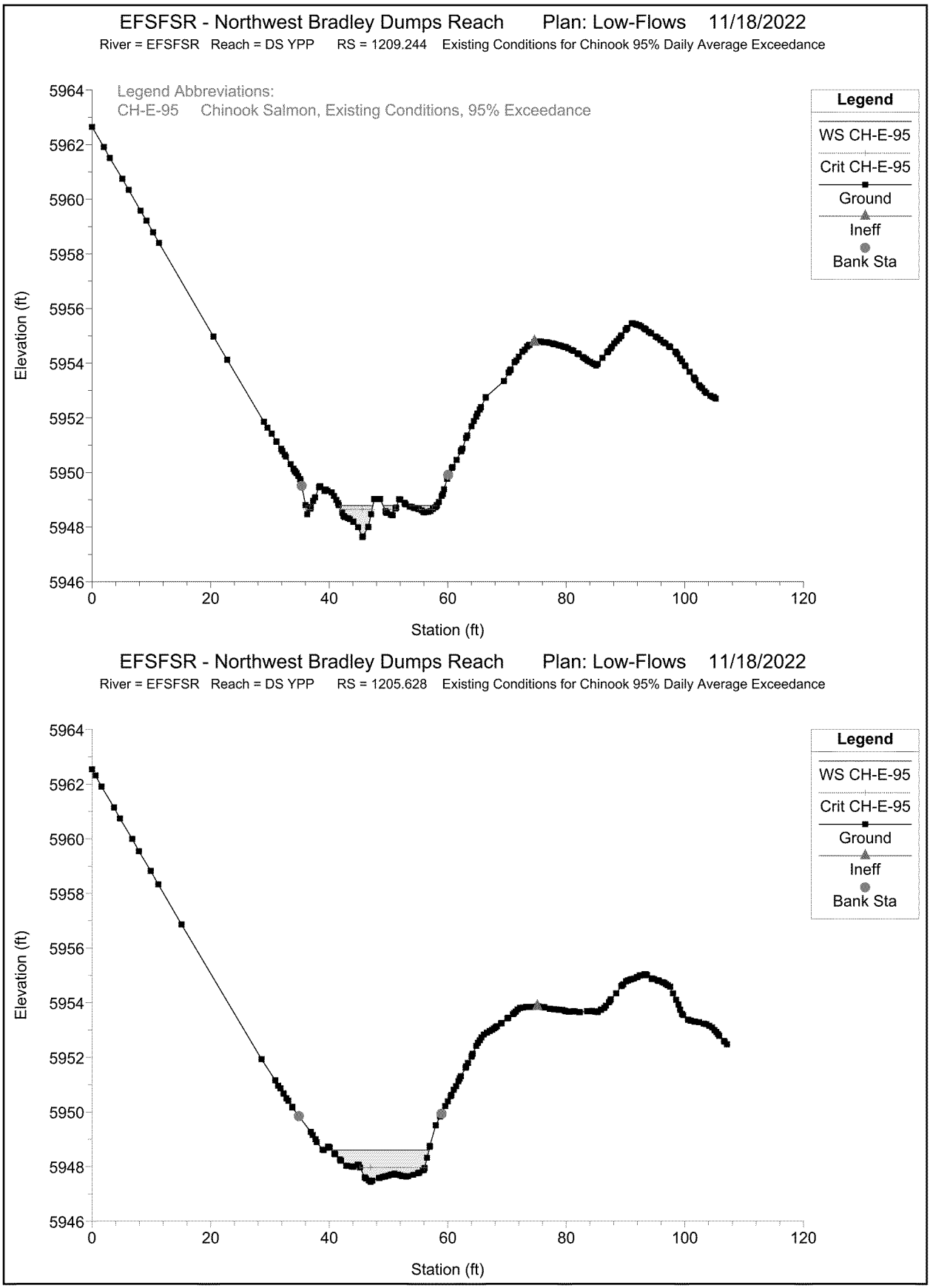

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1282.677 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5968
5966
5964
5962
5960
5958
5956
5954
5952
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1272.779 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1266.064 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5968
5966
5964
5962
5960
5958
5956
5954
5952
5950
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1259.571 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5966
5964
5962
5960
5958
5956
5954
5952
5950
5948
0
20
40
60
80
100
120


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1251.969 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5970
5965
5960
5955
5950
5945
0
20
40
60
80
100
120
140
160
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1251.589 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5970
5965
5960
5955
5950
5945
0
20
40
60
80
100
120

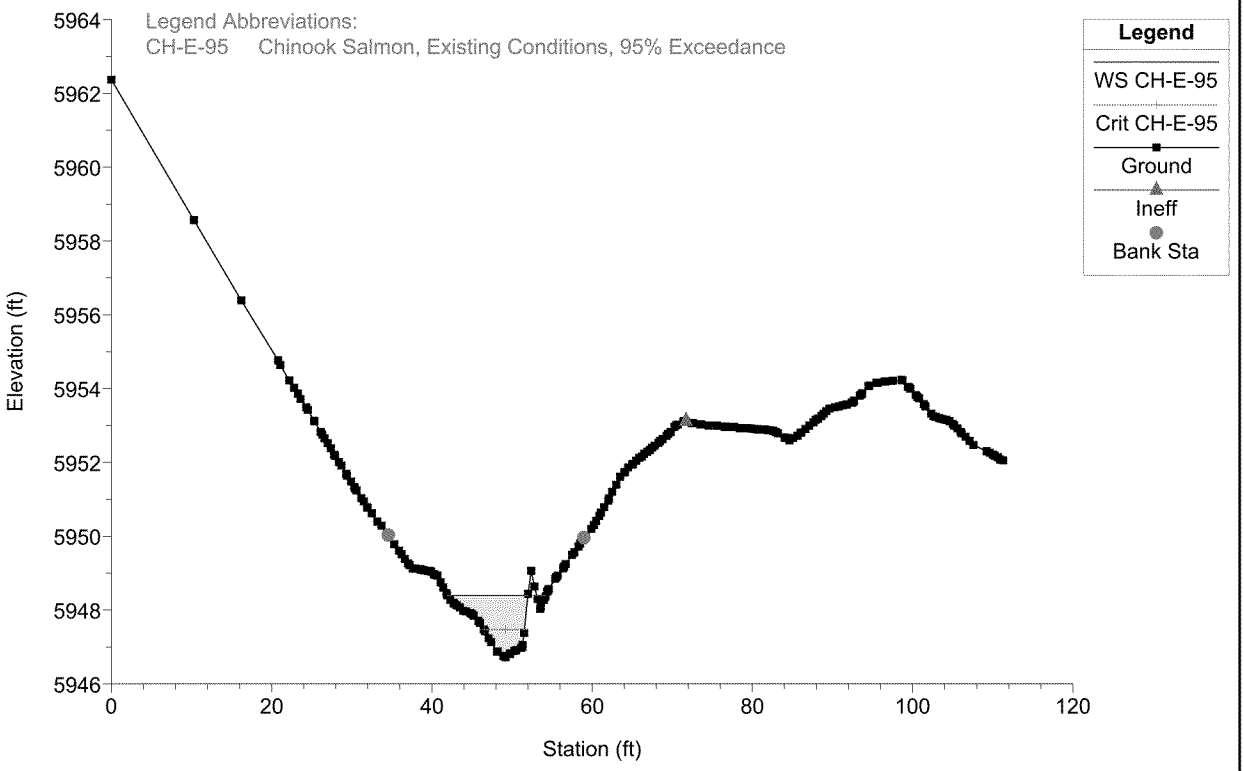

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1242.873 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5970
5965
5960
5955
5950
5945
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1232.886 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5970
5965
5960
5955
5950
5945
0
20
40
60
80
100


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1227.769 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5970
5965
5960
5955
5950
5945
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1217.144 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5964
5962
5960
5958
5956
5954
5952
5950
5948
5946
0
20
40
60
80
100
120
140
160
180


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1209.244 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5964
5962
5960
5958
5956
5954
5952
5950
5948
5946
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1205.628 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

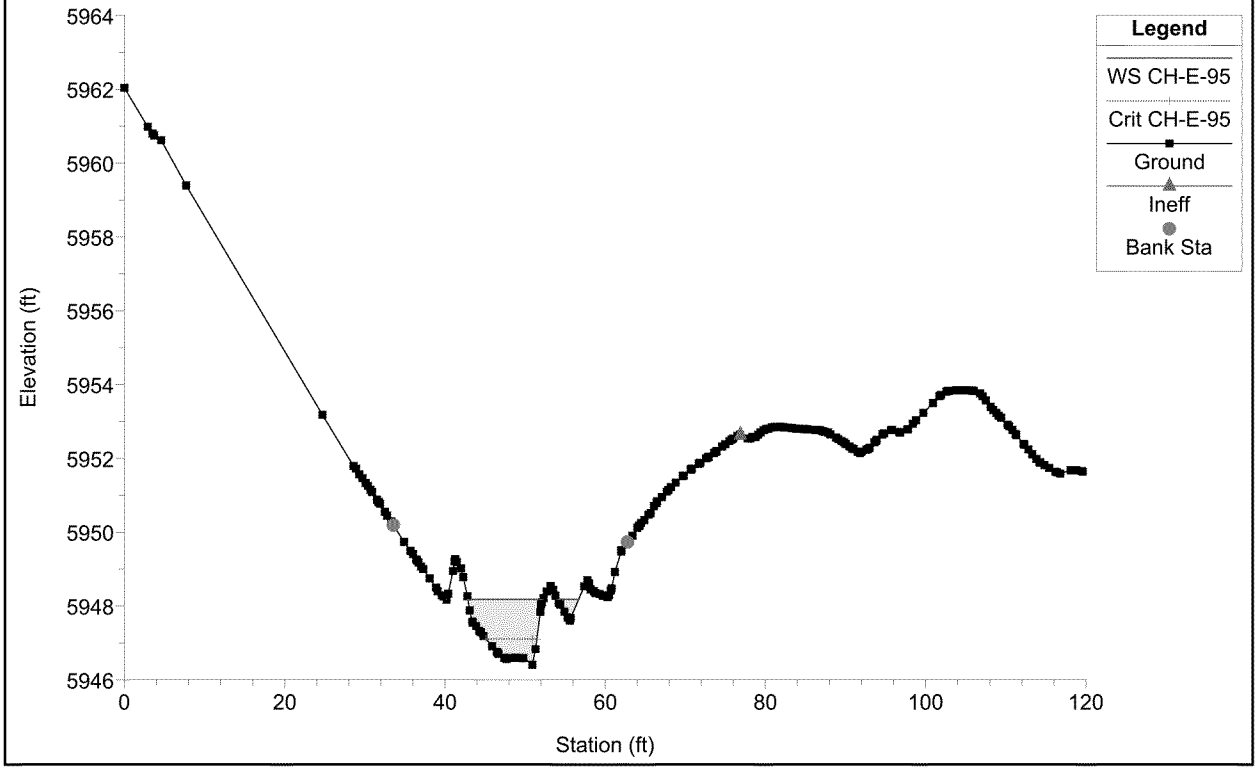
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

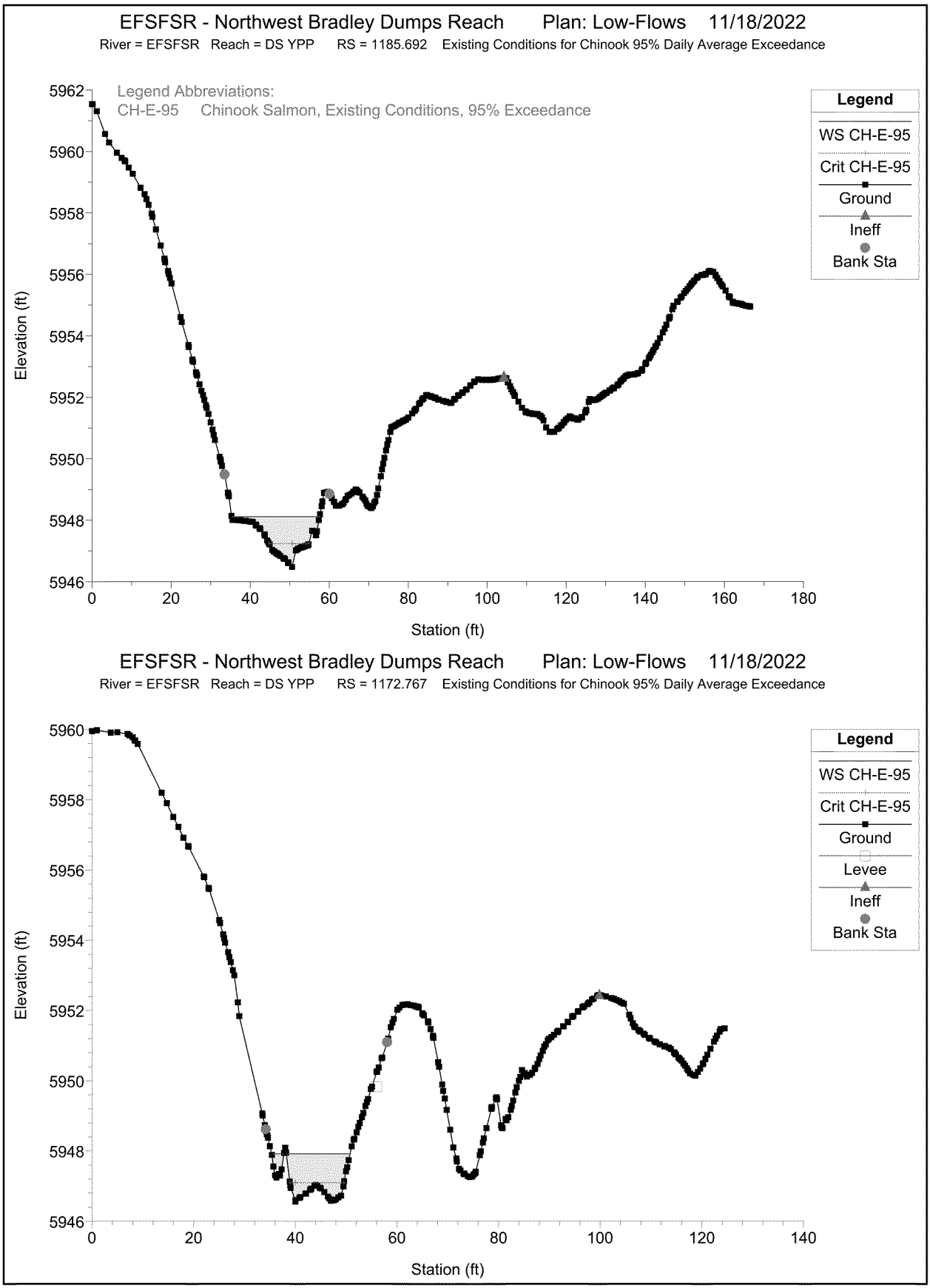
River = EFSFSR Reach = DS YPP RS = 1198.510 Existing Conditions for Chinook 95% Daily Average Exceedance

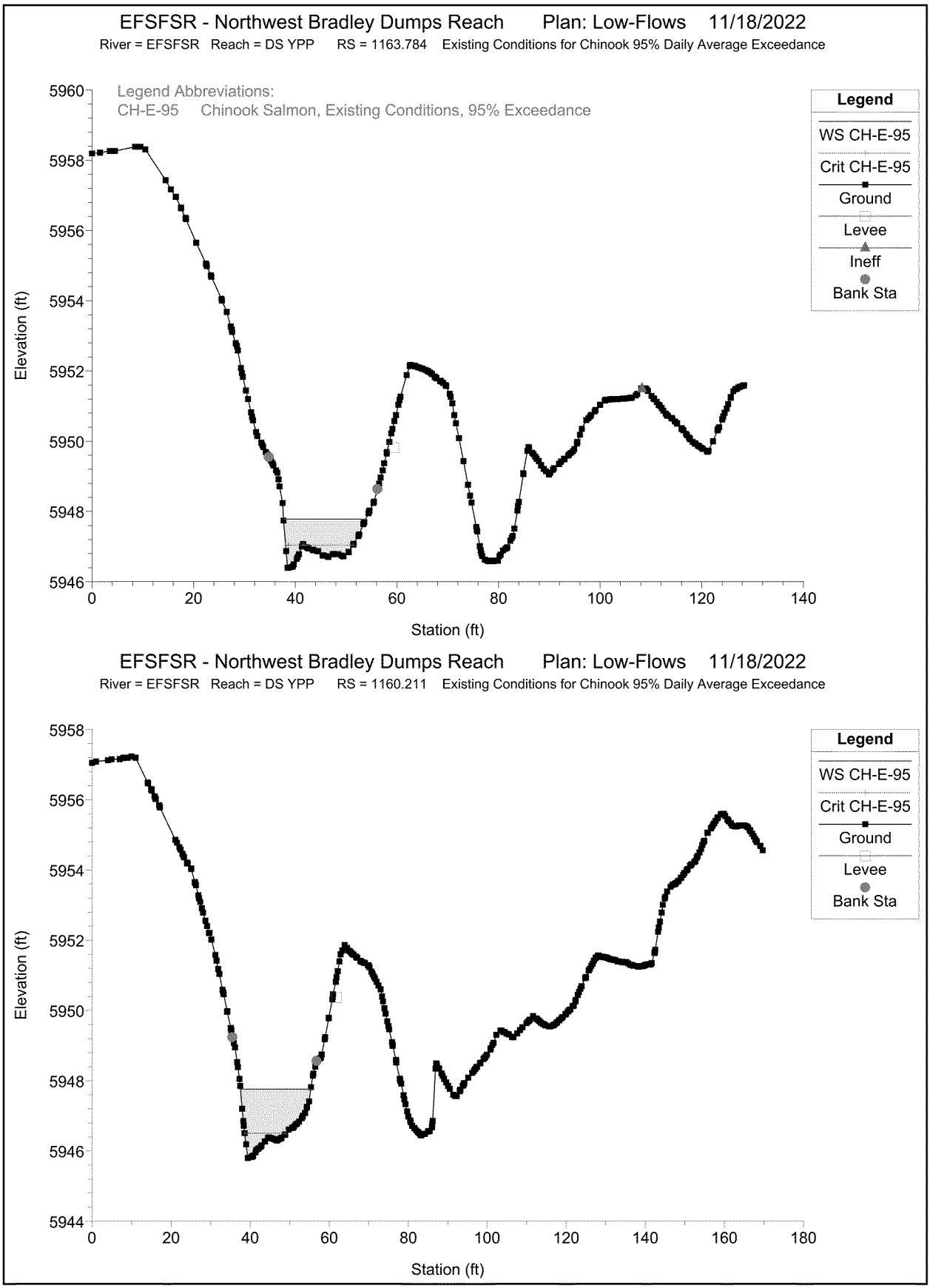


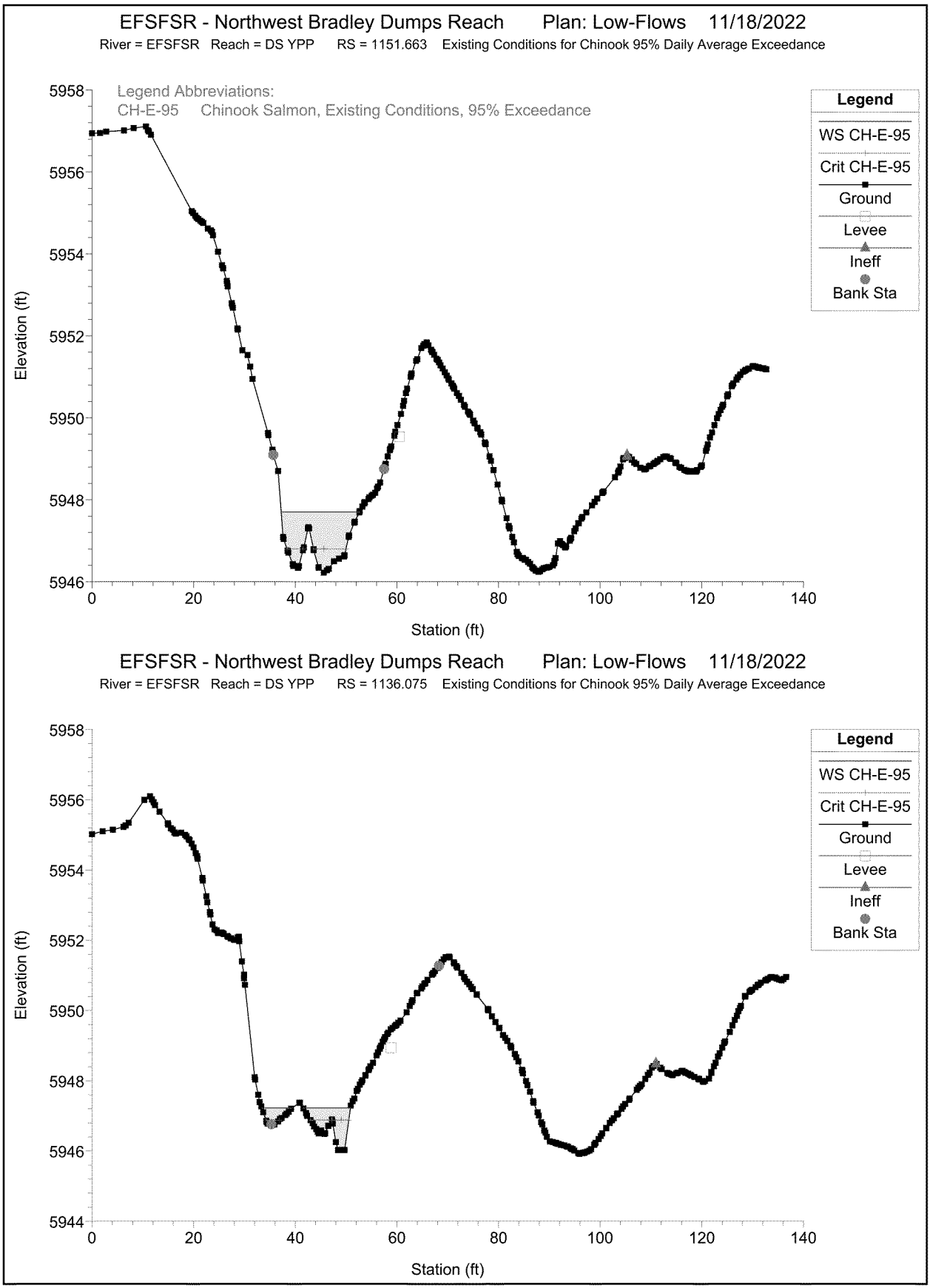
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

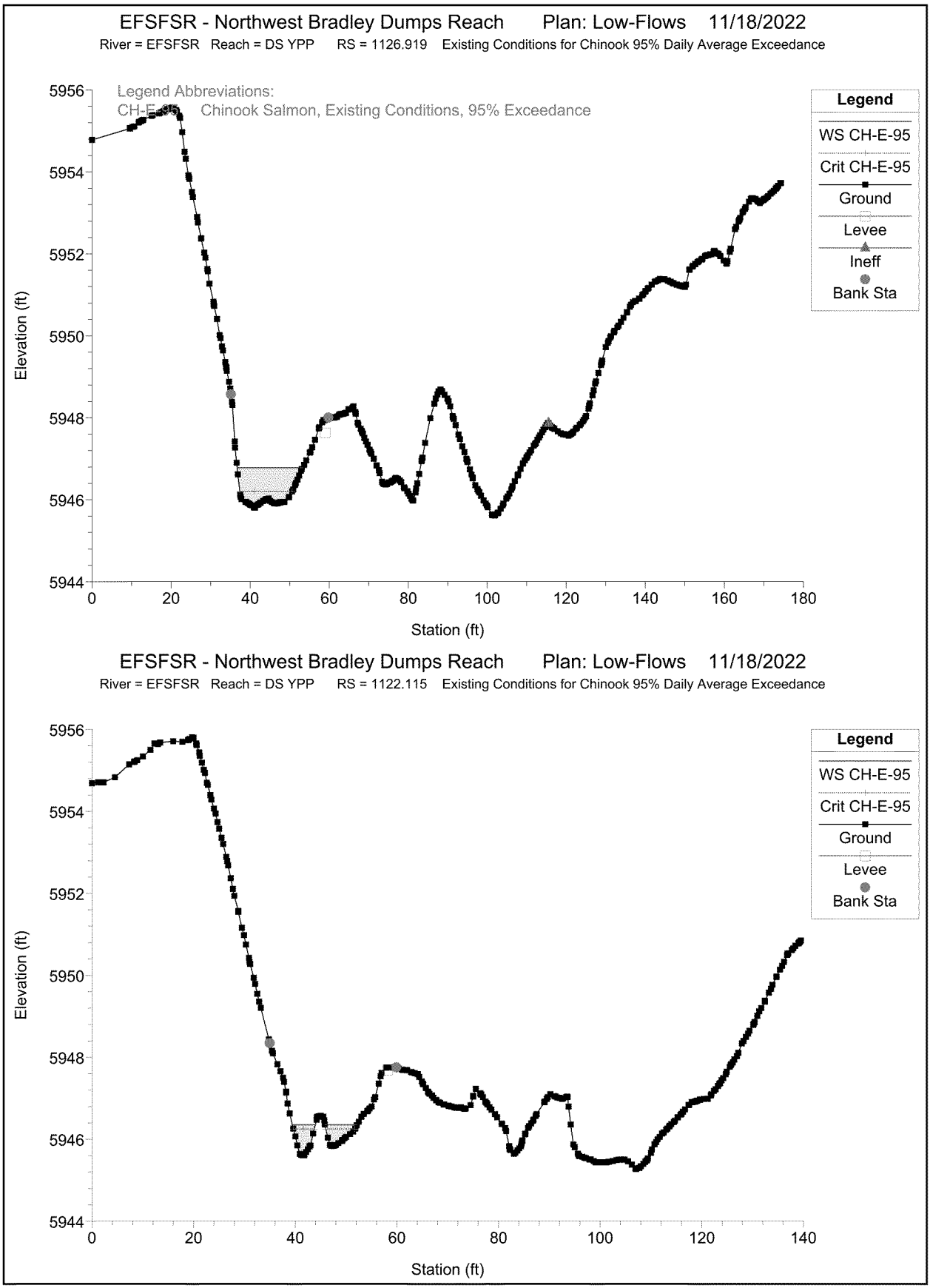
River = EFSFSR Reach = DS YPP RS = 1189.613 Existing Conditions for Chinook 95% Daily Average Exceedance

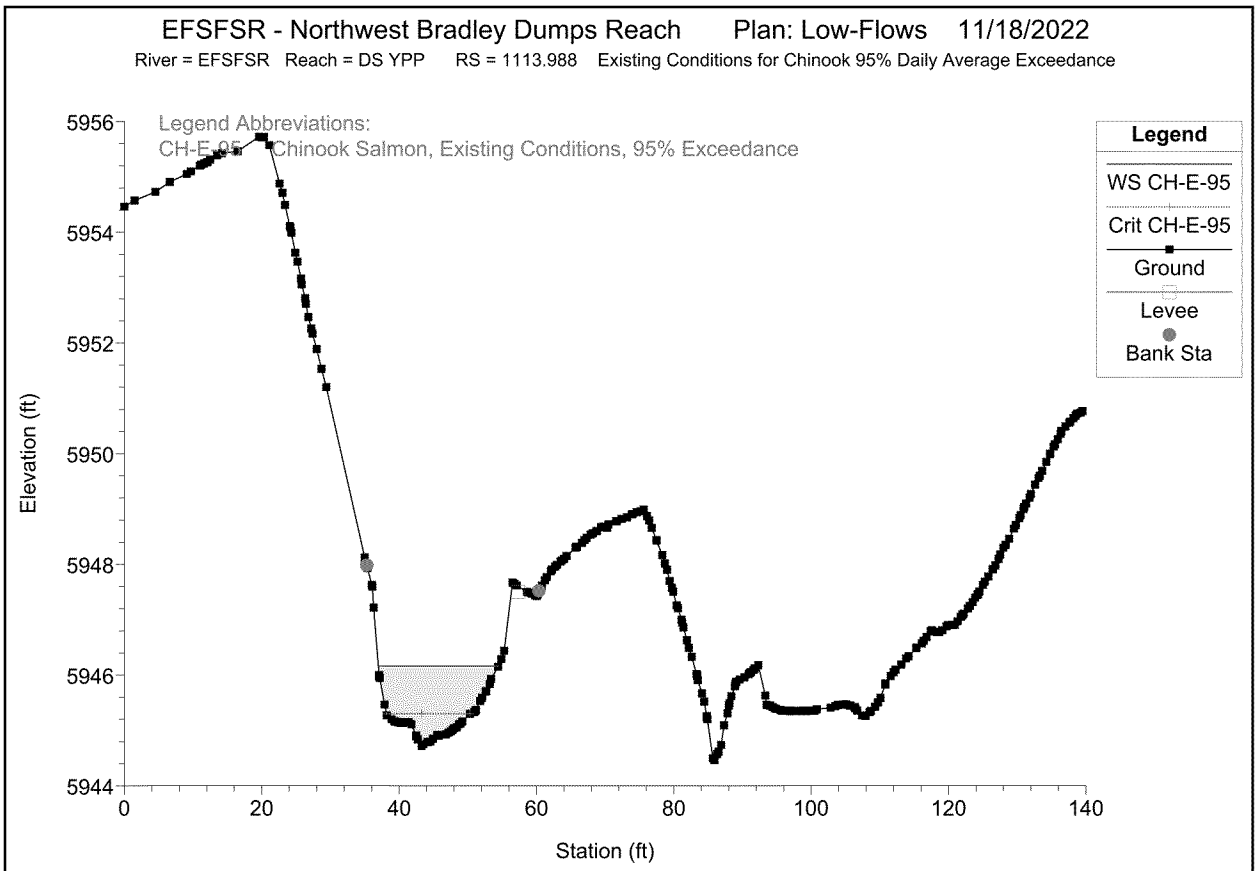


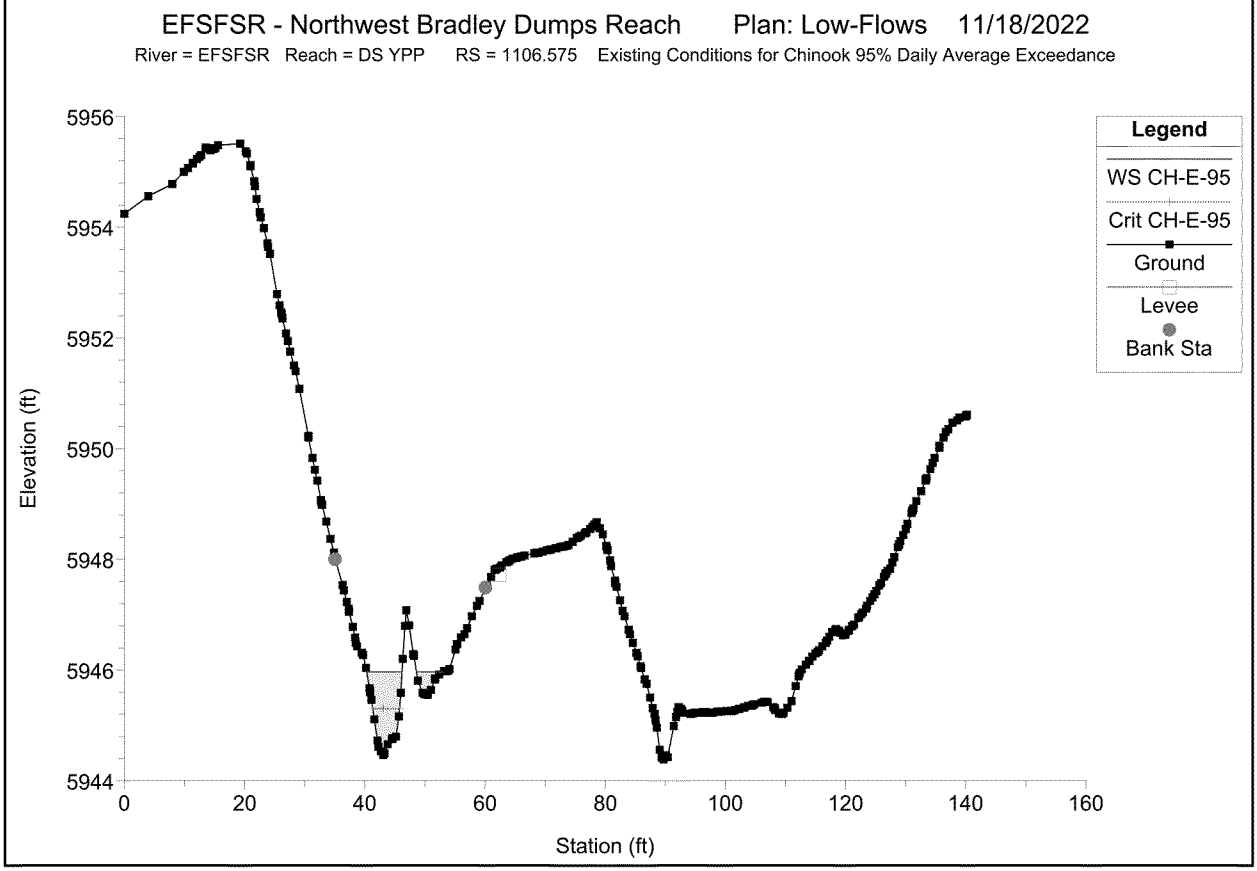

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1185.692 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5962
5960
5958
5956
5954
5952
5950
5948
5946
0
20
40
60
80
100
120
140
160
180
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1172.767 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5960
5958
5956
5954
5952
5950
5948
5946
0
20
40
60
80
100
120
140

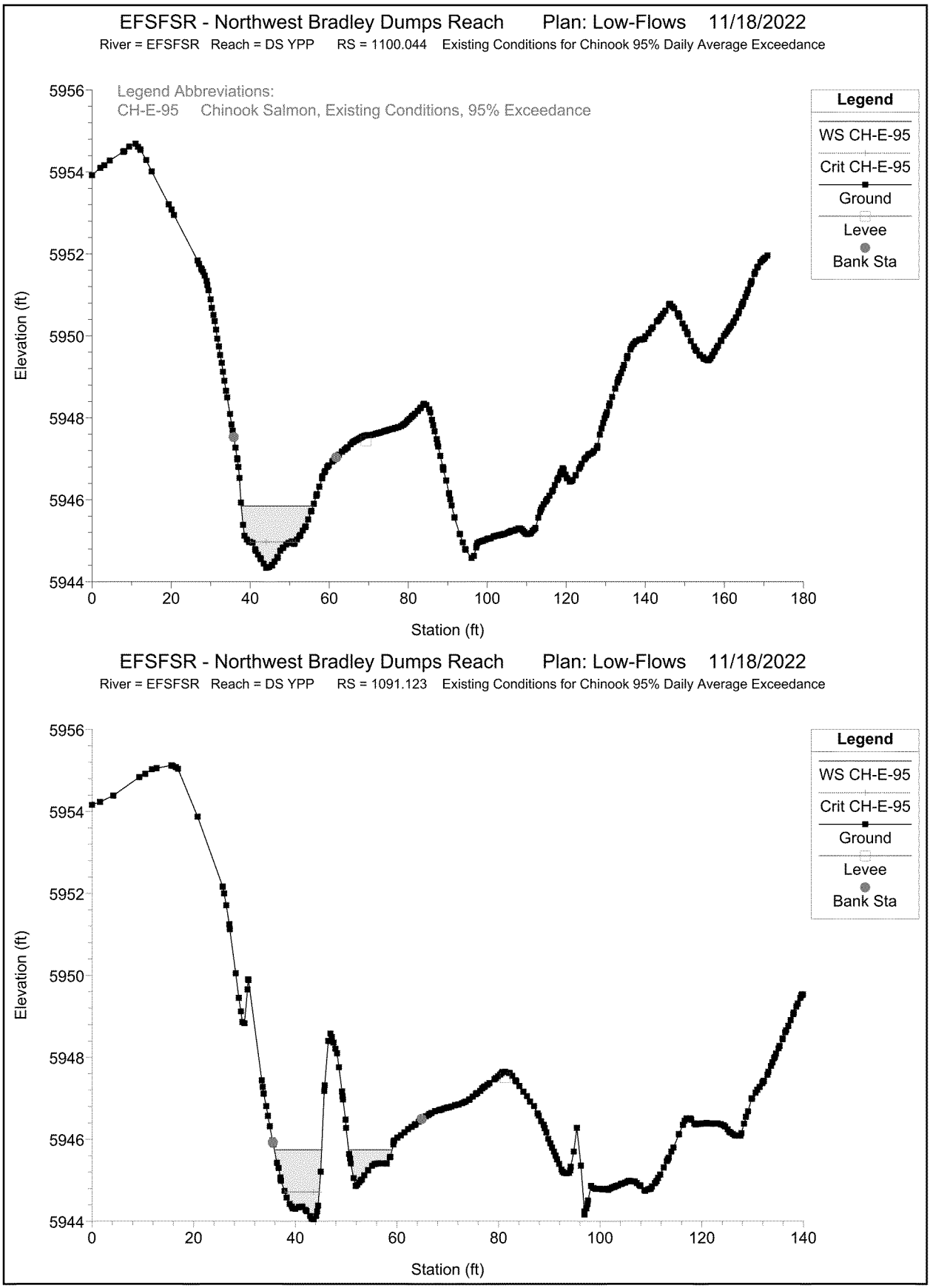

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1163.784 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5960
5958
5956
5954
5952
5950
5948
5946
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1160.211 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5958
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140
160
180

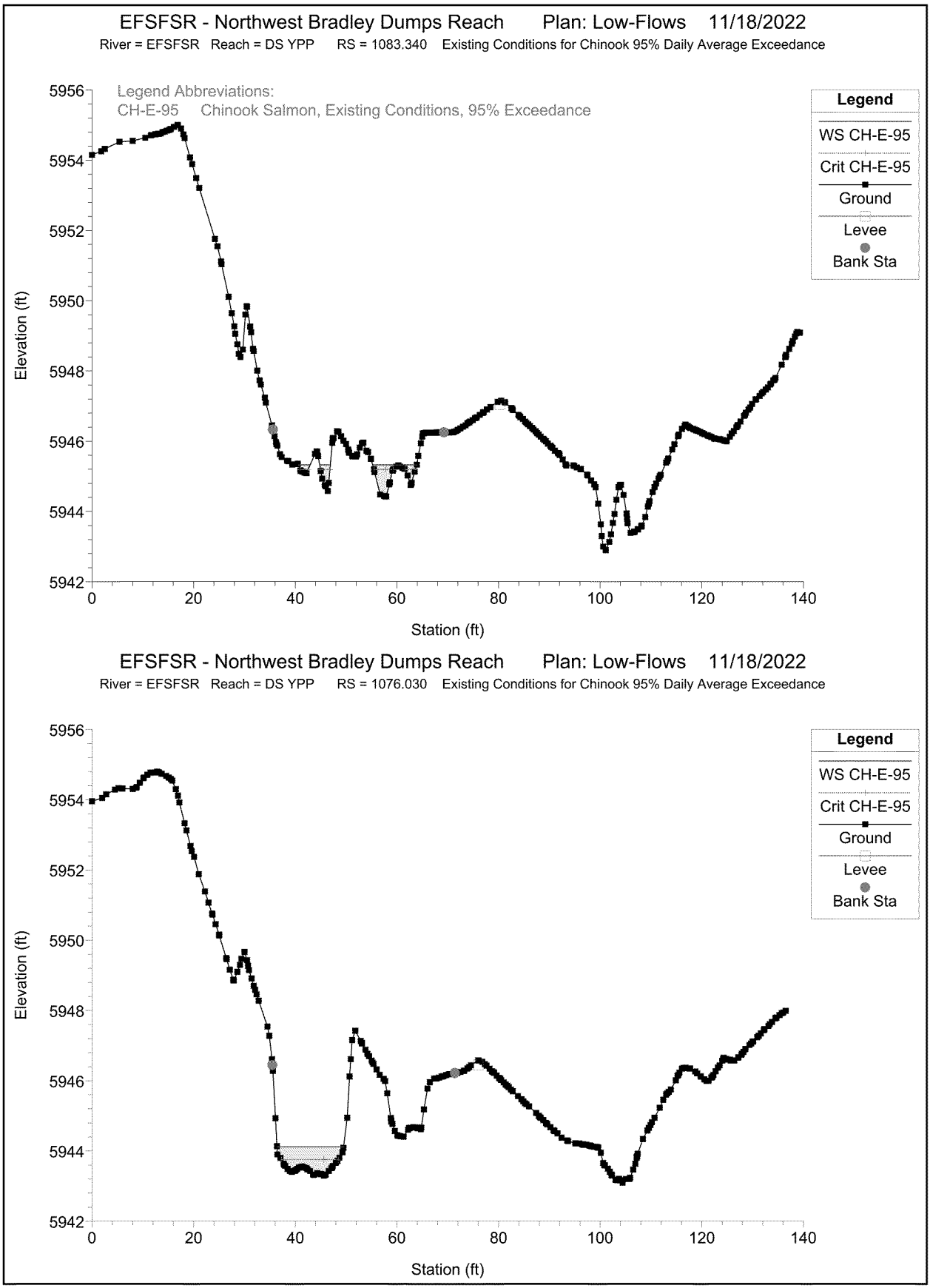

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1151.663 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5958
5956
5954
5952
5950
5948
5946
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1136.075 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5958
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140

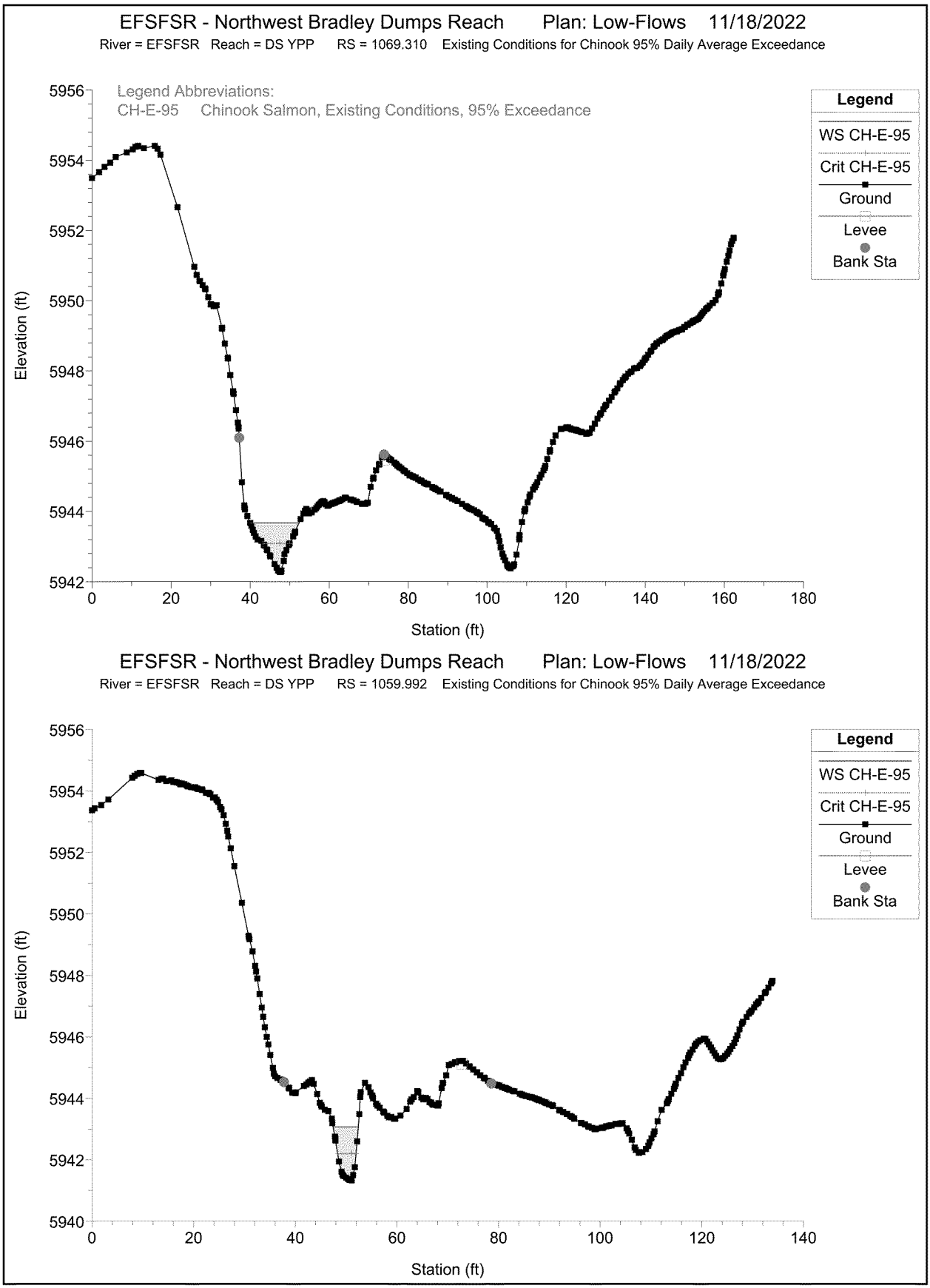

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1126.919 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140
160
180
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1122.115 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140

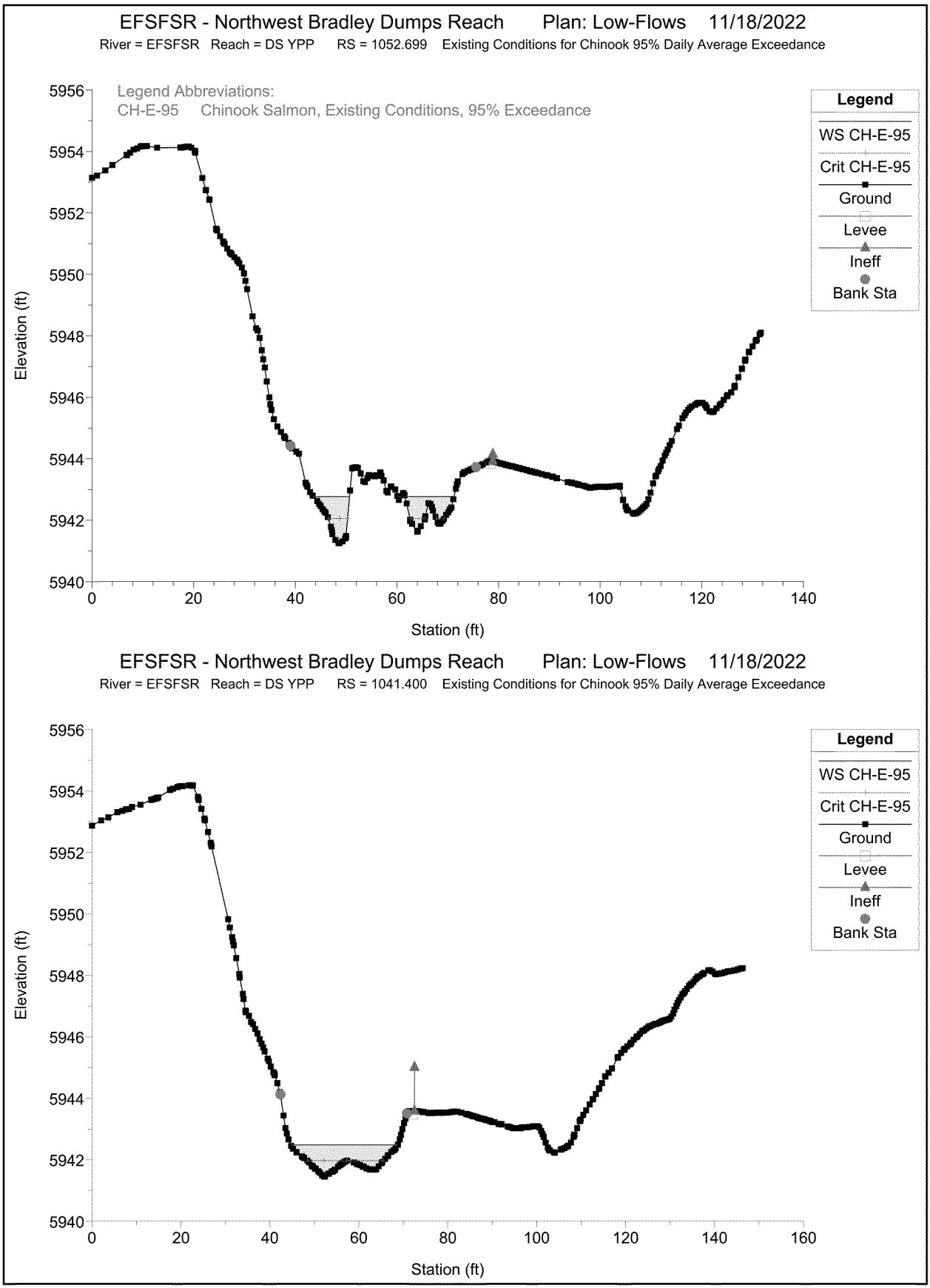

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1113.988 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140

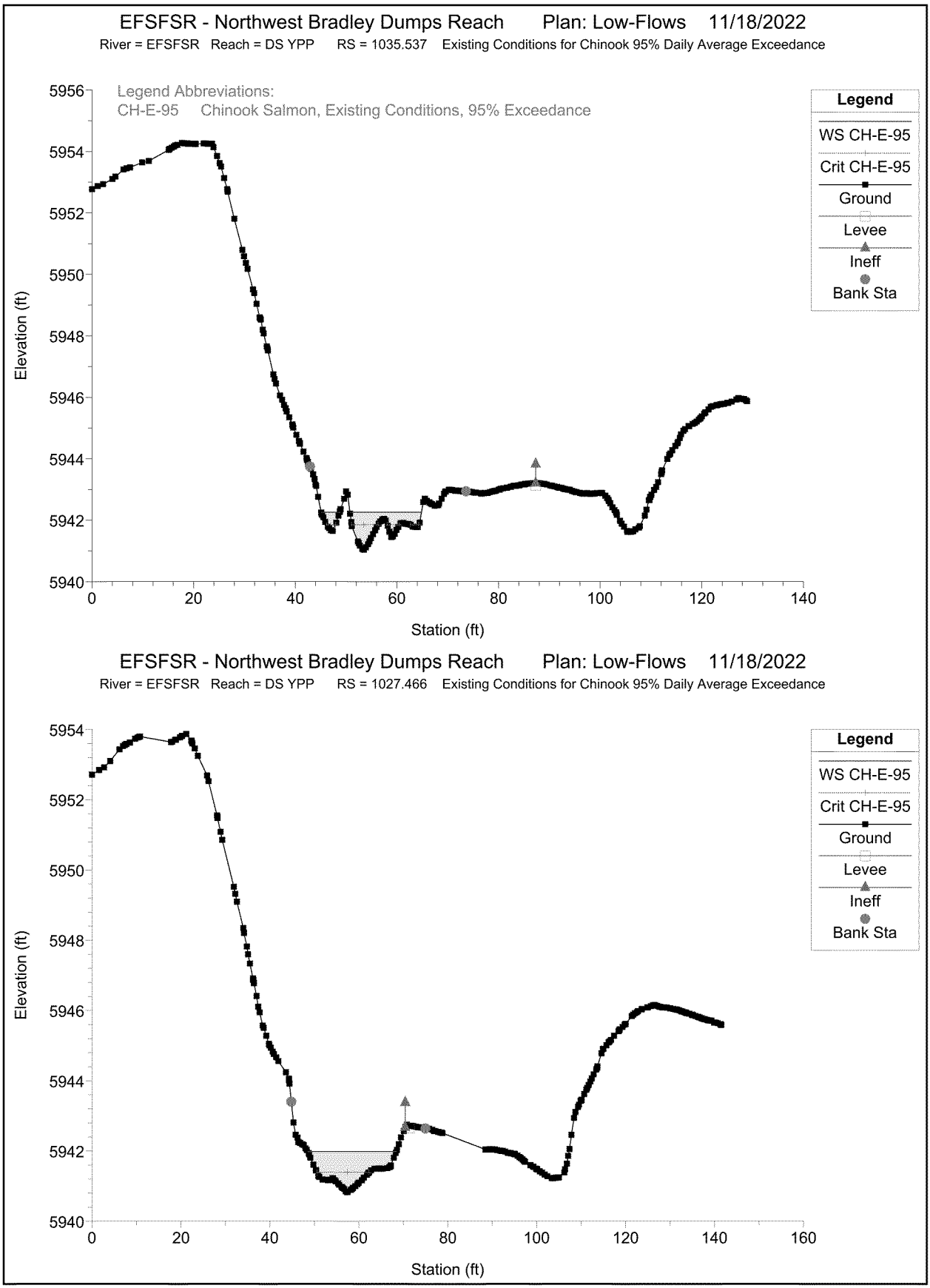

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1106.575 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140
160

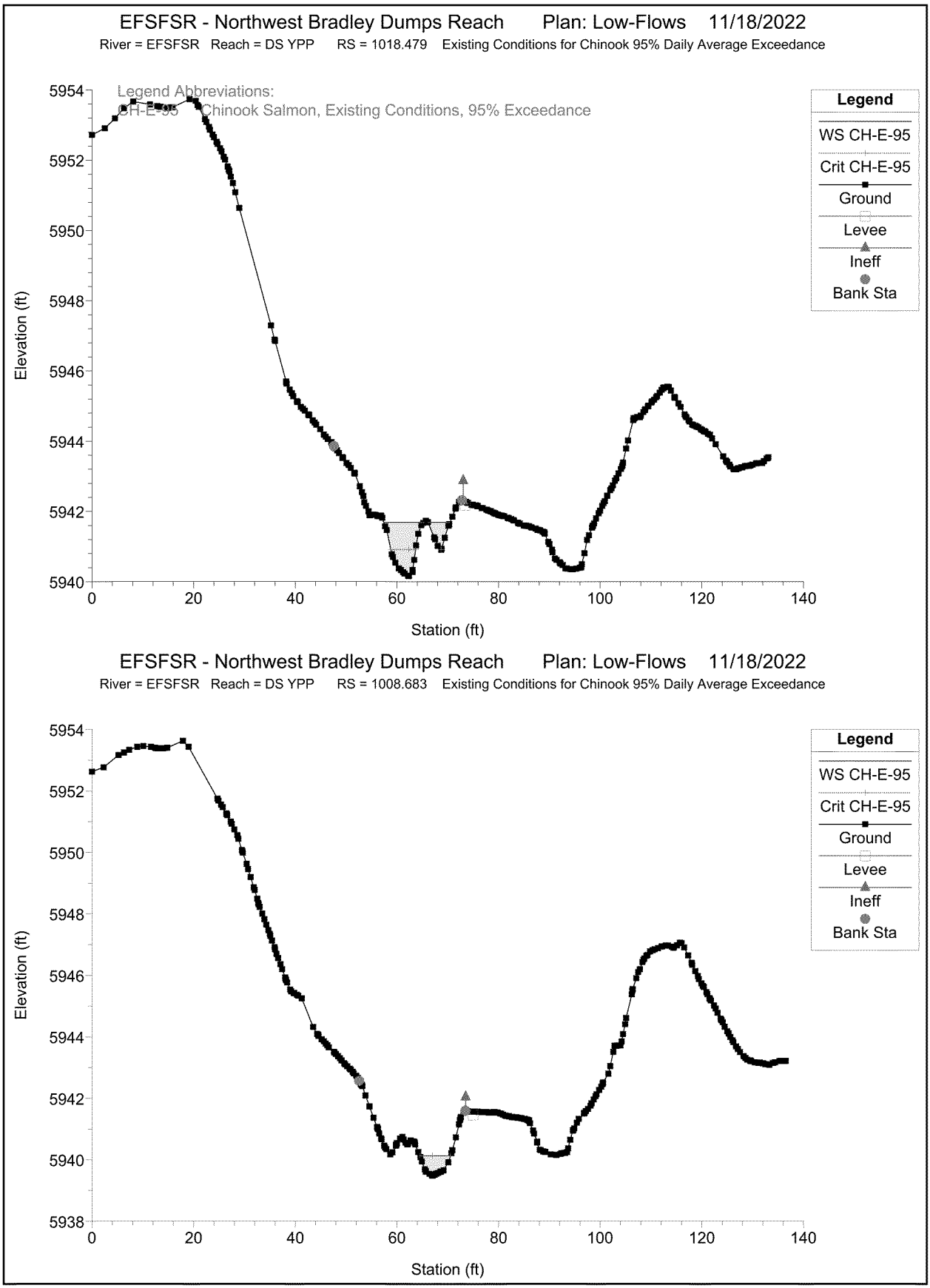

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1100.044 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140
160
180
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1091.123 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
0
20
40
60
80
100
120
140

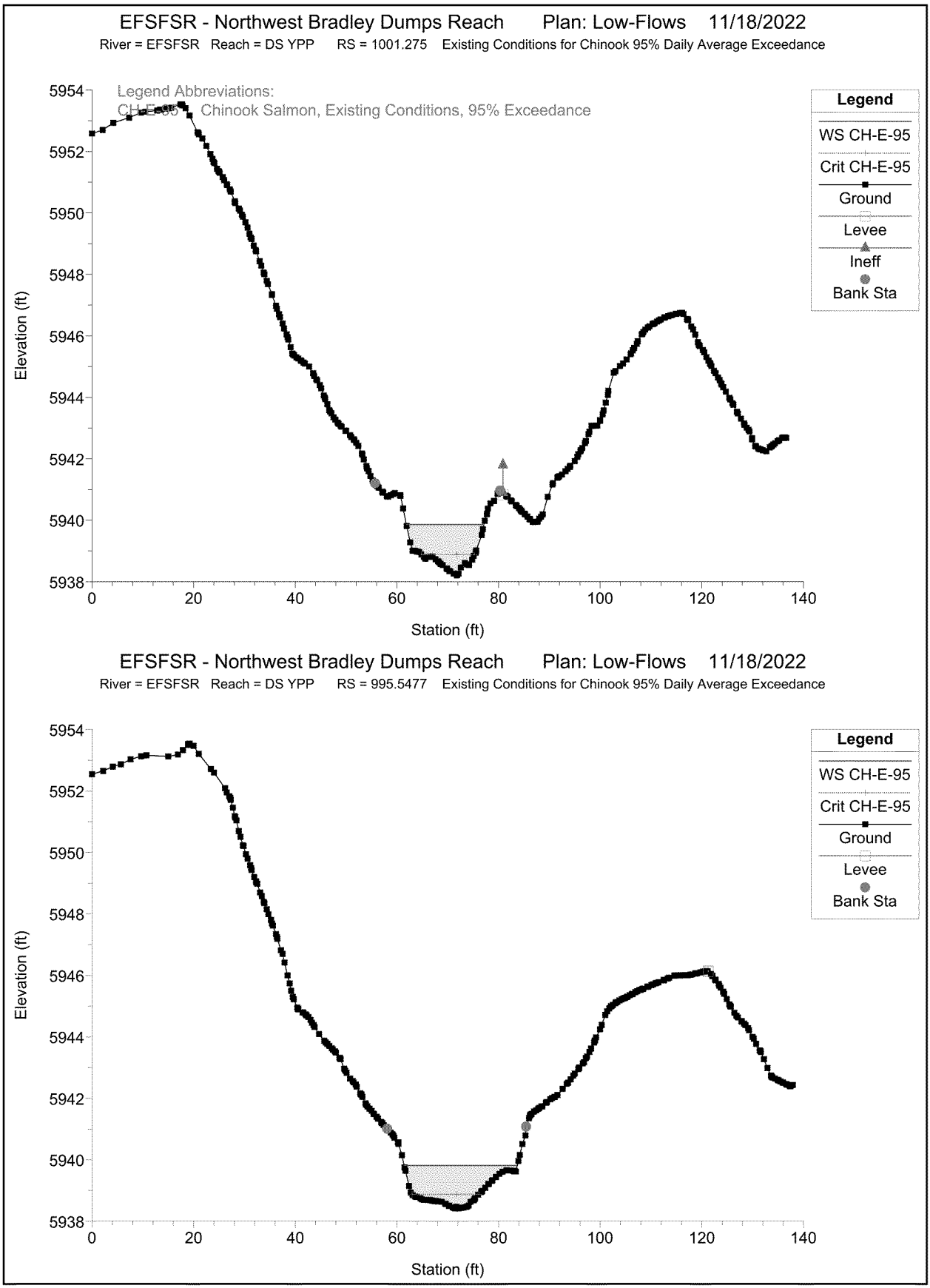

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1083.340 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
5942
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1076.030 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

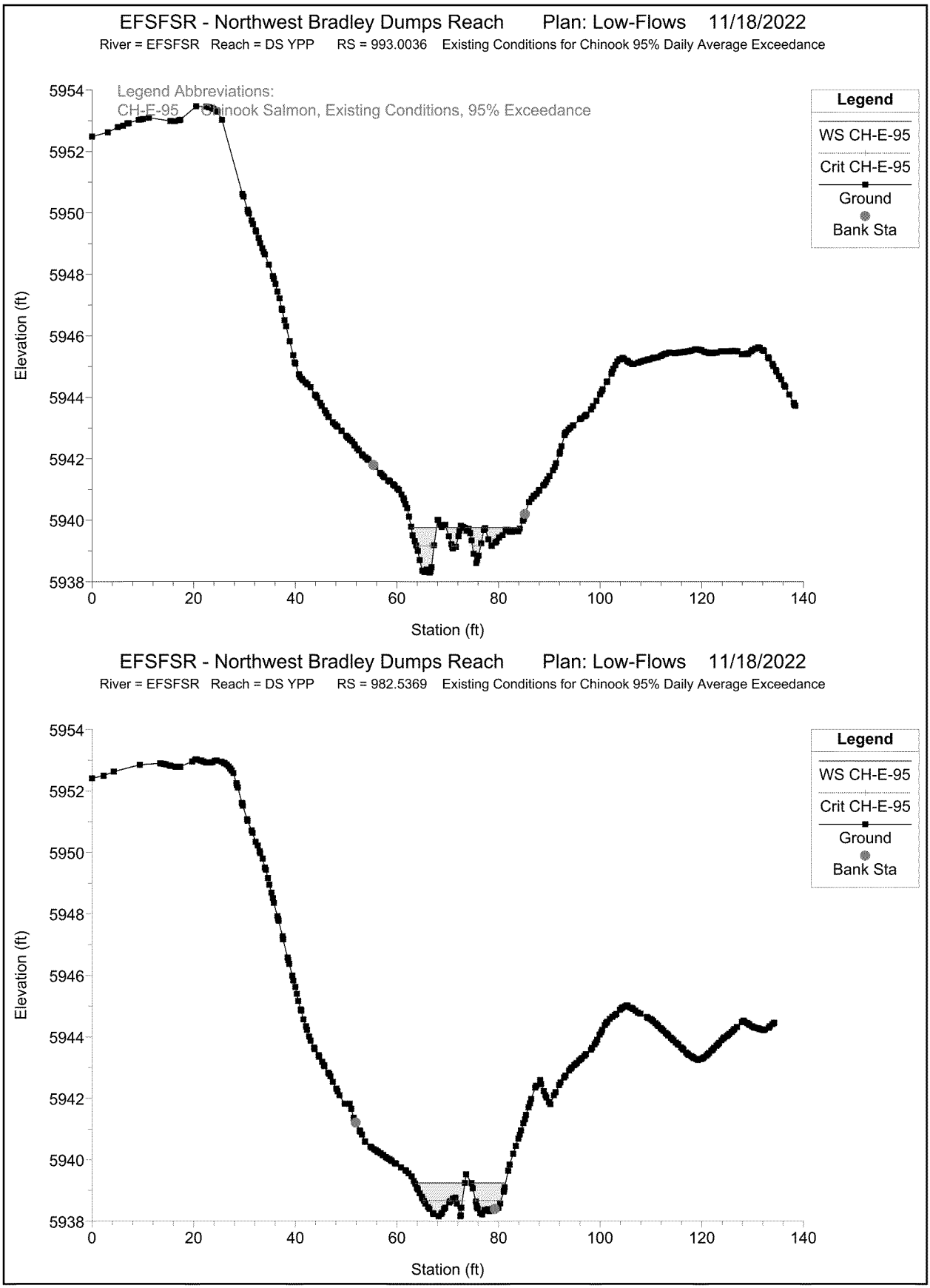

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1069.310 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
5942
0
20
40
60
80
100
120
140
160
180
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1059.992 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
5942
5940
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40
60
80
100
120
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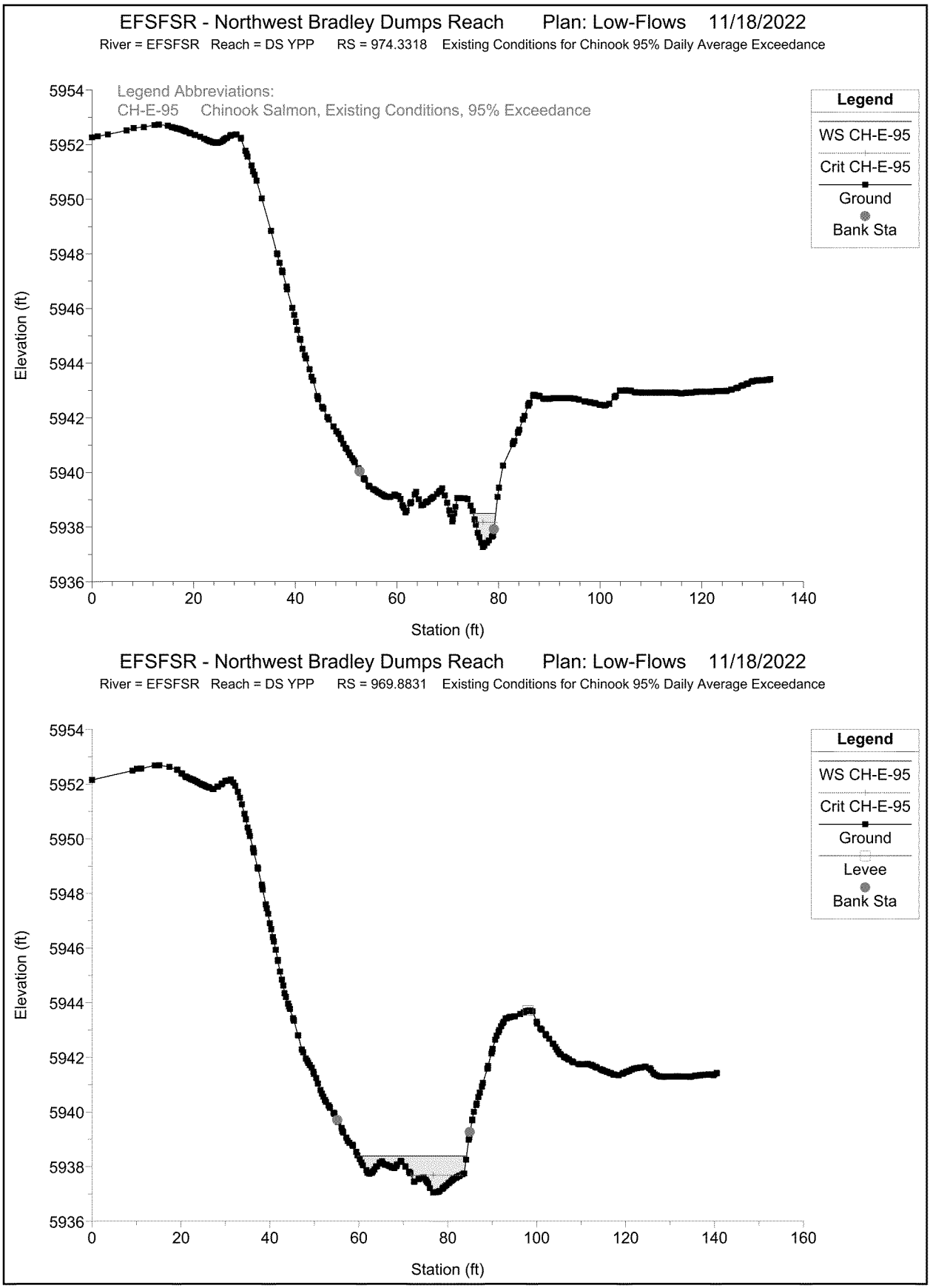

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1052.699 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
5942
5940
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1041.400 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
5942
5940
0
20
40
60
80
100
120
140
160


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1035.537 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5956
5954
5952
5950
5948
5946
5944
5942
5940
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1027.466 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
0
20
40
60
80
100
120
140
160


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1018.479 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1008.683 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
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0
20
40
60
80
100
120
140

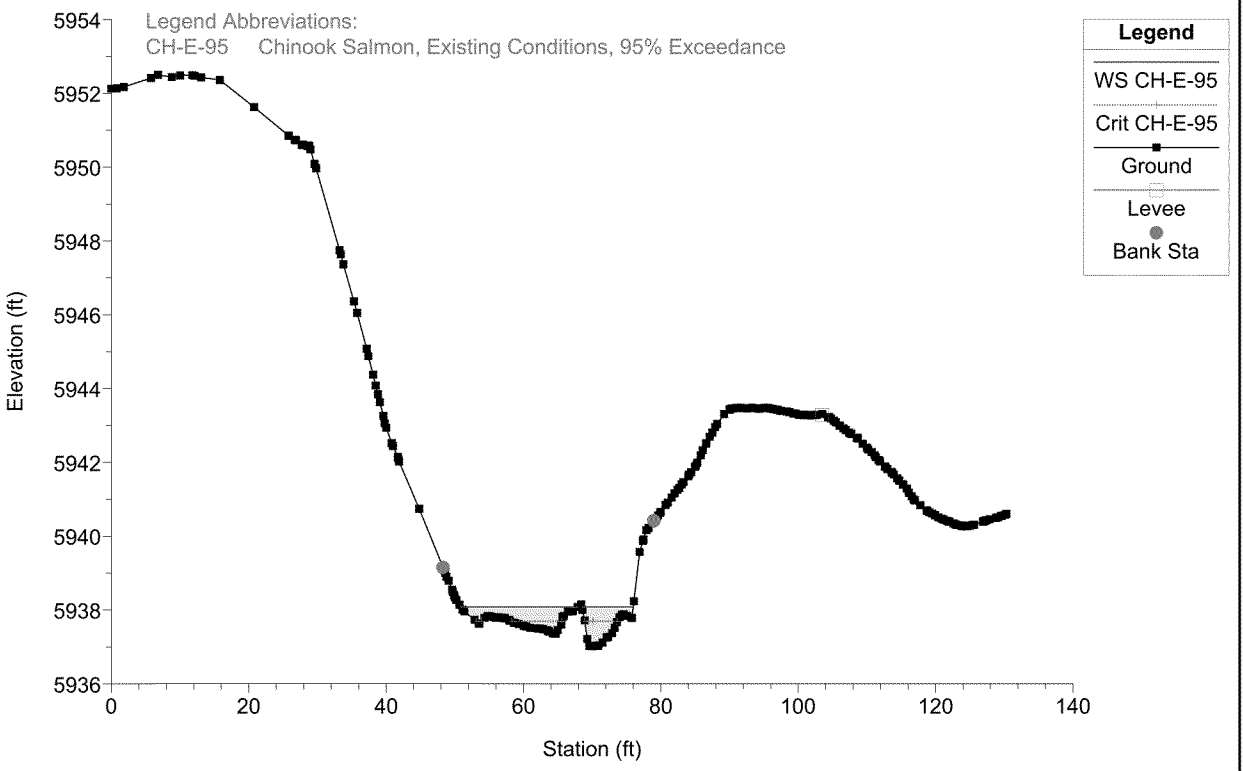

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 1001.275 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
5938
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 995.5477 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 993.0036 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
5938
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 982.5369 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
5938
0
20
40
60
80
100
120
140


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 974.3318 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
5938
5936
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 969.8831 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
5938
5936
0
20
40
60
80
100
120
140
160

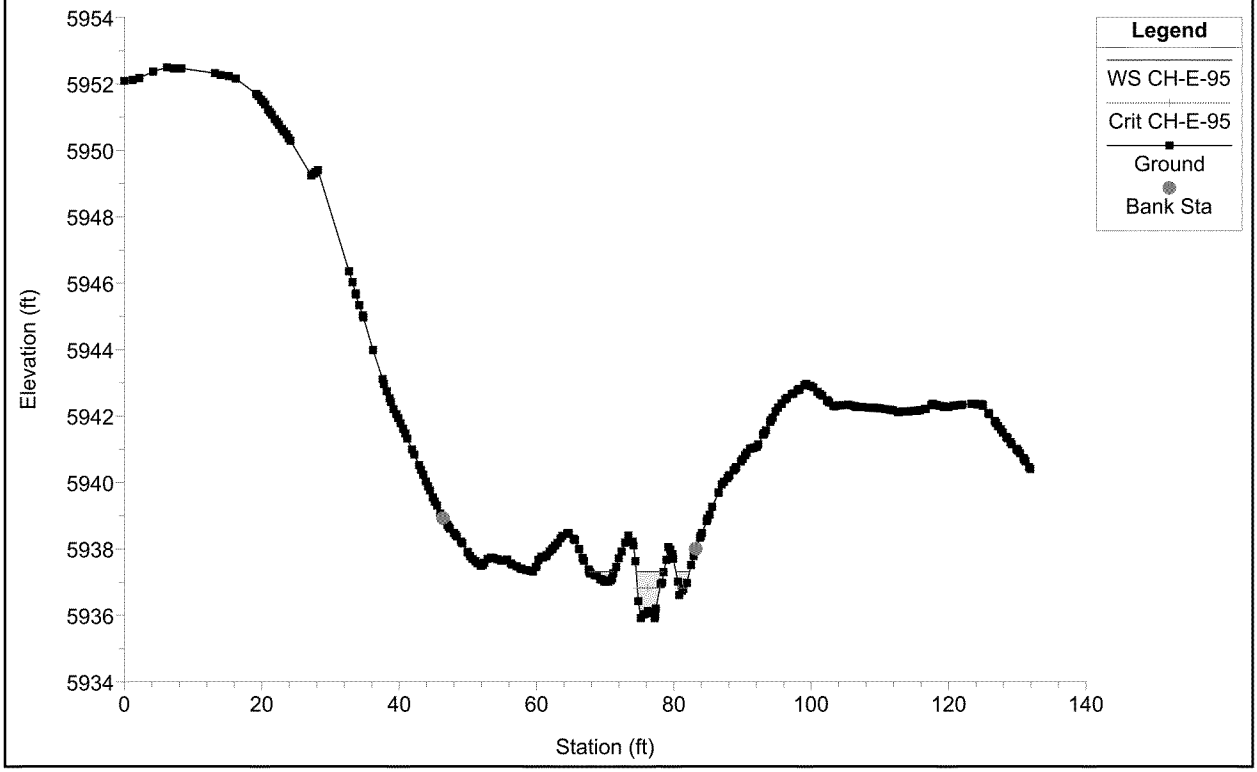
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

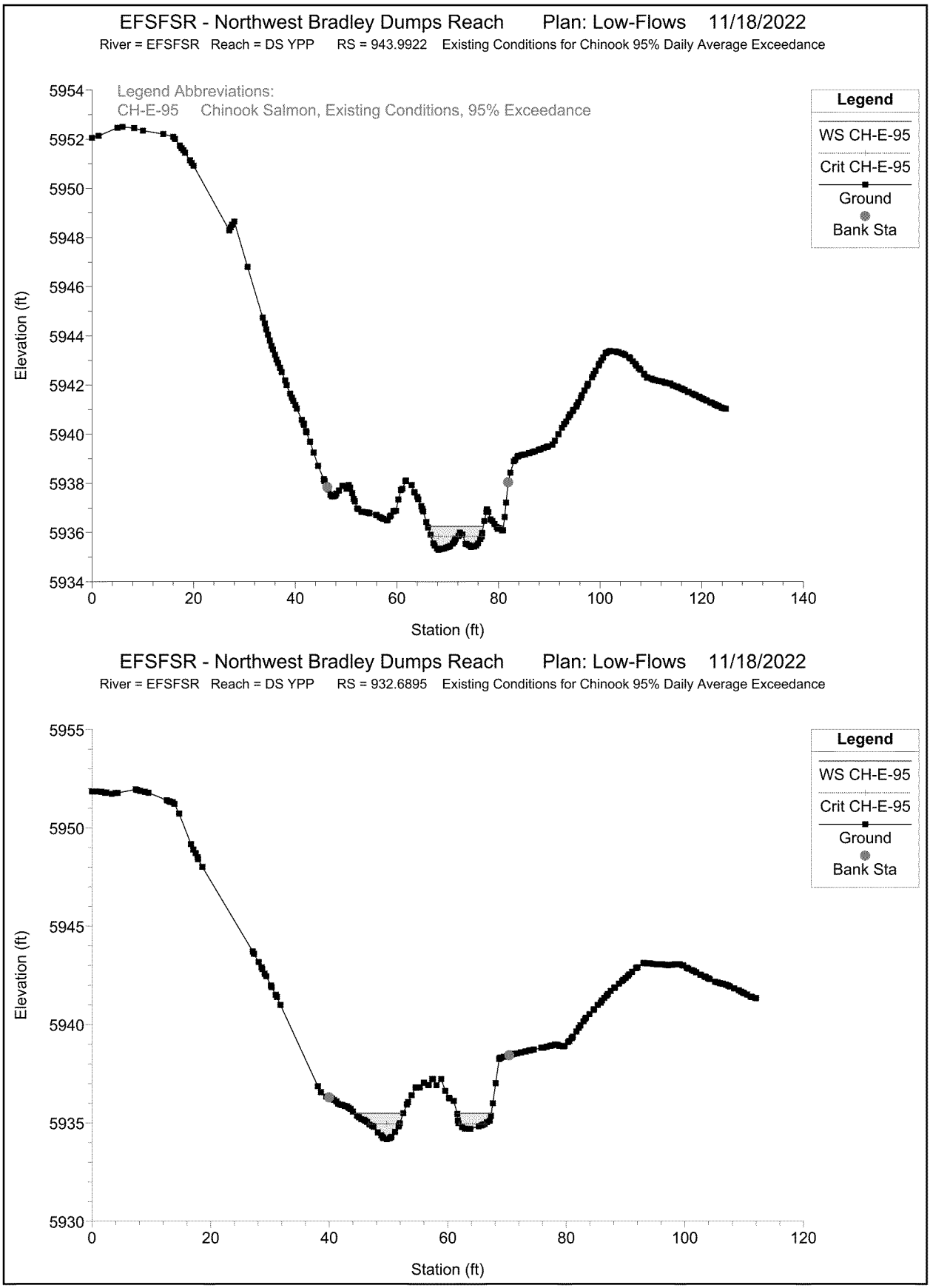
River = EFSFSR Reach = DS YPP RS = 958.9428 Existing Conditions for Chinook 95% Daily Average Exceedance

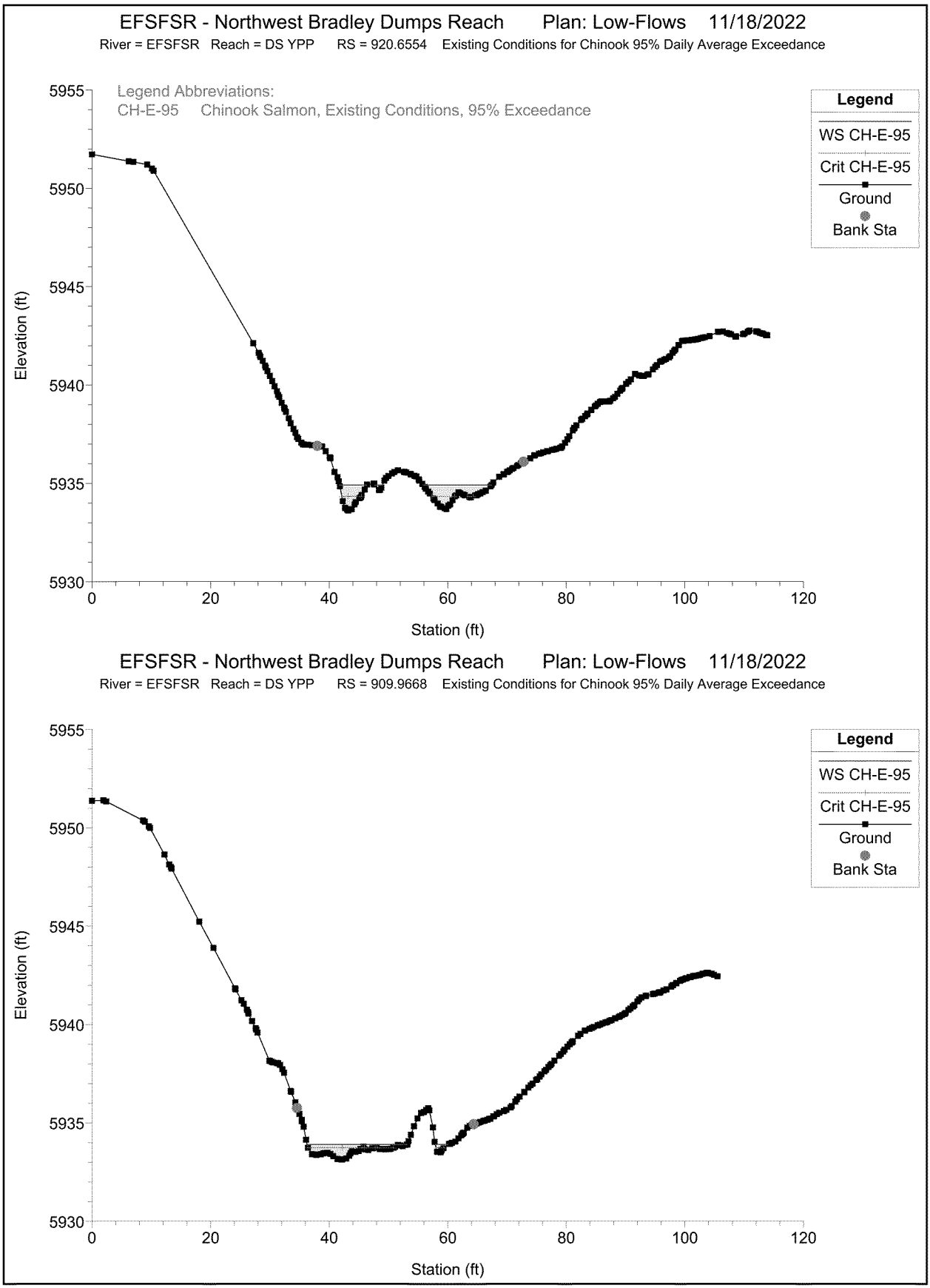


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 951.7118 Existing Conditions for Chinook 95% Daily Average Exceedance

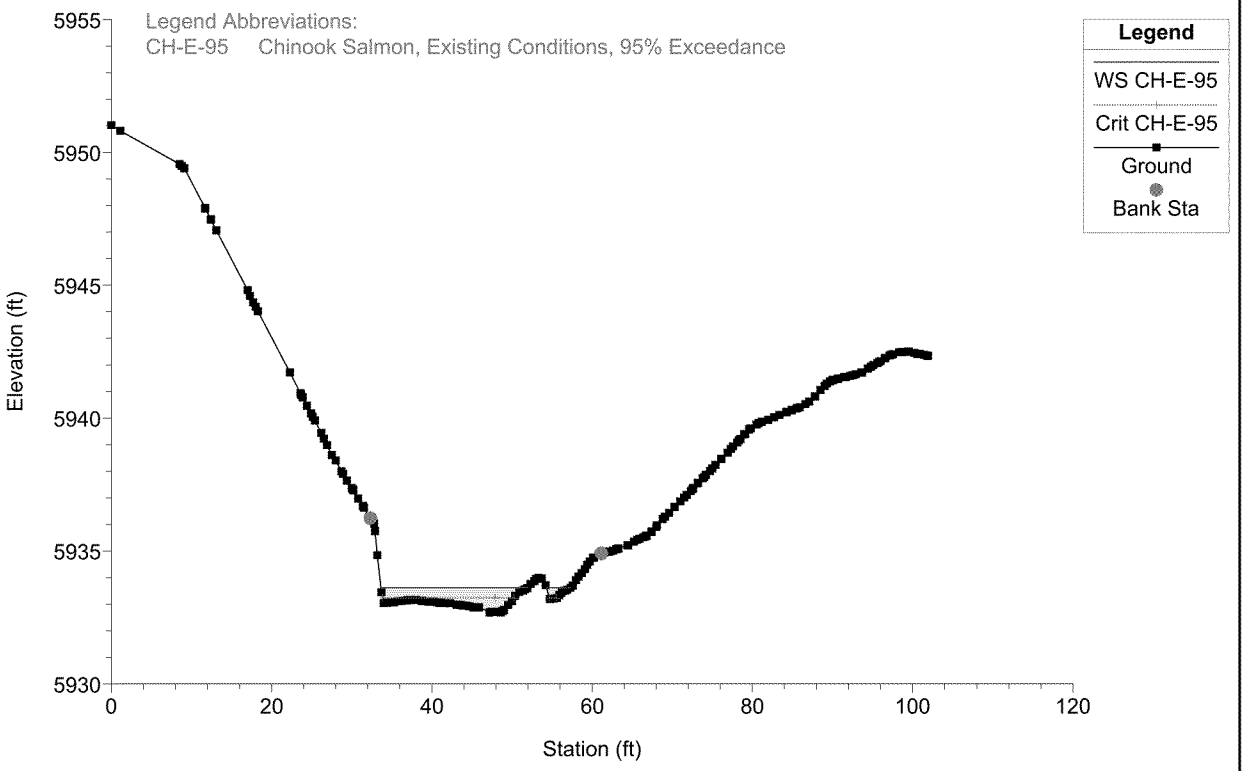



EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 943.9922 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5954
5952
5950
5948
5946
5944
5942
5940
5938
5936
5934
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 932.6895 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5955
5950
5945
5940
5935
5930
0
20
40
60
80
100
120


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 920.6554 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5955
5950
5945
5940
5935
5930
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 909.9668 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5955
5950
5945
5940
5935
5930
0
20
40
60
80
100
120

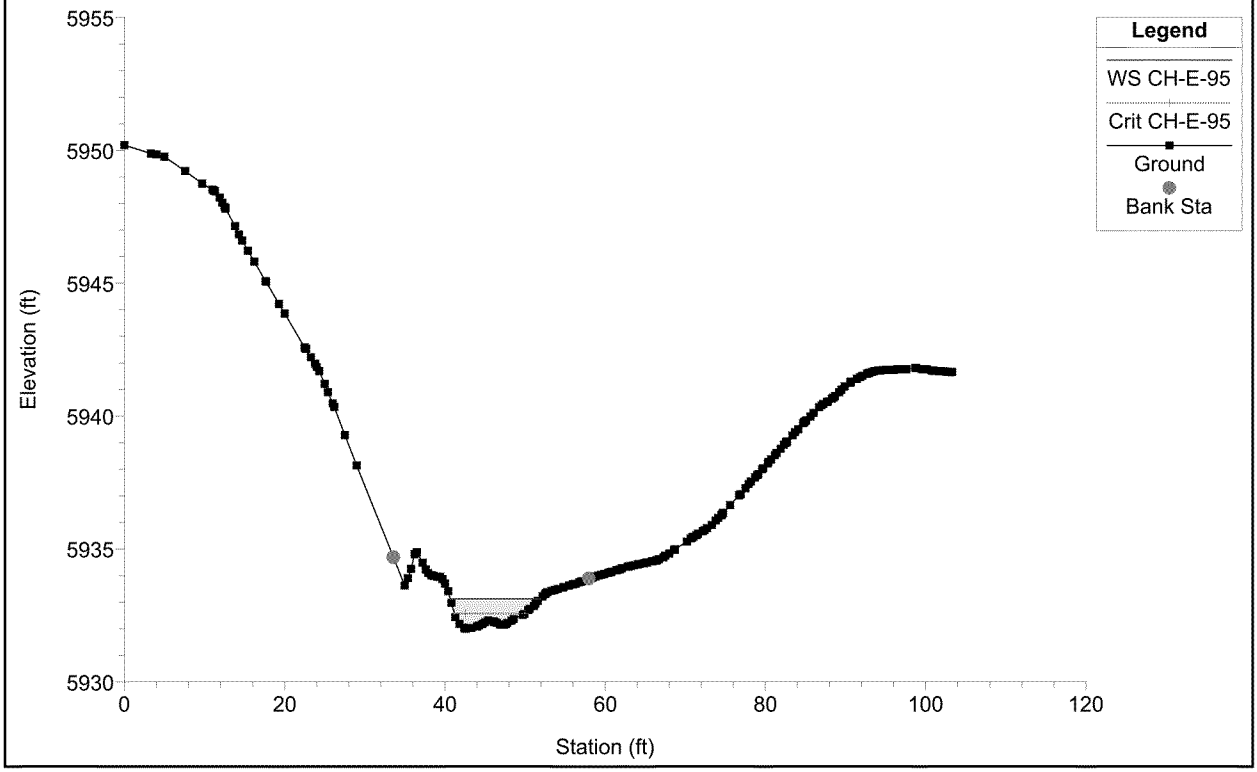
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

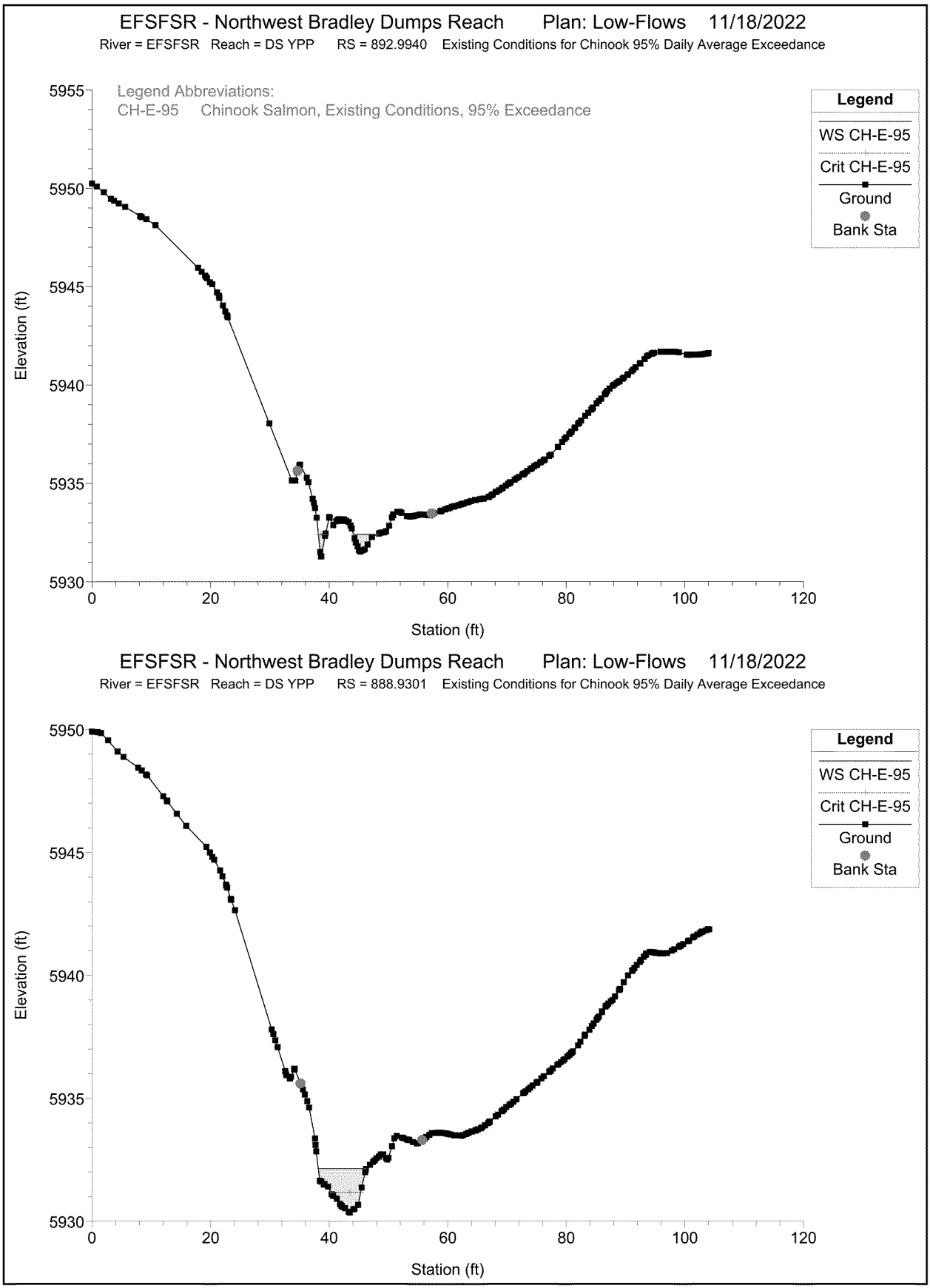
River = EFSFSR Reach = DS YPP RS = 906.5929 Existing Conditions for Chinook 95% Daily Average Exceedance

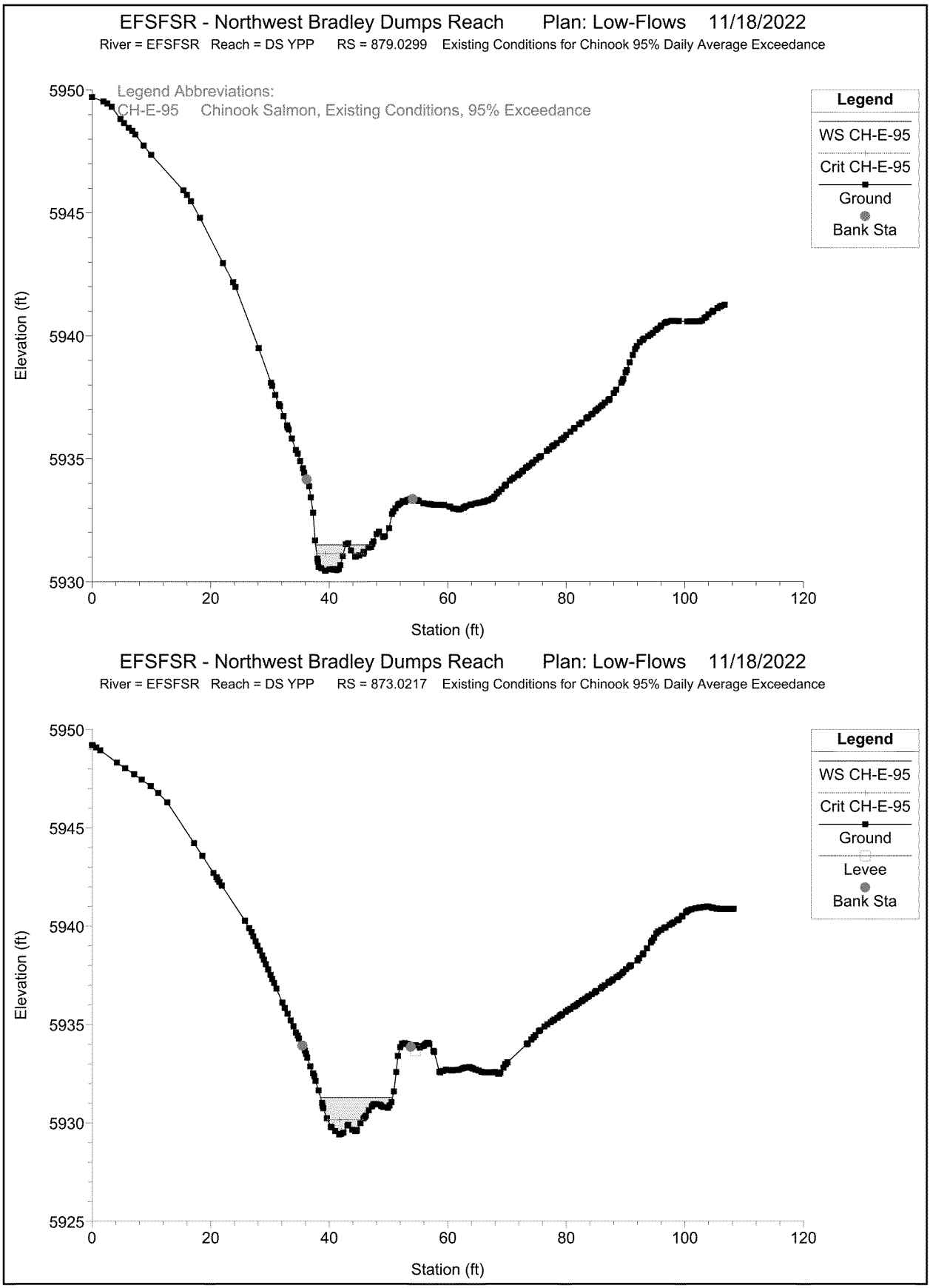


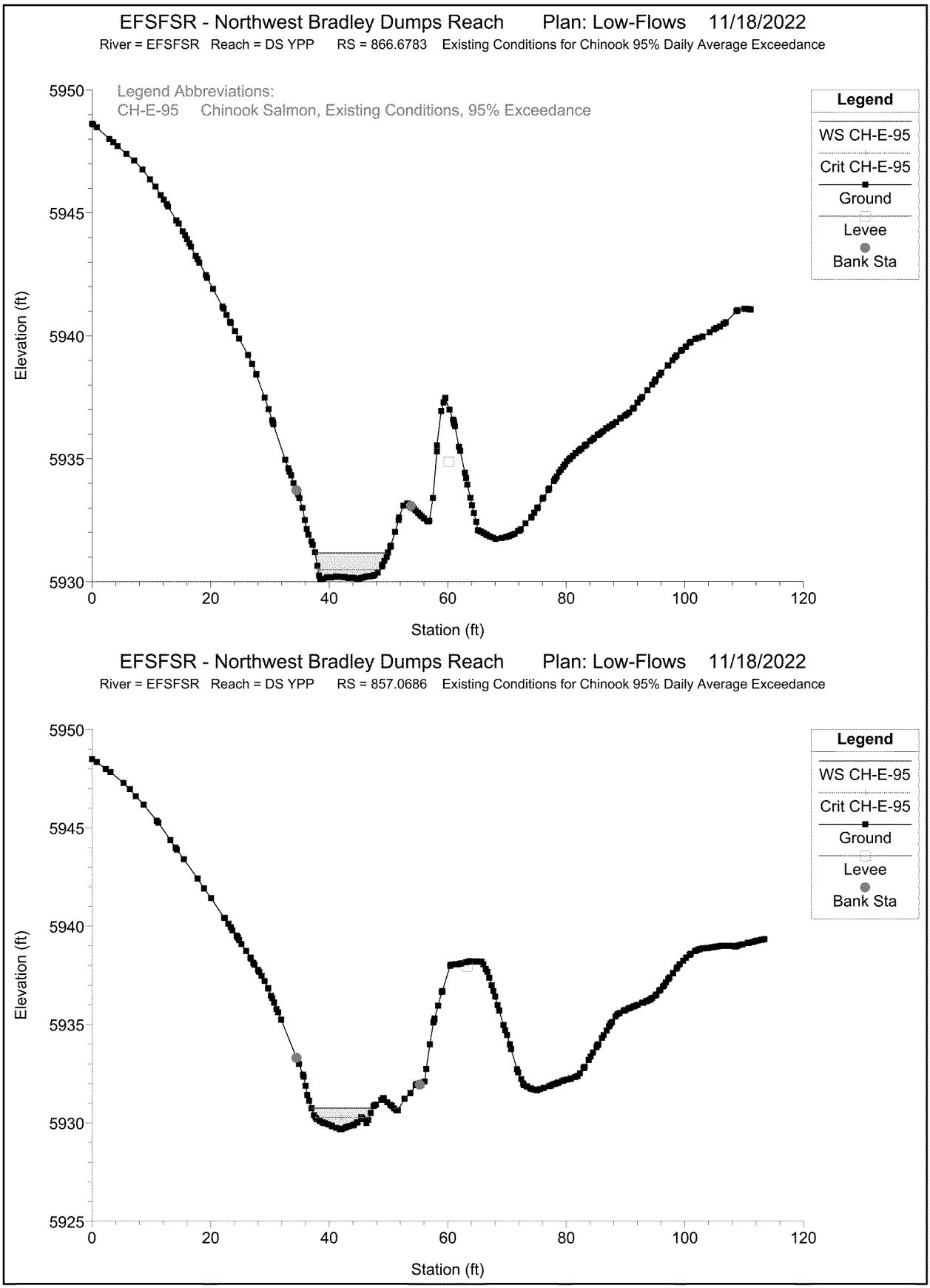
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

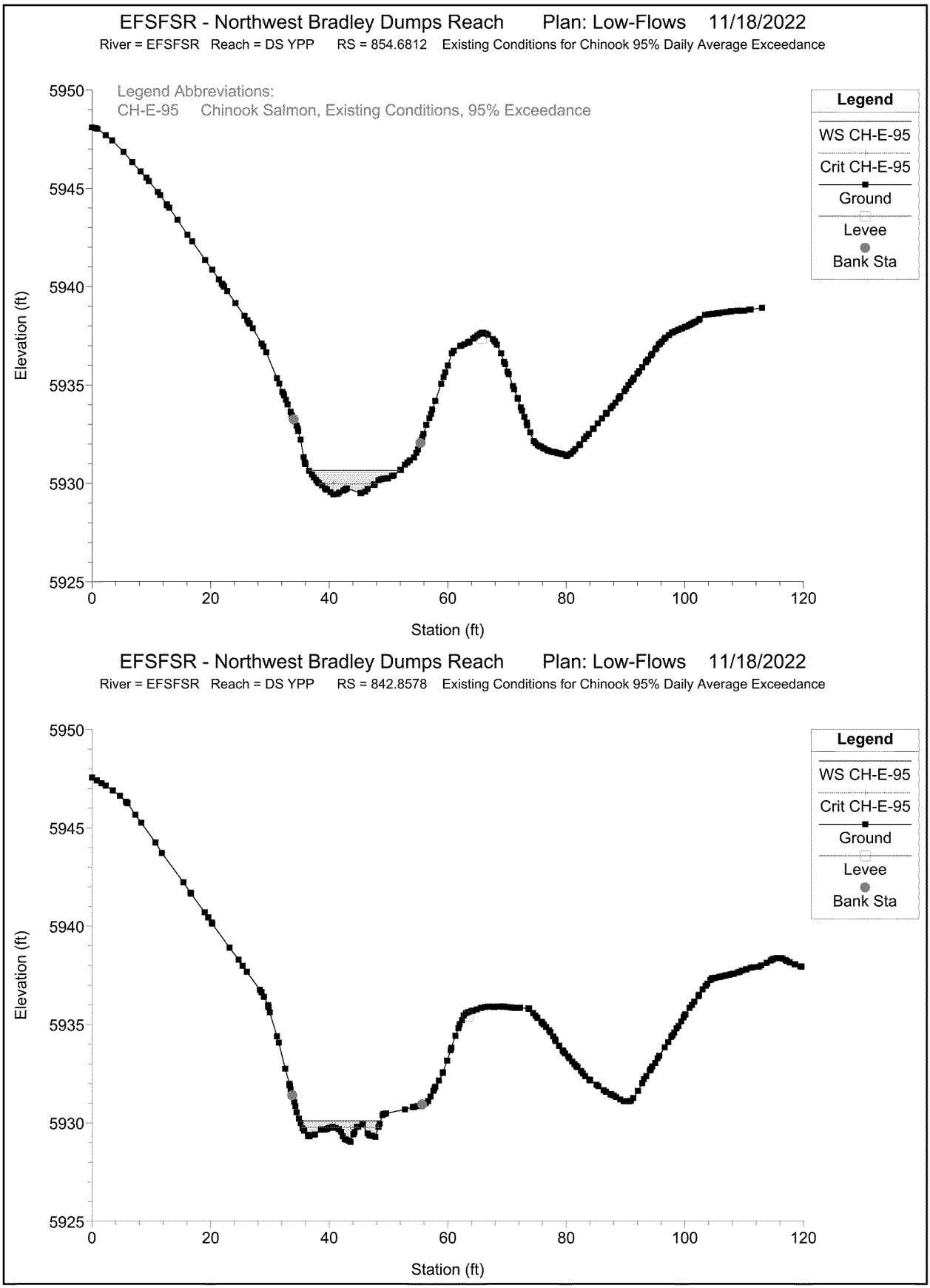
River = EFSFSR Reach = DS YPP RS = 896.3598 Existing Conditions for Chinook 95% Daily Average Exceedance

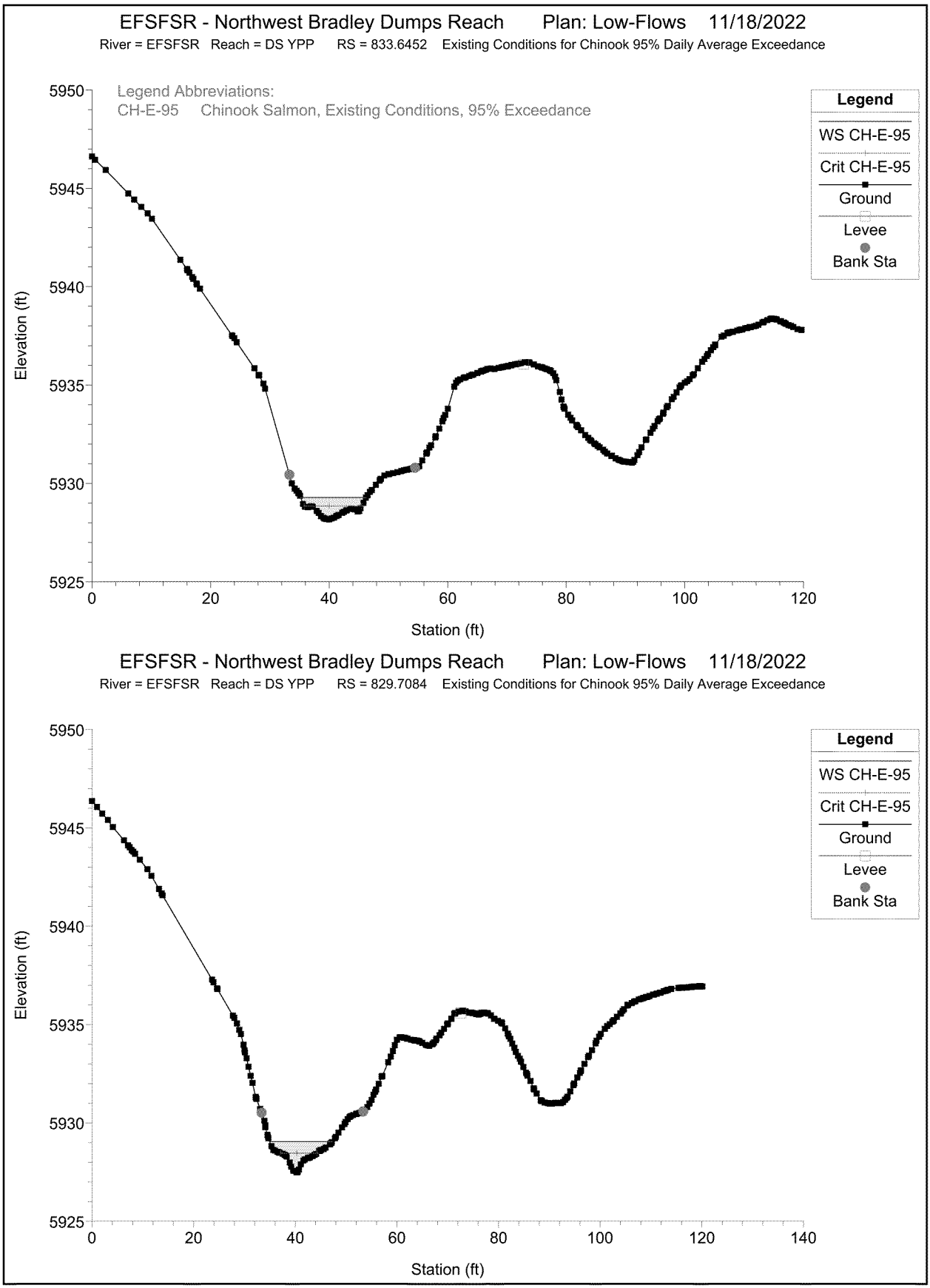


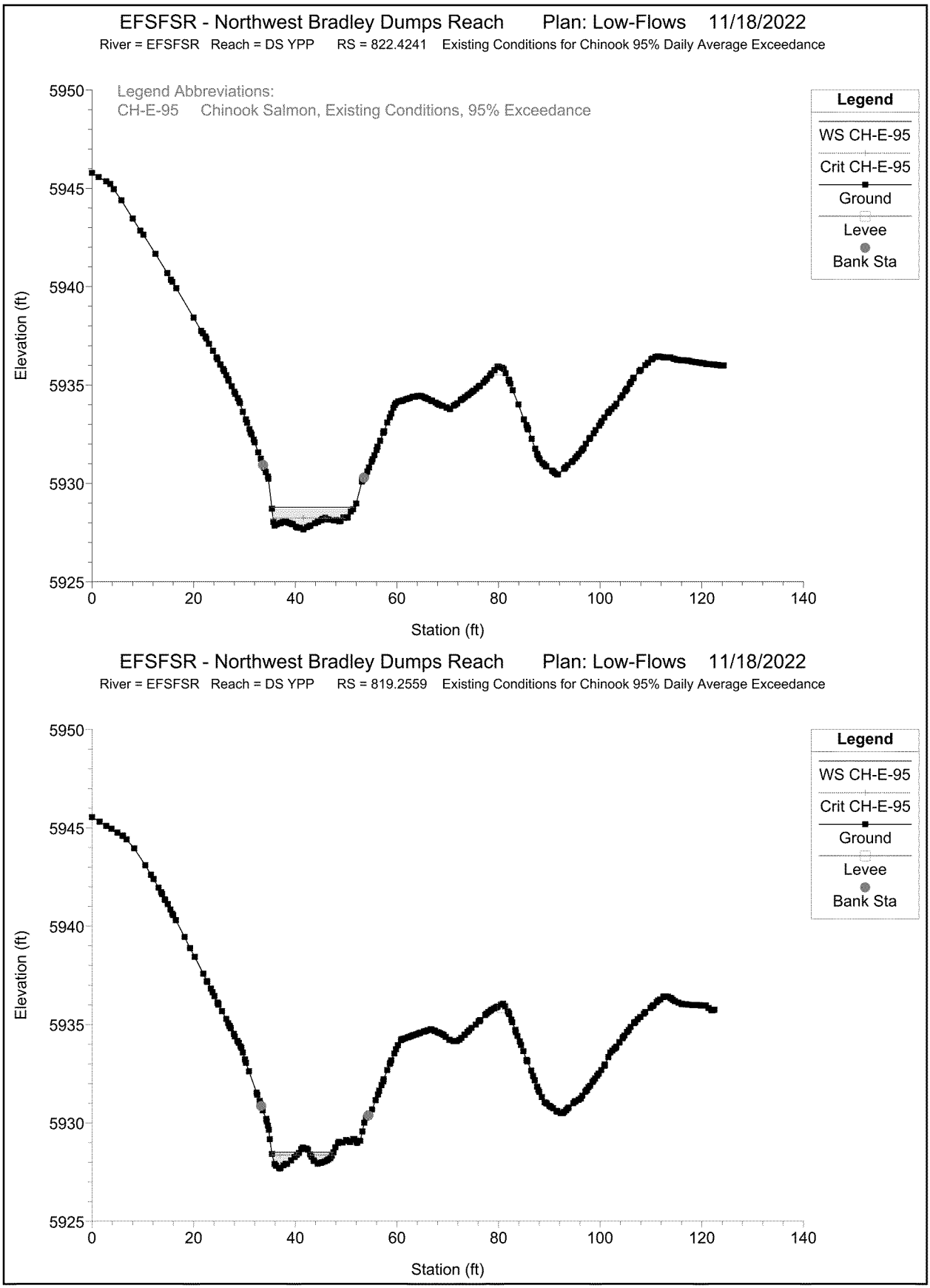

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 892.9940 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5955
5950
5945
5940
5935
5930
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 888.9301 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
0
20
40
60
80
100
120

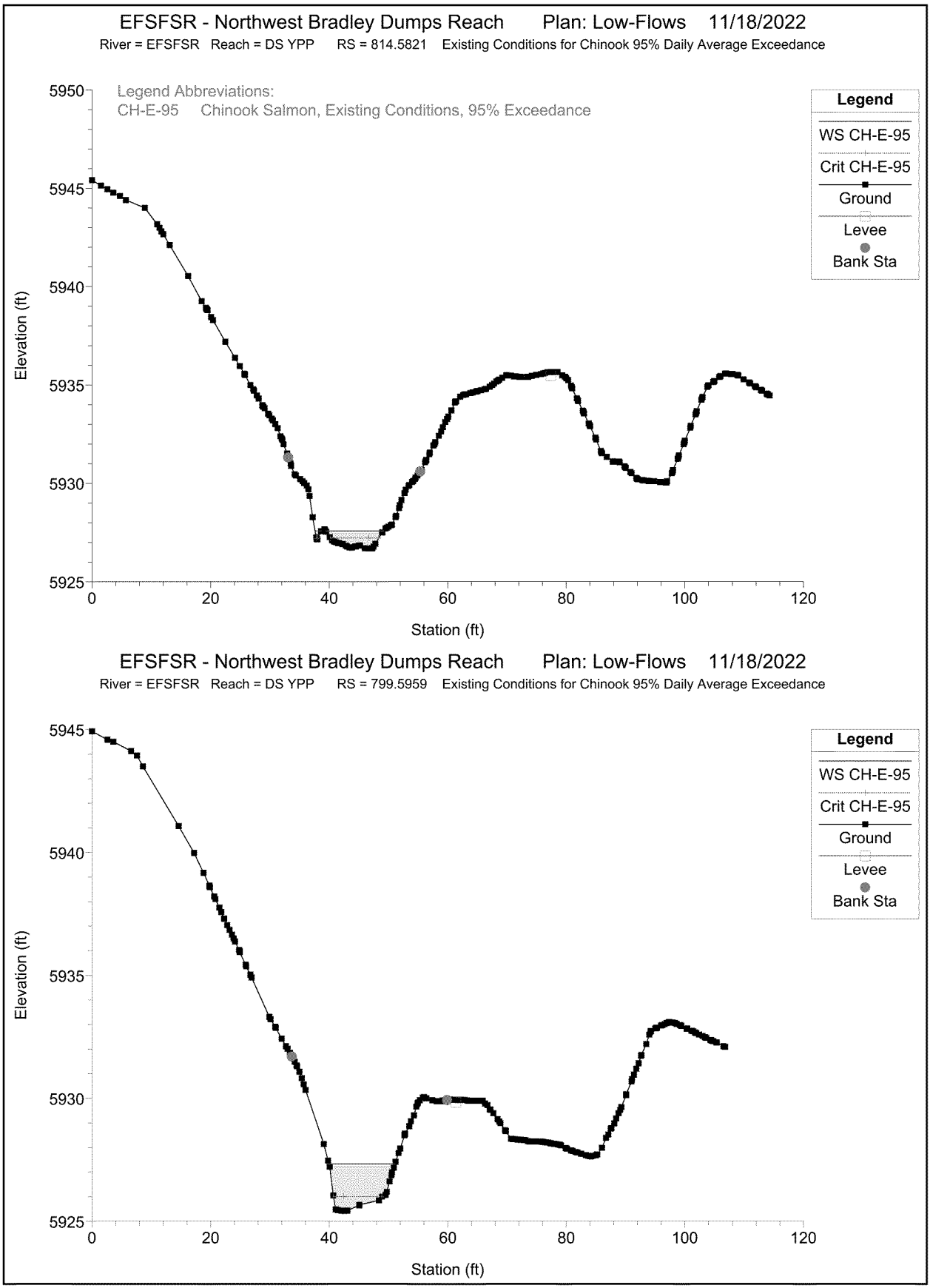

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 879.0299 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 873.0217 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120

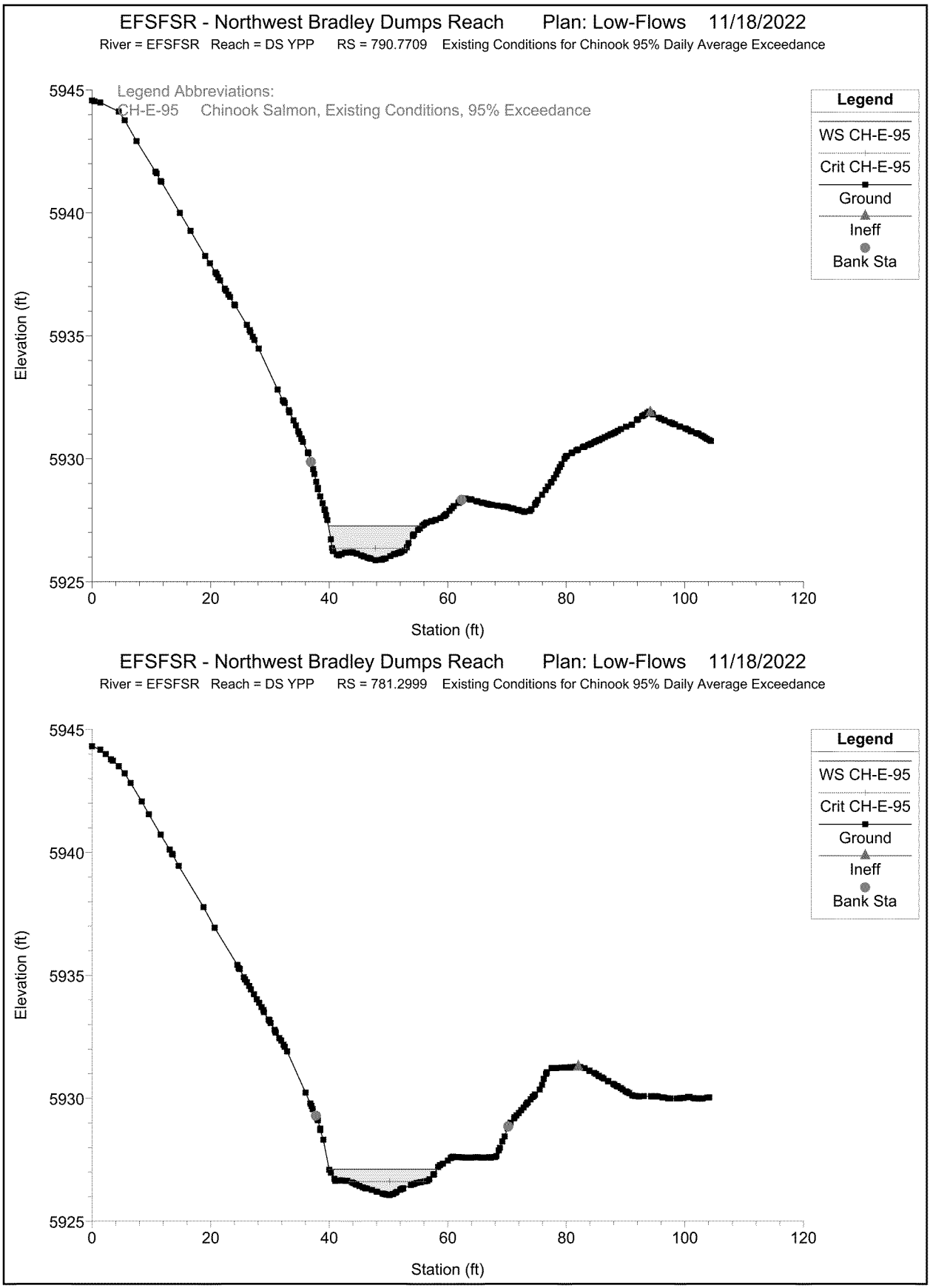

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 866.6783 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 857.0686 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120

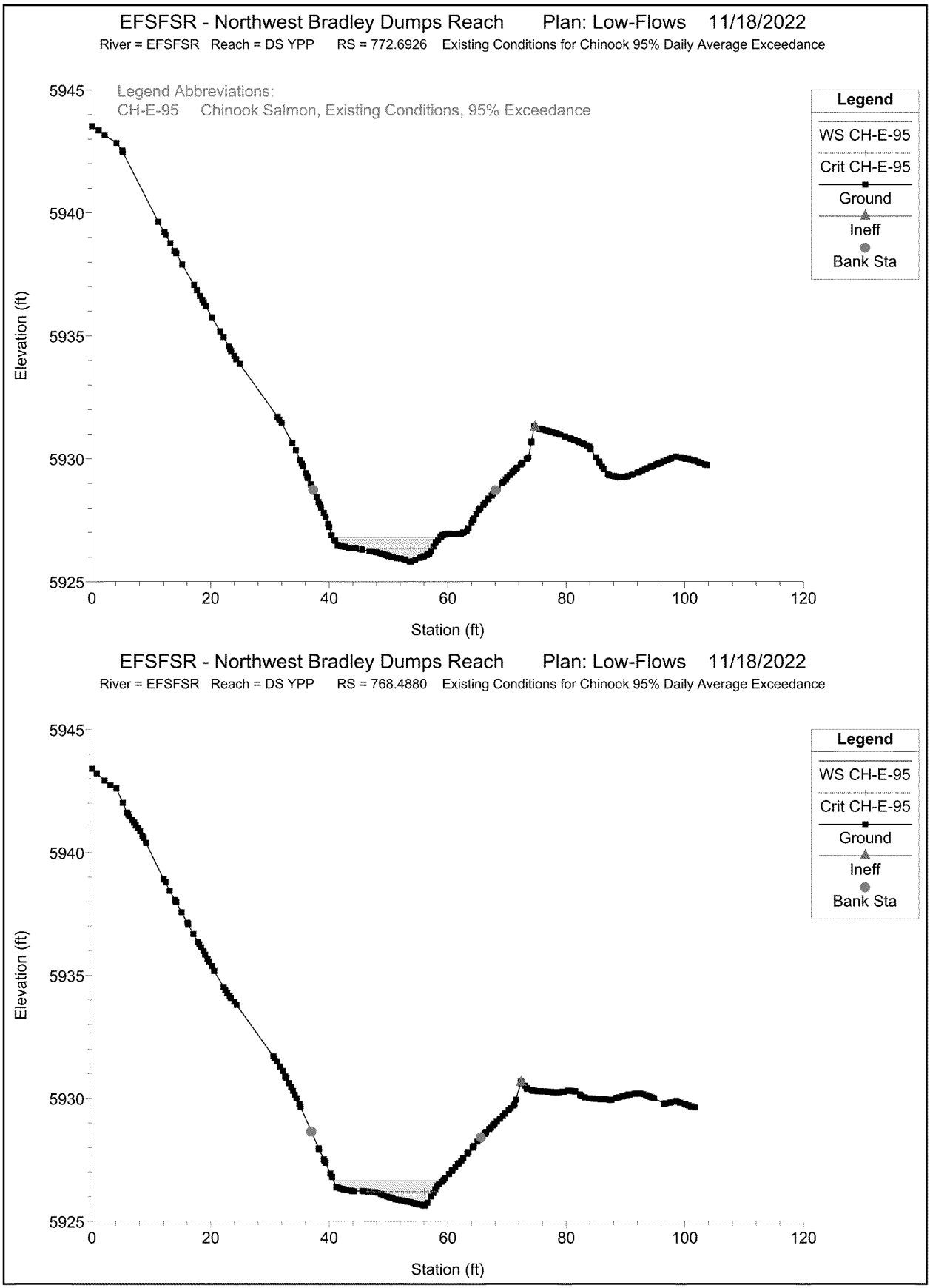

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 854.6812 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 842.8578 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

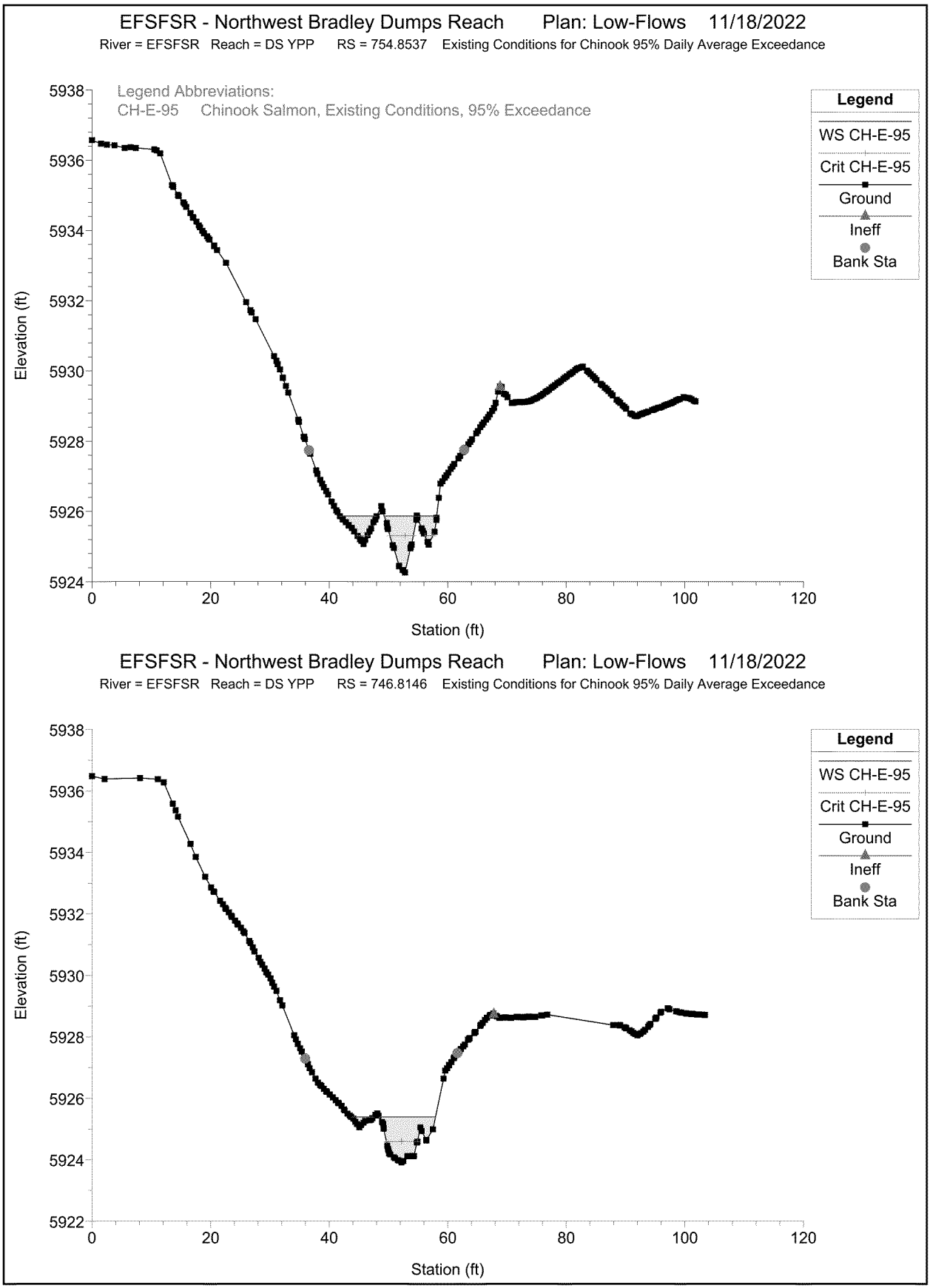

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 833.6452 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 829.7084 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
140


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 822.4241 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
140
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 819.2559 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 814.5821 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5950
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 799.5959 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
5945
5940
5935
5930
5925
0
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60
80
100
120

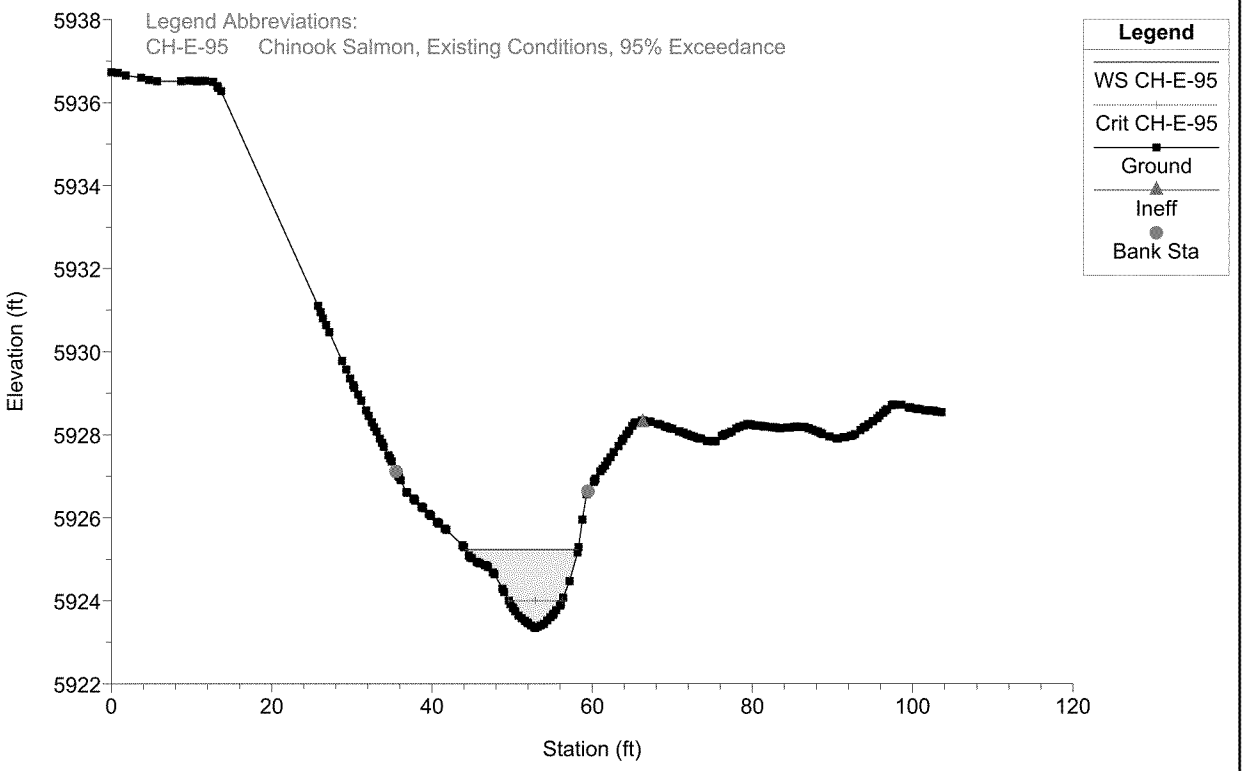

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 790.7709 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 781.2999 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 772.6926 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 768.4880 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5945
5940
5935
5930
5925
0
20
40
60
80
100
120
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 754.8537 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 746.8146 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
120

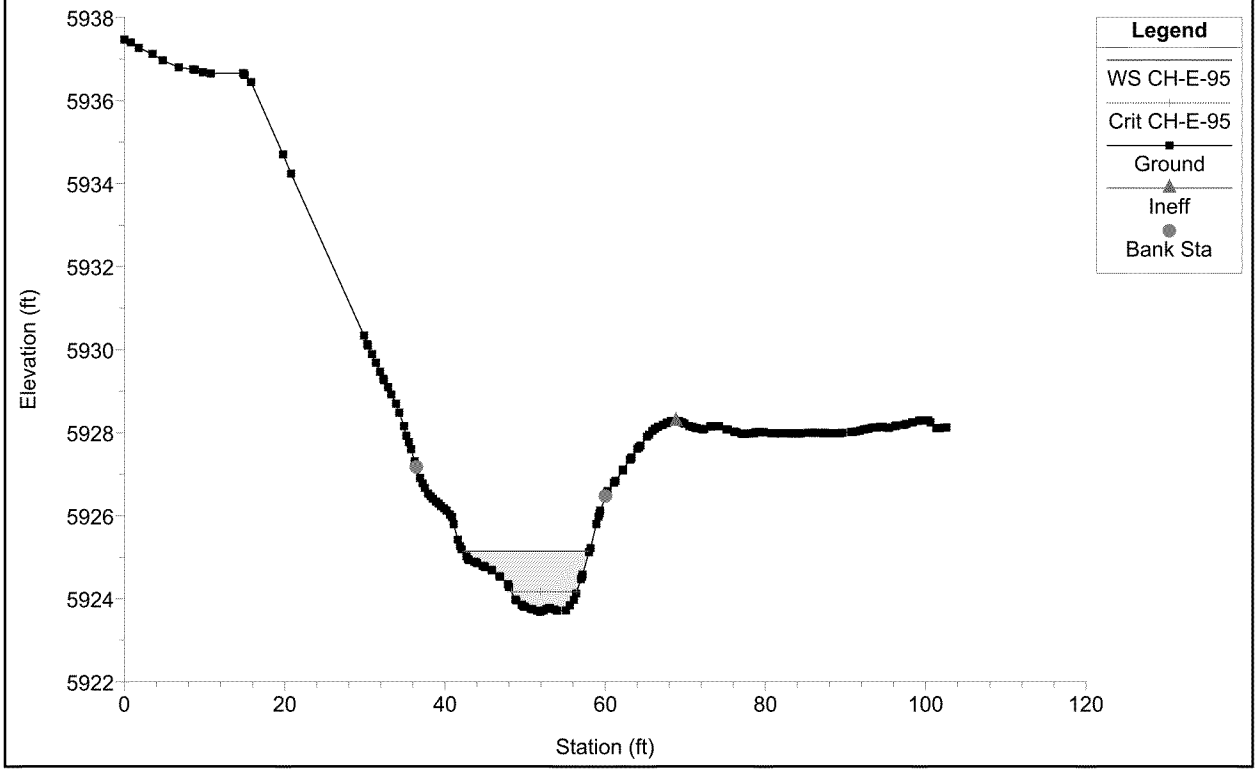
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 738.1886 Existing Conditions for Chinook 95% Daily Average Exceedance



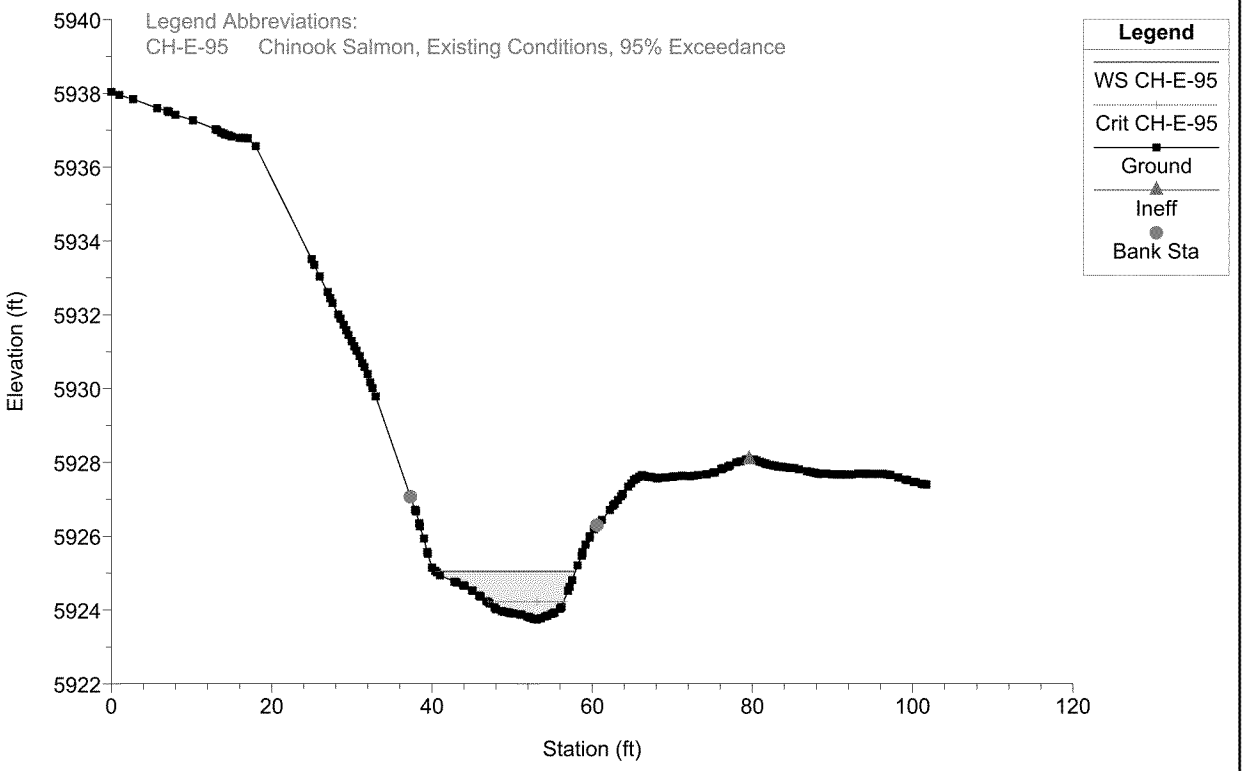
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 729.9025 Existing Conditions for Chinook 95% Daily Average Exceedance



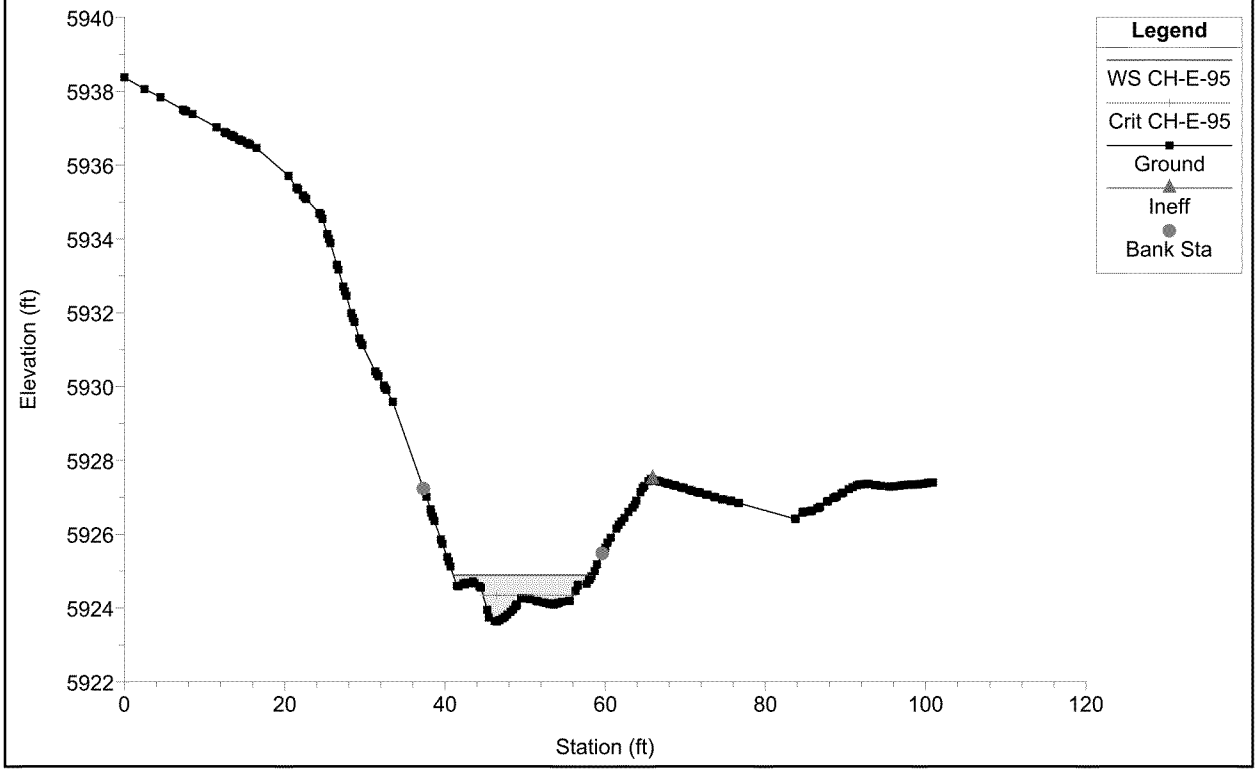
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

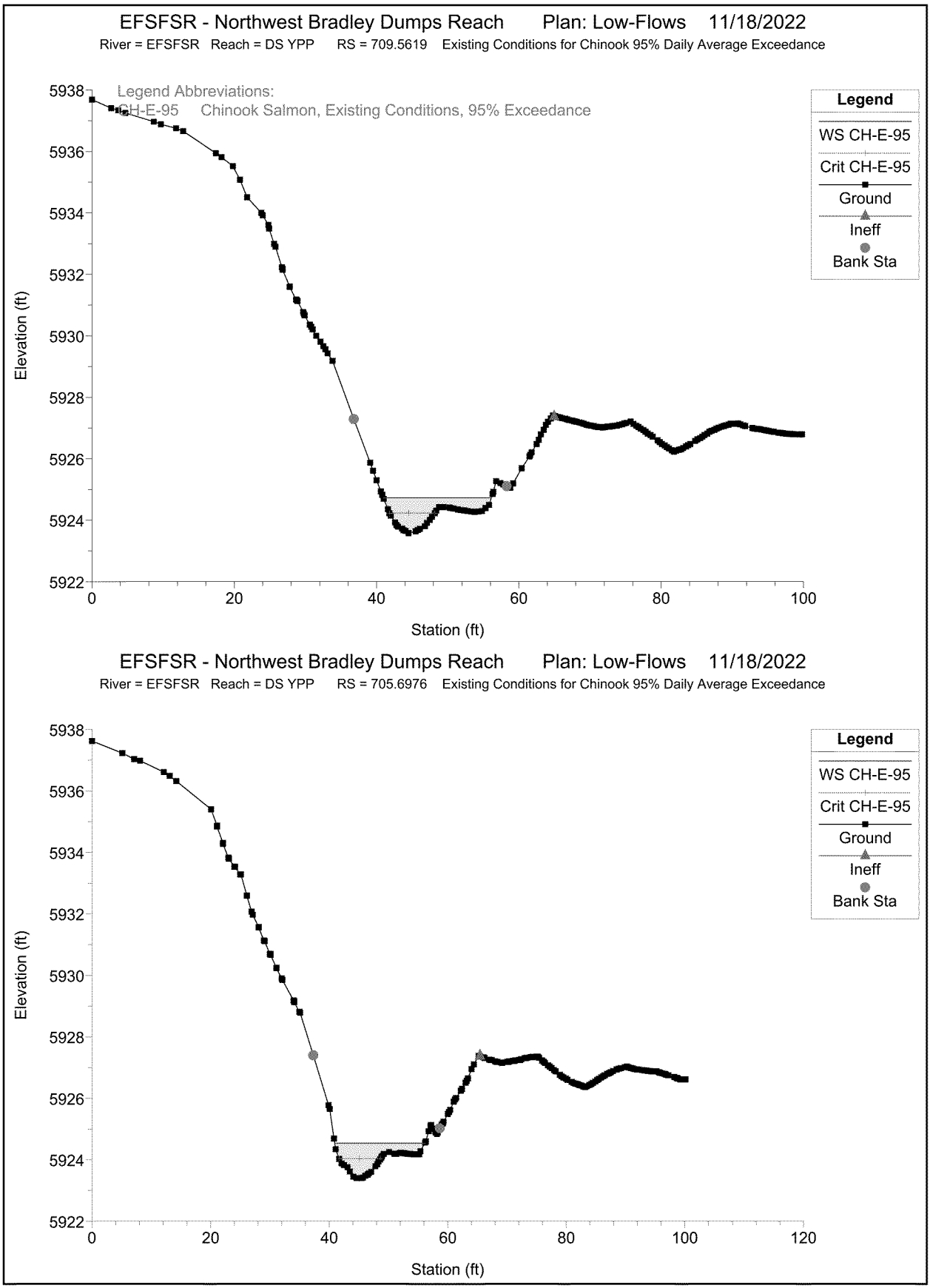
River = EFSFSR Reach = DS YPP RS = 721.5939 Existing Conditions for Chinook 95% Daily Average Exceedance

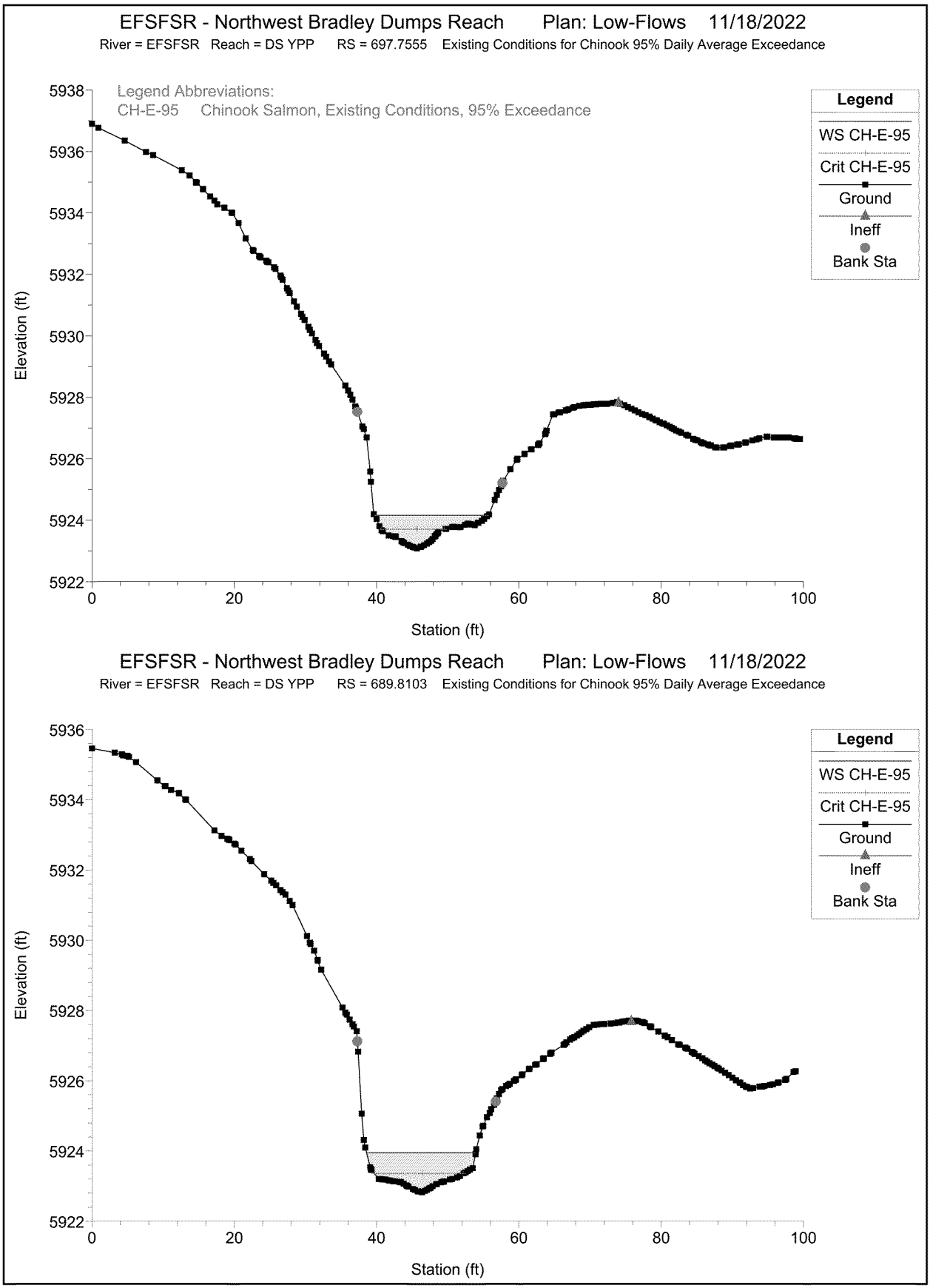


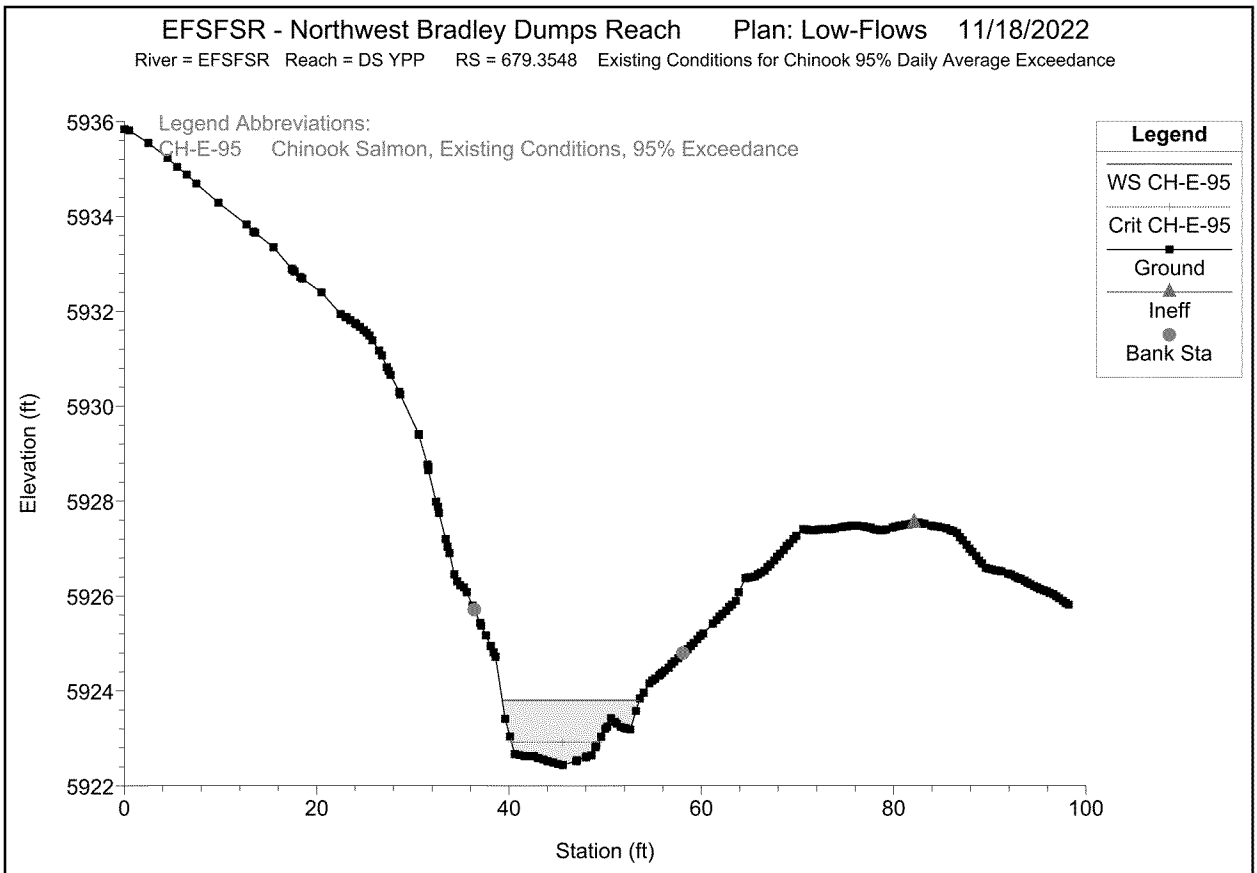
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

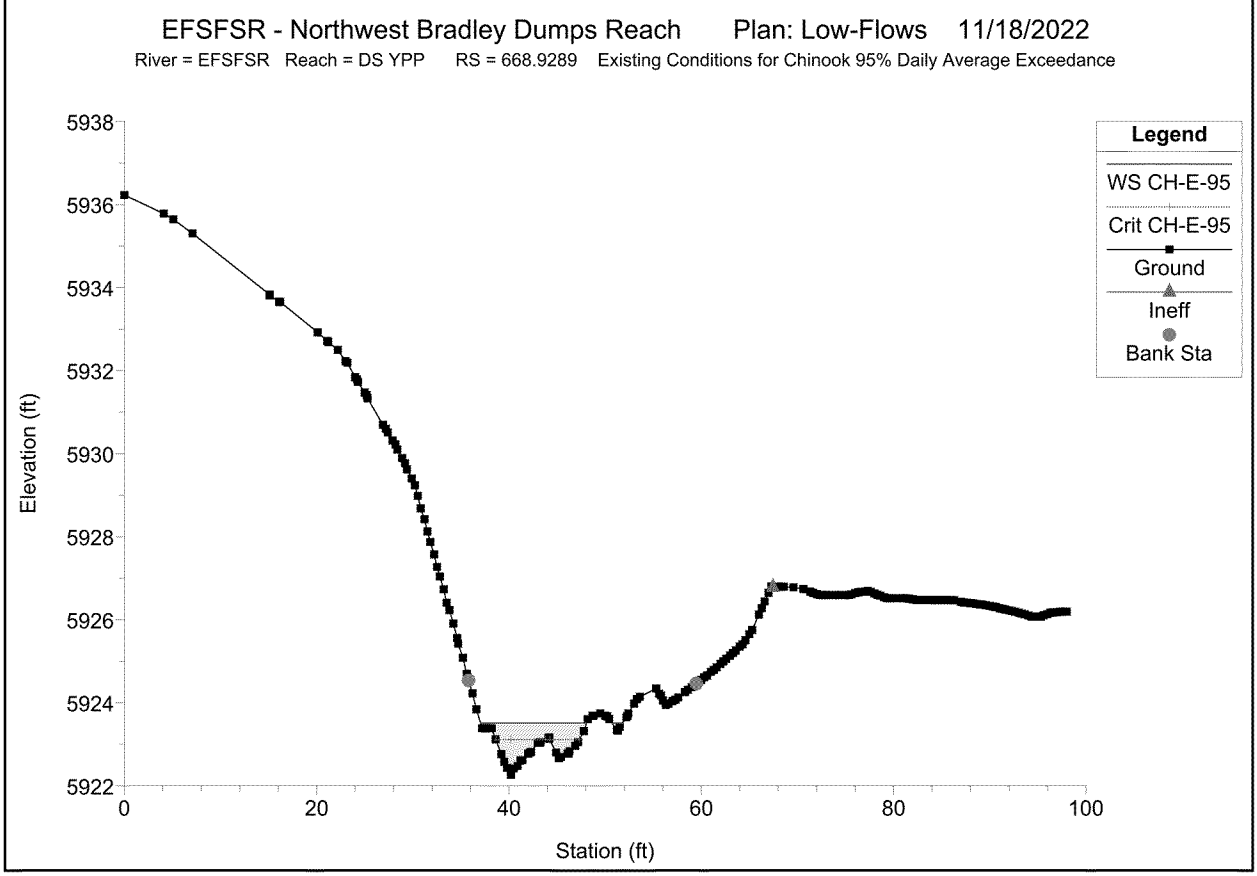
River = EFSFSR Reach = DS YPP RS = 713.6439 Existing Conditions for Chinook 95% Daily Average Exceedance

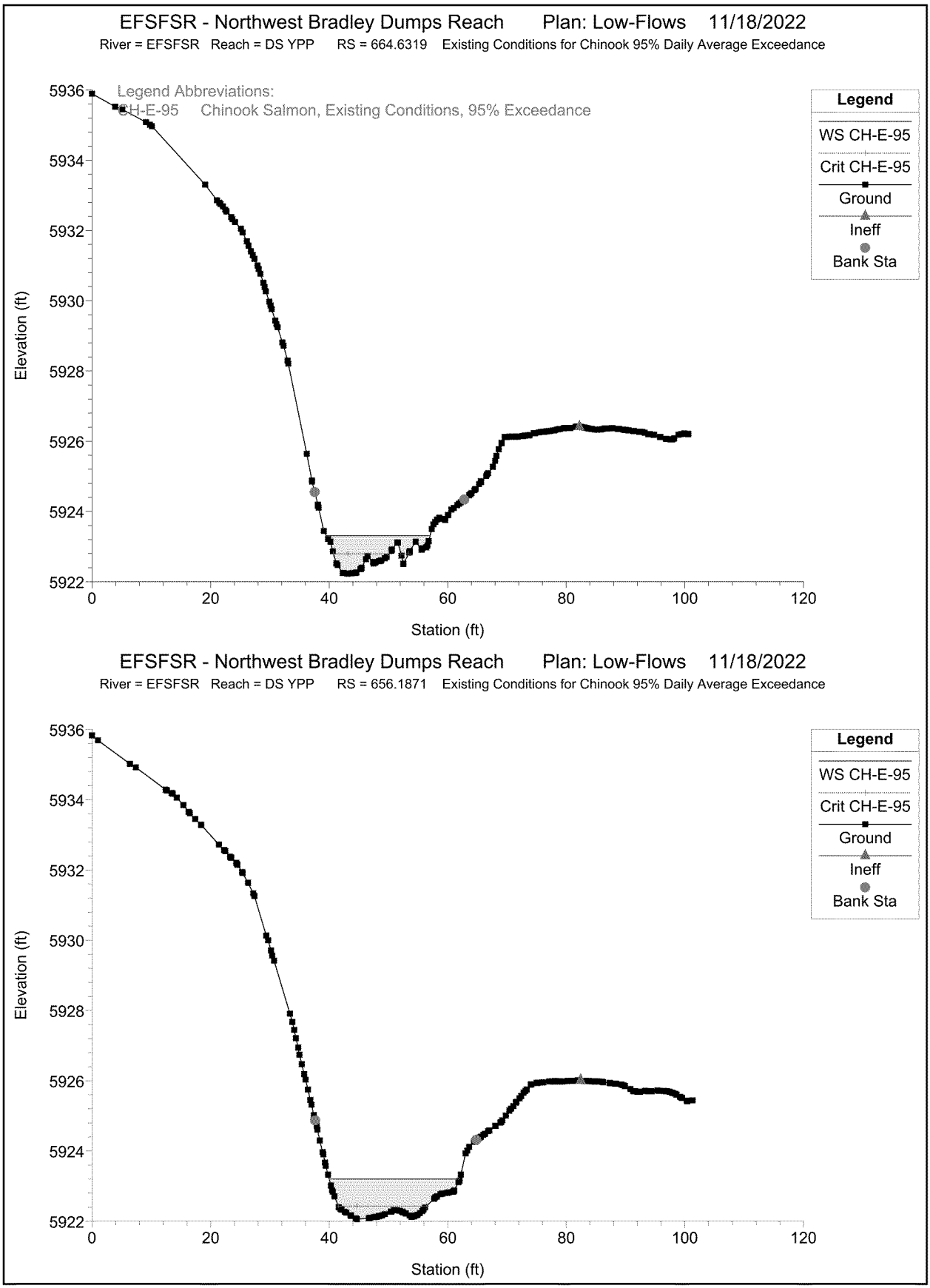


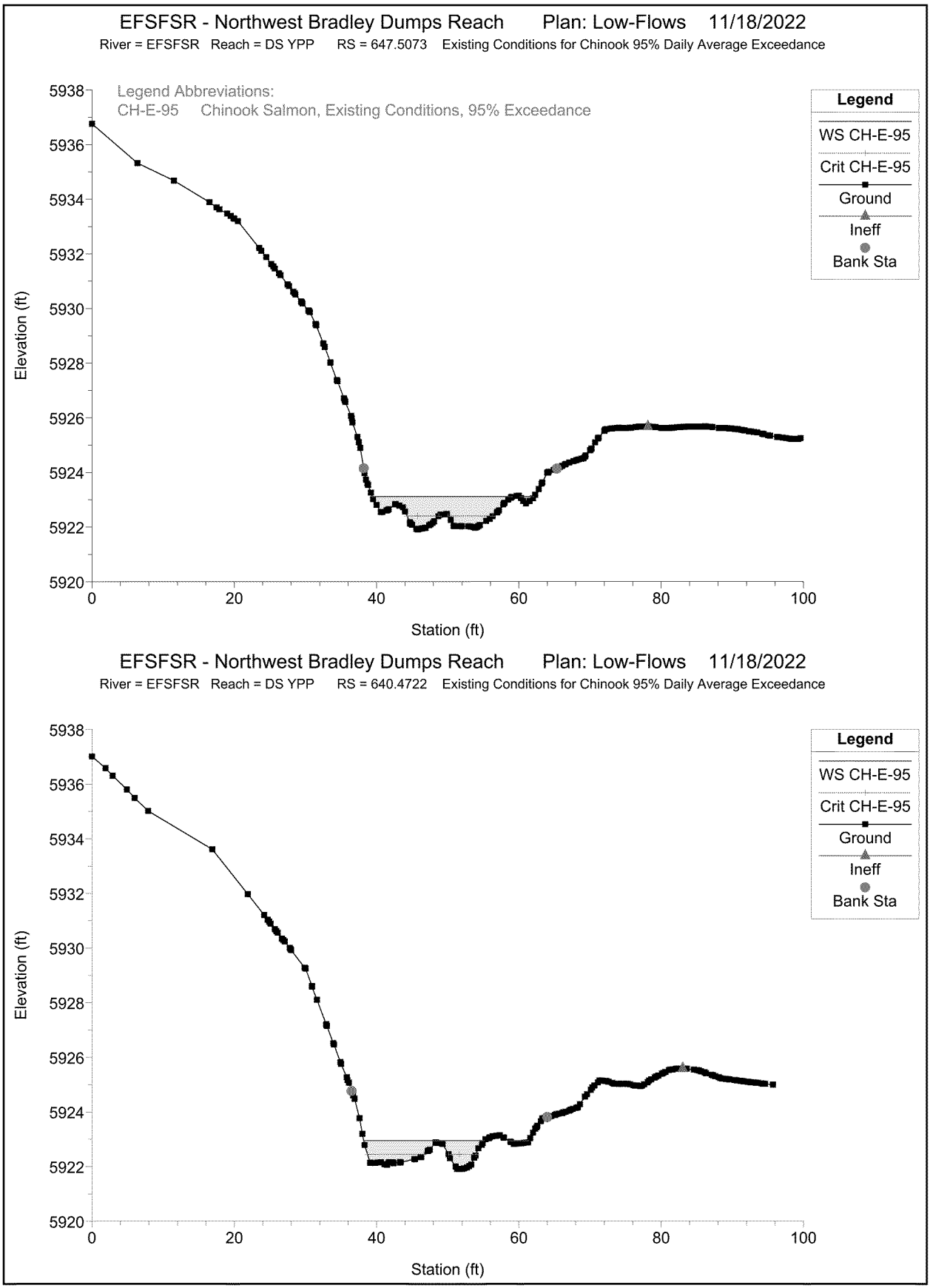

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 709.5619 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 705.6976 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
120

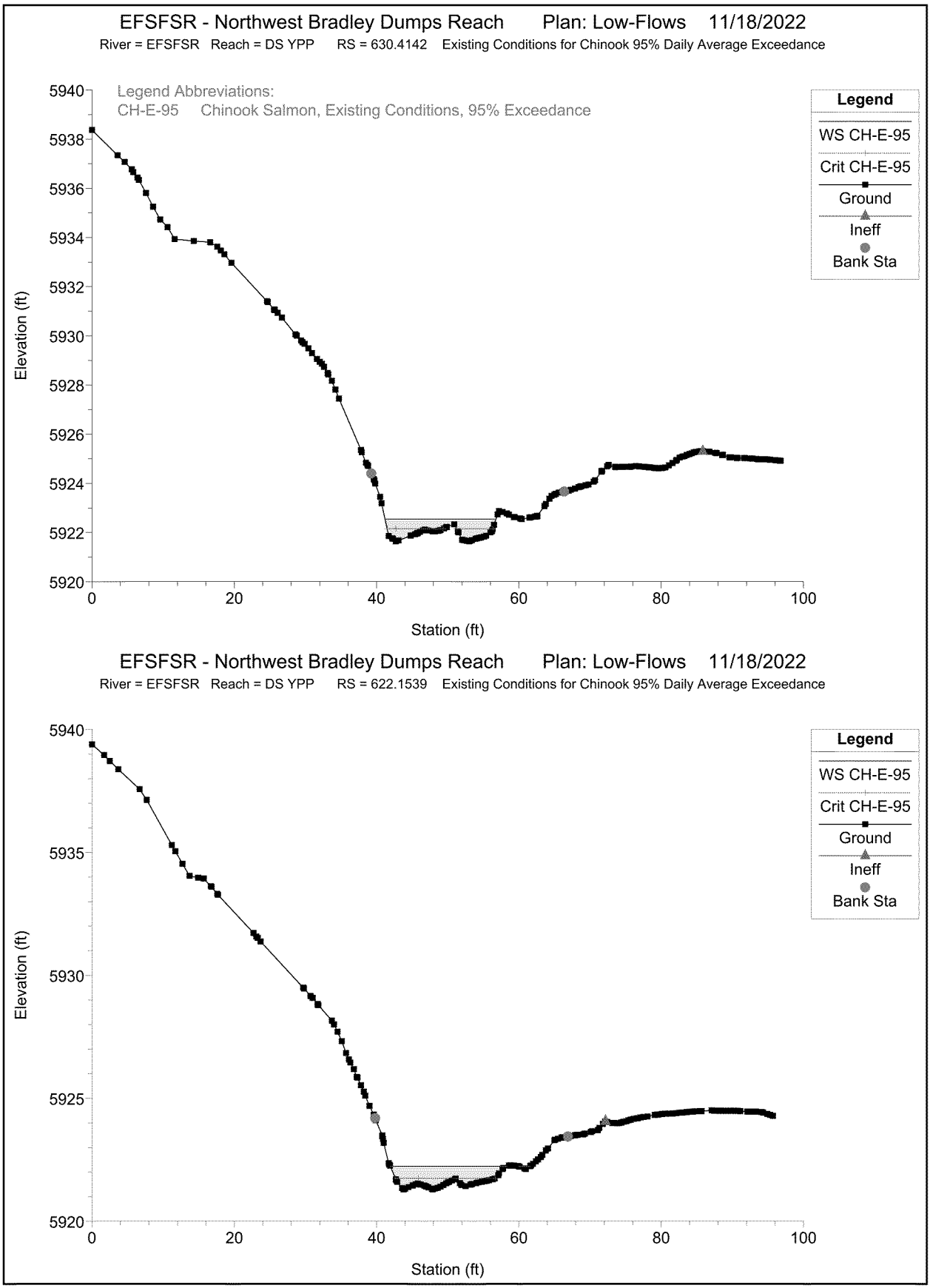

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 697.7555 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 689.8103 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100

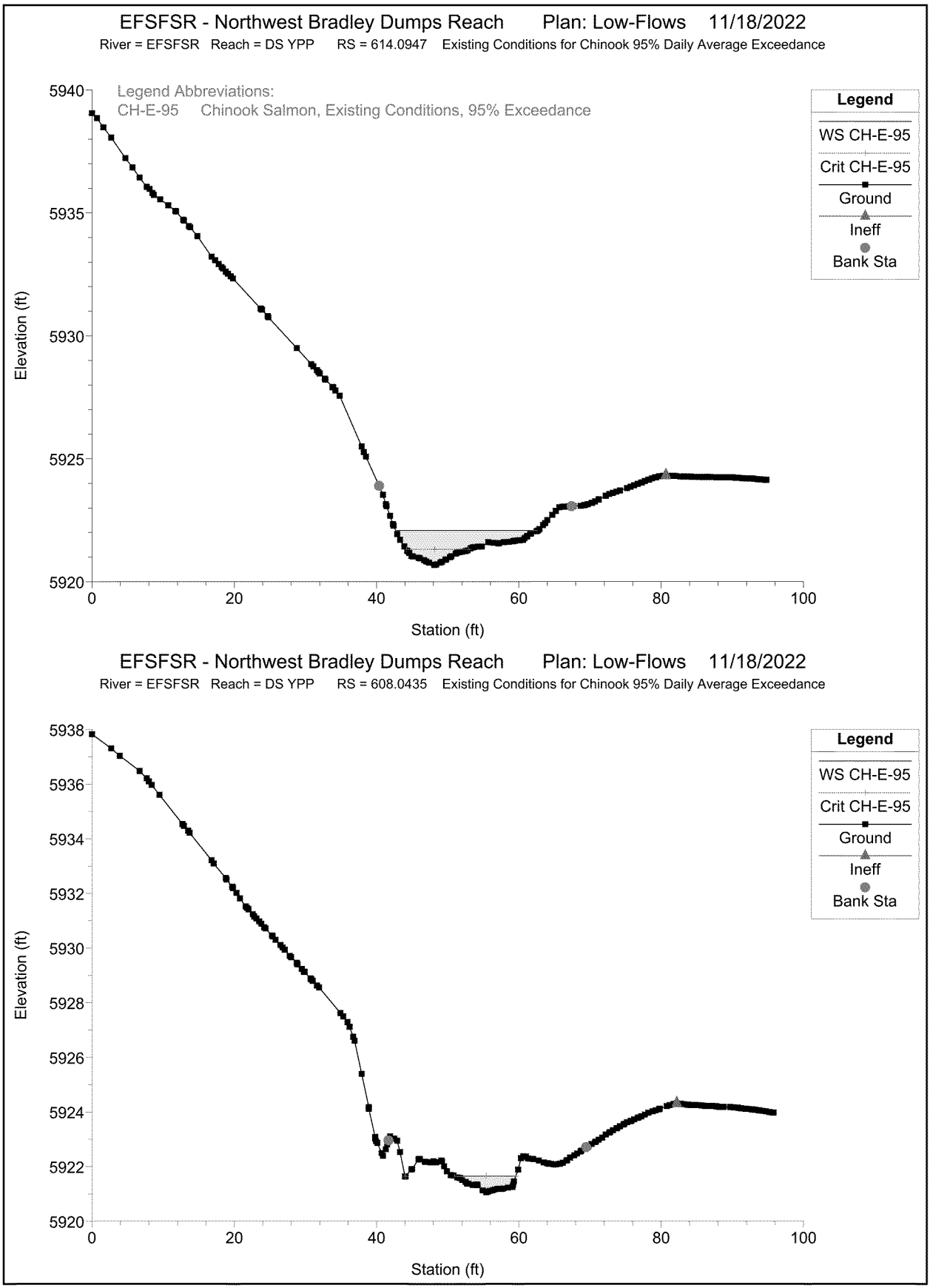

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 679.3548 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
Station (ft)

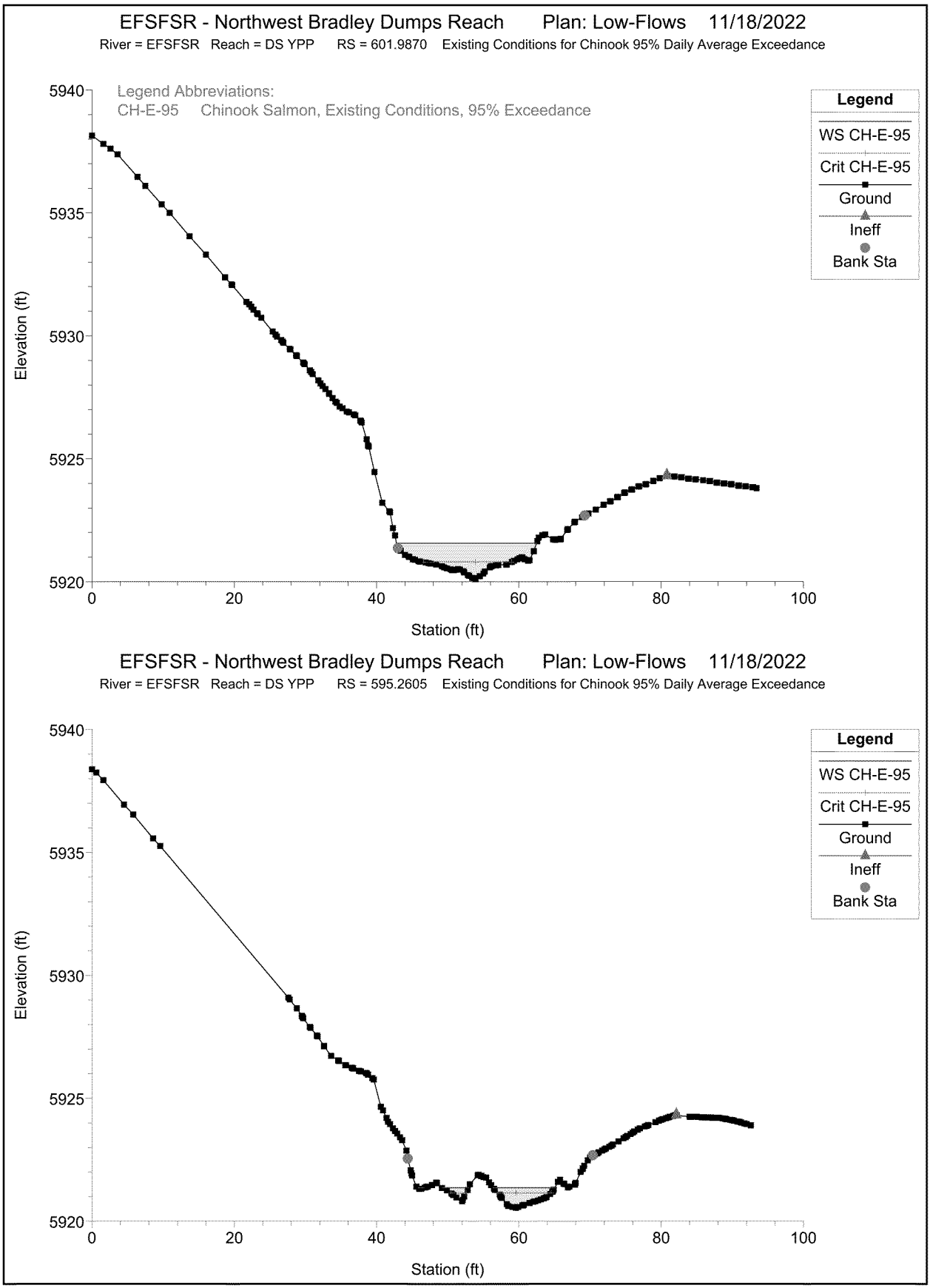

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 668.9289 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
Station (ft)

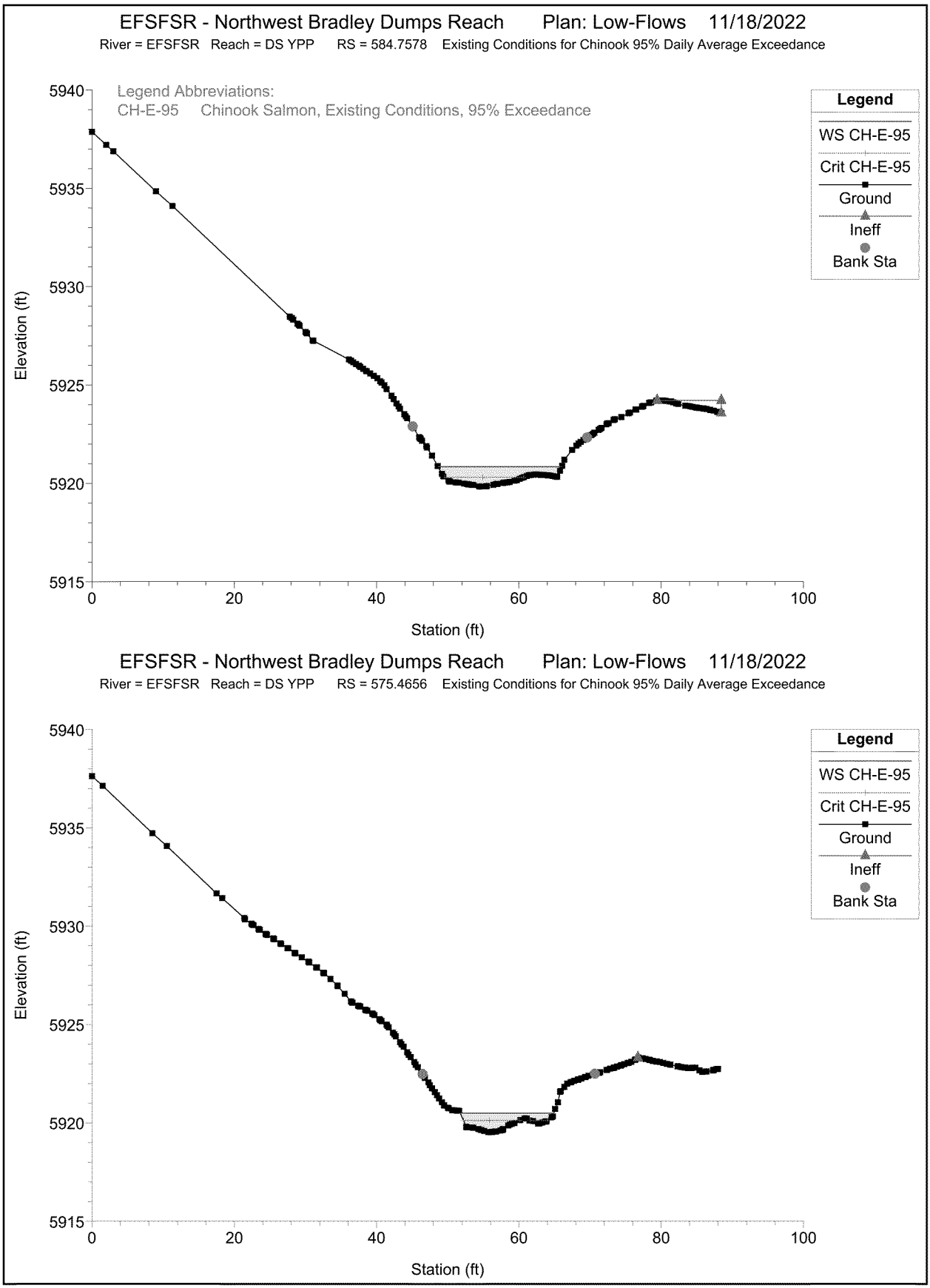

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 664.6319 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5936
5934
5932
5930
5928
5926
5924
5922
0
20
40
60
80
100
120
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 656.1871 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

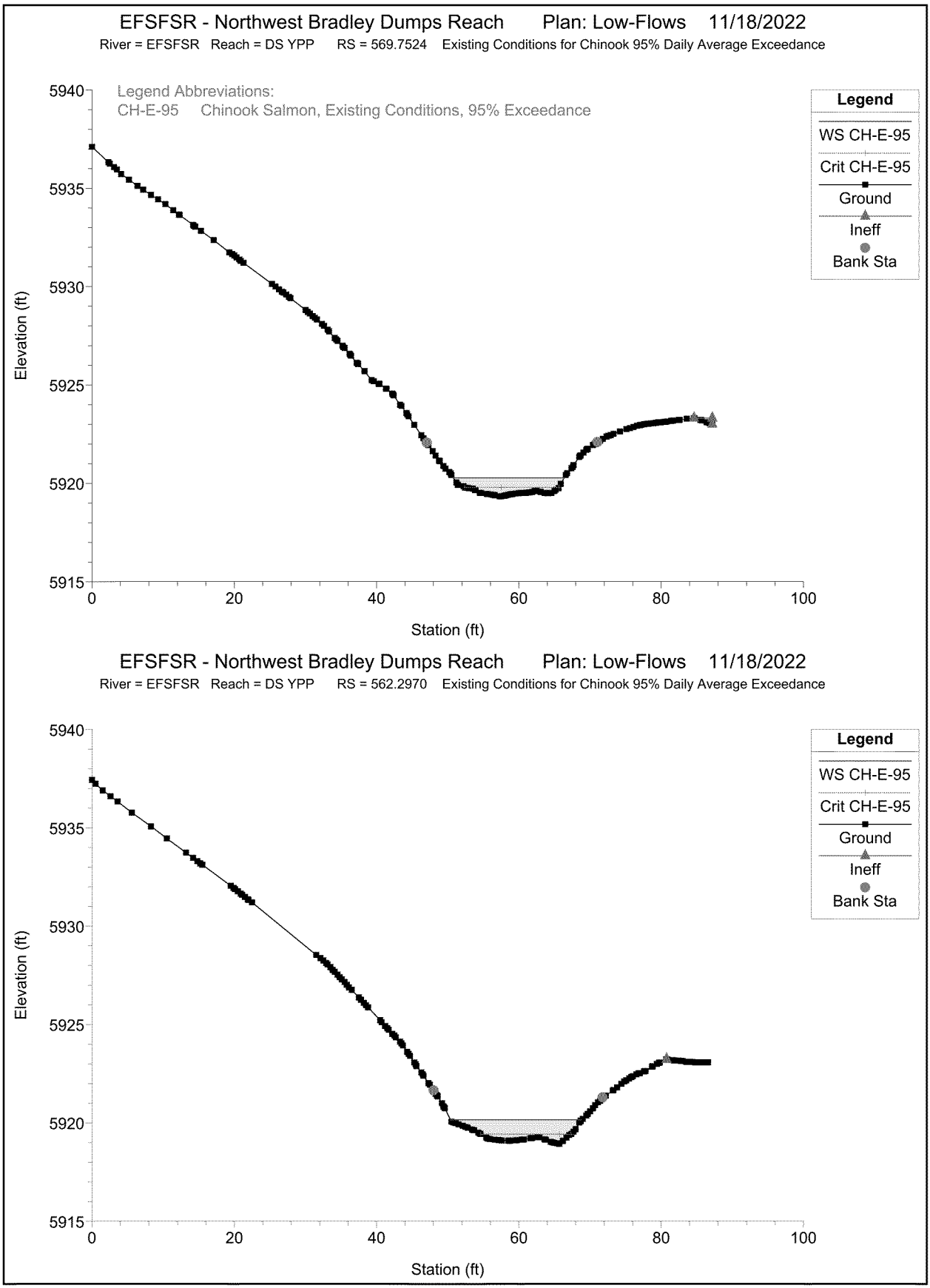

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 647.5073 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
5920
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 640.4722 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

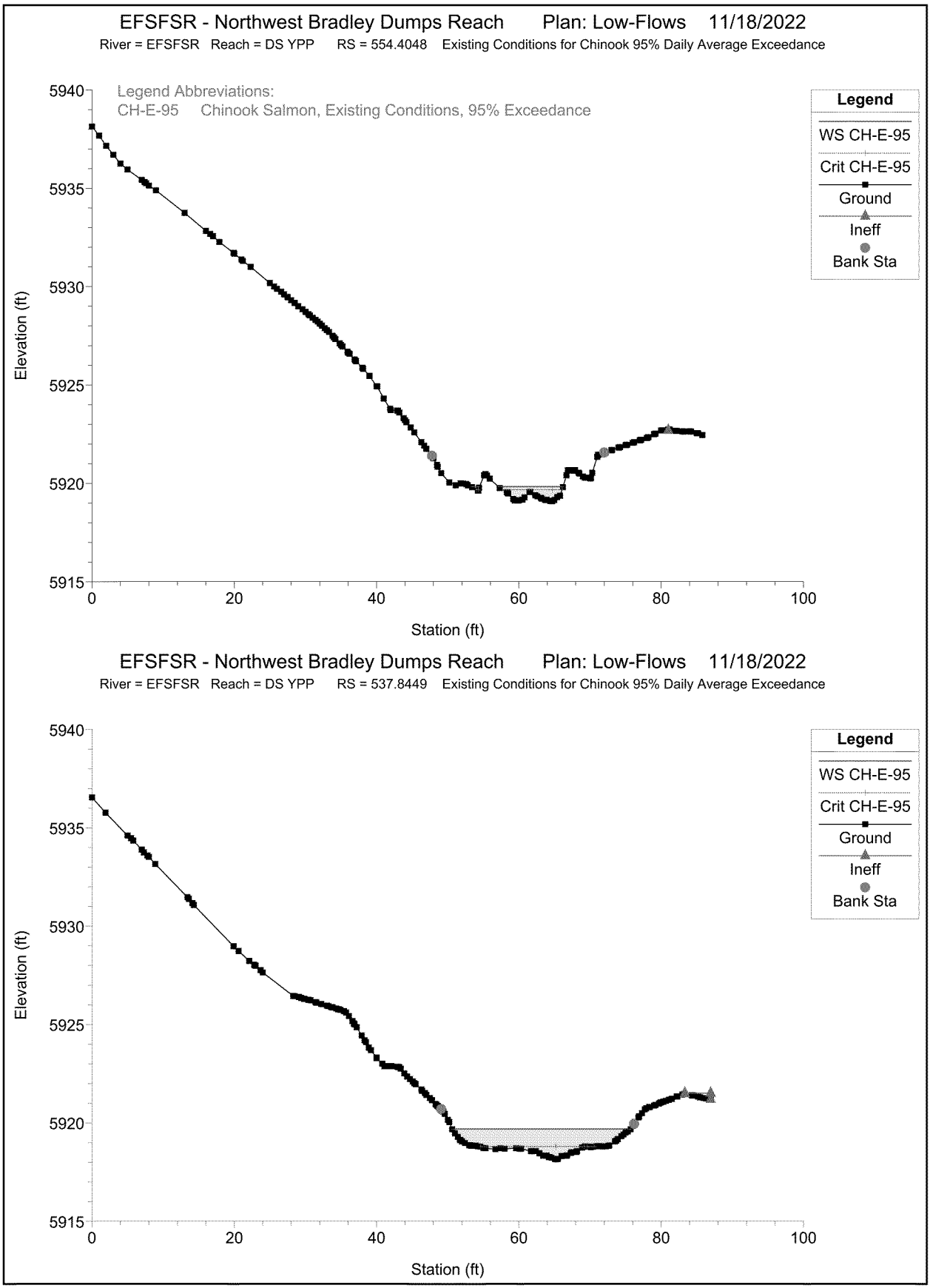

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 630.4142 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5940
5938
5936
5934
5932
5930
5928
5926
5924
5922
5920
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 622.1539 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5940
5935
5930
5925
5920
0
20
40
60
80
100


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 614.0947 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5940
5935
5930
5925
5920
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 608.0435 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5938
5936
5934
5932
5930
5928
5926
5924
5922
5920
0
20
40
60
80
100


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 601.9870 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5940
5935
5930
5925
5920
0
20
40
60
80
100
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 595.2605 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5940
5935
5930
5925
5920
0
20
40
60
80
100
Station (ft)

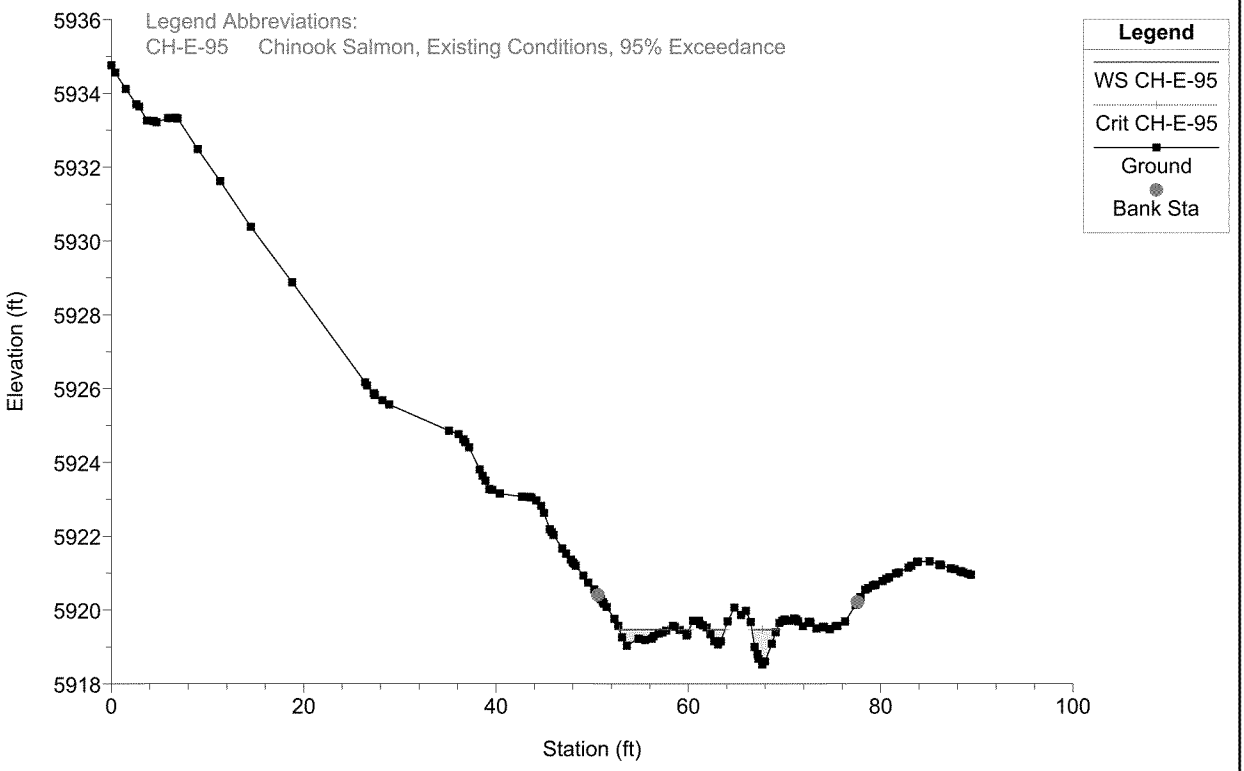

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 584.7578 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5940
5935
5930
5925
5920
5915
0
20
40
60
80
100
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 575.4656 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5940
5935
5930
5925
5920
5915
0
20
40
60
80
100
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 569.7524 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5940
5935
5930
5925
5920
5915
0
20
40
60
80
100
Station (ft)
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 562.2970 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
5940
5935
5930
5925
5920
5915
0
20
40
60
80
100
Station (ft)


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 554.4048 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend Abbreviations:
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5940
5935
5930
5925
5920
5915
0
20
40
60
80
100
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022
River = EFSFSR Reach = DS YPP RS = 537.8449 Existing Conditions for Chinook 95% Daily Average Exceedance
Legend
WS CH-E-95
Crit CH-E-95
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5940
5935
5930
5925
5920
5915
0
20
40
60
80
100

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

River = EFSFSR Reach = DS YPP RS = 534.3307 Existing Conditions for Chinook 95% Daily Average Exceedance



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Attachment B3

HEC-RAS Depth and Velocity Profiles for the Area of Interest

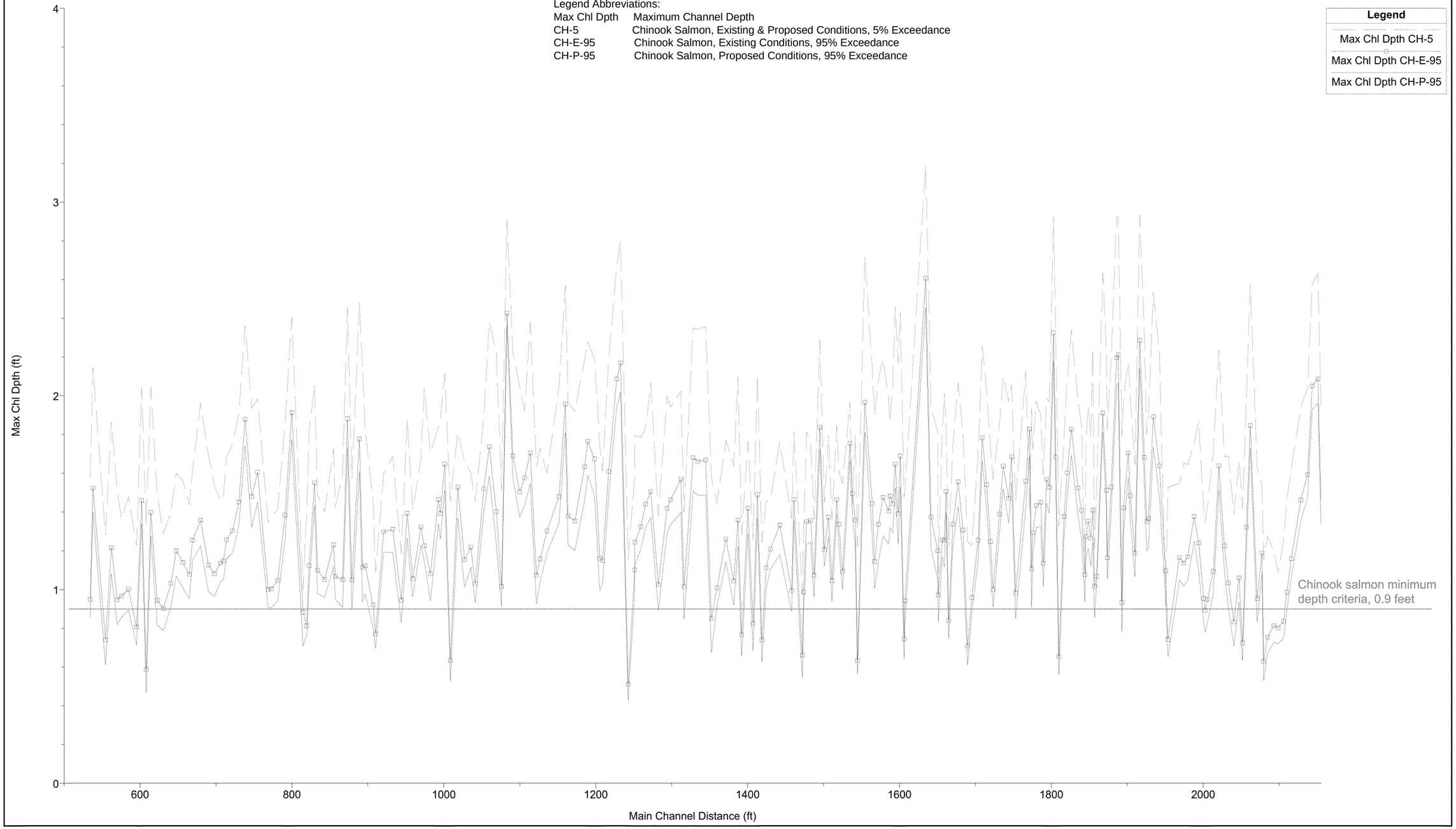
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EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Chinook Depths

Legend Abbreviations:

Max Chl Dpth	Maximum Channel Depth
CH-5	Chinook Salmon, Existing & Proposed Conditions, 5% Exceedance
CH-E-95	Chinook Salmon, Existing Conditions, 95% Exceedance
CH-P-95	Chinook Salmon, Proposed Conditions, 95% Exceedance



Chinook Salmon Burst Swim Speed, <22 ft/s (off chart)

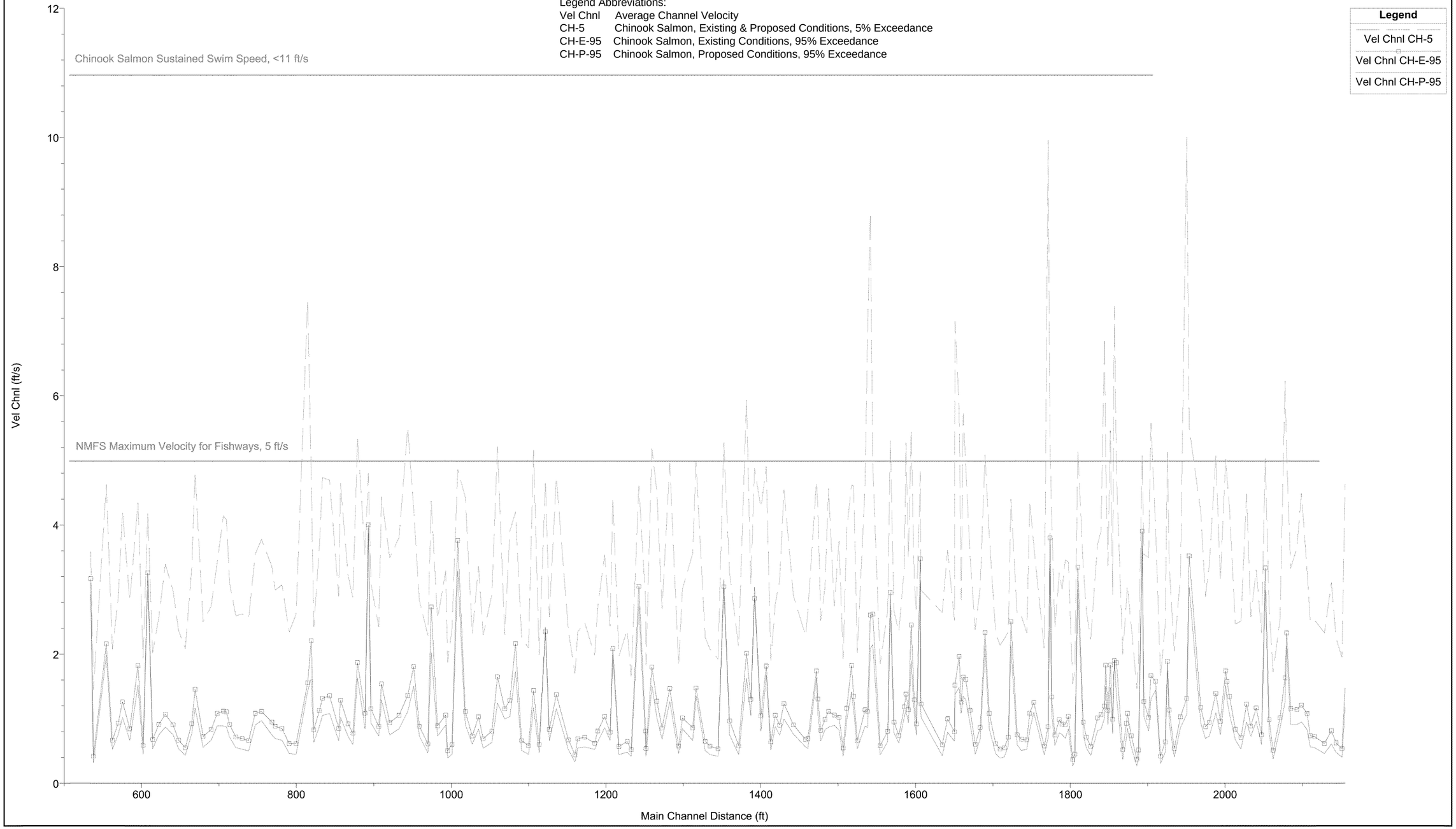
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Chinook Velocities

Legend Abbreviations:
Vel Chnl Average Channel Velocity
CH-5 Chinook Salmon, Existing & Proposed Conditions, 5% Exceedance
CH-E-95 Chinook Salmon, Existing Conditions, 95% Exceedance
CH-P-95 Chinook Salmon, Proposed Conditions, 95% Exceedance

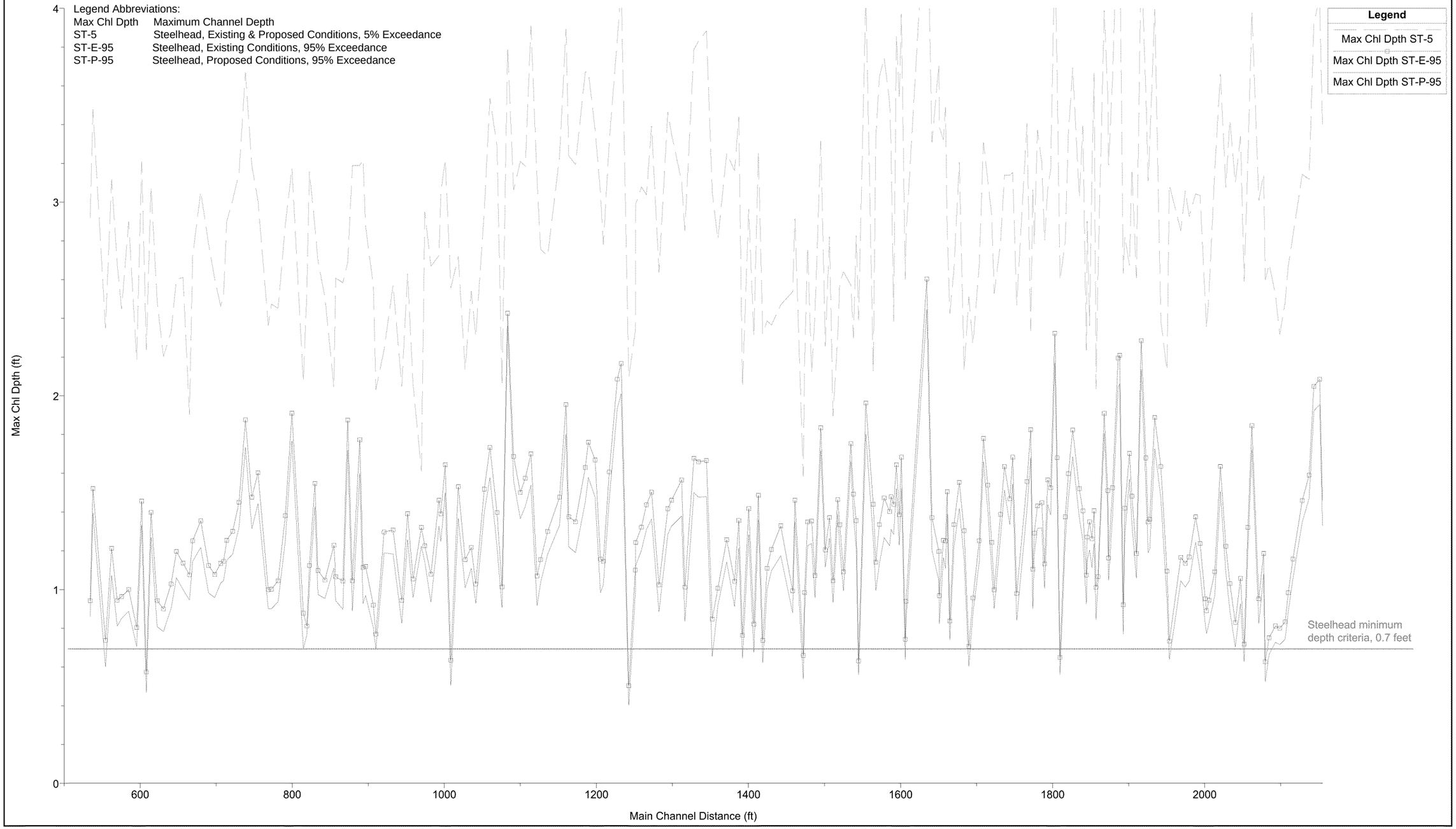
Chinook Salmon Sustained Swim Speed, <11 ft/s

NMFS Maximum Velocity for Fishways, 5 ft/s



EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Steelhead Depths

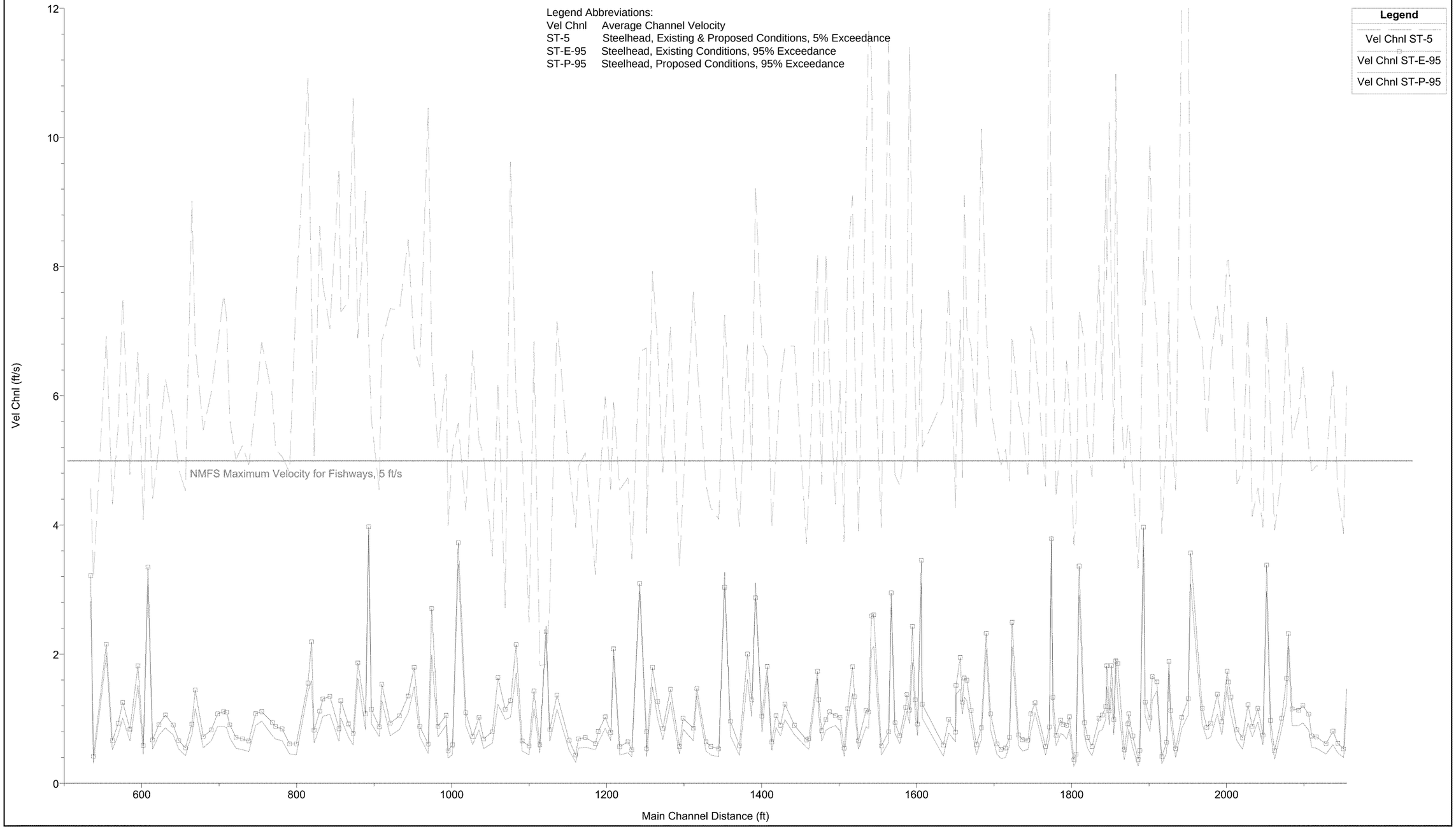


Steelhead Burst Swim Speed, <26 ft/s (off chart)
Steelhead Sustained Swim Speed, <15 ft/s (off chart)

EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Steelhead Velocities

Legend Abbreviations:
Vel Chnl Average Channel Velocity
ST-5 Steelhead, Existing & Proposed Conditions, 5% Exceedance
ST-E-95 Steelhead, Existing Conditions, 95% Exceedance
ST-P-95 Steelhead, Proposed Conditions, 95% Exceedance

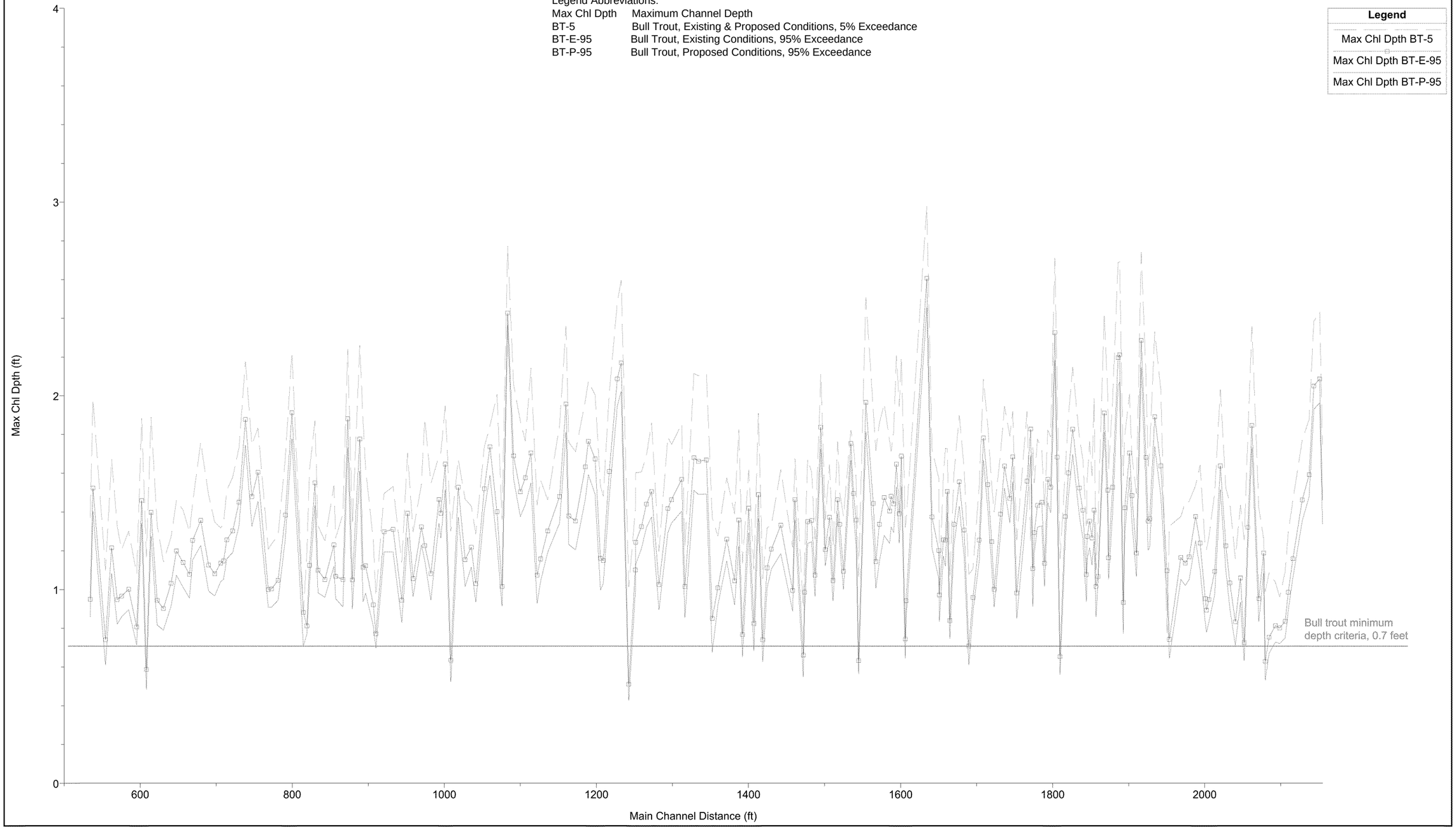


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Bull Trout Depths

Legend Abbreviations:

Max Chl Dpth	Maximum Channel Depth
BT-5	Bull Trout, Existing & Proposed Conditions, 5% Exceedance
BT-E-95	Bull Trout, Existing Conditions, 95% Exceedance
BT-P-95	Bull Trout, Proposed Conditions, 95% Exceedance

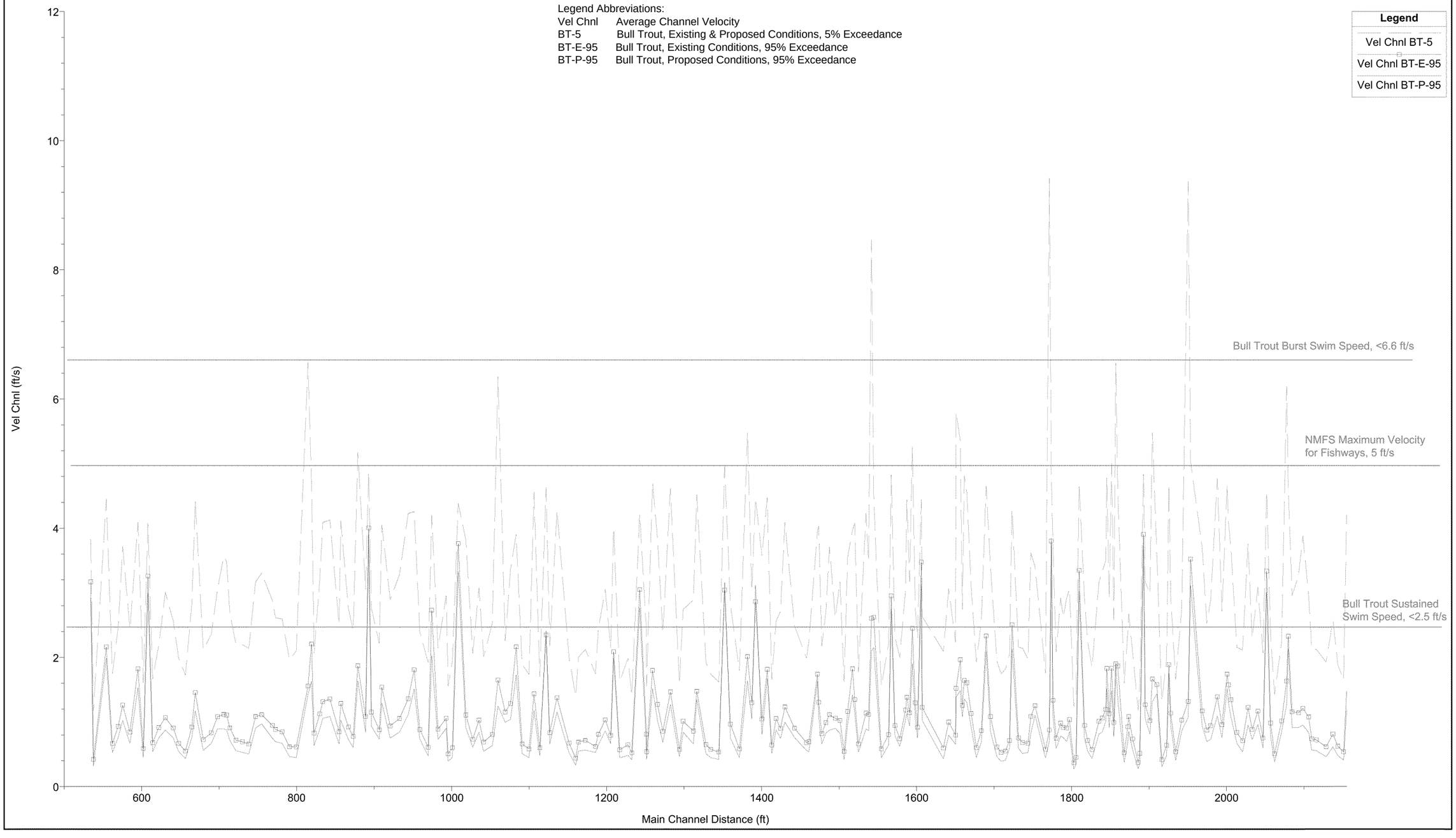


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Bull Trout Velocities

Legend Abbreviations:

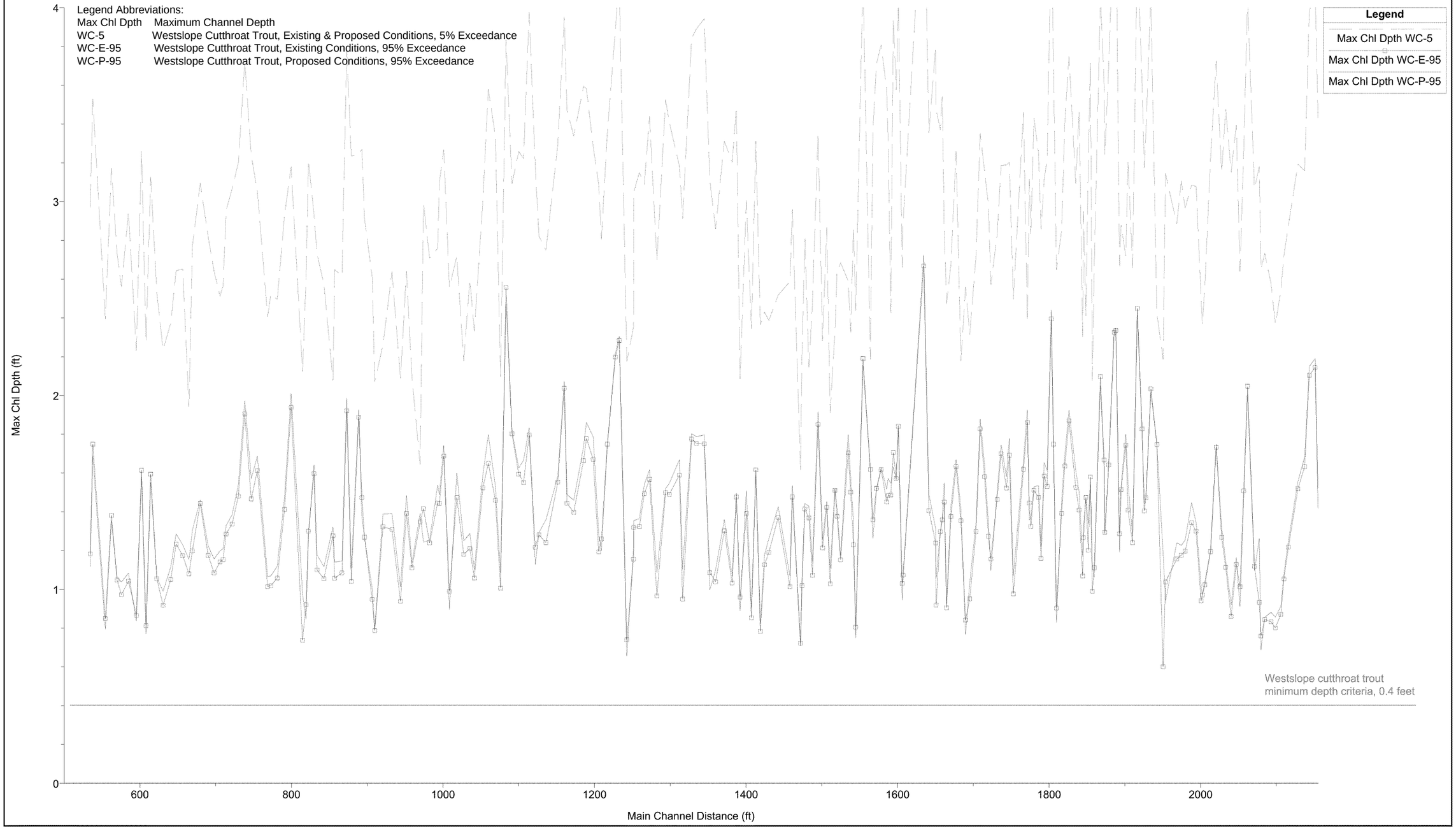
Vel Chnl	Average Channel Velocity
BT-5	Bull Trout, Existing & Proposed Conditions, 5% Exceedance
BT-E-95	Bull Trout, Existing Conditions, 95% Exceedance
BT-P-95	Bull Trout, Proposed Conditions, 95% Exceedance



EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Westslope Cutthroat Depths

Legend Abbreviations:
Max Chl Dpth Maximum Channel Depth
WC-5 Westslope Cutthroat Trout, Existing & Proposed Conditions, 5% Exceedance
WC-E-95 Westslope Cutthroat Trout, Existing Conditions, 95% Exceedance
WC-P-95 Westslope Cutthroat Trout, Proposed Conditions, 95% Exceedance

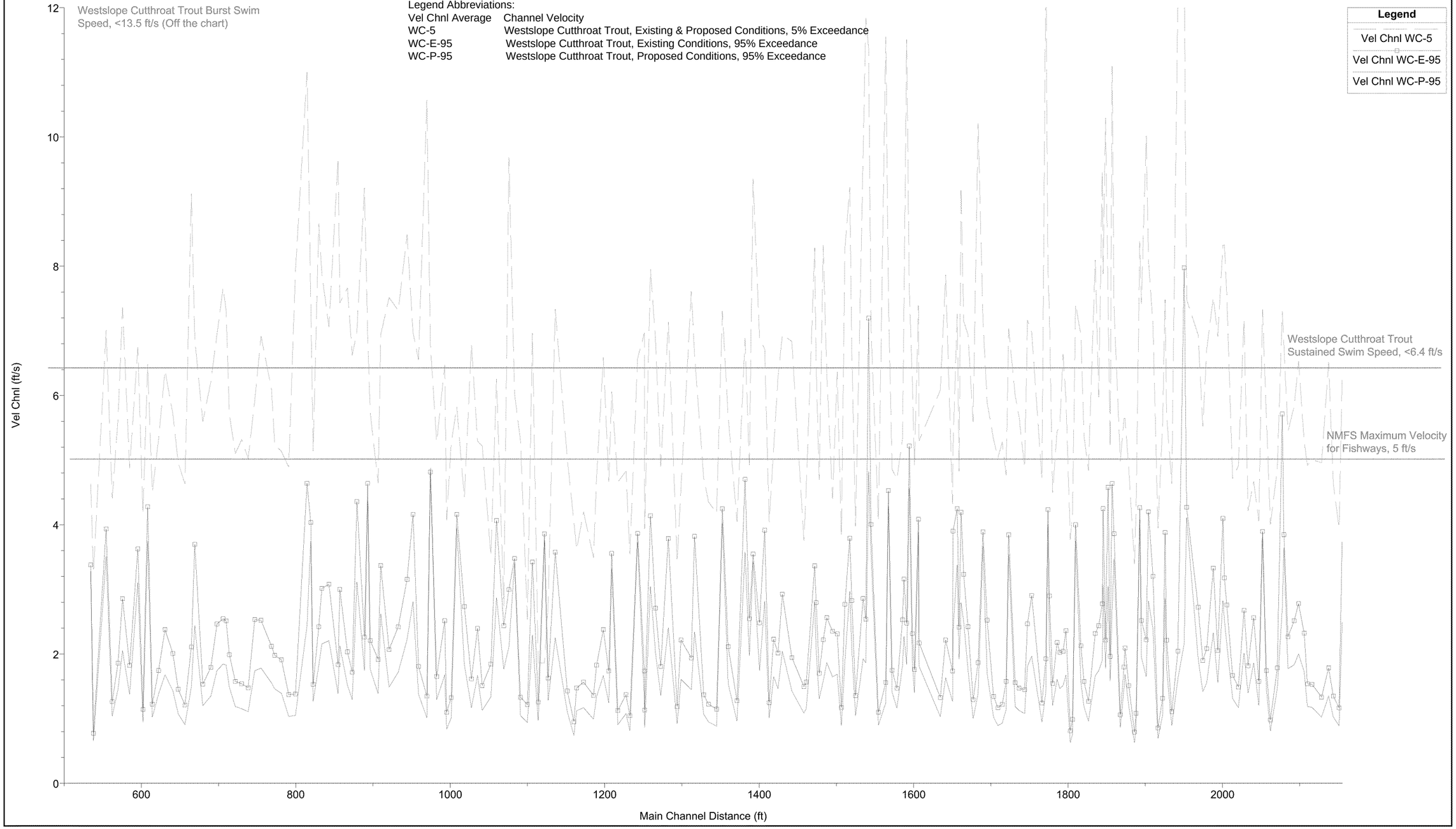


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Westslope Cutthroat Velocities

Legend Abbreviations:

Vel Chnl Average	Channel Velocity
WC-5	Westslope Cutthroat Trout, Existing & Proposed Conditions, 5% Exceedance
WC-E-95	Westslope Cutthroat Trout, Existing Conditions, 95% Exceedance
WC-P-95	Westslope Cutthroat Trout, Proposed Conditions, 95% Exceedance

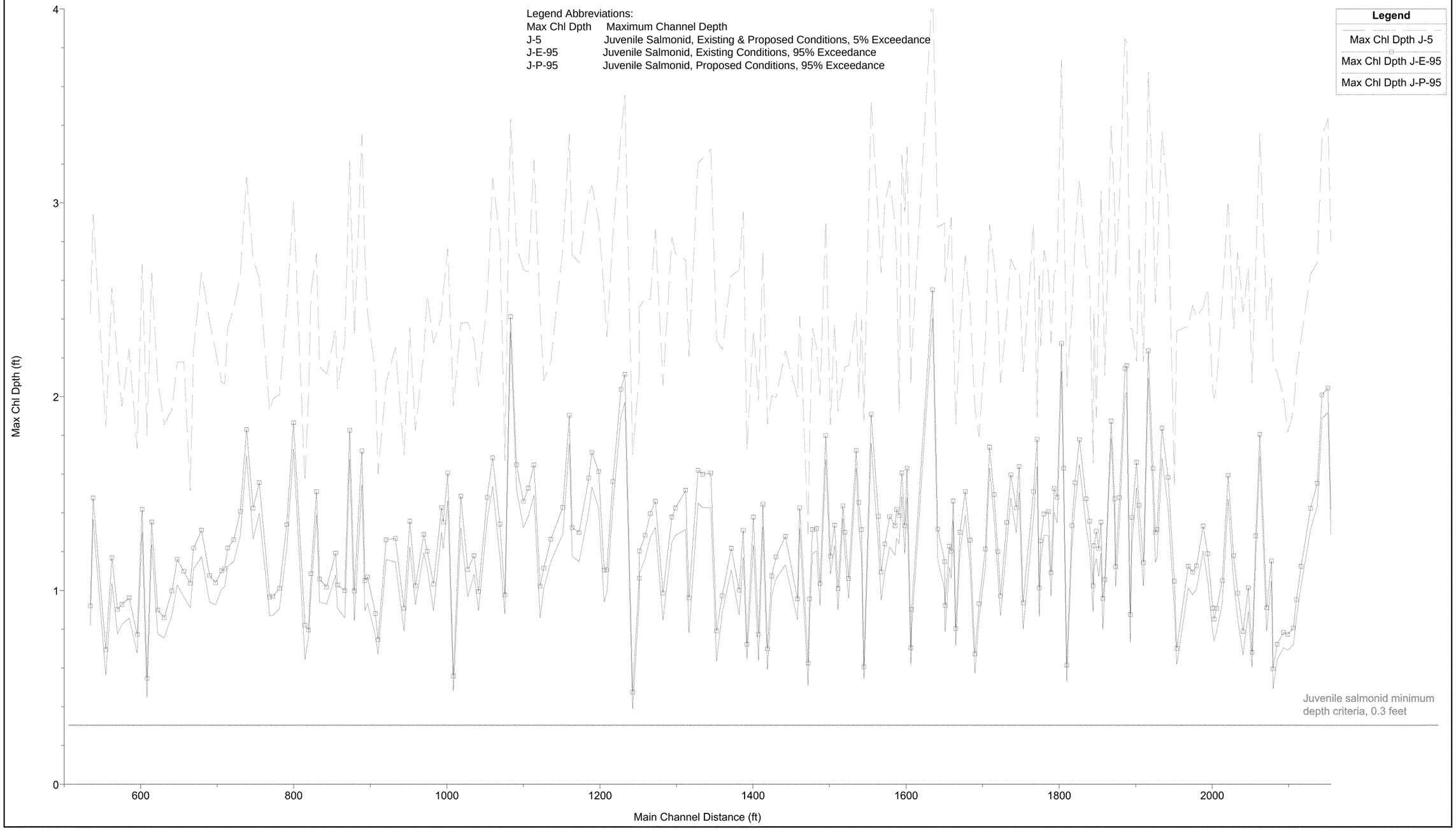


EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Juvenile Salmonid Depths

Legend Abbreviations:

Max Chl Dpth	Maximum Channel Depth
J-5	Juvenile Salmonid, Existing & Proposed Conditions, 5% Exceedance
J-E-95	Juvenile Salmonid, Existing Conditions, 95% Exceedance
J-P-95	Juvenile Salmonid, Proposed Conditions, 95% Exceedance



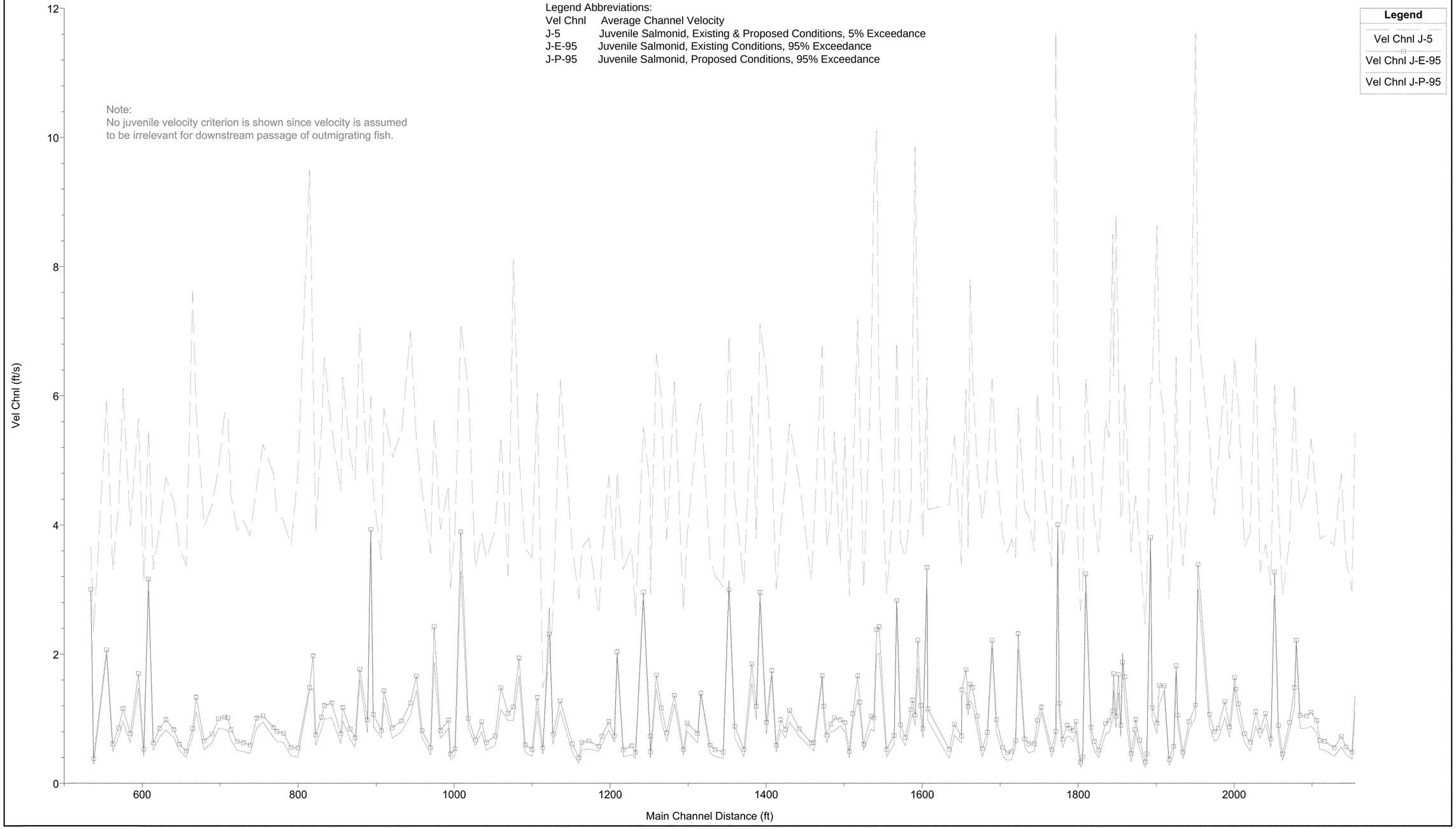
EFSFSR - Northwest Bradley Dumps Reach Plan: Low-Flows 11/18/2022

Juvenile Salmonid Velocities

Legend Abbreviations:

Vel Chnl	Average Channel Velocity
J-5	Juvenile Salmonid, Existing & Proposed Conditions, 5% Exceedance
J-E-95	Juvenile Salmonid, Existing Conditions, 95% Exceedance
J-P-95	Juvenile Salmonid, Proposed Conditions, 95% Exceedance

Note:
No juvenile velocity criterion is shown since velocity is assumed to be irrelevant for downstream passage of outmigrating fish.



Attachment B4

HEC-RAS Hydraulic Output Tables for the Area of Interest

Profile Abbreviations:

CH-E-95	Chinook Salmon, Existing Conditions, 95% Exceedance
ST-E-95	Steelhead, Existing Conditions, 95% Exceedance
BT-E-95	Bull Trout, Existing Conditions, 95% Exceedance
WC-E-95	Westslope Cutthroat Trout, Existing Conditions, 95% Exceedance
J-E-95	Juvenile Salmonid, Existing Conditions, 95% Exceedance
CH-P-95	Chinook Salmon, Proposed Conditions, 95% Exceedance
ST-P-95	Steelhead, Proposed Conditions, 95% Exceedance
BT-P-95	Bull Trout, Proposed Conditions, 95% Exceedance
WC-P-95	Westslope Cutthroat Trout, Proposed Conditions, 95% Exceedance
J-P-95	Juvenile Salmonid, Proposed Conditions, 95% Exceedance
CH-5	Chinook Salmon, Existing and Proposed Conditions, 5% Exceedance
ST-5	Steelhead, Existing and Proposed Conditions, 5% Exceedance
BT-5	Bull Trout, Existing and Proposed Conditions, 5% Exceedance
WC-5	Westslope Cutthroat Trout, Existing and Proposed Conditions, 5% Exceedance
J-5	Juvenile Salmonid, Existing and Proposed Conditions, 5% Exceedance

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Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2150.848	CH-E-95	9.9	5991.36	5993.45	2.09	0.54	18.42	18.29
DS YPP	2150.848	ST-E-95	9.8	5991.36	5993.45	2.09	0.53	18.38	18.28
DS YPP	2150.848	BT-E-95	9.9	5991.36	5993.45	2.09	0.54	18.42	18.29
DS YPP	2150.848	WC-E-95	22.7	5991.36	5993.5	2.14	1.17	19.47	18.9
DS YPP	2150.848	J-E-95	8.5	5991.36	5993.4	2.04	0.48	17.62	17.98
DS YPP	2150.848	CH-P-95	6.6	5991.36	5993.32	1.96	0.41	16.16	17.38
DS YPP	2150.848	ST-P-95	6.4	5991.36	5993.31	1.95	0.4	16.04	17.32
DS YPP	2150.848	BT-P-95	6.6	5991.36	5993.32	1.96	0.41	16.19	17.4
DS YPP	2150.848	WC-P-95	18.1	5991.36	5993.55	2.19	0.89	20.34	19.25
DS YPP	2150.848	J-P-95	5.8	5991.36	5993.28	1.92	0.37	15.41	16.99
DS YPP	2150.848	CH-5	57.4	5991.36	5993.99	2.63	1.95	29.42	21.46
DS YPP	2150.848	ST-5	244.7	5991.36	5995.42	4.06	3.86	63.77	26.01
DS YPP	2150.848	BT-5	41.5	5991.36	5993.79	2.43	1.64	25.23	20.83
DS YPP	2150.848	WC-5	255.5	5991.36	5995.48	4.12	3.94	65.34	26.16
DS YPP	2150.848	J-5	142.7	5991.36	5994.79	3.43	2.98	48	24.6
DS YPP	2137.153	CH-E-95	9.9	5991.79	5993.38	1.59	0.81	12.2	13.05
DS YPP	2137.153	ST-E-95	9.8	5991.79	5993.38	1.59	0.81	12.16	13.04
DS YPP	2137.153	BT-E-95	9.9	5991.79	5993.38	1.59	0.81	12.2	13.05
DS YPP	2137.153	WC-E-95	22.7	5991.79	5993.42	1.63	1.79	12.71	13.22
DS YPP	2137.153	J-E-95	8.5	5991.79	5993.34	1.55	0.73	11.67	12.89
DS YPP	2137.153	CH-P-95	6.6	5991.79	5993.27	1.48	0.61	10.72	12.62
DS YPP	2137.153	ST-P-95	6.4	5991.79	5993.26	1.47	0.6	10.65	12.6
DS YPP	2137.153	BT-P-95	6.6	5991.79	5993.27	1.48	0.61	10.75	12.62
DS YPP	2137.153	WC-P-95	18.1	5991.79	5993.47	1.68	1.35	13.38	13.43
DS YPP	2137.153	J-P-95	5.8	5991.79	5993.23	1.44	0.56	10.22	12.46
DS YPP	2137.153	CH-5	57.4	5991.79	5993.83	2.04	3.11	18.48	15.19
DS YPP	2137.153	ST-5	244.7	5991.79	5994.91	3.12	6.38	38.34	20.99
DS YPP	2137.153	BT-5	41.5	5991.79	5993.67	1.88	2.58	16.1	14.38
DS YPP	2137.153	WC-5	255.5	5991.79	5994.95	3.16	6.51	39.24	21.16
DS YPP	2137.153	J-5	142.7	5991.79	5994.48	2.69	4.79	29.78	19.24
DS YPP	2128.167	CH-E-95	9.9	5991.88	5993.34	1.46	0.62	16.07	17.04
DS YPP	2128.167	ST-E-95	9.8	5991.88	5993.34	1.46	0.61	16.02	17.03
DS YPP	2128.167	BT-E-95	9.9	5991.88	5993.34	1.46	0.62	16.07	17.04
DS YPP	2128.167	WC-E-95	22.7	5991.88	5993.4	1.52	1.33	17.04	17.26
DS YPP	2128.167	J-E-95	8.5	5991.88	5993.3	1.42	0.55	15.41	16.89
DS YPP	2128.167	CH-P-95	6.6	5991.88	5993.23	1.35	0.46	14.24	16.57
DS YPP	2128.167	ST-P-95	6.4	5991.88	5993.23	1.35	0.45	14.14	16.6
DS YPP	2128.167	BT-P-95	6.6	5991.88	5993.24	1.35	0.46	14.26	16.58
DS YPP	2128.167	WC-P-95	18.1	5991.88	5993.44	1.56	1.02	17.67	17.39
DS YPP	2128.167	J-P-95	5.8	5991.88	5993.2	1.32	0.42	13.61	16.4
DS YPP	2128.167	CH-5	57.4	5991.88	5993.82	1.94	2.33	24.66	18.78
DS YPP	2128.167	ST-5	244.7	5991.88	5995.02	3.14	4.86	50.92	25.3
DS YPP	2128.167	BT-5	41.5	5991.88	5993.65	1.77	1.93	21.52	18.16
DS YPP	2128.167	WC-5	255.5	5991.88	5995.07	3.19	4.96	52.19	25.61
DS YPP	2128.167	J-5	142.7	5991.88	5994.51	2.63	3.68	38.79	22.32

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2115.801	CH-E-95	9.9	5992.12	5993.28	1.16	0.72	13.73	18.72
DS YPP	2115.801	ST-E-95	9.8	5992.12	5993.28	1.16	0.72	13.69	18.71
DS YPP	2115.801	BT-E-95	9.9	5992.12	5993.28	1.16	0.72	13.73	18.72
DS YPP	2115.801	WC-E-95	22.7	5992.12	5993.34	1.22	1.53	14.84	18.9
DS YPP	2115.801	J-E-95	8.5	5992.12	5993.25	1.13	0.65	13.09	18.61
DS YPP	2115.801	CH-P-95	6.6	5992.12	5993.18	1.06	0.55	11.89	18.39
DS YPP	2115.801	ST-P-95	6.4	5992.12	5993.18	1.05	0.54	11.78	18.38
DS YPP	2115.801	BT-P-95	6.6	5992.12	5993.18	1.06	0.55	11.91	18.4
DS YPP	2115.801	WC-P-95	18.1	5992.12	5993.37	1.25	1.17	15.42	18.98
DS YPP	2115.801	J-P-95	5.8	5992.12	5993.15	1.03	0.51	11.26	18.28
DS YPP	2115.801	CH-5	57.4	5992.12	5993.74	1.62	2.52	22.75	20.14
DS YPP	2115.801	ST-5	244.7	5992.12	5994.95	2.83	4.92	50.09	25.85
DS YPP	2115.801	BT-5	41.5	5992.12	5993.58	1.46	2.13	19.51	19.63
DS YPP	2115.801	WC-5	255.5	5992.12	5995	2.88	5.01	51.41	26.13
DS YPP	2115.801	J-5	142.7	5992.12	5994.42	2.3	3.83	37.22	22.96
DS YPP	2109.84	CH-E-95	9.9	5992.25	5993.24	0.99	0.74	13.42	19.42
DS YPP	2109.84	ST-E-95	9.8	5992.25	5993.23	0.98	0.73	13.38	19.41
DS YPP	2109.84	BT-E-95	9.9	5992.25	5993.24	0.99	0.74	13.42	19.42
DS YPP	2109.84	WC-E-95	22.7	5992.25	5993.3	1.05	1.54	14.75	19.67
DS YPP	2109.84	J-E-95	8.5	5992.25	5993.2	0.95	0.67	12.78	19.29
DS YPP	2109.84	CH-P-95	6.6	5992.25	5993.14	0.89	0.56	11.6	18.99
DS YPP	2109.84	ST-P-95	6.4	5992.25	5993.14	0.89	0.56	11.49	18.95
DS YPP	2109.84	BT-P-95	6.6	5992.25	5993.14	0.89	0.57	11.62	18.99
DS YPP	2109.84	WC-P-95	18.1	5992.25	5993.33	1.08	1.19	15.21	19.75
DS YPP	2109.84	J-P-95	5.8	5992.25	5993.11	0.86	0.53	10.98	18.69
DS YPP	2109.84	CH-5	57.4	5992.25	5993.71	1.46	2.5	22.99	20.85
DS YPP	2109.84	ST-5	244.7	5992.25	5994.92	2.67	4.83	50.99	26
DS YPP	2109.84	BT-5	41.5	5992.25	5993.55	1.3	2.12	19.61	20.43
DS YPP	2109.84	WC-5	255.5	5992.25	5994.97	2.72	4.92	52.33	26.25
DS YPP	2109.84	J-5	142.7	5992.25	5994.38	2.13	3.78	37.76	23.29
DS YPP	2105.762	CH-E-95	9.9	5992.34	5993.18	0.84	1.08	9.19	15.68
DS YPP	2105.762	ST-E-95	9.8	5992.34	5993.17	0.83	1.07	9.15	15.67
DS YPP	2105.762	BT-E-95	9.9	5992.34	5993.18	0.84	1.08	9.19	15.68
DS YPP	2105.762	WC-E-95	22.7	5992.34	5993.21	0.87	2.32	9.77	17.16
DS YPP	2105.762	J-E-95	8.5	5992.34	5993.15	0.81	0.97	8.73	15.54
DS YPP	2105.762	CH-P-95	6.6	5992.34	5993.09	0.75	0.83	7.85	15.26
DS YPP	2105.762	ST-P-95	6.4	5992.34	5993.08	0.74	0.82	7.77	15.23
DS YPP	2105.762	BT-P-95	6.6	5992.34	5993.09	0.75	0.84	7.87	15.26
DS YPP	2105.762	WC-P-95	18.1	5992.34	5993.25	0.91	1.73	10.49	17.93
DS YPP	2105.762	J-P-95	5.8	5992.34	5993.06	0.72	0.78	7.38	15.1
DS YPP	2105.762	CH-5	57.4	5992.34	5993.59	1.25	3.29	17.44	21.49
DS YPP	2105.762	ST-5	244.7	5992.34	5994.83	2.49	5.22	47.12	27.48
DS YPP	2105.762	BT-5	41.5	5992.34	5993.43	1.09	2.96	14.03	20.92
DS YPP	2105.762	WC-5	255.5	5992.34	5994.88	2.54	5.29	48.6	27.73
DS YPP	2105.762	J-5	142.7	5992.34	5994.27	1.92	4.38	32.57	24.2

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2098.416	CH-E-95	9.9	5992.19	5992.99	0.8	1.21	8.18	15.6
DS YPP	2098.416	ST-E-95	9.8	5992.19	5992.99	0.8	1.2	8.15	15.59
DS YPP	2098.416	BT-E-95	9.9	5992.19	5992.99	0.8	1.21	8.18	15.6
DS YPP	2098.416	WC-E-95	22.7	5992.19	5992.99	0.8	2.78	8.17	15.6
DS YPP	2098.416	J-E-95	8.5	5992.19	5992.96	0.77	1.1	7.72	15.47
DS YPP	2098.416	CH-P-95	6.6	5992.19	5992.91	0.72	0.95	6.91	15.22
DS YPP	2098.416	ST-P-95	6.4	5992.19	5992.91	0.72	0.93	6.85	15.2
DS YPP	2098.416	BT-P-95	6.6	5992.19	5992.91	0.72	0.95	6.93	15.23
DS YPP	2098.416	WC-P-95	18.1	5992.19	5993.05	0.86	2	9.04	15.83
DS YPP	2098.416	J-P-95	5.8	5992.19	5992.88	0.69	0.89	6.51	15.09
DS YPP	2098.416	CH-5	57.4	5992.19	5993.28	1.09	4.49	12.79	17.13
DS YPP	2098.416	ST-5	244.7	5992.19	5994.51	2.32	6.45	37.94	23.51
DS YPP	2098.416	BT-5	41.5	5992.19	5993.15	0.96	3.88	10.71	16.25
DS YPP	2098.416	WC-5	255.5	5992.19	5994.56	2.37	6.53	39.11	23.71
DS YPP	2098.416	J-5	142.7	5992.19	5994.01	1.81	5.33	26.78	20.98
DS YPP	2092.702	CH-E-95	9.9	5992.01	5992.82	0.81	1.14	8.67	17.58
DS YPP	2092.702	ST-E-95	9.8	5992.01	5992.82	0.81	1.13	8.64	17.57
DS YPP	2092.702	BT-E-95	9.9	5992.01	5992.82	0.81	1.14	8.67	17.58
DS YPP	2092.702	WC-E-95	22.7	5992.01	5992.84	0.83	2.52	9.02	17.64
DS YPP	2092.702	J-E-95	8.5	5992.01	5992.79	0.78	1.04	8.14	17.48
DS YPP	2092.702	CH-P-95	6.6	5992.01	5992.74	0.73	0.91	7.18	17.26
DS YPP	2092.702	ST-P-95	6.4	5992.01	5992.74	0.73	0.89	7.18	17.26
DS YPP	2092.702	BT-P-95	6.6	5992.01	5992.74	0.73	0.92	7.2	17.26
DS YPP	2092.702	WC-P-95	18.1	5992.01	5992.89	0.88	1.83	9.87	17.79
DS YPP	2092.702	J-P-95	5.8	5992.01	5992.71	0.7	0.85	6.76	17.15
DS YPP	2092.702	CH-5	57.4	5992.01	5993.21	1.2	3.65	15.73	18.65
DS YPP	2092.702	ST-5	244.7	5992.01	5994.54	2.53	5.74	42.67	22.29
DS YPP	2092.702	BT-5	41.5	5992.01	5993.05	1.04	3.27	12.69	18.28
DS YPP	2092.702	WC-5	255.5	5992.01	5994.59	2.58	5.83	43.83	22.48
DS YPP	2092.702	J-5	142.7	5992.01	5994.01	2	4.54	31.44	20.7
DS YPP	2084.452	CH-E-95	9.9	5991.84	5992.59	0.75	1.16	8.55	16.01
DS YPP	2084.452	ST-E-95	9.8	5991.84	5992.59	0.75	1.15	8.52	16
DS YPP	2084.452	BT-E-95	9.9	5991.84	5992.59	0.75	1.16	8.55	16.01
DS YPP	2084.452	WC-E-95	22.7	5991.84	5992.68	0.84	2.27	10.02	16.27
DS YPP	2084.452	J-E-95	8.5	5991.84	5992.56	0.72	1.05	8.07	15.92
DS YPP	2084.452	CH-P-95	6.6	5991.84	5992.51	0.67	0.91	7.22	15.78
DS YPP	2084.452	ST-P-95	6.4	5991.84	5992.51	0.67	0.9	7.15	15.76
DS YPP	2084.452	BT-P-95	6.6	5991.84	5992.51	0.67	0.91	7.25	15.78
DS YPP	2084.452	WC-P-95	18.1	5991.84	5992.7	0.86	1.77	10.21	16.3
DS YPP	2084.452	J-P-95	5.8	5991.84	5992.48	0.64	0.85	6.79	15.7
DS YPP	2084.452	CH-5	57.4	5991.84	5993.11	1.27	3.32	17.27	17.64
DS YPP	2084.452	ST-5	244.7	5991.84	5994.52	2.68	5.35	46.05	23.32
DS YPP	2084.452	BT-5	41.5	5991.84	5992.93	1.09	2.96	14.04	16.98
DS YPP	2084.452	WC-5	255.5	5991.84	5994.57	2.73	5.44	47.32	23.54
DS YPP	2084.452	J-5	142.7	5991.84	5993.97	2.13	4.23	33.75	21.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2079.324	CH-E-95	9.9	5991.6	5992.23	0.63	2.33	4.25	12.38
DS YPP	2079.324	ST-E-95	9.8	5991.6	5992.23	0.63	2.32	4.23	12.37
DS YPP	2079.324	BT-E-95	9.9	5991.6	5992.23	0.63	2.33	4.25	12.38
DS YPP	2079.324	WC-E-95	22.7	5991.6	5992.36	0.76	3.85	5.9	12.95
DS YPP	2079.324	J-E-95	8.5	5991.6	5992.2	0.6	2.21	3.84	12.09
DS YPP	2079.324	CH-P-95	6.6	5991.6	5992.13	0.53	2.13	3.07	10.82
DS YPP	2079.324	ST-P-95	6.4	5991.6	5992.12	0.52	2.12	3.02	10.77
DS YPP	2079.324	BT-P-95	6.6	5991.6	5992.13	0.53	2.13	3.1	10.84
DS YPP	2079.324	WC-P-95	18.1	5991.6	5992.29	0.69	3.64	4.97	12.64
DS YPP	2079.324	J-P-95	5.8	5991.6	5992.09	0.49	2.14	2.69	10.22
DS YPP	2079.324	CH-5	57.4	5991.6	5992.75	1.15	5.1	11.25	14.15
DS YPP	2079.324	ST-5	244.7	5991.6	5994.2	2.6	6.67	37.34	24.46
DS YPP	2079.324	BT-5	41.5	5991.6	5992.59	0.99	4.63	8.97	13.8
DS YPP	2079.324	WC-5	255.5	5991.6	5994.25	2.65	6.77	38.58	24.86
DS YPP	2079.324	J-5	142.7	5991.6	5993.77	2.17	5.12	27.88	18.64
DS YPP	2077.238	CH-E-95	9.9	5990.91	5992.1	1.19	1.63	6.06	8.66
DS YPP	2077.238	ST-E-95	9.8	5990.91	5992.1	1.19	1.62	6.04	8.65
DS YPP	2077.238	BT-E-95	9.9	5990.91	5992.1	1.19	1.63	6.06	8.66
DS YPP	2077.238	WC-E-95	22.7	5990.91	5991.84	0.93	5.72	3.97	7.55
DS YPP	2077.238	J-E-95	8.5	5990.91	5992.06	1.15	1.48	5.74	8.53
DS YPP	2077.238	CH-P-95	6.6	5990.91	5992	1.08	1.26	5.18	8.27
DS YPP	2077.238	ST-P-95	6.4	5990.91	5991.99	1.08	1.25	5.13	8.25
DS YPP	2077.238	BT-P-95	6.6	5990.91	5992	1.09	1.27	5.19	8.28
DS YPP	2077.238	WC-P-95	18.1	5990.91	5992.17	1.26	2.71	6.69	8.82
DS YPP	2077.238	J-P-95	5.8	5990.91	5991.96	1.05	1.18	4.89	8.14
DS YPP	2077.238	CH-5	57.4	5990.91	5992.45	1.54	6.23	9.21	9.44
DS YPP	2077.238	ST-5	244.7	5990.91	5994.06	3.15	7.14	35.33	24.91
DS YPP	2077.238	BT-5	41.5	5990.91	5992.17	1.26	6.19	6.7	8.82
DS YPP	2077.238	WC-5	255.5	5990.91	5994.09	3.18	7.29	36.21	25.05
DS YPP	2077.238	J-5	142.7	5990.91	5993.52	2.61	6.19	23.07	20.22
DS YPP	2070.818	CH-E-95	9.9	5990.99	5991.94	0.95	1.02	10.07	18.71
DS YPP	2070.818	ST-E-95	9.8	5990.99	5991.94	0.95	1.01	10.04	18.7
DS YPP	2070.818	BT-E-95	9.9	5990.99	5991.94	0.95	1.02	10.07	18.71
DS YPP	2070.818	WC-E-95	22.7	5990.99	5992.11	1.12	1.79	13.3	20.46
DS YPP	2070.818	J-E-95	8.5	5990.99	5991.9	0.91	0.94	9.28	18.36
DS YPP	2070.818	CH-P-95	6.6	5990.99	5991.82	0.83	0.85	7.86	17.69
DS YPP	2070.818	ST-P-95	6.4	5990.99	5991.82	0.82	0.84	7.74	17.62
DS YPP	2070.818	BT-P-95	6.6	5990.99	5991.82	0.83	0.85	7.9	17.71
DS YPP	2070.818	WC-P-95	18.1	5990.99	5992.09	1.1	1.47	12.84	20.16
DS YPP	2070.818	J-P-95	5.8	5990.99	5991.78	0.79	0.82	7.17	16.98
DS YPP	2070.818	CH-5	57.4	5990.99	5992.62	1.63	2.54	24.06	21.51
DS YPP	2070.818	ST-5	244.7	5990.99	5994	3.01	4.78	56.27	25.65
DS YPP	2070.818	BT-5	41.5	5990.99	5992.41	1.42	2.24	19.59	21.09
DS YPP	2070.818	WC-5	255.5	5990.99	5994.06	3.07	4.87	57.76	25.84
DS YPP	2070.818	J-5	142.7	5990.99	5993.39	2.4	3.74	41.33	23.57

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2061.706	CH-E-95	9.9	5990.06	5991.91	1.85	0.51	19.45	18.57
DS YPP	2061.706	ST-E-95	9.8	5990.06	5991.91	1.85	0.5	19.42	18.56
DS YPP	2061.706	BT-E-95	9.9	5990.06	5991.91	1.85	0.51	19.45	18.57
DS YPP	2061.706	WC-E-95	22.7	5990.06	5992.11	2.05	0.98	23.21	19.04
DS YPP	2061.706	J-E-95	8.5	5990.06	5991.87	1.81	0.46	18.67	18.38
DS YPP	2061.706	CH-P-95	6.6	5990.06	5991.79	1.73	0.38	17.27	18.02
DS YPP	2061.706	ST-P-95	6.4	5990.06	5991.78	1.72	0.37	17.16	17.99
DS YPP	2061.706	BT-P-95	6.6	5990.06	5991.79	1.73	0.38	17.31	18.03
DS YPP	2061.706	WC-P-95	18.1	5990.06	5992.07	2.01	0.81	22.41	18.94
DS YPP	2061.706	J-P-95	5.8	5990.06	5991.75	1.69	0.35	16.6	17.83
DS YPP	2061.706	CH-5	57.4	5990.06	5992.63	2.57	1.72	33.54	20.37
DS YPP	2061.706	ST-5	244.7	5990.06	5994.05	3.99	3.92	66.43	26.23
DS YPP	2061.706	BT-5	41.5	5990.06	5992.42	2.36	1.42	29.23	19.8
DS YPP	2061.706	WC-5	255.5	5990.06	5994.11	4.05	4.01	68	26.42
DS YPP	2061.706	J-5	142.7	5990.06	5993.42	3.36	2.9	50.6	23.74
DS YPP	2056.486	CH-E-95	9.9	5990.55	5991.87	1.32	0.98	10.07	15.45
DS YPP	2056.486	ST-E-95	9.8	5990.55	5991.87	1.32	0.97	10.06	15.44
DS YPP	2056.486	BT-E-95	9.9	5990.55	5991.87	1.32	0.98	10.07	15.45
DS YPP	2056.486	WC-E-95	22.7	5990.55	5992.06	1.51	1.74	13.02	16.02
DS YPP	2056.486	J-E-95	8.5	5990.55	5991.83	1.28	0.9	9.47	15.27
DS YPP	2056.486	CH-P-95	6.6	5990.55	5991.76	1.21	0.78	8.39	14.75
DS YPP	2056.486	ST-P-95	6.4	5990.55	5991.75	1.2	0.77	8.3	14.7
DS YPP	2056.486	BT-P-95	6.6	5990.55	5991.76	1.21	0.78	8.42	14.76
DS YPP	2056.486	WC-P-95	18.1	5990.55	5992.02	1.47	1.46	12.41	15.9
DS YPP	2056.486	J-P-95	5.8	5990.55	5991.73	1.17	0.73	7.88	14.47
DS YPP	2056.486	CH-5	57.4	5990.55	5992.54	1.99	2.73	21.06	17.25
DS YPP	2056.486	ST-5	244.7	5990.55	5993.76	3.21	5.55	44.87	22.93
DS YPP	2056.486	BT-5	41.5	5990.55	5992.34	1.79	2.34	17.7	16.75
DS YPP	2056.486	WC-5	255.5	5990.55	5993.81	3.26	5.67	46.01	23.22
DS YPP	2056.486	J-5	142.7	5990.55	5993.23	2.68	4.24	33.71	19.62
DS YPP	2051.619	CH-E-95	9.9	5990.75	5991.48	0.73	3.34	2.97	8.56
DS YPP	2051.619	ST-E-95	9.8	5990.75	5991.47	0.72	3.38	2.9	8.51
DS YPP	2051.619	BT-E-95	9.9	5990.75	5991.48	0.73	3.34	2.97	8.56
DS YPP	2051.619	WC-E-95	22.7	5990.75	5991.77	1.01	3.89	5.83	12.3
DS YPP	2051.619	J-E-95	8.5	5990.75	5991.43	0.68	3.27	2.6	8.27
DS YPP	2051.619	CH-P-95	6.6	5990.75	5991.38	0.63	2.99	2.19	7.9
DS YPP	2051.619	ST-P-95	6.4	5990.75	5991.38	0.63	2.97	2.15	7.86
DS YPP	2051.619	BT-P-95	6.6	5990.75	5991.38	0.63	3.01	2.19	7.9
DS YPP	2051.619	WC-P-95	18.1	5990.75	5991.66	0.91	3.84	4.71	10.25
DS YPP	2051.619	J-P-95	5.8	5990.75	5991.36	0.6	2.91	1.99	7.69
DS YPP	2051.619	CH-5	57.4	5990.75	5992.17	1.42	5.02	11.43	15.21
DS YPP	2051.619	ST-5	244.7	5990.75	5993.34	2.59	7.22	34.36	23.12
DS YPP	2051.619	BT-5	41.5	5990.75	5992.01	1.26	4.57	9.08	14.23
DS YPP	2051.619	WC-5	255.5	5990.75	5993.39	2.64	7.33	35.42	23.36
DS YPP	2051.619	J-5	142.7	5990.75	5992.82	2.07	6.17	23.14	19.81

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2046.851	CH-E-95	9.9	5990.34	5991.4	1.06	0.75	13.15	17.83
DS YPP	2046.851	ST-E-95	9.8	5990.34	5991.4	1.06	0.75	13.1	17.82
DS YPP	2046.851	BT-E-95	9.9	5990.34	5991.4	1.06	0.75	13.15	17.83
DS YPP	2046.851	WC-E-95	22.7	5990.34	5991.47	1.13	1.58	14.4	18.18
DS YPP	2046.851	J-E-95	8.5	5990.34	5991.35	1.01	0.69	12.35	17.6
DS YPP	2046.851	CH-P-95	6.6	5990.34	5991.27	0.93	0.6	10.94	17.16
DS YPP	2046.851	ST-P-95	6.4	5990.34	5991.27	0.93	0.59	10.81	17.12
DS YPP	2046.851	BT-P-95	6.6	5990.34	5991.28	0.94	0.6	10.97	17.17
DS YPP	2046.851	WC-P-95	18.1	5990.34	5991.5	1.16	1.21	15.01	18.34
DS YPP	2046.851	J-P-95	5.8	5990.34	5991.23	0.89	0.57	10.21	16.93
DS YPP	2046.851	CH-5	57.4	5990.34	5992.01	1.67	2.32	24.72	21.04
DS YPP	2046.851	ST-5	244.7	5990.34	5993.68	3.34	3.96	64.37	26.79
DS YPP	2046.851	BT-5	41.5	5990.34	5991.78	1.44	2.06	20.15	19.27
DS YPP	2046.851	WC-5	255.5	5990.34	5993.74	3.4	4.05	65.88	27.02
DS YPP	2046.851	J-5	142.7	5990.34	5993.01	2.67	3.06	47.26	24.22
DS YPP	2040.035	CH-E-95	9.9	5990.47	5991.3	0.83	1.17	8.48	14.06
DS YPP	2040.035	ST-E-95	9.8	5990.47	5991.3	0.83	1.16	8.44	14.03
DS YPP	2040.035	BT-E-95	9.9	5990.47	5991.3	0.83	1.17	8.48	14.06
DS YPP	2040.035	WC-E-95	22.7	5990.47	5991.33	0.86	2.56	8.87	14.29
DS YPP	2040.035	J-E-95	8.5	5990.47	5991.26	0.79	1.08	7.87	13.58
DS YPP	2040.035	CH-P-95	6.6	5990.47	5991.18	0.71	0.96	6.84	12.56
DS YPP	2040.035	ST-P-95	6.4	5990.47	5991.17	0.7	0.95	6.74	12.46
DS YPP	2040.035	BT-P-95	6.6	5990.47	5991.18	0.71	0.96	6.86	12.59
DS YPP	2040.035	WC-P-95	18.1	5990.47	5991.39	0.92	1.86	9.73	14.81
DS YPP	2040.035	J-P-95	5.8	5990.47	5991.14	0.67	0.91	6.31	12.14
DS YPP	2040.035	CH-5	57.4	5990.47	5991.86	1.39	3.3	17.38	17.63
DS YPP	2040.035	ST-5	244.7	5990.47	5993.57	3.1	4.58	55.46	26.41
DS YPP	2040.035	BT-5	41.5	5990.47	5991.63	1.16	3.08	13.46	16.27
DS YPP	2040.035	WC-5	255.5	5990.47	5993.62	3.15	4.67	56.88	26.65
DS YPP	2040.035	J-5	142.7	5990.47	5992.91	2.44	3.7	38.98	23.38
DS YPP	2032.979	CH-E-95	9.9	5990.16	5991.19	1.03	0.89	11.18	16.3
DS YPP	2032.979	ST-E-95	9.8	5990.16	5991.19	1.03	0.88	11.13	16.3
DS YPP	2032.979	BT-E-95	9.9	5990.16	5991.19	1.03	0.89	11.18	16.3
DS YPP	2032.979	WC-E-95	22.7	5990.16	5991.27	1.11	1.82	12.49	16.48
DS YPP	2032.979	J-E-95	8.5	5990.16	5991.15	0.99	0.82	10.4	16.19
DS YPP	2032.979	CH-P-95	6.6	5990.16	5991.06	0.9	0.73	9.01	15.91
DS YPP	2032.979	ST-P-95	6.4	5990.16	5991.05	0.89	0.72	8.89	15.87
DS YPP	2032.979	BT-P-95	6.6	5990.16	5991.06	0.9	0.73	9.05	15.92
DS YPP	2032.979	WC-P-95	18.1	5990.16	5991.31	1.14	1.39	12.99	16.6
DS YPP	2032.979	J-P-95	5.8	5990.16	5991.01	0.85	0.7	8.24	15.65
DS YPP	2032.979	CH-5	57.4	5990.16	5991.85	1.69	2.57	22.31	17.76
DS YPP	2032.979	ST-5	244.7	5990.16	5993.58	3.42	4.13	61.19	27.4
DS YPP	2032.979	BT-5	41.5	5990.16	5991.61	1.45	2.29	18.09	17.18
DS YPP	2032.979	WC-5	255.5	5990.16	5993.64	3.48	4.22	62.69	27.65
DS YPP	2032.979	J-5	142.7	5990.16	5992.9	2.74	3.27	43.74	23.8

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2027.612	CH-E-95	9.9	5989.88	5991.11	1.23	1.22	8.09	9.46
DS YPP	2027.612	ST-E-95	9.8	5989.88	5991.1	1.22	1.22	8.07	9.45
DS YPP	2027.612	BT-E-95	9.9	5989.88	5991.11	1.23	1.22	8.09	9.46
DS YPP	2027.612	WC-E-95	22.7	5989.88	5991.15	1.27	2.67	8.49	9.66
DS YPP	2027.612	J-E-95	8.5	5989.88	5991.06	1.18	1.11	7.66	9.24
DS YPP	2027.612	CH-P-95	6.6	5989.88	5990.98	1.1	0.95	6.9	8.84
DS YPP	2027.612	ST-P-95	6.4	5989.88	5990.97	1.09	0.94	6.84	8.8
DS YPP	2027.612	BT-P-95	6.6	5989.88	5990.98	1.1	0.95	6.93	8.85
DS YPP	2027.612	WC-P-95	18.1	5989.88	5991.2	1.32	2.02	8.98	9.85
DS YPP	2027.612	J-P-95	5.8	5989.88	5990.93	1.05	0.89	6.48	8.6
DS YPP	2027.612	CH-5	57.4	5989.88	5991.57	1.69	4.48	12.8	10.91
DS YPP	2027.612	ST-5	244.7	5989.88	5992.96	3.08	7.19	34.45	22.9
DS YPP	2027.612	BT-5	41.5	5989.88	5991.4	1.52	3.76	11.04	10.38
DS YPP	2027.612	WC-5	255.5	5989.88	5993.03	3.15	7.18	36.06	23.57
DS YPP	2027.612	J-5	142.7	5989.88	5992.23	2.35	6.91	20.67	13.82
DS YPP	2020.416	CH-E-95	9.9	5989.42	5991.06	1.64	0.71	13.93	13.87
DS YPP	2020.416	ST-E-95	9.8	5989.42	5991.06	1.64	0.71	13.89	13.86
DS YPP	2020.416	BT-E-95	9.9	5989.42	5991.06	1.64	0.71	13.93	13.87
DS YPP	2020.416	WC-E-95	22.7	5989.42	5991.15	1.73	1.49	15.24	14.25
DS YPP	2020.416	J-E-95	8.5	5989.42	5991.01	1.59	0.64	13.31	13.7
DS YPP	2020.416	CH-P-95	6.6	5989.42	5990.93	1.51	0.54	12.22	13.27
DS YPP	2020.416	ST-P-95	6.4	5989.42	5990.93	1.51	0.53	12.13	13.18
DS YPP	2020.416	BT-P-95	6.6	5989.42	5990.94	1.52	0.54	12.25	13.3
DS YPP	2020.416	WC-P-95	18.1	5989.42	5991.17	1.75	1.17	15.46	14.3
DS YPP	2020.416	J-P-95	5.8	5989.42	5990.89	1.47	0.5	11.65	12.4
DS YPP	2020.416	CH-5	57.4	5989.42	5991.66	2.24	2.51	22.86	16.12
DS YPP	2020.416	ST-5	244.7	5989.42	5993.08	3.66	4.84	51.48	24.53
DS YPP	2020.416	BT-5	41.5	5989.42	5991.45	2.03	2.11	19.65	15.26
DS YPP	2020.416	WC-5	255.5	5989.42	5993.15	3.73	4.91	53.07	24.86
DS YPP	2020.416	J-5	142.7	5989.42	5992.43	3.01	3.87	36.85	20.57
DS YPP	2012.967	CH-E-95	9.9	5989.91	5991	1.09	0.84	11.83	17.53
DS YPP	2012.967	ST-E-95	9.8	5989.91	5991	1.09	0.83	11.78	17.52
DS YPP	2012.967	BT-E-95	9.9	5989.91	5991	1.09	0.84	11.83	17.53
DS YPP	2012.967	WC-E-95	22.7	5989.91	5991.1	1.19	1.67	13.6	17.85
DS YPP	2012.967	J-E-95	8.5	5989.91	5990.96	1.05	0.77	11.07	17.37
DS YPP	2012.967	CH-P-95	6.6	5989.91	5990.89	0.97	0.67	9.76	17.07
DS YPP	2012.967	ST-P-95	6.4	5989.91	5990.88	0.97	0.66	9.65	17.04
DS YPP	2012.967	BT-P-95	6.6	5989.91	5990.89	0.98	0.67	9.78	17.07
DS YPP	2012.967	WC-P-95	18.1	5989.91	5991.11	1.2	1.32	13.75	17.88
DS YPP	2012.967	J-P-95	5.8	5989.91	5990.84	0.93	0.64	9.06	16.92
DS YPP	2012.967	CH-5	57.4	5989.91	5991.62	1.71	2.46	23.31	19.73
DS YPP	2012.967	ST-5	244.7	5989.91	5993.07	3.16	4.63	55.18	24.97
DS YPP	2012.967	BT-5	41.5	5989.91	5991.41	1.5	2.16	19.24	18.96
DS YPP	2012.967	WC-5	255.5	5989.91	5993.13	3.22	4.71	56.8	25.33
DS YPP	2012.967	J-5	142.7	5989.91	5992.41	2.5	3.66	39.83	22.09

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	2005.464	CH-E-95	9.9	5989.91	5990.86	0.95	1.34	7.37	11.13
DS YPP	2005.464	ST-E-95	9.8	5989.91	5990.86	0.95	1.34	7.34	11.12
DS YPP	2005.464	BT-E-95	9.9	5989.91	5990.86	0.95	1.34	7.37	11.13
DS YPP	2005.464	WC-E-95	22.7	5989.91	5990.94	1.02	2.76	8.23	11.64
DS YPP	2005.464	J-E-95	8.5	5989.91	5990.82	0.91	1.23	6.91	10.91
DS YPP	2005.464	CH-P-95	6.6	5989.91	5990.74	0.83	1.07	6.1	10.58
DS YPP	2005.464	ST-P-95	6.4	5989.91	5990.74	0.83	1.06	6.03	10.54
DS YPP	2005.464	BT-P-95	6.6	5989.91	5990.74	0.83	1.08	6.12	10.59
DS YPP	2005.464	WC-P-95	18.1	5989.91	5990.95	1.04	2.15	8.42	11.76
DS YPP	2005.464	J-P-95	5.8	5989.91	5990.7	0.79	1.02	5.67	10.24
DS YPP	2005.464	CH-5	57.4	5989.91	5991.34	1.43	4.25	13.5	14.35
DS YPP	2005.464	ST-5	244.7	5989.91	5992.43	2.52	7.43	33.5	21.26
DS YPP	2005.464	BT-5	41.5	5989.91	5991.18	1.27	3.66	11.33	13.34
DS YPP	2005.464	WC-5	255.5	5989.91	5992.48	2.57	7.54	34.54	21.53
DS YPP	2005.464	J-5	142.7	5989.91	5991.98	2.07	5.87	24.33	18.91
DS YPP	2002.148	CH-E-95	9.9	5989.83	5990.72	0.89	1.58	6.28	10.99
DS YPP	2002.148	ST-E-95	9.8	5989.83	5990.72	0.89	1.57	6.25	10.97
DS YPP	2002.148	BT-E-95	9.9	5989.83	5990.72	0.89	1.58	6.28	10.99
DS YPP	2002.148	WC-E-95	22.7	5989.83	5990.8	0.97	3.18	7.15	11.62
DS YPP	2002.148	J-E-95	8.5	5989.83	5990.68	0.85	1.46	5.83	10.61
DS YPP	2002.148	CH-P-95	6.6	5989.83	5990.61	0.78	1.29	5.07	9.94
DS YPP	2002.148	ST-P-95	6.4	5989.83	5990.6	0.77	1.28	5.01	9.89
DS YPP	2002.148	BT-P-95	6.6	5989.83	5990.61	0.78	1.3	5.09	9.96
DS YPP	2002.148	WC-P-95	18.1	5989.83	5990.8	0.97	2.53	7.16	11.63
DS YPP	2002.148	J-P-95	5.8	5989.83	5990.57	0.74	1.23	4.7	9.55
DS YPP	2002.148	CH-5	57.4	5989.83	5991.18	1.35	4.74	12.11	14.55
DS YPP	2002.148	ST-5	244.7	5989.83	5992.18	2.35	8.1	30.36	21.63
DS YPP	2002.148	BT-5	41.5	5989.83	5991.04	1.21	4.1	10.11	13.78
DS YPP	2002.148	WC-5	255.5	5989.83	5992.2	2.37	8.33	30.84	21.76
DS YPP	2002.148	J-5	142.7	5989.83	5991.82	1.99	6.21	22.98	19.63
DS YPP	2000.454	CH-E-95	9.9	5989.66	5990.61	0.95	1.74	5.69	11.18
DS YPP	2000.454	ST-E-95	9.8	5989.66	5990.61	0.95	1.73	5.66	11.16
DS YPP	2000.454	BT-E-95	9.9	5989.66	5990.61	0.95	1.74	5.69	11.18
DS YPP	2000.454	WC-E-95	22.7	5989.66	5990.6	0.94	4.1	5.54	11.09
DS YPP	2000.454	J-E-95	8.5	5989.66	5990.57	0.91	1.64	5.19	10.87
DS YPP	2000.454	CH-P-95	6.6	5989.66	5990.49	0.83	1.52	4.32	10.26
DS YPP	2000.454	ST-P-95	6.4	5989.66	5990.48	0.82	1.5	4.26	10.22
DS YPP	2000.454	BT-P-95	6.6	5989.66	5990.49	0.83	1.52	4.34	10.28
DS YPP	2000.454	WC-P-95	18.1	5989.66	5990.68	1.02	2.82	6.41	11.63
DS YPP	2000.454	J-P-95	5.8	5989.66	5990.44	0.78	1.49	3.88	9.94
DS YPP	2000.454	CH-5	57.4	5989.66	5991.06	1.4	5.03	11.42	14.58
DS YPP	2000.454	ST-5	244.7	5989.66	5992.15	2.49	8.08	30.48	20.78
DS YPP	2000.454	BT-5	41.5	5989.66	5990.88	1.22	4.68	8.87	13.29
DS YPP	2000.454	WC-5	255.5	5989.66	5992.17	2.51	8.33	30.93	20.94
DS YPP	2000.454	J-5	142.7	5989.66	5991.69	2.03	6.59	21.64	17.87

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1993.765	CH-E-95	9.9	5989.25	5990.49	1.24	0.96	10.32	12.03
DS YPP	1993.765	ST-E-95	9.8	5989.25	5990.49	1.24	0.95	10.29	12.03
DS YPP	1993.765	BT-E-95	9.9	5989.25	5990.49	1.24	0.96	10.32	12.03
DS YPP	1993.765	WC-E-95	22.7	5989.25	5990.55	1.3	2.06	11.04	12.15
DS YPP	1993.765	J-E-95	8.5	5989.25	5990.44	1.19	0.88	9.71	11.94
DS YPP	1993.765	CH-P-95	6.6	5989.25	5990.35	1.1	0.76	8.64	11.76
DS YPP	1993.765	ST-P-95	6.4	5989.25	5990.34	1.09	0.75	8.56	11.75
DS YPP	1993.765	BT-P-95	6.6	5989.25	5990.35	1.1	0.76	8.68	11.77
DS YPP	1993.765	WC-P-95	18.1	5989.25	5990.6	1.34	1.56	11.59	12.24
DS YPP	1993.765	J-P-95	5.8	5989.25	5990.3	1.05	0.71	8.08	11.67
DS YPP	1993.765	CH-5	57.4	5989.25	5991.12	1.87	3.14	18.29	13.57
DS YPP	1993.765	ST-5	244.7	5989.25	5992.28	3.03	6.76	37.04	20.02
DS YPP	1993.765	BT-5	41.5	5989.25	5990.89	1.64	2.71	15.32	12.82
DS YPP	1993.765	WC-5	255.5	5989.25	5992.33	3.08	6.91	37.92	20.38
DS YPP	1993.765	J-5	142.7	5989.25	5991.81	2.56	5.03	28.54	16.09
DS YPP	1987.888	CH-E-95	9.9	5989	5990.38	1.38	1.39	7.12	9.14
DS YPP	1987.888	ST-E-95	9.8	5989	5990.38	1.38	1.38	7.11	9.13
DS YPP	1987.888	BT-E-95	9.9	5989	5990.38	1.38	1.39	7.12	9.14
DS YPP	1987.888	WC-E-95	22.7	5989	5990.34	1.34	3.33	6.82	8.88
DS YPP	1987.888	J-E-95	8.5	5989	5990.33	1.33	1.27	6.72	8.78
DS YPP	1987.888	CH-P-95	6.6	5989	5990.25	1.25	1.09	6.01	8.18
DS YPP	1987.888	ST-P-95	6.4	5989	5990.24	1.24	1.07	5.97	8.14
DS YPP	1987.888	BT-P-95	6.6	5989	5990.25	1.25	1.09	6.04	8.2
DS YPP	1987.888	WC-P-95	18.1	5989	5990.45	1.45	2.32	7.79	9.74
DS YPP	1987.888	J-P-95	5.8	5989	5990.2	1.2	1.02	5.65	7.88
DS YPP	1987.888	CH-5	57.4	5989	5990.75	1.75	5.08	11.31	14.25
DS YPP	1987.888	ST-5	244.7	5989	5992.04	3.04	7.39	33.7	21.01
DS YPP	1987.888	BT-5	41.5	5989	5990.54	1.54	4.77	8.69	10.42
DS YPP	1987.888	WC-5	255.5	5989	5992.09	3.09	7.52	34.63	21.26
DS YPP	1987.888	J-5	142.7	5989	5991.46	2.46	6.34	22.52	17.4
DS YPP	1979.265	CH-E-95	9.9	5989.08	5990.25	1.17	0.94	10.52	12.99
DS YPP	1979.265	ST-E-95	9.8	5989.08	5990.25	1.17	0.93	10.51	12.98
DS YPP	1979.265	BT-E-95	9.9	5989.08	5990.25	1.17	0.94	10.52	12.99
DS YPP	1979.265	WC-E-95	22.7	5989.08	5990.28	1.2	2.08	10.89	13.06
DS YPP	1979.265	J-E-95	8.5	5989.08	5990.21	1.13	0.85	9.98	12.88
DS YPP	1979.265	CH-P-95	6.6	5989.08	5990.13	1.05	0.73	8.98	12.68
DS YPP	1979.265	ST-P-95	6.4	5989.08	5990.13	1.04	0.72	8.93	12.67
DS YPP	1979.265	BT-P-95	6.6	5989.08	5990.13	1.05	0.73	9.03	12.69
DS YPP	1979.265	WC-P-95	18.1	5989.08	5990.33	1.25	1.55	11.64	13.21
DS YPP	1979.265	J-P-95	5.8	5989.08	5990.09	1.01	0.68	8.48	12.56
DS YPP	1979.265	CH-5	57.4	5989.08	5990.72	1.64	3.38	16.99	14.27
DS YPP	1979.265	ST-5	244.7	5989.08	5992.01	2.93	6.54	38.05	19.22
DS YPP	1979.265	BT-5	41.5	5989.08	5990.53	1.45	2.9	14.33	13.74
DS YPP	1979.265	WC-5	255.5	5989.08	5992.05	2.97	6.71	38.81	19.41
DS YPP	1979.265	J-5	142.7	5989.08	5991.49	2.41	4.96	28.79	16.77

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1974.235	CH-E-95	9.9	5989.06	5990.2	1.14	0.87	11.32	16.03
DS YPP	1974.235	ST-E-95	9.8	5989.06	5990.2	1.14	0.87	11.3	16.03
DS YPP	1974.235	BT-E-95	9.9	5989.06	5990.2	1.14	0.87	11.32	16.03
DS YPP	1974.235	WC-E-95	22.7	5989.06	5990.24	1.18	1.9	11.95	16.12
DS YPP	1974.235	J-E-95	8.5	5989.06	5990.16	1.09	0.8	10.64	15.95
DS YPP	1974.235	CH-P-95	6.6	5989.06	5990.08	1.02	0.7	9.42	15.69
DS YPP	1974.235	ST-P-95	6.4	5989.06	5990.07	1.01	0.68	9.35	15.68
DS YPP	1974.235	BT-P-95	6.6	5989.06	5990.08	1.02	0.7	9.48	15.7
DS YPP	1974.235	WC-P-95	18.1	5989.06	5990.29	1.23	1.42	12.76	16.22
DS YPP	1974.235	J-P-95	5.8	5989.06	5990.04	0.98	0.66	8.8	15.52
DS YPP	1974.235	CH-5	57.4	5989.06	5990.71	1.65	2.89	19.88	17.11
DS YPP	1974.235	ST-5	244.7	5989.06	5992.12	3.06	5.39	46.75	21.8
DS YPP	1974.235	BT-5	41.5	5989.06	5990.51	1.45	2.52	16.44	16.7
DS YPP	1974.235	WC-5	255.5	5989.06	5992.17	3.11	5.52	47.78	21.97
DS YPP	1974.235	J-5	142.7	5989.06	5991.53	2.47	4.15	34.59	19.36
DS YPP	1968.267	CH-E-95	9.9	5988.93	5990.1	1.17	1.17	8.45	12.67
DS YPP	1968.267	ST-E-95	9.8	5988.93	5990.1	1.17	1.16	8.45	12.67
DS YPP	1968.267	BT-E-95	9.9	5988.93	5990.1	1.17	1.17	8.45	12.67
DS YPP	1968.267	WC-E-95	22.7	5988.93	5990.09	1.16	2.72	8.33	12.62
DS YPP	1968.267	J-E-95	8.5	5988.93	5990.06	1.12	1.07	7.93	12.43
DS YPP	1968.267	CH-P-95	6.6	5988.93	5989.98	1.05	0.94	7	11.97
DS YPP	1968.267	ST-P-95	6.4	5988.93	5989.98	1.04	0.92	6.96	11.95
DS YPP	1968.267	BT-P-95	6.6	5988.93	5989.98	1.05	0.94	7.05	12
DS YPP	1968.267	WC-P-95	18.1	5988.93	5990.17	1.24	1.92	9.41	13.06
DS YPP	1968.267	J-P-95	5.8	5988.93	5989.94	1.01	0.88	6.57	11.76
DS YPP	1968.267	CH-5	57.4	5988.93	5990.48	1.55	4.21	13.65	14.55
DS YPP	1968.267	ST-5	244.7	5988.93	5991.78	2.85	6.76	37.1	20.94
DS YPP	1968.267	BT-5	41.5	5988.93	5990.31	1.38	3.7	11.22	13.65
DS YPP	1968.267	WC-5	255.5	5988.93	5991.81	2.88	6.94	37.78	21.1
DS YPP	1968.267	J-5	142.7	5988.93	5991.29	2.36	5.27	27.4	18.85
DS YPP	1953.402	CH-E-95	9.9	5988.3	5989.04	0.74	3.52	2.81	7.48
DS YPP	1953.402	ST-E-95	9.8	5988.3	5989.03	0.73	3.57	2.75	7.43
DS YPP	1953.402	BT-E-95	9.9	5988.3	5989.04	0.74	3.52	2.81	7.48
DS YPP	1953.402	WC-E-95	22.7	5988.3	5989.34	1.04	4.27	5.32	9.78
DS YPP	1953.402	J-E-95	8.5	5988.3	5989	0.7	3.39	2.51	7.26
DS YPP	1953.402	CH-P-95	6.6	5988.3	5988.95	0.65	3.03	2.16	7
DS YPP	1953.402	ST-P-95	6.4	5988.3	5988.94	0.64	3.09	2.07	6.93
DS YPP	1953.402	BT-P-95	6.6	5988.3	5988.95	0.65	3.12	2.12	6.97
DS YPP	1953.402	WC-P-95	18.1	5988.3	5989.24	0.94	4.11	4.4	8.81
DS YPP	1953.402	J-P-95	5.8	5988.3	5988.92	0.62	3.01	1.92	6.8
DS YPP	1953.402	CH-5	57.4	5988.3	5989.83	1.53	5.51	10.43	11.11
DS YPP	1953.402	ST-5	244.7	5988.3	5991.39	3.09	7.41	33.11	20.51
DS YPP	1953.402	BT-5	41.5	5988.3	5989.63	1.33	5.02	8.26	10.58
DS YPP	1953.402	WC-5	255.5	5988.3	5991.44	3.14	7.49	34.28	20.77
DS YPP	1953.402	J-5	142.7	5988.3	5990.64	2.34	7.01	20.36	13.59

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1950.308	CH-E-95	9.9	5987.48	5988.58	1.1	1.32	7.51	9.94
DS YPP	1950.308	ST-E-95	9.8	5987.48	5988.58	1.1	1.31	7.49	9.93
DS YPP	1950.308	BT-E-95	9.9	5987.48	5988.58	1.1	1.32	7.51	9.94
DS YPP	1950.308	WC-E-95	22.7	5987.48	5988.08	0.6	7.97	2.85	8.72
DS YPP	1950.308	J-E-95	8.5	5987.48	5988.53	1.05	1.21	7.02	9.83
DS YPP	1950.308	CH-P-95	6.6	5987.48	5988.44	0.96	1.07	6.13	9.63
DS YPP	1950.308	ST-P-95	6.4	5987.48	5988.43	0.95	1.06	6.06	9.61
DS YPP	1950.308	BT-P-95	6.6	5987.48	5988.44	0.96	1.07	6.16	9.64
DS YPP	1950.308	WC-P-95	18.1	5987.48	5988.67	1.19	2.16	8.39	10.13
DS YPP	1950.308	J-P-95	5.8	5987.48	5988.39	0.91	1.02	5.66	9.52
DS YPP	1950.308	CH-5	57.4	5987.48	5988.4	0.92	10	5.74	9.54
DS YPP	1950.308	ST-5	244.7	5987.48	5989.61	2.13	12.39	19.75	13.62
DS YPP	1950.308	BT-5	41.5	5987.48	5988.26	0.78	9.37	4.43	9.24
DS YPP	1950.308	WC-5	255.5	5987.48	5989.67	2.19	12.44	20.54	13.81
DS YPP	1950.308	J-5	142.7	5987.48	5989.03	1.55	11.6	12.3	12.06
DS YPP	1942.059	CH-E-95	9.9	5986.79	5988.43	1.64	1.03	9.63	13.4
DS YPP	1942.059	ST-E-95	9.8	5986.79	5988.43	1.64	1.02	9.59	13.39
DS YPP	1942.059	BT-E-95	9.9	5986.79	5988.43	1.64	1.03	9.63	13.4
DS YPP	1942.059	WC-E-95	22.7	5986.79	5988.54	1.75	2.04	11.1	13.71
DS YPP	1942.059	J-E-95	8.5	5986.79	5988.37	1.58	0.95	8.9	13.01
DS YPP	1942.059	CH-P-95	6.6	5986.79	5988.27	1.48	0.86	7.6	12.21
DS YPP	1942.059	ST-P-95	6.4	5986.79	5988.26	1.47	0.85	7.5	12.14
DS YPP	1942.059	BT-P-95	6.6	5986.79	5988.27	1.48	0.86	7.64	12.23
DS YPP	1942.059	WC-P-95	18.1	5986.79	5988.54	1.75	1.62	11.18	13.72
DS YPP	1942.059	J-P-95	5.8	5986.79	5988.22	1.43	0.83	6.95	11.69
DS YPP	1942.059	CH-5	57.4	5986.79	5989.01	2.22	3.21	17.89	14.95
DS YPP	1942.059	ST-5	244.7	5986.79	5989.18	2.39	11.99	20.41	15.5
DS YPP	1942.059	BT-5	41.5	5986.79	5988.82	2.03	2.76	15.05	14.42
DS YPP	1942.059	WC-5	255.5	5986.79	5989.22	2.43	12.16	21.01	15.63
DS YPP	1942.059	J-5	142.7	5986.79	5989.81	3.02	4.65	30.66	16.95
DS YPP	1934.056	CH-E-95	9.9	5986.51	5988.4	1.89	0.54	18.39	14.62
DS YPP	1934.056	ST-E-95	9.8	5986.51	5988.4	1.89	0.53	18.35	14.62
DS YPP	1934.056	BT-E-95	9.9	5986.51	5988.4	1.89	0.54	18.39	14.62
DS YPP	1934.056	WC-E-95	22.7	5986.51	5988.54	2.03	1.11	20.48	14.87
DS YPP	1934.056	J-E-95	8.5	5986.51	5988.35	1.84	0.48	17.59	14.53
DS YPP	1934.056	CH-P-95	6.6	5986.51	5988.25	1.73	0.41	16.12	14.36
DS YPP	1934.056	ST-P-95	6.4	5986.51	5988.24	1.73	0.4	16	14.34
DS YPP	1934.056	BT-P-95	6.6	5986.51	5988.25	1.74	0.41	16.17	14.36
DS YPP	1934.056	WC-P-95	18.1	5986.51	5988.53	2.02	0.89	20.25	14.84
DS YPP	1934.056	J-P-95	5.8	5986.51	5988.19	1.68	0.38	15.35	14.26
DS YPP	1934.056	CH-5	57.4	5986.51	5989.04	2.53	2.04	28.14	15.92
DS YPP	1934.056	ST-5	244.7	5986.51	5990.5	3.99	4.53	55.1	21.04
DS YPP	1934.056	BT-5	41.5	5986.51	5988.84	2.33	1.66	24.96	15.42
DS YPP	1934.056	WC-5	255.5	5986.51	5990.56	4.05	4.64	56.28	21.28
DS YPP	1934.056	J-5	142.7	5986.51	5989.88	3.36	3.37	42.58	18.8

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1927.547	CH-E-95	9.9	5986.98	5988.35	1.37	1.13	8.72	13.68
DS YPP	1927.547	ST-E-95	9.8	5986.98	5988.34	1.36	1.13	8.68	13.63
DS YPP	1927.547	BT-E-95	9.9	5986.98	5988.35	1.37	1.13	8.72	13.68
DS YPP	1927.547	WC-E-95	22.7	5986.98	5988.45	1.47	2.21	10.26	14.81
DS YPP	1927.547	J-E-95	8.5	5986.98	5988.3	1.31	1.06	8.05	12.8
DS YPP	1927.547	CH-P-95	6.6	5986.98	5988.2	1.22	0.95	6.89	11.27
DS YPP	1927.547	ST-P-95	6.4	5986.98	5988.19	1.21	0.94	6.8	11.18
DS YPP	1927.547	BT-P-95	6.6	5986.98	5988.2	1.22	0.95	6.92	11.31
DS YPP	1927.547	WC-P-95	18.1	5986.98	5988.45	1.47	1.77	10.21	14.8
DS YPP	1927.547	J-P-95	5.8	5986.98	5988.15	1.17	0.91	6.33	10.49
DS YPP	1927.547	CH-5	57.4	5986.98	5988.88	1.9	3.38	16.98	16.67
DS YPP	1927.547	ST-5	244.7	5986.98	5990.28	3.3	5.58	44.6	22.96
DS YPP	1927.547	BT-5	41.5	5986.98	5988.7	1.72	2.94	14.13	15.98
DS YPP	1927.547	WC-5	255.5	5986.98	5990.33	3.35	5.68	45.84	23.19
DS YPP	1927.547	J-5	142.7	5986.98	5989.66	2.68	4.57	31.26	20
DS YPP	1925.395	CH-E-95	9.9	5986.68	5988.03	1.35	1.89	5.24	11.33
DS YPP	1925.395	ST-E-95	9.8	5986.68	5988.03	1.35	1.88	5.2	11.26
DS YPP	1925.395	BT-E-95	9.9	5986.68	5988.03	1.35	1.89	5.24	11.33
DS YPP	1925.395	WC-E-95	22.7	5986.68	5988.08	1.4	3.88	5.85	12.16
DS YPP	1925.395	J-E-95	8.5	5986.68	5987.98	1.3	1.82	4.67	10.22
DS YPP	1925.395	CH-P-95	6.6	5986.68	5987.88	1.2	1.75	3.74	8.2
DS YPP	1925.395	ST-P-95	6.4	5986.68	5987.87	1.19	1.74	3.67	8.06
DS YPP	1925.395	BT-P-95	6.6	5986.68	5987.88	1.2	1.75	3.77	8.27
DS YPP	1925.395	WC-P-95	18.1	5986.68	5988.12	1.44	2.87	6.31	12.44
DS YPP	1925.395	J-P-95	5.8	5986.68	5987.83	1.15	1.73	3.34	7.25
DS YPP	1925.395	CH-5	57.4	5986.68	5988.48	1.8	5.12	11.21	14.41
DS YPP	1925.395	ST-5	244.7	5986.68	5989.79	3.11	7.45	32.86	19.96
DS YPP	1925.395	BT-5	41.5	5986.68	5988.32	1.63	4.67	8.88	14.02
DS YPP	1925.395	WC-5	255.5	5986.68	5989.85	3.17	7.48	34.22	20.36
DS YPP	1925.395	J-5	142.7	5986.68	5989.16	2.48	6.6	21.63	16.3
DS YPP	1922.433	CH-E-95	9.9	5986.31	5987.99	1.68	0.64	15.5	12.09
DS YPP	1922.433	ST-E-95	9.8	5986.31	5987.99	1.68	0.63	15.46	12.09
DS YPP	1922.433	BT-E-95	9.9	5986.31	5987.99	1.68	0.64	15.5	12.09
DS YPP	1922.433	WC-E-95	22.7	5986.31	5988.14	1.83	1.31	17.28	12.35
DS YPP	1922.433	J-E-95	8.5	5986.31	5987.94	1.63	0.57	14.87	12
DS YPP	1922.433	CH-P-95	6.6	5986.31	5987.84	1.53	0.48	13.72	11.82
DS YPP	1922.433	ST-P-95	6.4	5986.31	5987.84	1.53	0.47	13.63	11.81
DS YPP	1922.433	BT-P-95	6.6	5986.31	5987.85	1.54	0.48	13.76	11.83
DS YPP	1922.433	WC-P-95	18.1	5986.31	5988.13	1.81	1.06	17.11	12.33
DS YPP	1922.433	J-P-95	5.8	5986.31	5987.8	1.49	0.44	13.15	11.73
DS YPP	1922.433	CH-5	57.4	5986.31	5988.61	2.3	2.46	23.36	13.26
DS YPP	1922.433	ST-5	244.7	5986.31	5989.87	3.56	5.46	44.97	21.28
DS YPP	1922.433	BT-5	41.5	5986.31	5988.43	2.12	1.98	20.92	12.92
DS YPP	1922.433	WC-5	255.5	5986.31	5989.92	3.61	5.57	46.06	21.55
DS YPP	1922.433	J-5	142.7	5986.31	5989.32	3.01	4.17	34.2	17.82

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1916.314	CH-E-95	9.9	5985.68	5987.97	2.29	0.42	23.72	16.86
DS YPP	1916.314	ST-E-95	9.8	5985.68	5987.96	2.28	0.41	23.68	16.85
DS YPP	1916.314	BT-E-95	9.9	5985.68	5987.97	2.29	0.42	23.72	16.86
DS YPP	1916.314	WC-E-95	22.7	5985.68	5988.13	2.45	0.86	26.49	17.35
DS YPP	1916.314	J-E-95	8.5	5985.68	5987.92	2.24	0.37	22.88	16.6
DS YPP	1916.314	CH-P-95	6.6	5985.68	5987.82	2.14	0.31	21.41	15.61
DS YPP	1916.314	ST-P-95	6.4	5985.68	5987.82	2.14	0.3	21.29	15.58
DS YPP	1916.314	BT-P-95	6.6	5985.68	5987.83	2.15	0.31	21.46	15.63
DS YPP	1916.314	WC-P-95	18.1	5985.68	5988.1	2.42	0.69	26.05	17.27
DS YPP	1916.314	J-P-95	5.8	5985.68	5987.78	2.1	0.28	20.69	15.46
DS YPP	1916.314	CH-5	57.4	5985.68	5988.61	2.93	1.63	35.22	18.77
DS YPP	1916.314	ST-5	244.7	5985.68	5989.97	4.29	3.85	64.58	24.82
DS YPP	1916.314	BT-5	41.5	5985.68	5988.42	2.74	1.31	31.68	18.13
DS YPP	1916.314	WC-5	255.5	5985.68	5990.02	4.34	3.95	65.97	25.08
DS YPP	1916.314	J-5	142.7	5985.68	5989.36	3.68	2.85	50.34	21.92
DS YPP	1909.943	CH-E-95	9.9	5986.68	5987.87	1.19	1.58	6.27	14.95
DS YPP	1909.943	ST-E-95	9.8	5986.68	5987.87	1.19	1.57	6.24	14.92
DS YPP	1909.943	BT-E-95	9.9	5986.68	5987.87	1.19	1.58	6.27	14.95
DS YPP	1909.943	WC-E-95	22.7	5986.68	5987.92	1.24	3.2	7.09	15.8
DS YPP	1909.943	J-E-95	8.5	5986.68	5987.82	1.14	1.51	5.63	14.18
DS YPP	1909.943	CH-P-95	6.6	5986.68	5987.74	1.06	1.44	4.55	12.7
DS YPP	1909.943	ST-P-95	6.4	5986.68	5987.74	1.06	1.43	4.47	12.6
DS YPP	1909.943	BT-P-95	6.6	5986.68	5987.75	1.07	1.44	4.59	12.74
DS YPP	1909.943	WC-P-95	18.1	5986.68	5987.95	1.27	2.38	7.6	16.27
DS YPP	1909.943	J-P-95	5.8	5986.68	5987.7	1.02	1.43	4.03	12.08
DS YPP	1909.943	CH-5	57.4	5986.68	5988.32	1.64	3.97	14.44	19.54
DS YPP	1909.943	ST-5	244.7	5986.68	5989.29	2.61	7.01	35.1	23.48
DS YPP	1909.943	BT-5	41.5	5986.68	5988.17	1.49	3.6	11.54	18.97
DS YPP	1909.943	WC-5	255.5	5986.68	5989.34	2.66	7.09	36.3	23.72
DS YPP	1909.943	J-5	142.7	5986.68	5988.86	2.18	5.61	25.46	21.59
DS YPP	1904.027	CH-E-95	9.9	5985.5	5986.99	1.48	1.67	5.94	7.28
DS YPP	1904.027	ST-E-95	9.8	5985.5	5986.98	1.48	1.65	5.92	7.27
DS YPP	1904.027	BT-E-95	9.9	5985.5	5986.99	1.48	1.67	5.94	7.28
DS YPP	1904.027	WC-E-95	22.7	5985.5	5986.91	1.41	4.2	5.4	6.83
DS YPP	1904.027	J-E-95	8.5	5985.5	5986.94	1.44	1.51	5.62	7.01
DS YPP	1904.027	CH-P-95	6.6	5985.5	5986.85	1.35	1.31	5.02	6.48
DS YPP	1904.027	ST-P-95	6.4	5985.5	5986.84	1.34	1.29	4.96	6.42
DS YPP	1904.027	BT-P-95	6.6	5985.5	5986.85	1.35	1.31	5.03	6.49
DS YPP	1904.027	WC-P-95	18.1	5985.5	5987.05	1.55	2.82	6.42	7.63
DS YPP	1904.027	J-P-95	5.8	5985.5	5986.8	1.3	1.23	4.7	6.11
DS YPP	1904.027	CH-5	57.4	5985.5	5987.48	1.98	5.58	10.29	10.69
DS YPP	1904.027	ST-5	244.7	5985.5	5988.67	3.17	7.97	30.71	20.96
DS YPP	1904.027	BT-5	41.5	5985.5	5987.19	1.69	5.48	7.57	8.22
DS YPP	1904.027	WC-5	255.5	5985.5	5988.71	3.21	8.09	31.57	21.14
DS YPP	1904.027	J-5	142.7	5985.5	5988.28	2.78	6.27	22.76	19.19

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1901.071	CH-E-95	9.9	5985.1	5986.81	1.71	1.02	9.7	13.05
DS YPP	1901.071	ST-E-95	9.8	5985.1	5986.8	1.7	1.01	9.66	13.04
DS YPP	1901.071	BT-E-95	9.9	5985.1	5986.81	1.71	1.02	9.7	13.05
DS YPP	1901.071	WC-E-95	22.7	5985.1	5986.84	1.74	2.22	10.22	13.28
DS YPP	1901.071	J-E-95	8.5	5985.1	5986.76	1.66	0.93	9.13	12.8
DS YPP	1901.071	CH-P-95	6.6	5985.1	5986.68	1.58	0.81	8.08	12.32
DS YPP	1901.071	ST-P-95	6.4	5985.1	5986.67	1.57	0.8	7.99	12.28
DS YPP	1901.071	BT-P-95	6.6	5985.1	5986.68	1.58	0.81	8.11	12.33
DS YPP	1901.071	WC-P-95	18.1	5985.1	5986.9	1.8	1.65	10.96	13.6
DS YPP	1901.071	J-P-95	5.8	5985.1	5986.63	1.53	0.77	7.5	12.06
DS YPP	1901.071	CH-5	57.4	5985.1	5987.27	2.17	3.5	16.41	15.44
DS YPP	1901.071	ST-5	244.7	5985.1	5987.77	2.67	9.92	24.66	17.73
DS YPP	1901.071	BT-5	41.5	5985.1	5987.11	2.01	2.98	13.9	14.73
DS YPP	1901.071	WC-5	255.5	5985.1	5987.82	2.72	10.02	25.5	17.82
DS YPP	1901.071	J-5	142.7	5985.1	5987.28	2.18	8.63	16.54	15.45
DS YPP	1894.842	CH-E-95	9.9	5985.01	5986.43	1.42	1.27	7.81	12.45
DS YPP	1894.842	ST-E-95	9.8	5985.01	5986.43	1.42	1.26	7.79	12.43
DS YPP	1894.842	BT-E-95	9.9	5985.01	5986.43	1.42	1.27	7.81	12.45
DS YPP	1894.842	WC-E-95	22.7	5985.01	5986.53	1.52	2.52	9.01	13.19
DS YPP	1894.842	J-E-95	8.5	5985.01	5986.39	1.38	1.17	7.26	11.94
DS YPP	1894.842	CH-P-95	6.6	5985.01	5986.3	1.29	1.05	6.27	11.09
DS YPP	1894.842	ST-P-95	6.4	5985.01	5986.29	1.28	1.03	6.19	11.02
DS YPP	1894.842	BT-P-95	6.6	5985.01	5986.3	1.29	1.05	6.3	11.12
DS YPP	1894.842	WC-P-95	18.1	5985.01	5986.6	1.54	1.95	9.3	13.37
DS YPP	1894.842	J-P-95	5.8	5985.01	5986.25	1.24	1.01	5.73	10.29
DS YPP	1894.842	CH-5	57.4	5985.01	5986.99	1.98	3.54	16.2	17.52
DS YPP	1894.842	ST-5	244.7	5985.01	5987.83	2.82	7.39	33.13	23.92
DS YPP	1894.842	BT-5	41.5	5985.01	5986.81	1.8	3.17	13.1	15.98
DS YPP	1894.842	WC-5	255.5	5985.01	5987.89	2.88	7.43	34.45	24.15
DS YPP	1894.842	J-5	142.7	5985.01	5987.36	2.35	6.19	23.04	19.58
DS YPP	1892.715	CH-E-95	9.9	5984.82	5985.75	0.93	3.91	2.53	5.5
DS YPP	1892.715	ST-E-95	9.8	5984.82	5985.74	0.92	3.97	2.47	5.4
DS YPP	1892.715	BT-E-95	9.9	5984.82	5985.75	0.93	3.91	2.53	5.5
DS YPP	1892.715	WC-E-95	22.7	5984.82	5986.11	1.29	4.26	5.32	9.69
DS YPP	1892.715	J-E-95	8.5	5984.82	5985.7	0.88	3.8	2.23	5.02
DS YPP	1892.715	CH-P-95	6.6	5984.82	5985.6	0.78	3.67	1.78	4.27
DS YPP	1892.715	ST-P-95	6.4	5984.82	5985.59	0.77	3.66	1.75	4.21
DS YPP	1892.715	BT-P-95	6.6	5984.82	5985.59	0.77	3.74	1.77	4.24
DS YPP	1892.715	WC-P-95	18.1	5984.82	5986.01	1.19	4.08	4.44	8.8
DS YPP	1892.715	J-P-95	5.8	5984.82	5985.55	0.73	3.61	1.6	3.93
DS YPP	1892.715	CH-5	57.4	5984.82	5986.61	1.79	5.09	11.27	14.26
DS YPP	1892.715	ST-5	244.7	5984.82	5987.45	2.63	8.24	30.03	24.81
DS YPP	1892.715	BT-5	41.5	5984.82	5986.41	1.59	4.83	8.6	12.23
DS YPP	1892.715	WC-5	255.5	5984.82	5987.49	2.67	8.38	30.85	24.93
DS YPP	1892.715	J-5	142.7	5984.82	5987.17	2.35	6.2	23.18	23.9

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1887.881	CH-E-95	9.9	5983	5985.21	2.21	0.51	19.24	13.78
DS YPP	1887.881	ST-E-95	9.8	5983	5985.21	2.21	0.51	19.2	13.77
DS YPP	1887.881	BT-E-95	9.9	5983	5985.21	2.21	0.51	19.24	13.78
DS YPP	1887.881	WC-E-95	22.7	5983	5985.34	2.33	1.08	20.95	14.19
DS YPP	1887.881	J-E-95	8.5	5983	5985.16	2.16	0.46	18.52	13.69
DS YPP	1887.881	CH-P-95	6.6	5983	5985.07	2.07	0.38	17.27	13.55
DS YPP	1887.881	ST-P-95	6.4	5983	5985.06	2.06	0.37	17.17	13.55
DS YPP	1887.881	BT-P-95	6.6	5983	5985.07	2.07	0.38	17.3	13.56
DS YPP	1887.881	WC-P-95	18.1	5983	5985.35	2.35	0.86	21.12	14.25
DS YPP	1887.881	J-P-95	5.8	5983	5985.02	2.02	0.35	16.64	13.5
DS YPP	1887.881	CH-5	57.4	5983	5985.93	2.93	1.91	30.05	16.05
DS YPP	1887.881	ST-5	244.7	5983	5987.48	4.48	4.13	59.68	23.62
DS YPP	1887.881	BT-5	41.5	5983	5985.69	2.69	1.58	26.35	15.64
DS YPP	1887.881	WC-5	255.5	5983	5987.54	4.54	4.21	61.12	23.97
DS YPP	1887.881	J-5	142.7	5983	5986.83	3.83	3.13	45.53	19.21
DS YPP	1885.78	CH-E-95	9.9	5983.01	5985.21	2.2	0.37	26.5	16.66
DS YPP	1885.78	ST-E-95	9.8	5983.01	5985.2	2.19	0.37	26.45	16.65
DS YPP	1885.78	BT-E-95	9.9	5983.01	5985.21	2.2	0.37	26.5	16.66
DS YPP	1885.78	WC-E-95	22.7	5983.01	5985.34	2.33	0.79	28.67	17.1
DS YPP	1885.78	J-E-95	8.5	5983.01	5985.16	2.15	0.33	25.64	16.51
DS YPP	1885.78	CH-P-95	6.6	5983.01	5985.06	2.05	0.27	24.14	16.29
DS YPP	1885.78	ST-P-95	6.4	5983.01	5985.06	2.05	0.27	24.02	16.27
DS YPP	1885.78	BT-P-95	6.6	5983.01	5985.07	2.06	0.27	24.18	16.3
DS YPP	1885.78	WC-P-95	18.1	5983.01	5985.34	2.33	0.63	28.8	17.13
DS YPP	1885.78	J-P-95	5.8	5983.01	5985.02	2.01	0.25	23.39	16.17
DS YPP	1885.78	CH-5	57.4	5983.01	5985.93	2.92	1.46	39.34	18.58
DS YPP	1885.78	ST-5	244.7	5983.01	5987.54	4.53	3.32	74.22	25.31
DS YPP	1885.78	BT-5	41.5	5983.01	5985.7	2.69	1.19	35	17.98
DS YPP	1885.78	WC-5	255.5	5983.01	5987.6	4.59	3.4	75.8	25.54
DS YPP	1885.78	J-5	142.7	5983.01	5986.86	3.85	2.46	58.07	22.35
DS YPP	1878.574	CH-E-95	9.9	5983.64	5985.17	1.53	0.74	13.42	13.91
DS YPP	1878.574	ST-E-95	9.8	5983.64	5985.17	1.53	0.73	13.38	13.88
DS YPP	1878.574	BT-E-95	9.9	5983.64	5985.17	1.53	0.74	13.42	13.91
DS YPP	1878.574	WC-E-95	22.7	5983.64	5985.28	1.64	1.51	15.05	14.59
DS YPP	1878.574	J-E-95	8.5	5983.64	5985.12	1.48	0.67	12.75	13.48
DS YPP	1878.574	CH-P-95	6.6	5983.64	5985.04	1.39	0.56	11.63	12.76
DS YPP	1878.574	ST-P-95	6.4	5983.64	5985.03	1.39	0.55	11.55	12.71
DS YPP	1878.574	BT-P-95	6.6	5983.64	5985.04	1.4	0.57	11.67	12.78
DS YPP	1878.574	WC-P-95	18.1	5983.64	5985.29	1.65	1.19	15.2	14.61
DS YPP	1878.574	J-P-95	5.8	5983.64	5984.99	1.35	0.52	11.09	12.45
DS YPP	1878.574	CH-5	57.4	5983.64	5985.83	2.19	2.44	23.52	16.22
DS YPP	1878.574	ST-5	244.7	5983.64	5987.28	3.64	4.76	51.45	22.6
DS YPP	1878.574	BT-5	41.5	5983.64	5985.62	1.98	2.07	20.08	15.58
DS YPP	1878.574	WC-5	255.5	5983.64	5987.34	3.7	4.85	52.73	22.86
DS YPP	1878.574	J-5	142.7	5983.64	5986.67	3.03	3.71	38.47	19.75

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1873.476	CH-E-95	9.9	5983.86	5985.02	1.16	1.08	9.14	12.96
DS YPP	1873.476	ST-E-95	9.8	5983.86	5985.02	1.16	1.07	9.12	12.95
DS YPP	1873.476	BT-E-95	9.9	5983.86	5985.02	1.16	1.08	9.14	12.96
DS YPP	1873.476	WC-E-95	22.7	5983.86	5985.15	1.29	2.09	10.85	13.45
DS YPP	1873.476	J-E-95	8.5	5983.86	5984.98	1.12	0.99	8.61	12.8
DS YPP	1873.476	CH-P-95	6.6	5983.86	5984.91	1.05	0.85	7.72	12.53
DS YPP	1873.476	ST-P-95	6.4	5983.86	5984.91	1.05	0.84	7.65	12.51
DS YPP	1873.476	BT-P-95	6.6	5983.86	5984.92	1.05	0.85	7.74	12.54
DS YPP	1873.476	WC-P-95	18.1	5983.86	5985.15	1.29	1.68	10.75	13.42
DS YPP	1873.476	J-P-95	5.8	5983.86	5984.88	1.02	0.79	7.29	12.4
DS YPP	1873.476	CH-5	57.4	5983.86	5985.68	1.82	3.06	18.74	15.74
DS YPP	1873.476	ST-5	244.7	5983.86	5987.05	3.19	5.55	44.12	22.1
DS YPP	1873.476	BT-5	41.5	5983.86	5985.48	1.62	2.67	15.54	15.36
DS YPP	1873.476	WC-5	255.5	5983.86	5987.1	3.24	5.65	45.31	22.37
DS YPP	1873.476	J-5	142.7	5983.86	5986.47	2.61	4.45	32.08	19.15
DS YPP	1872.384	CH-E-95	9.9	5983.47	5984.98	1.51	0.93	10.68	12.32
DS YPP	1872.384	ST-E-95	9.8	5983.47	5984.98	1.51	0.92	10.65	12.31
DS YPP	1872.384	BT-E-95	9.9	5983.47	5984.98	1.51	0.93	10.68	12.32
DS YPP	1872.384	WC-E-95	22.7	5983.47	5985.14	1.67	1.8	12.63	13.06
DS YPP	1872.384	J-E-95	8.5	5983.47	5984.94	1.47	0.83	10.18	12.18
DS YPP	1872.384	CH-P-95	6.6	5983.47	5984.88	1.4	0.7	9.36	11.96
DS YPP	1872.384	ST-P-95	6.4	5983.47	5984.87	1.4	0.69	9.3	11.94
DS YPP	1872.384	BT-P-95	6.6	5983.47	5984.88	1.41	0.7	9.38	11.96
DS YPP	1872.384	WC-P-95	18.1	5983.47	5985.11	1.64	1.47	12.32	12.92
DS YPP	1872.384	J-P-95	5.8	5983.47	5984.84	1.37	0.64	8.99	11.85
DS YPP	1872.384	CH-5	57.4	5983.47	5985.67	2.2	2.83	20.29	15.02
DS YPP	1872.384	ST-5	244.7	5983.47	5987.03	3.56	5.54	44.31	21.74
DS YPP	1872.384	BT-5	41.5	5983.47	5985.47	2	2.41	17.23	14.57
DS YPP	1872.384	WC-5	255.5	5983.47	5987.08	3.61	5.64	45.48	22.04
DS YPP	1872.384	J-5	142.7	5983.47	5986.44	2.97	4.36	32.76	17.64
DS YPP	1867.571	CH-E-95	9.9	5983.03	5984.94	1.91	0.52	18.97	13.12
DS YPP	1867.571	ST-E-95	9.8	5983.03	5984.94	1.91	0.52	18.94	13.11
DS YPP	1867.571	BT-E-95	9.9	5983.03	5984.94	1.91	0.52	18.97	13.12
DS YPP	1867.571	WC-E-95	22.7	5983.03	5985.13	2.1	1.06	21.42	13.29
DS YPP	1867.571	J-E-95	8.5	5983.03	5984.9	1.87	0.46	18.47	13.08
DS YPP	1867.571	CH-P-95	6.6	5983.03	5984.84	1.81	0.37	17.68	13.02
DS YPP	1867.571	ST-P-95	6.4	5983.03	5984.84	1.81	0.36	17.62	13.02
DS YPP	1867.571	BT-P-95	6.6	5983.03	5984.84	1.81	0.37	17.7	13.02
DS YPP	1867.571	WC-P-95	18.1	5983.03	5985.08	2.05	0.87	20.8	13.25
DS YPP	1867.571	J-P-95	5.8	5983.03	5984.81	1.78	0.33	17.31	13
DS YPP	1867.571	CH-5	57.4	5983.03	5985.67	2.64	2	28.76	13.79
DS YPP	1867.571	ST-5	244.7	5983.03	5987.02	3.99	4.87	50.26	20.31
DS YPP	1867.571	BT-5	41.5	5983.03	5985.46	2.43	1.6	25.89	13.61
DS YPP	1867.571	WC-5	255.5	5983.03	5987.07	4.04	4.98	51.35	20.98
DS YPP	1867.571	J-5	142.7	5983.03	5986.43	3.4	3.57	39.93	15.96

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1859.418	CH-E-95	9.9	5983.69	5984.76	1.07	1.87	5.3	13.05
DS YPP	1859.418	ST-E-95	9.8	5983.69	5984.76	1.07	1.85	5.29	13.05
DS YPP	1859.418	BT-E-95	9.9	5983.69	5984.76	1.07	1.87	5.3	13.05
DS YPP	1859.418	WC-E-95	22.7	5983.69	5984.8	1.11	3.86	5.88	13.25
DS YPP	1859.418	J-E-95	8.5	5983.69	5984.75	1.06	1.65	5.15	13
DS YPP	1859.418	CH-P-95	6.6	5983.69	5984.72	1.03	1.35	4.85	12.88
DS YPP	1859.418	ST-P-95	6.4	5983.69	5984.72	1.03	1.33	4.82	12.87
DS YPP	1859.418	BT-P-95	6.6	5983.69	5984.72	1.03	1.36	4.86	12.88
DS YPP	1859.418	WC-P-95	18.1	5983.69	5984.75	1.06	3.47	5.22	13.02
DS YPP	1859.418	J-P-95	5.8	5983.69	5984.71	1.02	1.22	4.71	12.83
DS YPP	1859.418	CH-5	57.4	5983.69	5985.21	1.52	4.81	11.93	17.44
DS YPP	1859.418	ST-5	244.7	5983.69	5986.31	2.62	7.28	33.67	21.23
DS YPP	1859.418	BT-5	41.5	5983.69	5985.03	1.34	4.59	9.05	14.5
DS YPP	1859.418	WC-5	255.5	5983.69	5986.37	2.68	7.35	34.85	21.49
DS YPP	1859.418	J-5	142.7	5983.69	5985.8	2.11	6.17	23.13	19.93
DS YPP	1856.86	CH-E-95	9.9	5982.92	5983.94	1.02	1.9	5.23	12.66
DS YPP	1856.86	ST-E-95	9.8	5982.92	5983.93	1.01	1.9	5.18	12.63
DS YPP	1856.86	BT-E-95	9.9	5982.92	5983.94	1.02	1.9	5.23	12.66
DS YPP	1856.86	WC-E-95	22.7	5982.92	5983.91	0.99	4.64	4.9	12.4
DS YPP	1856.86	J-E-95	8.5	5982.92	5983.88	0.96	1.88	4.54	11.62
DS YPP	1856.86	CH-P-95	6.6	5982.92	5983.77	0.85	1.92	3.41	10.01
DS YPP	1856.86	ST-P-95	6.4	5982.92	5983.77	0.85	1.93	3.32	9.9
DS YPP	1856.86	BT-P-95	6.6	5982.92	5983.78	0.86	1.91	3.45	10.06
DS YPP	1856.86	WC-P-95	18.1	5982.92	5984.05	1.13	2.69	6.78	13.93
DS YPP	1856.86	J-P-95	5.8	5982.92	5983.72	0.8	2.02	2.86	9.3
DS YPP	1856.86	CH-5	57.4	5982.92	5984.13	1.21	7.38	7.88	14.76
DS YPP	1856.86	ST-5	244.7	5982.92	5984.96	2.04	10.98	23.07	20.34
DS YPP	1856.86	BT-5	41.5	5982.92	5984.02	1.1	6.6	6.38	13.61
DS YPP	1856.86	WC-5	255.5	5982.92	5985	2.08	11.09	23.88	20.47
DS YPP	1856.86	J-5	142.7	5982.92	5985.51	2.59	4.29	34.86	22.4
DS YPP	1854.445	CH-E-95	9.9	5982.41	5983.82	1.41	0.99	9.98	9.05
DS YPP	1854.445	ST-E-95	9.8	5982.41	5983.82	1.41	0.99	9.94	9.05
DS YPP	1854.445	BT-E-95	9.9	5982.41	5983.82	1.41	0.99	9.98	9.05
DS YPP	1854.445	WC-E-95	22.7	5982.41	5983.99	1.58	1.96	11.56	9.82
DS YPP	1854.445	J-E-95	8.5	5982.41	5983.76	1.35	0.9	9.45	8.97
DS YPP	1854.445	CH-P-95	6.6	5982.41	5983.66	1.25	0.77	8.5	8.82
DS YPP	1854.445	ST-P-95	6.4	5982.41	5983.65	1.24	0.76	8.43	8.8
DS YPP	1854.445	BT-P-95	6.6	5982.41	5983.66	1.25	0.77	8.55	8.82
DS YPP	1854.445	WC-P-95	18.1	5982.41	5983.98	1.56	1.59	11.41	9.76
DS YPP	1854.445	J-P-95	5.8	5982.41	5983.6	1.19	0.72	8.03	8.74
DS YPP	1854.445	CH-5	57.4	5982.41	5984.65	2.24	2.92	19.71	16.32
DS YPP	1854.445	ST-5	244.7	5982.41	5986.08	3.66	5.1	50.06	25.48
DS YPP	1854.445	BT-5	41.5	5982.41	5984.4	1.99	2.58	16.08	12.39
DS YPP	1854.445	WC-5	255.5	5982.41	5986.13	3.72	5.18	51.56	25.68
DS YPP	1854.445	J-5	142.7	5982.41	5985.47	3.06	4.08	35.43	21.21

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1851.678	CH-E-95	9.9	5982.38	5983.65	1.27	1.83	5.4	7.14
DS YPP	1851.678	ST-E-95	9.8	5982.38	5983.64	1.26	1.82	5.37	7.12
DS YPP	1851.678	BT-E-95	9.9	5982.38	5983.65	1.27	1.83	5.4	7.14
DS YPP	1851.678	WC-E-95	22.7	5982.38	5983.58	1.2	4.58	4.96	6.91
DS YPP	1851.678	J-E-95	8.5	5982.38	5983.6	1.22	1.68	5.05	6.96
DS YPP	1851.678	CH-P-95	6.6	5982.38	5983.5	1.12	1.49	4.41	6.62
DS YPP	1851.678	ST-P-95	6.4	5982.38	5983.49	1.11	1.47	4.36	6.6
DS YPP	1851.678	BT-P-95	6.6	5982.38	5983.51	1.13	1.49	4.44	6.64
DS YPP	1851.678	WC-P-95	18.1	5982.38	5983.72	1.34	3.05	5.93	7.63
DS YPP	1851.678	J-P-95	5.8	5982.38	5983.45	1.07	1.41	4.09	6.45
DS YPP	1851.678	CH-5	57.4	5982.38	5984.16	1.78	5.46	10.52	11.69
DS YPP	1851.678	ST-5	244.7	5982.38	5985.53	3.15	7.34	34.72	22.24
DS YPP	1851.678	BT-5	41.5	5982.38	5983.97	1.59	5	8.3	11.03
DS YPP	1851.678	WC-5	255.5	5982.38	5985.58	3.2	7.44	35.85	22.35
DS YPP	1851.678	J-5	142.7	5982.38	5984.97	2.59	6.32	22.88	19.16
DS YPP	1848.506	CH-E-95	9.9	5982.06	5983.41	1.35	1.13	8.75	11.63
DS YPP	1848.506	ST-E-95	9.8	5982.06	5983.41	1.35	1.12	8.71	11.59
DS YPP	1848.506	BT-E-95	9.9	5982.06	5983.41	1.35	1.13	8.75	11.63
DS YPP	1848.506	WC-E-95	22.7	5982.06	5983.54	1.48	2.22	10.25	12.88
DS YPP	1848.506	J-E-95	8.5	5982.06	5983.37	1.3	1.04	8.2	11.1
DS YPP	1848.506	CH-P-95	6.6	5982.06	5983.27	1.21	0.91	7.21	10.4
DS YPP	1848.506	ST-P-95	6.4	5982.06	5983.26	1.2	0.9	7.13	10.34
DS YPP	1848.506	BT-P-95	6.6	5982.06	5983.28	1.21	0.91	7.24	10.41
DS YPP	1848.506	WC-P-95	18.1	5982.06	5983.53	1.47	1.78	10.19	12.83
DS YPP	1848.506	J-P-95	5.8	5982.06	5983.23	1.16	0.86	6.72	10.09
DS YPP	1848.506	CH-5	57.4	5982.06	5984.01	1.95	3.36	17.1	15.24
DS YPP	1848.506	ST-5	244.7	5982.06	5984.42	2.36	10.23	24.15	19.35
DS YPP	1848.506	BT-5	41.5	5982.06	5983.82	1.76	2.9	14.33	14.78
DS YPP	1848.506	WC-5	255.5	5982.06	5984.47	2.41	10.29	25.13	19.53
DS YPP	1848.506	J-5	142.7	5982.06	5983.95	1.89	8.81	16.19	15.04
DS YPP	1845.414	CH-E-95	9.9	5981.81	5983.08	1.27	1.83	5.41	9.63
DS YPP	1845.414	ST-E-95	9.8	5981.81	5983.08	1.27	1.82	5.38	9.61
DS YPP	1845.414	BT-E-95	9.9	5981.81	5983.08	1.27	1.83	5.41	9.63
DS YPP	1845.414	WC-E-95	22.7	5981.81	5983.08	1.27	4.25	5.34	9.58
DS YPP	1845.414	J-E-95	8.5	5981.81	5983.04	1.23	1.7	5	9.31
DS YPP	1845.414	CH-P-95	6.6	5981.81	5982.97	1.16	1.51	4.35	8.51
DS YPP	1845.414	ST-P-95	6.4	5981.81	5982.96	1.15	1.49	4.28	8.43
DS YPP	1845.414	BT-P-95	6.6	5981.81	5982.97	1.16	1.51	4.36	8.53
DS YPP	1845.414	WC-P-95	18.1	5981.81	5983.13	1.32	3.07	5.89	10.45
DS YPP	1845.414	J-P-95	5.8	5981.81	5982.93	1.12	1.44	4.01	8.1
DS YPP	1845.414	CH-5	57.4	5981.81	5983.56	1.75	5.16	11.12	13.86
DS YPP	1845.414	ST-5	244.7	5981.81	5984.71	2.9	7.79	32.31	20.95
DS YPP	1845.414	BT-5	41.5	5981.81	5983.38	1.56	4.78	8.68	12.69
DS YPP	1845.414	WC-5	255.5	5981.81	5984.76	2.95	7.88	33.39	21.06
DS YPP	1845.414	J-5	142.7	5981.81	5984.25	2.44	6.31	22.93	19.66

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1844.227	CH-E-95	9.9	5981.89	5982.97	1.08	1.2	8.3	13.23
DS YPP	1844.227	ST-E-95	9.8	5981.89	5982.96	1.07	1.19	8.25	13.2
DS YPP	1844.227	BT-E-95	9.9	5981.89	5982.97	1.08	1.2	8.3	13.23
DS YPP	1844.227	WC-E-95	22.7	5981.89	5982.96	1.07	2.78	8.19	13.17
DS YPP	1844.227	J-E-95	8.5	5981.89	5982.91	1.02	1.12	7.6	12.88
DS YPP	1844.227	CH-P-95	6.6	5981.89	5982.83	0.94	1.01	6.48	12.45
DS YPP	1844.227	ST-P-95	6.4	5981.89	5982.82	0.93	1	6.37	12.41
DS YPP	1844.227	BT-P-95	6.6	5981.89	5982.83	0.94	1.01	6.51	12.46
DS YPP	1844.227	WC-P-95	18.1	5981.89	5983.06	1.17	1.9	9.55	14
DS YPP	1844.227	J-P-95	5.8	5981.89	5982.78	0.89	0.98	5.89	12.18
DS YPP	1844.227	CH-5	57.4	5981.89	5982.97	1.08	6.9	8.34	13.26
DS YPP	1844.227	ST-5	244.7	5981.89	5984.13	2.24	9.45	26.5	17.12
DS YPP	1844.227	BT-5	41.5	5981.89	5983.22	1.33	3.5	11.92	15
DS YPP	1844.227	WC-5	255.5	5981.89	5984.19	2.3	9.48	27.64	17.63
DS YPP	1844.227	J-5	142.7	5981.89	5983.55	1.66	8.5	17.01	15.85
DS YPP	1839.668	CH-E-95	9.9	5981.32	5982.73	1.41	1.06	9.31	10.8
DS YPP	1839.668	ST-E-95	9.8	5981.32	5982.73	1.41	1.06	9.27	10.77
DS YPP	1839.668	BT-E-95	9.9	5981.32	5982.73	1.41	1.06	9.31	10.8
DS YPP	1839.668	WC-E-95	22.7	5981.32	5982.73	1.41	2.44	9.31	10.81
DS YPP	1839.668	J-E-95	8.5	5981.32	5982.68	1.36	0.97	8.76	10.38
DS YPP	1839.668	CH-P-95	6.6	5981.32	5982.58	1.26	0.84	7.8	9.95
DS YPP	1839.668	ST-P-95	6.4	5981.32	5982.57	1.25	0.83	7.72	9.91
DS YPP	1839.668	BT-P-95	6.6	5981.32	5982.59	1.27	0.84	7.83	9.96
DS YPP	1839.668	WC-P-95	18.1	5981.32	5982.82	1.5	1.74	10.38	11.9
DS YPP	1839.668	J-P-95	5.8	5981.32	5982.53	1.21	0.79	7.29	9.71
DS YPP	1839.668	CH-5	57.4	5981.32	5983.17	1.85	3.9	14.7	12.78
DS YPP	1839.668	ST-5	244.7	5981.32	5984.71	3.39	5.93	41.64	21.5
DS YPP	1839.668	BT-5	41.5	5981.32	5982.99	1.67	3.33	12.46	12.37
DS YPP	1839.668	WC-5	255.5	5981.32	5984.79	3.47	5.97	43.26	21.83
DS YPP	1839.668	J-5	142.7	5981.32	5983.97	2.65	5.35	26.65	18.79
DS YPP	1835.182	CH-E-95	9.9	5981.03	5982.55	1.52	1.01	9.79	12.37
DS YPP	1835.182	ST-E-95	9.8	5981.03	5982.55	1.52	1.01	9.75	12.36
DS YPP	1835.182	BT-E-95	9.9	5981.03	5982.55	1.52	1.01	9.79	12.37
DS YPP	1835.182	WC-E-95	22.7	5981.03	5982.56	1.52	2.32	9.8	12.37
DS YPP	1835.182	J-E-95	8.5	5981.03	5982.5	1.47	0.93	9.16	12.24
DS YPP	1835.182	CH-P-95	6.6	5981.03	5982.41	1.38	0.81	8.06	11.79
DS YPP	1835.182	ST-P-95	6.4	5981.03	5982.4	1.37	0.8	7.96	11.73
DS YPP	1835.182	BT-P-95	6.6	5981.03	5982.42	1.38	0.82	8.1	11.81
DS YPP	1835.182	WC-P-95	18.1	5981.03	5982.64	1.61	1.66	10.89	12.58
DS YPP	1835.182	J-P-95	5.8	5981.03	5982.36	1.33	0.77	7.49	11.46
DS YPP	1835.182	CH-5	57.4	5981.03	5983	1.97	3.7	15.52	13.24
DS YPP	1835.182	ST-5	244.7	5981.03	5984.05	3.02	8.02	30.51	15.45
DS YPP	1835.182	BT-5	41.5	5981.03	5982.82	1.79	3.16	13.13	12.9
DS YPP	1835.182	WC-5	255.5	5981.03	5984.12	3.09	8.09	31.57	15.67
DS YPP	1835.182	J-5	142.7	5981.03	5983.71	2.68	5.63	25.33	14.54

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1826.333	CH-E-95	9.9	5980.6	5982.43	1.83	0.57	17.25	16.16
DS YPP	1826.333	ST-E-95	9.8	5980.6	5982.42	1.82	0.57	17.19	16.15
DS YPP	1826.333	BT-E-95	9.9	5980.6	5982.43	1.83	0.57	17.25	16.16
DS YPP	1826.333	WC-E-95	22.7	5980.6	5982.47	1.87	1.27	17.92	16.22
DS YPP	1826.333	J-E-95	8.5	5980.6	5982.38	1.78	0.52	16.45	16.09
DS YPP	1826.333	CH-P-95	6.6	5980.6	5982.29	1.69	0.43	15.09	15.96
DS YPP	1826.333	ST-P-95	6.4	5980.6	5982.29	1.69	0.43	14.96	15.95
DS YPP	1826.333	BT-P-95	6.6	5980.6	5982.3	1.7	0.44	15.14	15.97
DS YPP	1826.333	WC-P-95	18.1	5980.6	5982.52	1.92	0.96	18.81	16.3
DS YPP	1826.333	J-P-95	5.8	5980.6	5982.25	1.65	0.4	14.38	15.89
DS YPP	1826.333	CH-5	57.4	5980.6	5982.94	2.34	2.23	25.79	17.16
DS YPP	1826.333	ST-5	244.7	5980.6	5984.29	3.69	4.74	51.67	21.68
DS YPP	1826.333	BT-5	41.5	5980.6	5982.75	2.15	1.85	22.48	16.64
DS YPP	1826.333	WC-5	255.5	5980.6	5984.35	3.75	4.84	52.93	21.92
DS YPP	1826.333	J-5	142.7	5980.6	5983.72	3.12	3.57	39.99	19.44
DS YPP	1820.612	CH-E-95	9.9	5980.76	5982.36	1.6	0.71	13.85	15.63
DS YPP	1820.612	ST-E-95	9.8	5980.76	5982.36	1.6	0.71	13.79	15.61
DS YPP	1820.612	BT-E-95	9.9	5980.76	5982.36	1.6	0.71	13.85	15.63
DS YPP	1820.612	WC-E-95	22.7	5980.76	5982.4	1.64	1.58	14.4	15.72
DS YPP	1820.612	J-E-95	8.5	5980.76	5982.32	1.56	0.65	13.13	15.41
DS YPP	1820.612	CH-P-95	6.6	5980.76	5982.24	1.48	0.55	11.94	14.7
DS YPP	1820.612	ST-P-95	6.4	5980.76	5982.23	1.47	0.54	11.83	14.62
DS YPP	1820.612	BT-P-95	6.6	5980.76	5982.24	1.48	0.55	11.98	14.73
DS YPP	1820.612	WC-P-95	18.1	5980.76	5982.45	1.69	1.19	15.24	15.87
DS YPP	1820.612	J-P-95	5.8	5980.76	5982.2	1.44	0.51	11.35	14.37
DS YPP	1820.612	CH-5	57.4	5980.76	5982.83	2.07	2.67	21.53	16.83
DS YPP	1820.612	ST-5	244.7	5980.76	5984.11	3.35	5.3	46.47	22.71
DS YPP	1820.612	BT-5	41.5	5980.76	5982.65	1.89	2.24	18.51	16.4
DS YPP	1820.612	WC-5	255.5	5980.76	5984.17	3.41	5.38	47.82	23.02
DS YPP	1820.612	J-5	142.7	5980.76	5983.56	2.8	4.11	34.76	20.26
DS YPP	1816.484	CH-E-95	9.9	5980.88	5982.26	1.38	0.95	10.45	15.18
DS YPP	1816.484	ST-E-95	9.8	5980.88	5982.26	1.38	0.94	10.42	15.17
DS YPP	1816.484	BT-E-95	9.9	5980.88	5982.26	1.38	0.95	10.45	15.18
DS YPP	1816.484	WC-E-95	22.7	5980.88	5982.27	1.39	2.13	10.67	15.26
DS YPP	1816.484	J-E-95	8.5	5980.88	5982.22	1.33	0.87	9.82	14.96
DS YPP	1816.484	CH-P-95	6.6	5980.88	5982.15	1.27	0.75	8.78	14.62
DS YPP	1816.484	ST-P-95	6.4	5980.88	5982.14	1.26	0.74	8.68	14.59
DS YPP	1816.484	BT-P-95	6.6	5980.88	5982.15	1.27	0.75	8.83	14.64
DS YPP	1816.484	WC-P-95	18.1	5980.88	5982.33	1.45	1.55	11.64	15.6
DS YPP	1816.484	J-P-95	5.8	5980.88	5982.11	1.23	0.7	8.27	14.45
DS YPP	1816.484	CH-5	57.4	5980.88	5982.66	1.78	3.37	17.02	16.95
DS YPP	1816.484	ST-5	244.7	5980.88	5983.68	2.8	6.82	35.87	20.26
DS YPP	1816.484	BT-5	41.5	5980.88	5982.5	1.62	2.91	14.24	16.4
DS YPP	1816.484	WC-5	255.5	5980.88	5983.73	2.85	6.93	36.85	20.45
DS YPP	1816.484	J-5	142.7	5980.88	5983.32	2.44	4.96	28.76	18.91

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1809.709	CH-E-95	9.9	5980.65	5981.3	0.65	3.35	2.96	8.9
DS YPP	1809.709	ST-E-95	9.8	5980.65	5981.3	0.65	3.36	2.91	8.82
DS YPP	1809.709	BT-E-95	9.9	5980.65	5981.3	0.65	3.35	2.96	8.9
DS YPP	1809.709	WC-E-95	22.7	5980.65	5981.55	0.9	4	5.68	11.93
DS YPP	1809.709	J-E-95	8.5	5980.65	5981.27	0.61	3.24	2.62	8.32
DS YPP	1809.709	CH-P-95	6.6	5980.65	5981.21	0.56	3	2.18	7.72
DS YPP	1809.709	ST-P-95	6.4	5980.65	5981.21	0.56	2.91	2.2	7.75
DS YPP	1809.709	BT-P-95	6.6	5980.65	5981.21	0.56	3.02	2.18	7.73
DS YPP	1809.709	WC-P-95	18.1	5980.65	5981.48	0.83	3.75	4.82	11.52
DS YPP	1809.709	J-P-95	5.8	5980.65	5981.18	0.53	2.97	1.94	7.43
DS YPP	1809.709	CH-5	57.4	5980.65	5981.98	1.33	5.16	11.13	13.8
DS YPP	1809.709	ST-5	244.7	5980.65	5983.24	2.59	7.33	33.45	20.73
DS YPP	1809.709	BT-5	41.5	5980.65	5981.81	1.16	4.69	8.86	13.14
DS YPP	1809.709	WC-5	255.5	5980.65	5983.3	2.65	7.41	34.55	20.92
DS YPP	1809.709	J-5	142.7	5980.65	5982.7	2.05	6.28	22.72	18.78
DS YPP	1805.707	CH-E-95	9.9	5979.35	5981.03	1.68	0.45	21.79	17.87
DS YPP	1805.707	ST-E-95	9.8	5979.35	5981.03	1.68	0.45	21.74	17.86
DS YPP	1805.707	BT-E-95	9.9	5979.35	5981.03	1.68	0.45	21.79	17.87
DS YPP	1805.707	WC-E-95	22.7	5979.35	5981.1	1.75	0.99	22.97	18.01
DS YPP	1805.707	J-E-95	8.5	5979.35	5980.98	1.63	0.41	20.87	17.75
DS YPP	1805.707	CH-P-95	6.6	5979.35	5980.89	1.54	0.34	19.17	17.54
DS YPP	1805.707	ST-P-95	6.4	5979.35	5980.88	1.53	0.34	19.03	17.52
DS YPP	1805.707	BT-P-95	6.6	5979.35	5980.89	1.54	0.34	19.24	17.55
DS YPP	1805.707	WC-P-95	18.1	5979.35	5981.15	1.8	0.76	23.83	18.12
DS YPP	1805.707	J-P-95	5.8	5979.35	5980.84	1.49	0.31	18.33	17.43
DS YPP	1805.707	CH-5	57.4	5979.35	5981.63	2.28	1.76	32.69	18.7
DS YPP	1805.707	ST-5	244.7	5979.35	5983.02	3.67	4.08	59.93	20.66
DS YPP	1805.707	BT-5	41.5	5979.35	5981.41	2.06	1.44	28.73	18.48
DS YPP	1805.707	WC-5	255.5	5979.35	5983.08	3.73	4.18	61.08	20.85
DS YPP	1805.707	J-5	142.7	5979.35	5982.43	3.08	2.97	48.09	19.64
DS YPP	1802.888	CH-E-95	9.9	5978.7	5981.03	2.33	0.37	26.78	17.08
DS YPP	1802.888	ST-E-95	9.8	5978.7	5981.02	2.32	0.37	26.73	17.08
DS YPP	1802.888	BT-E-95	9.9	5978.7	5981.03	2.33	0.37	26.78	17.08
DS YPP	1802.888	WC-E-95	22.7	5978.7	5981.1	2.4	0.81	27.96	17.22
DS YPP	1802.888	J-E-95	8.5	5978.7	5980.98	2.27	0.33	25.89	16.98
DS YPP	1802.888	CH-P-95	6.6	5978.7	5980.88	2.18	0.27	24.3	16.7
DS YPP	1802.888	ST-P-95	6.4	5978.7	5980.87	2.17	0.26	24.17	16.66
DS YPP	1802.888	BT-P-95	6.6	5978.7	5980.88	2.18	0.27	24.36	16.71
DS YPP	1802.888	WC-P-95	18.1	5978.7	5981.14	2.44	0.63	28.73	17.32
DS YPP	1802.888	J-P-95	5.8	5978.7	5980.83	2.13	0.25	23.5	16.46
DS YPP	1802.888	CH-5	57.4	5978.7	5981.62	2.92	1.53	37.43	18.64
DS YPP	1802.888	ST-5	244.7	5978.7	5983.04	4.34	3.68	66.81	23.2
DS YPP	1802.888	BT-5	41.5	5978.7	5981.41	2.71	1.24	33.51	18.06
DS YPP	1802.888	WC-5	255.5	5978.7	5983.09	4.39	3.77	68.15	23.41
DS YPP	1802.888	J-5	142.7	5978.7	5982.43	3.73	2.67	53.4	21.2

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1797.293	CH-E-95	9.9	5979.45	5980.98	1.53	1.04	9.56	14.14
DS YPP	1797.293	ST-E-95	9.8	5979.45	5980.98	1.53	1.03	9.52	14.11
DS YPP	1797.293	BT-E-95	9.9	5979.45	5980.98	1.53	1.04	9.56	14.14
DS YPP	1797.293	WC-E-95	22.7	5979.45	5980.98	1.53	2.36	9.61	14.18
DS YPP	1797.293	J-E-95	8.5	5979.45	5980.93	1.48	0.96	8.9	13.61
DS YPP	1797.293	CH-P-95	6.6	5979.45	5980.84	1.39	0.85	7.75	12.74
DS YPP	1797.293	ST-P-95	6.4	5979.45	5980.84	1.39	0.84	7.65	12.69
DS YPP	1797.293	BT-P-95	6.6	5979.45	5980.85	1.4	0.85	7.79	12.77
DS YPP	1797.293	WC-P-95	18.1	5979.45	5981.06	1.61	1.67	10.82	15.05
DS YPP	1797.293	J-P-95	5.8	5979.45	5980.8	1.35	0.8	7.2	12.35
DS YPP	1797.293	CH-5	57.4	5979.45	5981.42	1.97	3.42	16.76	18.25
DS YPP	1797.293	ST-5	244.7	5979.45	5982.62	3.17	5.85	42.09	23.42
DS YPP	1797.293	BT-5	41.5	5979.45	5981.24	1.79	3.05	13.58	16.73
DS YPP	1797.293	WC-5	255.5	5979.45	5982.67	3.22	5.95	43.19	23.58
DS YPP	1797.293	J-5	142.7	5979.45	5982.13	2.68	4.58	31.16	21.49
DS YPP	1793.475	CH-E-95	9.9	5979.27	5980.84	1.57	0.91	10.92	12.42
DS YPP	1793.475	ST-E-95	9.8	5979.27	5980.84	1.57	0.9	10.89	12.4
DS YPP	1793.475	BT-E-95	9.9	5979.27	5980.84	1.57	0.91	10.92	12.42
DS YPP	1793.475	WC-E-95	22.7	5979.27	5980.86	1.58	2.04	11.12	12.5
DS YPP	1793.475	J-E-95	8.5	5979.27	5980.8	1.53	0.82	10.38	12.19
DS YPP	1793.475	CH-P-95	6.6	5979.27	5980.72	1.44	0.7	9.42	11.79
DS YPP	1793.475	ST-P-95	6.4	5979.27	5980.71	1.44	0.69	9.34	11.76
DS YPP	1793.475	BT-P-95	6.6	5979.27	5980.72	1.45	0.7	9.46	11.8
DS YPP	1793.475	WC-P-95	18.1	5979.27	5980.92	1.65	1.51	11.98	12.96
DS YPP	1793.475	J-P-95	5.8	5979.27	5980.67	1.4	0.65	8.93	11.65
DS YPP	1793.475	CH-5	57.4	5979.27	5981.26	1.99	3.46	16.58	14.9
DS YPP	1793.475	ST-5	244.7	5979.27	5982.34	3.07	6.54	37.53	22.32
DS YPP	1793.475	BT-5	41.5	5979.27	5981.09	1.82	2.91	14.26	13.83
DS YPP	1793.475	WC-5	255.5	5979.27	5982.39	3.12	6.64	38.62	22.57
DS YPP	1793.475	J-5	142.7	5979.27	5981.9	2.63	5.06	28.2	20.19
DS YPP	1789.199	CH-E-95	9.9	5979.56	5980.7	1.14	0.92	10.79	17.78
DS YPP	1789.199	ST-E-95	9.8	5979.56	5980.69	1.13	0.91	10.75	17.77
DS YPP	1789.199	BT-E-95	9.9	5979.56	5980.7	1.14	0.92	10.79	17.78
DS YPP	1789.199	WC-E-95	22.7	5979.56	5980.72	1.16	2.02	11.21	17.84
DS YPP	1789.199	J-E-95	8.5	5979.56	5980.65	1.09	0.85	10.02	17.57
DS YPP	1789.199	CH-P-95	6.6	5979.56	5980.57	1.01	0.76	8.64	17.16
DS YPP	1789.199	ST-P-95	6.4	5979.56	5980.57	1.01	0.75	8.52	17.12
DS YPP	1789.199	BT-P-95	6.6	5979.56	5980.58	1.02	0.76	8.69	17.18
DS YPP	1789.199	WC-P-95	18.1	5979.56	5980.78	1.22	1.47	12.35	18.03
DS YPP	1789.199	J-P-95	5.8	5979.56	5980.53	0.97	0.73	7.92	16.9
DS YPP	1789.199	CH-5	57.4	5979.56	5981.15	1.59	3	19.13	19.02
DS YPP	1789.199	ST-5	244.7	5979.56	5982.36	2.8	5.44	45.53	24.21
DS YPP	1789.199	BT-5	41.5	5979.56	5980.97	1.41	2.62	15.84	18.48
DS YPP	1789.199	WC-5	255.5	5979.56	5982.42	2.86	5.53	46.83	24.42
DS YPP	1789.199	J-5	142.7	5979.56	5981.84	2.28	4.28	33.36	22.19

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1785.81	CH-E-95	9.9	5979.1	5980.55	1.45	0.98	10.07	13.83
DS YPP	1785.81	ST-E-95	9.8	5979.1	5980.55	1.45	0.98	10.03	13.81
DS YPP	1785.81	BT-E-95	9.9	5979.1	5980.55	1.45	0.98	10.07	13.83
DS YPP	1785.81	WC-E-95	22.7	5979.1	5980.58	1.48	2.18	10.41	14.04
DS YPP	1785.81	J-E-95	8.5	5979.1	5980.51	1.41	0.9	9.47	13.5
DS YPP	1785.81	CH-P-95	6.6	5979.1	5980.43	1.33	0.78	8.41	12.66
DS YPP	1785.81	ST-P-95	6.4	5979.1	5980.42	1.32	0.77	8.33	12.58
DS YPP	1785.81	BT-P-95	6.6	5979.1	5980.43	1.33	0.78	8.45	12.69
DS YPP	1785.81	WC-P-95	18.1	5979.1	5980.64	1.53	1.61	11.27	14.85
DS YPP	1785.81	J-P-95	5.8	5979.1	5980.38	1.28	0.73	7.88	12.19
DS YPP	1785.81	CH-5	57.4	5979.1	5981	1.9	3.26	17.61	19.82
DS YPP	1785.81	ST-5	244.7	5979.1	5982.3	3.2	5.36	46.09	23.83
DS YPP	1785.81	BT-5	41.5	5979.1	5980.82	1.72	2.92	14.24	17.27
DS YPP	1785.81	WC-5	255.5	5979.1	5982.36	3.25	5.45	47.41	23.97
DS YPP	1785.81	J-5	142.7	5979.1	5981.74	2.64	4.32	33.14	22.26
DS YPP	1779.883	CH-E-95	9.9	5978.94	5980.38	1.43	0.75	13.22	18.82
DS YPP	1779.883	ST-E-95	9.8	5978.94	5980.37	1.43	0.74	13.18	18.79
DS YPP	1779.883	BT-E-95	9.9	5978.94	5980.38	1.43	0.75	13.22	18.82
DS YPP	1779.883	WC-E-95	22.7	5978.94	5980.45	1.51	1.54	14.69	19.5
DS YPP	1779.883	J-E-95	8.5	5978.94	5980.33	1.39	0.68	12.46	18.46
DS YPP	1779.883	CH-P-95	6.6	5978.94	5980.26	1.32	0.59	11.13	17.82
DS YPP	1779.883	ST-P-95	6.4	5978.94	5980.25	1.31	0.58	11.03	17.76
DS YPP	1779.883	BT-P-95	6.6	5978.94	5980.26	1.32	0.59	11.16	17.83
DS YPP	1779.883	WC-P-95	18.1	5978.94	5980.47	1.53	1.2	15.05	19.57
DS YPP	1779.883	J-P-95	5.8	5978.94	5980.22	1.28	0.55	10.48	17.48
DS YPP	1779.883	CH-5	57.4	5978.94	5980.91	1.97	2.4	23.95	20.64
DS YPP	1779.883	ST-5	244.7	5978.94	5982.31	3.37	4.42	56.43	25.26
DS YPP	1779.883	BT-5	41.5	5978.94	5980.72	1.78	2.08	19.96	20.19
DS YPP	1779.883	WC-5	255.5	5978.94	5982.37	3.43	4.5	57.91	25.38
DS YPP	1779.883	J-5	142.7	5978.94	5981.69	2.75	3.48	41.24	23.72
DS YPP	1775.759	CH-E-95	9.9	5978.88	5980.17	1.29	1.34	7.4	14.18
DS YPP	1775.759	ST-E-95	9.8	5978.88	5980.17	1.29	1.33	7.36	14.16
DS YPP	1775.759	BT-E-95	9.9	5978.88	5980.17	1.29	1.34	7.4	14.18
DS YPP	1775.759	WC-E-95	22.7	5978.88	5980.21	1.32	2.9	7.83	14.38
DS YPP	1775.759	J-E-95	8.5	5978.88	5980.14	1.26	1.24	6.86	13.92
DS YPP	1775.759	CH-P-95	6.6	5978.88	5980.07	1.19	1.1	5.96	13.45
DS YPP	1775.759	ST-P-95	6.4	5978.88	5980.06	1.18	1.09	5.88	13.4
DS YPP	1775.759	BT-P-95	6.6	5978.88	5980.07	1.19	1.1	5.97	13.45
DS YPP	1775.759	WC-P-95	18.1	5978.88	5980.25	1.37	2.13	8.49	14.64
DS YPP	1775.759	J-P-95	5.8	5978.88	5980.04	1.16	1.05	5.51	13.2
DS YPP	1775.759	CH-5	57.4	5978.88	5980.6	1.72	4.14	13.86	15.92
DS YPP	1775.759	ST-5	244.7	5978.88	5981.67	2.79	7.22	33.88	21.52
DS YPP	1775.759	BT-5	41.5	5978.88	5980.43	1.55	3.72	11.16	15.34
DS YPP	1775.759	WC-5	255.5	5978.88	5981.71	2.83	7.32	34.91	21.69
DS YPP	1775.759	J-5	142.7	5978.88	5981.14	2.26	6.16	23.15	18.83

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1773.79	CH-E-95	9.9	5978.32	5979.43	1.11	3.8	2.6	6.11
DS YPP	1773.79	ST-E-95	9.8	5978.32	5979.43	1.1	3.79	2.59	6.08
DS YPP	1773.79	BT-E-95	9.9	5978.32	5979.43	1.11	3.8	2.6	6.11
DS YPP	1773.79	WC-E-95	22.7	5978.32	5979.77	1.45	4.23	5.36	10.08
DS YPP	1773.79	J-E-95	8.5	5978.32	5979.33	1.01	4.01	2.12	4.34
DS YPP	1773.79	CH-P-95	6.6	5978.32	5979.23	0.91	3.87	1.69	3.78
DS YPP	1773.79	ST-P-95	6.4	5978.32	5979.22	0.9	3.83	1.67	3.76
DS YPP	1773.79	BT-P-95	6.6	5978.32	5979.23	0.91	3.85	1.72	3.82
DS YPP	1773.79	WC-P-95	18.1	5978.32	5979.68	1.36	4.01	4.52	9.2
DS YPP	1773.79	J-P-95	5.8	5978.32	5979.19	0.86	3.75	1.54	3.57
DS YPP	1773.79	CH-5	57.4	5978.32	5980.25	1.93	5.21	11.02	13.1
DS YPP	1773.79	ST-5	244.7	5978.32	5981.39	3.07	7.82	31.31	20.9
DS YPP	1773.79	BT-5	41.5	5978.32	5980.06	1.74	4.83	8.59	11.87
DS YPP	1773.79	WC-5	255.5	5978.32	5981.43	3.11	7.93	32.23	21.05
DS YPP	1773.79	J-5	142.7	5978.32	5980.96	2.64	6.26	22.8	18.83
DS YPP	1771.21	CH-E-95	9.9	5977	5978.83	1.83	0.88	11.3	14.93
DS YPP	1771.21	ST-E-95	9.8	5977	5978.83	1.83	0.87	11.25	14.92
DS YPP	1771.21	BT-E-95	9.9	5977	5978.83	1.83	0.88	11.3	14.93
DS YPP	1771.21	WC-E-95	22.7	5977	5978.86	1.86	1.93	11.78	14.98
DS YPP	1771.21	J-E-95	8.5	5977	5978.78	1.78	0.8	10.57	14.77
DS YPP	1771.21	CH-P-95	6.6	5977	5978.69	1.69	0.71	9.28	13.5
DS YPP	1771.21	ST-P-95	6.4	5977	5978.68	1.68	0.7	9.16	13.42
DS YPP	1771.21	BT-P-95	6.6	5977	5978.69	1.69	0.71	9.31	13.52
DS YPP	1771.21	WC-P-95	18.1	5977	5978.93	1.93	1.42	12.75	15.1
DS YPP	1771.21	J-P-95	5.8	5977	5978.64	1.64	0.67	8.63	13.08
DS YPP	1771.21	CH-5	57.4	5977	5978.4	1.39	9.95	5.8	10.21
DS YPP	1771.21	ST-5	244.7	5977	5979.34	2.34	12.78	19.14	15.99
DS YPP	1771.21	BT-5	41.5	5977	5978.24	1.24	9.42	4.41	7.9
DS YPP	1771.21	WC-5	255.5	5977	5979.38	2.38	12.86	19.86	16.07
DS YPP	1771.21	J-5	142.7	5977	5978.89	1.89	11.65	12.25	15.03
DS YPP	1766.177	CH-E-95	9.9	5977.2	5978.76	1.56	0.58	17.21	17.49
DS YPP	1766.177	ST-E-95	9.8	5977.2	5978.76	1.56	0.57	17.16	17.48
DS YPP	1766.177	BT-E-95	9.9	5977.2	5978.76	1.56	0.58	17.21	17.49
DS YPP	1766.177	WC-E-95	22.7	5977.2	5978.82	1.62	1.24	18.26	17.64
DS YPP	1766.177	J-E-95	8.5	5977.2	5978.71	1.51	0.52	16.35	17.37
DS YPP	1766.177	CH-P-95	6.6	5977.2	5978.62	1.42	0.44	14.85	17.16
DS YPP	1766.177	ST-P-95	6.4	5977.2	5978.62	1.42	0.44	14.7	17.14
DS YPP	1766.177	BT-P-95	6.6	5977.2	5978.63	1.43	0.44	14.89	17.16
DS YPP	1766.177	WC-P-95	18.1	5977.2	5978.87	1.66	0.95	19.06	17.76
DS YPP	1766.177	J-P-95	5.8	5977.2	5978.58	1.38	0.41	14.04	17.04
DS YPP	1766.177	CH-5	57.4	5977.2	5979.33	2.13	2.09	27.53	18.93
DS YPP	1766.177	ST-5	244.7	5977.2	5980.61	3.41	4.59	53.59	21.85
DS YPP	1766.177	BT-5	41.5	5977.2	5979.12	1.92	1.75	23.66	18.5
DS YPP	1766.177	WC-5	255.5	5977.2	5980.66	3.46	4.7	54.77	22.01
DS YPP	1766.177	J-5	142.7	5977.2	5980.09	2.89	3.35	42.56	20.61

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1752.738	CH-E-95	9.9	5977.48	5978.46	0.98	1.25	7.91	14.9
DS YPP	1752.738	ST-E-95	9.8	5977.48	5978.46	0.98	1.24	7.87	14.89
DS YPP	1752.738	BT-E-95	9.9	5977.48	5978.46	0.98	1.25	7.91	14.9
DS YPP	1752.738	WC-E-95	22.7	5977.48	5978.46	0.98	2.9	7.82	14.88
DS YPP	1752.738	J-E-95	8.5	5977.48	5978.42	0.94	1.18	7.22	14.73
DS YPP	1752.738	CH-P-95	6.6	5977.48	5978.33	0.85	1.1	5.95	14.39
DS YPP	1752.738	ST-P-95	6.4	5977.48	5978.32	0.84	1.1	5.84	14.35
DS YPP	1752.738	BT-P-95	6.6	5977.48	5978.33	0.85	1.1	5.98	14.4
DS YPP	1752.738	WC-P-95	18.1	5977.48	5978.55	1.07	1.97	9.2	15.22
DS YPP	1752.738	J-P-95	5.8	5977.48	5978.28	0.8	1.1	5.26	14.16
DS YPP	1752.738	CH-5	57.4	5977.48	5978.93	1.45	3.68	15.61	17.84
DS YPP	1752.738	ST-5	244.7	5977.48	5979.95	2.47	6.79	37.62	24.62
DS YPP	1752.738	BT-5	41.5	5977.48	5978.73	1.25	3.4	12.19	16.72
DS YPP	1752.738	WC-5	255.5	5977.48	5979.98	2.49	6.98	38.25	24.73
DS YPP	1752.738	J-5	142.7	5977.48	5979.61	2.13	5.02	29.41	23.22
DS YPP	1747.401	CH-E-95	9.9	5976.49	5978.18	1.69	1.09	9.24	10.24
DS YPP	1747.401	ST-E-95	9.8	5976.49	5978.17	1.68	1.08	9.22	10.23
DS YPP	1747.401	BT-E-95	9.9	5976.49	5978.18	1.69	1.09	9.24	10.24
DS YPP	1747.401	WC-E-95	22.7	5976.49	5978.18	1.69	2.47	9.32	10.29
DS YPP	1747.401	J-E-95	8.5	5976.49	5978.13	1.64	0.98	8.79	9.95
DS YPP	1747.401	CH-P-95	6.6	5976.49	5978.04	1.55	0.82	7.98	8.73
DS YPP	1747.401	ST-P-95	6.4	5976.49	5978.04	1.55	0.81	7.91	8.63
DS YPP	1747.401	BT-P-95	6.6	5976.49	5978.05	1.56	0.83	8	8.77
DS YPP	1747.401	WC-P-95	18.1	5976.49	5978.27	1.78	1.81	10.21	10.81
DS YPP	1747.401	J-P-95	5.8	5976.49	5978	1.51	0.76	7.57	8.16
DS YPP	1747.401	CH-5	57.4	5976.49	5978.55	2.06	4.37	13.5	12.8
DS YPP	1747.401	ST-5	244.7	5976.49	5979.64	3.15	7.08	35.9	25.15
DS YPP	1747.401	BT-5	41.5	5976.49	5978.41	1.92	3.61	11.8	11.78
DS YPP	1747.401	WC-5	255.5	5976.49	5979.69	3.2	7.16	37.13	25.39
DS YPP	1747.401	J-5	142.7	5976.49	5979.14	2.65	6.04	24.12	20.76
DS YPP	1743.626	CH-E-95	9.9	5976.63	5978.1	1.47	0.67	15.1	19.47
DS YPP	1743.626	ST-E-95	9.8	5976.63	5978.1	1.47	0.67	15.06	19.46
DS YPP	1743.626	BT-E-95	9.9	5976.63	5978.1	1.47	0.67	15.1	19.47
DS YPP	1743.626	WC-E-95	22.7	5976.63	5978.15	1.52	1.45	16.11	19.74
DS YPP	1743.626	J-E-95	8.5	5976.63	5978.06	1.43	0.61	14.24	19.25
DS YPP	1743.626	CH-P-95	6.6	5976.63	5977.97	1.34	0.53	12.65	18.86
DS YPP	1743.626	ST-P-95	6.4	5976.63	5977.97	1.33	0.52	12.5	18.82
DS YPP	1743.626	BT-P-95	6.6	5976.63	5977.98	1.35	0.53	12.7	18.87
DS YPP	1743.626	WC-P-95	18.1	5976.63	5978.21	1.58	1.08	17.26	20.05
DS YPP	1743.626	J-P-95	5.8	5976.63	5977.93	1.3	0.5	11.79	18.4
DS YPP	1743.626	CH-5	57.4	5976.63	5978.6	1.97	2.32	25.43	21.85
DS YPP	1743.626	ST-5	244.7	5976.63	5979.77	3.14	4.78	53.69	26.82
DS YPP	1743.626	BT-5	41.5	5976.63	5978.42	1.79	1.97	21.62	21.07
DS YPP	1743.626	WC-5	255.5	5976.63	5979.82	3.19	4.88	55.04	27.02
DS YPP	1743.626	J-5	142.7	5976.63	5979.28	2.65	3.59	41.16	24.51

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1736.67	CH-E-95	9.9	5976.37	5978.01	1.64	0.68	14.53	14.49
DS YPP	1736.67	ST-E-95	9.8	5976.37	5978.01	1.64	0.68	14.5	14.46
DS YPP	1736.67	BT-E-95	9.9	5976.37	5978.01	1.64	0.68	14.53	14.49
DS YPP	1736.67	WC-E-95	22.7	5976.37	5978.07	1.7	1.47	15.46	15.41
DS YPP	1736.67	J-E-95	8.5	5976.37	5977.97	1.6	0.61	13.96	13.99
DS YPP	1736.67	CH-P-95	6.6	5976.37	5977.89	1.52	0.51	12.88	13.85
DS YPP	1736.67	ST-P-95	6.4	5976.37	5977.88	1.51	0.5	12.77	13.83
DS YPP	1736.67	BT-P-95	6.6	5976.37	5977.89	1.52	0.51	12.92	13.85
DS YPP	1736.67	WC-P-95	18.1	5976.37	5978.12	1.74	1.12	16.17	15.95
DS YPP	1736.67	J-P-95	5.8	5976.37	5977.85	1.48	0.47	12.29	13.77
DS YPP	1736.67	CH-5	57.4	5976.37	5978.47	2.1	2.6	22.41	18.92
DS YPP	1736.67	ST-5	244.7	5976.37	5979.51	3.14	5.55	45.57	24.42
DS YPP	1736.67	BT-5	41.5	5976.37	5978.32	1.95	2.14	19.57	17.65
DS YPP	1736.67	WC-5	255.5	5976.37	5979.56	3.19	5.66	46.71	24.63
DS YPP	1736.67	J-5	142.7	5976.37	5979.08	2.71	4.13	35.42	22.72
DS YPP	1731.341	CH-E-95	9.9	5976.53	5977.92	1.39	0.75	13.15	19.11
DS YPP	1731.341	ST-E-95	9.8	5976.53	5977.92	1.39	0.75	13.11	19.11
DS YPP	1731.341	BT-E-95	9.9	5976.53	5977.92	1.39	0.75	13.15	19.11
DS YPP	1731.341	WC-E-95	22.7	5976.53	5977.99	1.46	1.56	14.59	19.3
DS YPP	1731.341	J-E-95	8.5	5976.53	5977.88	1.35	0.68	12.42	19.02
DS YPP	1731.341	CH-P-95	6.6	5976.53	5977.81	1.28	0.59	11.07	18.84
DS YPP	1731.341	ST-P-95	6.4	5976.53	5977.8	1.27	0.59	10.92	18.82
DS YPP	1731.341	BT-P-95	6.6	5976.53	5977.81	1.28	0.59	11.11	18.85
DS YPP	1731.341	WC-P-95	18.1	5976.53	5978.03	1.5	1.19	15.23	19.38
DS YPP	1731.341	J-P-95	5.8	5976.53	5977.77	1.24	0.56	10.3	18.74
DS YPP	1731.341	CH-5	57.4	5976.53	5978.38	1.85	2.59	22.17	20.28
DS YPP	1731.341	ST-5	244.7	5976.53	5979.32	2.79	5.87	42.39	23.12
DS YPP	1731.341	BT-5	41.5	5976.53	5978.23	1.7	2.16	19.2	19.91
DS YPP	1731.341	WC-5	255.5	5976.53	5979.36	2.83	6.01	43.28	23.24
DS YPP	1731.341	J-5	142.7	5976.53	5978.94	2.41	4.24	33.96	21.67
DS YPP	1723.022	CH-E-95	9.9	5976.26	5977.26	1	2.5	3.95	10.35
DS YPP	1723.022	ST-E-95	9.8	5976.26	5977.26	1	2.49	3.93	10.32
DS YPP	1723.022	BT-E-95	9.9	5976.26	5977.26	1	2.5	3.95	10.35
DS YPP	1723.022	WC-E-95	22.7	5976.26	5977.42	1.16	3.84	5.91	13.53
DS YPP	1723.022	J-E-95	8.5	5976.26	5977.23	0.97	2.32	3.67	9.81
DS YPP	1723.022	CH-P-95	6.6	5976.26	5977.17	0.91	2.13	3.07	8.36
DS YPP	1723.022	ST-P-95	6.4	5976.26	5977.16	0.9	2.11	3.03	8.15
DS YPP	1723.022	BT-P-95	6.6	5976.26	5977.17	0.91	2.13	3.1	8.45
DS YPP	1723.022	WC-P-95	18.1	5976.26	5977.36	1.1	3.54	5.11	13.01
DS YPP	1723.022	J-P-95	5.8	5976.26	5977.13	0.87	2.08	2.77	7.3
DS YPP	1723.022	CH-5	57.4	5976.26	5977.83	1.57	4.4	13.05	21.72
DS YPP	1723.022	ST-5	244.7	5976.26	5978.79	2.53	6.93	35.7	25.03
DS YPP	1723.022	BT-5	41.5	5976.26	5977.66	1.4	4.29	9.68	17.39
DS YPP	1723.022	WC-5	255.5	5976.26	5978.83	2.57	7.03	36.77	25.17
DS YPP	1723.022	J-5	142.7	5976.26	5978.33	2.07	5.82	24.6	23.71

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1719.728	CH-E-95	9.9	5975.86	5977.11	1.25	0.72	13.83	21.43
DS YPP	1719.728	ST-E-95	9.8	5975.86	5977.1	1.24	0.71	13.77	21.42
DS YPP	1719.728	BT-E-95	9.9	5975.86	5977.11	1.25	0.72	13.83	21.43
DS YPP	1719.728	WC-E-95	22.7	5975.86	5977.13	1.27	1.58	14.41	21.48
DS YPP	1719.728	J-E-95	8.5	5975.86	5977.06	1.2	0.66	12.82	21.3
DS YPP	1719.728	CH-P-95	6.6	5975.86	5976.98	1.12	0.59	11.1	20.28
DS YPP	1719.728	ST-P-95	6.4	5975.86	5976.97	1.11	0.58	10.99	20.21
DS YPP	1719.728	BT-P-95	6.6	5975.86	5976.98	1.12	0.59	11.16	20.31
DS YPP	1719.728	WC-P-95	18.1	5975.86	5977.2	1.34	1.14	15.87	21.63
DS YPP	1719.728	J-P-95	5.8	5975.86	5976.94	1.08	0.56	10.29	19.75
DS YPP	1719.728	CH-5	57.4	5975.86	5977.59	1.73	2.35	24.42	22.34
DS YPP	1719.728	ST-5	244.7	5975.86	5978.79	2.93	4.67	53.02	25.78
DS YPP	1719.728	BT-5	41.5	5975.86	5977.41	1.55	2.04	20.31	22
DS YPP	1719.728	WC-5	255.5	5975.86	5978.84	2.98	4.77	54.27	25.95
DS YPP	1719.728	J-5	142.7	5975.86	5978.32	2.46	3.49	41.17	23.98
DS YPP	1714.672	CH-E-95	9.9	5975.51	5977.05	1.54	0.55	17.98	15.45
DS YPP	1714.672	ST-E-95	9.8	5975.51	5977.05	1.54	0.55	17.95	15.45
DS YPP	1714.672	BT-E-95	9.9	5975.51	5977.05	1.54	0.55	17.98	15.45
DS YPP	1714.672	WC-E-95	22.7	5975.51	5977.09	1.58	1.22	18.61	15.51
DS YPP	1714.672	J-E-95	8.5	5975.51	5977	1.49	0.49	17.27	15.38
DS YPP	1714.672	CH-P-95	6.6	5975.51	5976.93	1.42	0.41	16.07	15.26
DS YPP	1714.672	ST-P-95	6.4	5975.51	5976.92	1.41	0.4	16.01	15.26
DS YPP	1714.672	BT-P-95	6.6	5975.51	5976.93	1.42	0.41	16.12	15.27
DS YPP	1714.672	WC-P-95	18.1	5975.51	5977.15	1.64	0.93	19.5	15.6
DS YPP	1714.672	J-P-95	5.8	5975.51	5976.89	1.38	0.37	15.51	15.21
DS YPP	1714.672	CH-5	57.4	5975.51	5977.54	2.03	2.24	25.66	16.16
DS YPP	1714.672	ST-5	244.7	5975.51	5978.62	3.11	5.17	47.63	24.82
DS YPP	1714.672	BT-5	41.5	5975.51	5977.36	1.85	1.82	22.8	15.92
DS YPP	1714.672	WC-5	255.5	5975.51	5978.67	3.16	5.28	48.73	24.98
DS YPP	1714.672	J-5	142.7	5975.51	5978.2	2.69	3.78	37.78	21.76
DS YPP	1709.018	CH-E-95	9.9	5975.23	5977.01	1.78	0.53	18.7	16.3
DS YPP	1709.018	ST-E-95	9.8	5975.23	5977.01	1.78	0.53	18.65	16.29
DS YPP	1709.018	BT-E-95	9.9	5975.23	5977.01	1.78	0.53	18.7	16.3
DS YPP	1709.018	WC-E-95	22.7	5975.23	5977.06	1.83	1.17	19.43	16.46
DS YPP	1709.018	J-E-95	8.5	5975.23	5976.97	1.74	0.47	17.99	16.14
DS YPP	1709.018	CH-P-95	6.6	5975.23	5976.9	1.67	0.39	16.81	15.88
DS YPP	1709.018	ST-P-95	6.4	5975.23	5976.89	1.66	0.38	16.75	15.87
DS YPP	1709.018	BT-P-95	6.6	5975.23	5976.9	1.67	0.39	16.85	15.89
DS YPP	1709.018	WC-P-95	18.1	5975.23	5977.11	1.88	0.89	20.26	16.66
DS YPP	1709.018	J-P-95	5.8	5975.23	5976.86	1.63	0.35	16.27	15.76
DS YPP	1709.018	CH-5	57.4	5975.23	5977.49	2.26	2.14	26.85	18.2
DS YPP	1709.018	ST-5	244.7	5975.23	5978.54	3.31	4.93	49.8	24.22
DS YPP	1709.018	BT-5	41.5	5975.23	5977.31	2.08	1.75	23.78	17.46
DS YPP	1709.018	WC-5	255.5	5975.23	5978.58	3.35	5.04	50.86	24.37
DS YPP	1709.018	J-5	142.7	5975.23	5978.12	2.89	3.58	39.9	22.82

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1703.47	CH-E-95	9.9	5975.71	5976.97	1.25	0.61	16.13	18.13
DS YPP	1703.47	ST-E-95	9.8	5975.71	5976.96	1.25	0.61	16.08	18.12
DS YPP	1703.47	BT-E-95	9.9	5975.71	5976.97	1.25	0.61	16.13	18.13
DS YPP	1703.47	WC-E-95	22.7	5975.71	5977.01	1.3	1.34	16.92	18.23
DS YPP	1703.47	J-E-95	8.5	5975.71	5976.92	1.21	0.55	15.39	18.03
DS YPP	1703.47	CH-P-95	6.6	5975.71	5976.86	1.15	0.46	14.19	17.87
DS YPP	1703.47	ST-P-95	6.4	5975.71	5976.85	1.14	0.45	14.13	17.87
DS YPP	1703.47	BT-P-95	6.6	5975.71	5976.86	1.15	0.46	14.23	17.88
DS YPP	1703.47	WC-P-95	18.1	5975.71	5977.05	1.34	1.02	17.75	18.35
DS YPP	1703.47	J-P-95	5.8	5975.71	5976.83	1.12	0.42	13.64	17.8
DS YPP	1703.47	CH-5	57.4	5975.71	5977.41	1.7	2.33	24.67	20.33
DS YPP	1703.47	ST-5	244.7	5975.71	5978.39	2.68	5.2	47.16	24.61
DS YPP	1703.47	BT-5	41.5	5975.71	5977.25	1.54	1.94	21.43	19.66
DS YPP	1703.47	WC-5	255.5	5975.71	5978.43	2.72	5.32	48.13	24.73
DS YPP	1703.47	J-5	142.7	5975.71	5977.99	2.28	3.8	37.58	23.35
DS YPP	1695.135	CH-E-95	9.9	5975.79	5976.75	0.96	1.08	9.14	19.58
DS YPP	1695.135	ST-E-95	9.8	5975.79	5976.75	0.96	1.08	9.1	19.55
DS YPP	1695.135	BT-E-95	9.9	5975.79	5976.75	0.96	1.08	9.14	19.58
DS YPP	1695.135	WC-E-95	22.7	5975.79	5976.74	0.95	2.52	9	19.46
DS YPP	1695.135	J-E-95	8.5	5975.79	5976.72	0.93	0.99	8.61	19.05
DS YPP	1695.135	CH-P-95	6.6	5975.79	5976.67	0.88	0.85	7.73	18.41
DS YPP	1695.135	ST-P-95	6.4	5975.79	5976.67	0.88	0.84	7.66	18.38
DS YPP	1695.135	BT-P-95	6.6	5975.79	5976.68	0.89	0.85	7.75	18.42
DS YPP	1695.135	WC-P-95	18.1	5975.79	5976.82	1.03	1.7	10.64	20.9
DS YPP	1695.135	J-P-95	5.8	5975.79	5976.65	0.86	0.79	7.31	18.22
DS YPP	1695.135	CH-5	57.4	5975.79	5977.02	1.23	3.83	14.97	23.57
DS YPP	1695.135	ST-5	244.7	5975.79	5978.05	2.26	5.83	42.03	27.86
DS YPP	1695.135	BT-5	41.5	5975.79	5976.9	1.11	3.39	12.25	21.93
DS YPP	1695.135	WC-5	255.5	5975.79	5978.11	2.31	5.89	43.47	28.03
DS YPP	1695.135	J-5	142.7	5975.79	5977.59	1.79	4.86	29.34	26.3
DS YPP	1689.684	CH-E-95	9.9	5975.03	5975.74	0.71	2.33	4.24	11.46
DS YPP	1689.684	ST-E-95	9.8	5975.03	5975.74	0.71	2.32	4.22	11.44
DS YPP	1689.684	BT-E-95	9.9	5975.03	5975.74	0.71	2.33	4.24	11.46
DS YPP	1689.684	WC-E-95	22.7	5975.03	5975.87	0.84	3.89	5.84	12.42
DS YPP	1689.684	J-E-95	8.5	5975.03	5975.7	0.67	2.21	3.85	11.21
DS YPP	1689.684	CH-P-95	6.6	5975.03	5975.64	0.61	2.08	3.14	10.73
DS YPP	1689.684	ST-P-95	6.4	5975.03	5975.63	0.6	2.07	3.09	10.69
DS YPP	1689.684	BT-P-95	6.6	5975.03	5975.64	0.61	2.1	3.15	10.73
DS YPP	1689.684	WC-P-95	18.1	5975.03	5975.8	0.77	3.67	4.93	11.88
DS YPP	1689.684	J-P-95	5.8	5975.03	5975.6	0.57	2.1	2.75	10.34
DS YPP	1689.684	CH-5	57.4	5975.03	5976.27	1.24	5.08	11.29	14.59
DS YPP	1689.684	ST-5	244.7	5975.03	5977.54	2.51	7.08	34.56	22.44
DS YPP	1689.684	BT-5	41.5	5975.03	5976.11	1.08	4.65	8.93	13.73
DS YPP	1689.684	WC-5	255.5	5975.03	5977.59	2.56	7.17	35.64	22.78
DS YPP	1689.684	J-5	142.7	5975.03	5976.97	1.94	6.26	22.8	18.88

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1683.483	CH-E-95	9.9	5974.05	5975.36	1.31	0.86	11.46	14.35
DS YPP	1683.483	ST-E-95	9.8	5974.05	5975.35	1.3	0.86	11.41	14.34
DS YPP	1683.483	BT-E-95	9.9	5974.05	5975.36	1.31	0.86	11.46	14.35
DS YPP	1683.483	WC-E-95	22.7	5974.05	5975.41	1.35	1.87	12.15	14.54
DS YPP	1683.483	J-E-95	8.5	5974.05	5975.31	1.26	0.79	10.77	14.15
DS YPP	1683.483	CH-P-95	6.6	5974.05	5975.22	1.17	0.69	9.5	13.78
DS YPP	1683.483	ST-P-95	6.4	5974.05	5975.21	1.16	0.68	9.4	13.75
DS YPP	1683.483	BT-P-95	6.6	5974.05	5975.22	1.17	0.69	9.56	13.8
DS YPP	1683.483	WC-P-95	18.1	5974.05	5975.46	1.41	1.39	12.99	14.75
DS YPP	1683.483	J-P-95	5.8	5974.05	5975.18	1.13	0.65	8.92	13.61
DS YPP	1683.483	CH-5	57.4	5974.05	5975.85	1.8	3.04	18.89	15.75
DS YPP	1683.483	ST-5	244.7	5974.05	5976.17	2.12	10.13	24.16	16.38
DS YPP	1683.483	BT-5	41.5	5974.05	5975.67	1.62	2.56	16.19	15.48
DS YPP	1683.483	WC-5	255.5	5974.05	5976.23	2.18	10.2	25.04	16.48
DS YPP	1683.483	J-5	142.7	5974.05	5976.53	2.48	4.75	30.03	17.13
DS YPP	1677.094	CH-E-95	9.9	5973.72	5975.28	1.56	0.6	16.45	14.53
DS YPP	1677.094	ST-E-95	9.8	5973.72	5975.27	1.55	0.6	16.41	14.52
DS YPP	1677.094	BT-E-95	9.9	5973.72	5975.28	1.56	0.6	16.45	14.53
DS YPP	1677.094	WC-E-95	22.7	5973.72	5975.35	1.63	1.29	17.57	14.66
DS YPP	1677.094	J-E-95	8.5	5973.72	5975.23	1.51	0.54	15.79	14.45
DS YPP	1677.094	CH-P-95	6.6	5973.72	5975.15	1.42	0.45	14.56	14.29
DS YPP	1677.094	ST-P-95	6.4	5973.72	5975.14	1.42	0.44	14.46	14.28
DS YPP	1677.094	BT-P-95	6.6	5973.72	5975.15	1.43	0.45	14.63	14.3
DS YPP	1677.094	WC-P-95	18.1	5973.72	5975.39	1.67	1	18.09	14.72
DS YPP	1677.094	J-P-95	5.8	5973.72	5975.11	1.39	0.41	14.02	14.23
DS YPP	1677.094	CH-5	57.4	5973.72	5975.79	2.07	2.38	24.14	15.42
DS YPP	1677.094	ST-5	244.7	5973.72	5976.92	3.2	5.49	44.54	21.66
DS YPP	1677.094	BT-5	41.5	5973.72	5975.62	1.9	1.93	21.53	15.13
DS YPP	1677.094	WC-5	255.5	5973.72	5976.98	3.26	5.59	45.72	21.97
DS YPP	1677.094	J-5	142.7	5973.72	5976.45	2.73	4.08	34.98	18.31
DS YPP	1670.331	CH-E-95	9.9	5973.8	5975.14	1.34	1.13	8.73	15.69
DS YPP	1670.331	ST-E-95	9.8	5973.8	5975.14	1.34	1.13	8.7	15.66
DS YPP	1670.331	BT-E-95	9.9	5973.8	5975.14	1.34	1.13	8.73	15.69
DS YPP	1670.331	WC-E-95	22.7	5973.8	5975.18	1.38	2.42	9.37	16.91
DS YPP	1670.331	J-E-95	8.5	5973.8	5975.1	1.3	1.04	8.17	15.13
DS YPP	1670.331	CH-P-95	6.6	5973.8	5975.03	1.23	0.92	7.11	14.06
DS YPP	1670.331	ST-P-95	6.4	5973.8	5975.02	1.22	0.91	7.03	14.05
DS YPP	1670.331	BT-P-95	6.6	5973.8	5975.03	1.23	0.92	7.18	14.08
DS YPP	1670.331	WC-P-95	18.1	5973.8	5975.23	1.43	1.76	10.29	17.99
DS YPP	1670.331	J-P-95	5.8	5973.8	5975	1.2	0.86	6.71	13.98
DS YPP	1670.331	CH-5	57.4	5973.8	5975.54	1.74	3.52	16.32	20.32
DS YPP	1670.331	ST-5	244.7	5973.8	5976.46	2.65	6.74	36.29	23.52
DS YPP	1670.331	BT-5	41.5	5973.8	5975.4	1.6	3.07	13.52	19.6
DS YPP	1670.331	WC-5	255.5	5973.8	5976.48	2.68	6.94	36.83	23.61
DS YPP	1670.331	J-5	142.7	5973.8	5976.13	2.33	4.94	28.87	22.09

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1664.738	CH-E-95	9.9	5973.69	5974.53	0.84	1.61	6.17	12.27
DS YPP	1664.738	ST-E-95	9.8	5973.69	5974.53	0.84	1.6	6.14	12.24
DS YPP	1664.738	BT-E-95	9.9	5973.69	5974.53	0.84	1.61	6.17	12.27
DS YPP	1664.738	WC-E-95	22.7	5973.69	5974.6	0.9	3.23	7.02	13.71
DS YPP	1664.738	J-E-95	8.5	5973.69	5974.49	0.8	1.48	5.73	11.78
DS YPP	1664.738	CH-P-95	6.6	5973.69	5974.44	0.74	1.3	5.05	11.29
DS YPP	1664.738	ST-P-95	6.4	5973.69	5974.43	0.74	1.28	5	11.26
DS YPP	1664.738	BT-P-95	6.6	5973.69	5974.44	0.75	1.3	5.08	11.31
DS YPP	1664.738	WC-P-95	18.1	5973.69	5974.61	0.92	2.5	7.24	13.81
DS YPP	1664.738	J-P-95	5.8	5973.69	5974.4	0.71	1.23	4.71	11.04
DS YPP	1664.738	CH-5	57.4	5973.69	5974.91	1.22	4.92	11.67	15.89
DS YPP	1664.738	ST-5	244.7	5973.69	5976.11	2.42	7.06	35.07	24.44
DS YPP	1664.738	BT-5	41.5	5973.69	5974.74	1.05	4.54	9.13	14.44
DS YPP	1664.738	WC-5	255.5	5973.69	5976.16	2.47	7.15	36.23	24.72
DS YPP	1664.738	J-5	142.7	5973.69	5975.55	1.86	6.31	22.61	18.76
DS YPP	1661.418	CH-E-95	9.9	5972.48	5973.99	1.51	1.64	6.02	10.92
DS YPP	1661.418	ST-E-95	9.8	5972.48	5973.99	1.5	1.63	6.01	10.91
DS YPP	1661.418	BT-E-95	9.9	5972.48	5973.99	1.51	1.64	6.02	10.92
DS YPP	1661.418	WC-E-95	22.7	5972.48	5973.93	1.45	4.19	5.41	10.55
DS YPP	1661.418	J-E-95	8.5	5972.48	5973.94	1.46	1.53	5.54	10.63
DS YPP	1661.418	CH-P-95	6.6	5972.48	5973.88	1.4	1.35	4.86	10.3
DS YPP	1661.418	ST-P-95	6.4	5972.48	5973.87	1.39	1.33	4.8	10.28
DS YPP	1661.418	BT-P-95	6.6	5972.48	5973.88	1.4	1.35	4.88	10.31
DS YPP	1661.418	WC-P-95	18.1	5972.48	5974.03	1.55	2.79	6.48	11.17
DS YPP	1661.418	J-P-95	5.8	5972.48	5973.84	1.36	1.28	4.49	10.08
DS YPP	1661.418	CH-5	57.4	5972.48	5974.31	1.83	5.72	10.04	13.96
DS YPP	1661.418	ST-5	244.7	5972.48	5975.32	2.84	9.1	26.95	21.75
DS YPP	1661.418	BT-5	41.5	5972.48	5974.21	1.73	4.81	8.63	13.6
DS YPP	1661.418	WC-5	255.5	5972.48	5975.36	2.88	9.23	27.8	22.01
DS YPP	1661.418	J-5	142.7	5972.48	5974.86	2.38	7.81	18.27	15.76
DS YPP	1658.955	CH-E-95	9.9	5972.44	5973.7	1.25	1.26	7.87	14.48
DS YPP	1658.955	ST-E-95	9.8	5972.44	5973.69	1.25	1.25	7.81	14.46
DS YPP	1658.955	BT-E-95	9.9	5972.44	5973.7	1.25	1.26	7.87	14.48
DS YPP	1658.955	WC-E-95	22.7	5972.44	5973.8	1.36	2.42	9.4	14.87
DS YPP	1658.955	J-E-95	8.5	5972.44	5973.64	1.2	1.19	7.14	13.27
DS YPP	1658.955	CH-P-95	6.6	5972.44	5973.56	1.12	1.08	6.06	12.06
DS YPP	1658.955	ST-P-95	6.4	5972.44	5973.55	1.11	1.07	5.98	11.97
DS YPP	1658.955	BT-P-95	6.6	5972.44	5973.56	1.12	1.08	6.1	12.1
DS YPP	1658.955	WC-P-95	18.1	5972.44	5973.8	1.36	1.92	9.43	14.87
DS YPP	1658.955	J-P-95	5.8	5972.44	5973.5	1.06	1.06	5.44	11.35
DS YPP	1658.955	CH-5	57.4	5972.44	5974.45	2.01	2.84	20.21	19.45
DS YPP	1658.955	ST-5	244.7	5972.44	5975.93	3.49	4.73	53.73	25.56
DS YPP	1658.955	BT-5	41.5	5972.44	5974.17	1.73	2.73	15.18	16.47
DS YPP	1658.955	WC-5	255.5	5972.44	5975.98	3.54	4.83	55.07	25.75
DS YPP	1658.955	J-5	142.7	5972.44	5975.36	2.92	3.65	39.85	23.47

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1656.35	CH-E-95	9.9	5972.07	5973.33	1.26	1.96	5.04	7.34
DS YPP	1656.35	ST-E-95	9.8	5972.07	5973.32	1.25	1.95	5.02	7.32
DS YPP	1656.35	BT-E-95	9.9	5972.07	5973.33	1.26	1.96	5.04	7.34
DS YPP	1656.35	WC-E-95	22.7	5972.07	5973.37	1.3	4.25	5.34	7.59
DS YPP	1656.35	J-E-95	8.5	5972.07	5973.3	1.23	1.76	4.83	7.16
DS YPP	1656.35	CH-P-95	6.6	5972.07	5973.24	1.17	1.48	4.42	6.66
DS YPP	1656.35	ST-P-95	6.4	5972.07	5973.23	1.16	1.46	4.39	6.62
DS YPP	1656.35	BT-P-95	6.6	5972.07	5973.24	1.17	1.49	4.44	6.68
DS YPP	1656.35	WC-P-95	18.1	5972.07	5973.37	1.3	3.38	5.36	7.6
DS YPP	1656.35	J-P-95	5.8	5972.07	5973.19	1.12	1.41	4.1	6.01
DS YPP	1656.35	CH-5	57.4	5972.07	5973.89	1.82	5.8	9.93	9.78
DS YPP	1656.35	ST-5	244.7	5972.07	5975.39	3.32	7.18	35.28	24.26
DS YPP	1656.35	BT-5	41.5	5972.07	5973.66	1.59	5.36	7.74	8.85
DS YPP	1656.35	WC-5	255.5	5972.07	5975.44	3.37	7.26	36.5	24.44
DS YPP	1656.35	J-5	142.7	5972.07	5974.89	2.82	6.11	23.8	21.64
DS YPP	1650.992	CH-E-95	9.9	5971.46	5972.43	0.97	1.52	6.51	13.29
DS YPP	1650.992	ST-E-95	9.8	5971.46	5972.43	0.97	1.52	6.47	13.26
DS YPP	1650.992	BT-E-95	9.9	5971.46	5972.43	0.97	1.52	6.51	13.29
DS YPP	1650.992	WC-E-95	22.7	5971.46	5972.38	0.92	3.9	5.82	12.86
DS YPP	1650.992	J-E-95	8.5	5971.46	5972.38	0.92	1.45	5.87	12.9
DS YPP	1650.992	CH-P-95	6.6	5971.46	5972.29	0.83	1.38	4.74	11.98
DS YPP	1650.992	ST-P-95	6.4	5971.46	5972.28	0.82	1.38	4.64	11.89
DS YPP	1650.992	BT-P-95	6.6	5971.46	5972.3	0.83	1.38	4.77	12
DS YPP	1650.992	WC-P-95	18.1	5971.46	5972.52	1.06	2.36	7.68	14.25
DS YPP	1650.992	J-P-95	5.8	5971.46	5972.24	0.78	1.38	4.18	11.09
DS YPP	1650.992	CH-5	57.4	5971.46	5972.54	1.08	7.16	8.02	14.66
DS YPP	1650.992	ST-5	244.7	5971.46	5974.85	3.39	5.14	48.85	20.09
DS YPP	1650.992	BT-5	41.5	5971.46	5972.48	1.02	5.8	7.16	13.68
DS YPP	1650.992	WC-5	255.5	5971.46	5974.93	3.47	5.19	50.6	20.28
DS YPP	1650.992	J-5	142.7	5971.46	5974.05	2.59	4.29	33.58	18.21
DS YPP	1650.389	CH-E-95	9.9	5971.22	5972.42	1.2	0.8	12.44	16.42
DS YPP	1650.389	ST-E-95	9.8	5971.22	5972.42	1.2	0.79	12.39	16.41
DS YPP	1650.389	BT-E-95	9.9	5971.22	5972.42	1.2	0.8	12.44	16.42
DS YPP	1650.389	WC-E-95	22.7	5971.22	5972.46	1.24	1.74	13.08	16.53
DS YPP	1650.389	J-E-95	8.5	5971.22	5972.37	1.15	0.73	11.59	16.26
DS YPP	1650.389	CH-P-95	6.6	5971.22	5972.27	1.05	0.65	10.04	16
DS YPP	1650.389	ST-P-95	6.4	5971.22	5972.27	1.04	0.65	9.91	15.98
DS YPP	1650.389	BT-P-95	6.6	5971.22	5972.28	1.05	0.65	10.08	16
DS YPP	1650.389	WC-P-95	18.1	5971.22	5972.53	1.31	1.27	14.3	16.71
DS YPP	1650.389	J-P-95	5.8	5971.22	5972.22	1	0.62	9.25	15.78
DS YPP	1650.389	CH-5	57.4	5971.22	5973.04	1.82	2.52	22.99	17.8
DS YPP	1650.389	ST-5	244.7	5971.22	5974.93	3.71	4.26	61.64	23.34
DS YPP	1650.389	BT-5	41.5	5971.22	5972.79	1.57	2.23	18.71	17.26
DS YPP	1650.389	WC-5	255.5	5971.22	5975.02	3.8	4.32	63.68	23.63
DS YPP	1650.389	J-5	142.7	5971.22	5974.12	2.9	3.39	43.6	20.67

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1641.382	CH-E-95	9.9	5970.81	5972.19	1.37	1	9.92	10.17
DS YPP	1641.382	ST-E-95	9.8	5970.81	5972.18	1.37	0.99	9.89	10.17
DS YPP	1641.382	BT-E-95	9.9	5970.81	5972.19	1.37	1	9.92	10.17
DS YPP	1641.382	WC-E-95	22.7	5970.81	5972.22	1.41	2.22	10.24	10.23
DS YPP	1641.382	J-E-95	8.5	5970.81	5972.13	1.32	0.91	9.33	10.07
DS YPP	1641.382	CH-P-95	6.6	5970.81	5972.02	1.21	0.79	8.29	9.89
DS YPP	1641.382	ST-P-95	6.4	5970.81	5972.01	1.2	0.78	8.21	9.87
DS YPP	1641.382	BT-P-95	6.6	5970.81	5972.03	1.21	0.79	8.32	9.89
DS YPP	1641.382	WC-P-95	18.1	5970.81	5972.3	1.49	1.63	11.09	10.37
DS YPP	1641.382	J-P-95	5.8	5970.81	5971.97	1.16	0.74	7.75	9.79
DS YPP	1641.382	CH-5	57.4	5970.81	5972.75	1.94	3.61	15.94	11.07
DS YPP	1641.382	ST-5	244.7	5970.81	5974.12	3.31	7.68	33.01	14.9
DS YPP	1641.382	BT-5	41.5	5970.81	5972.54	1.72	3.06	13.58	10.73
DS YPP	1641.382	WC-5	255.5	5970.81	5974.16	3.35	7.86	33.72	15.17
DS YPP	1641.382	J-5	142.7	5970.81	5973.69	2.87	5.38	27.06	12.88
DS YPP	1634.628	CH-E-95	9.9	5969.52	5972.13	2.61	0.6	16.57	8.38
DS YPP	1634.628	ST-E-95	9.8	5969.52	5972.12	2.6	0.59	16.54	8.38
DS YPP	1634.628	BT-E-95	9.9	5969.52	5972.13	2.61	0.6	16.57	8.38
DS YPP	1634.628	WC-E-95	22.7	5969.52	5972.19	2.67	1.33	17.09	8.44
DS YPP	1634.628	J-E-95	8.5	5969.52	5972.07	2.55	0.53	16.11	8.33
DS YPP	1634.628	CH-P-95	6.6	5969.52	5971.98	2.46	0.43	15.31	8.24
DS YPP	1634.628	ST-P-95	6.4	5969.52	5971.97	2.45	0.42	15.25	8.23
DS YPP	1634.628	BT-P-95	6.6	5969.52	5971.98	2.46	0.43	15.34	8.24
DS YPP	1634.628	WC-P-95	18.1	5969.52	5972.24	2.72	1.03	17.56	8.5
DS YPP	1634.628	J-P-95	5.8	5969.52	5971.93	2.41	0.39	14.9	8.19
DS YPP	1634.628	CH-5	57.4	5969.52	5972.71	3.19	2.64	21.71	9.11
DS YPP	1634.628	ST-5	244.7	5969.52	5974.19	4.67	5.95	41.65	16.06
DS YPP	1634.628	BT-5	41.5	5969.52	5972.5	2.98	2.1	19.81	8.85
DS YPP	1634.628	WC-5	255.5	5969.52	5974.25	4.73	6.08	42.59	16.19
DS YPP	1634.628	J-5	142.7	5969.52	5973.64	4.12	4.31	33.13	14.89
DS YPP	1619.328		Bridge						
DS YPP	1607.186	CH-E-95	9.9	5970.75	5971.69	0.94	1.23	8.06	17.34
DS YPP	1607.186	ST-E-95	9.8	5970.75	5971.69	0.94	1.22	8.01	17.3
DS YPP	1607.186	BT-E-95	9.9	5970.75	5971.69	0.94	1.23	8.06	17.34
DS YPP	1607.186	WC-E-95	22.7	5970.75	5971.82	1.07	2.17	10.45	18.94
DS YPP	1607.186	J-E-95	8.5	5970.75	5971.65	0.9	1.15	7.37	16.79
DS YPP	1607.186	CH-P-95	6.6	5970.75	5971.59	0.84	1.02	6.4	15.87
DS YPP	1607.186	ST-P-95	6.4	5970.75	5971.59	0.84	1.01	6.33	15.8
DS YPP	1607.186	BT-P-95	6.6	5970.75	5971.6	0.85	1.03	6.44	15.93
DS YPP	1607.186	WC-P-95	18.1	5970.75	5971.8	1.05	1.81	10.01	18.75
DS YPP	1607.186	J-P-95	5.8	5970.75	5971.56	0.81	0.97	5.94	15.4
DS YPP	1607.186	CH-5	57.4	5970.75	5972.27	1.52	2.99	19.21	20.11
DS YPP	1607.186	ST-5	244.7	5970.75	5973.58	2.83	5.21	47.05	22.4
DS YPP	1607.186	BT-5	41.5	5970.75	5972.1	1.35	2.63	15.76	19.79
DS YPP	1607.186	WC-5	255.5	5970.75	5973.63	2.88	5.3	48.31	22.48
DS YPP	1607.186	J-5	142.7	5970.75	5972.97	2.22	4.24	33.67	21.37

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1606.148	CH-E-95	9.9	5970.49	5971.24	0.74	3.48	2.85	7.82
DS YPP	1606.148	ST-E-95	9.8	5970.49	5971.23	0.74	3.45	2.84	7.8
DS YPP	1606.148	BT-E-95	9.9	5970.49	5971.24	0.74	3.48	2.85	7.82
DS YPP	1606.148	WC-E-95	22.7	5970.49	5971.52	1.03	4.09	5.56	10.83
DS YPP	1606.148	J-E-95	8.5	5970.49	5971.19	0.7	3.34	2.54	7.39
DS YPP	1606.148	CH-P-95	6.6	5970.49	5971.13	0.64	3.11	2.11	7
DS YPP	1606.148	ST-P-95	6.4	5970.49	5971.13	0.64	3.1	2.07	6.97
DS YPP	1606.148	BT-P-95	6.6	5970.49	5971.14	0.65	3.12	2.12	7.01
DS YPP	1606.148	WC-P-95	18.1	5970.49	5971.44	0.94	3.89	4.65	10.08
DS YPP	1606.148	J-P-95	5.8	5970.49	5971.11	0.62	3.02	1.91	6.82
DS YPP	1606.148	CH-5	57.4	5970.49	5971.97	1.47	4.83	11.89	17.21
DS YPP	1606.148	ST-5	244.7	5970.49	5973.09	2.6	7.34	33.35	20.38
DS YPP	1606.148	BT-5	41.5	5970.49	5971.81	1.32	4.44	9.35	15.85
DS YPP	1606.148	WC-5	255.5	5970.49	5973.15	2.66	7.39	34.58	20.5
DS YPP	1606.148	J-5	142.7	5970.49	5972.55	2.06	6.28	22.71	19.17
DS YPP	1601.016	CH-E-95	9.9	5968.98	5970.67	1.69	0.92	10.79	13.42
DS YPP	1601.016	ST-E-95	9.8	5968.98	5970.66	1.68	0.92	10.71	13.36
DS YPP	1601.016	BT-E-95	9.9	5968.98	5970.67	1.69	0.92	10.79	13.42
DS YPP	1601.016	WC-E-95	22.7	5968.98	5970.82	1.84	1.76	12.9	14.11
DS YPP	1601.016	J-E-95	8.5	5968.98	5970.61	1.63	0.85	10.01	12.89
DS YPP	1601.016	CH-P-95	6.6	5968.98	5970.51	1.53	0.75	8.78	12.02
DS YPP	1601.016	ST-P-95	6.4	5968.98	5970.5	1.52	0.74	8.68	11.95
DS YPP	1601.016	BT-P-95	6.6	5968.98	5970.51	1.53	0.75	8.81	12.04
DS YPP	1601.016	WC-P-95	18.1	5968.98	5970.83	1.85	1.39	12.99	14.12
DS YPP	1601.016	J-P-95	5.8	5968.98	5970.46	1.48	0.7	8.2	11.61
DS YPP	1601.016	CH-5	57.4	5968.98	5971.41	2.43	2.63	21.82	17.95
DS YPP	1601.016	ST-5	244.7	5968.98	5972.95	3.97	4.8	51.59	21.06
DS YPP	1601.016	BT-5	41.5	5968.98	5971.18	2.2	2.29	18.09	14.87
DS YPP	1601.016	WC-5	255.5	5968.98	5973.01	4.03	4.89	52.91	21.17
DS YPP	1601.016	J-5	142.7	5968.98	5972.27	3.29	3.78	37.78	19.47
DS YPP	1598.214	CH-E-95	9.9	5969.13	5970.52	1.39	1.29	7.65	10.57
DS YPP	1598.214	ST-E-95	9.8	5969.13	5970.52	1.39	1.29	7.58	10.4
DS YPP	1598.214	BT-E-95	9.9	5969.13	5970.52	1.39	1.29	7.65	10.57
DS YPP	1598.214	WC-E-95	22.7	5969.13	5970.7	1.57	2.31	9.81	12.56
DS YPP	1598.214	J-E-95	8.5	5969.13	5970.46	1.33	1.21	7.05	10.02
DS YPP	1598.214	CH-P-95	6.6	5969.13	5970.37	1.24	1.07	6.1	9.58
DS YPP	1598.214	ST-P-95	6.4	5969.13	5970.36	1.23	1.06	6.01	9.54
DS YPP	1598.214	BT-P-95	6.6	5969.13	5970.37	1.24	1.08	6.12	9.59
DS YPP	1598.214	WC-P-95	18.1	5969.13	5970.7	1.56	1.87	9.7	12.5
DS YPP	1598.214	J-P-95	5.8	5969.13	5970.32	1.19	1.02	5.66	9.37
DS YPP	1598.214	CH-5	57.4	5969.13	5971.3	2.17	3.14	18.27	15.19
DS YPP	1598.214	ST-5	244.7	5969.13	5972.66	3.53	6.08	40.26	17.01
DS YPP	1598.214	BT-5	41.5	5969.13	5971.08	1.95	2.77	14.97	14.78
DS YPP	1598.214	WC-5	255.5	5969.13	5972.71	3.57	6.22	41.07	17.07
DS YPP	1598.214	J-5	142.7	5969.13	5972.08	2.95	4.64	30.72	16.31

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1594.427	CH-E-95	9.9	5968.29	5969.94	1.65	2.45	4.04	5.15
DS YPP	1594.427	ST-E-95	9.8	5968.29	5969.94	1.64	2.43	4.03	5.14
DS YPP	1594.427	BT-E-95	9.9	5968.29	5969.94	1.65	2.45	4.04	5.15
DS YPP	1594.427	WC-E-95	22.7	5968.29	5970	1.71	5.22	4.35	5.32
DS YPP	1594.427	J-E-95	8.5	5968.29	5969.9	1.61	2.22	3.83	5.03
DS YPP	1594.427	CH-P-95	6.6	5968.29	5969.82	1.53	1.9	3.45	4.79
DS YPP	1594.427	ST-P-95	6.4	5968.29	5969.81	1.52	1.87	3.42	4.77
DS YPP	1594.427	BT-P-95	6.6	5968.29	5969.82	1.53	1.91	3.46	4.8
DS YPP	1594.427	WC-P-95	18.1	5968.29	5969.92	1.63	4.57	3.96	5.1
DS YPP	1594.427	J-P-95	5.8	5968.29	5969.78	1.49	1.78	3.25	4.67
DS YPP	1594.427	CH-5	57.4	5968.29	5970.75	2.46	5.47	10.49	11.37
DS YPP	1594.427	ST-5	244.7	5968.29	5972.15	3.86	7.62	32.11	17.95
DS YPP	1594.427	BT-5	41.5	5968.29	5970.5	2.21	5.27	7.88	9.43
DS YPP	1594.427	WC-5	255.5	5968.29	5972.23	3.94	7.62	33.56	18.82
DS YPP	1594.427	J-5	142.7	5968.29	5971.54	3.25	6.58	21.69	16.29
DS YPP	1590.934	CH-E-95	9.9	5968.19	5969.63	1.44	1.14	8.66	11.24
DS YPP	1590.934	ST-E-95	9.8	5968.19	5969.63	1.44	1.14	8.62	11.23
DS YPP	1590.934	BT-E-95	9.9	5968.19	5969.63	1.44	1.14	8.66	11.24
DS YPP	1590.934	WC-E-95	22.7	5968.19	5969.68	1.49	2.48	9.16	11.36
DS YPP	1590.934	J-E-95	8.5	5968.19	5969.58	1.39	1.06	8.03	11.07
DS YPP	1590.934	CH-P-95	6.6	5968.19	5969.48	1.29	0.94	6.99	10.8
DS YPP	1590.934	ST-P-95	6.4	5968.19	5969.47	1.28	0.93	6.9	10.78
DS YPP	1590.934	BT-P-95	6.6	5968.19	5969.48	1.29	0.94	7.03	10.81
DS YPP	1590.934	WC-P-95	18.1	5968.19	5969.74	1.55	1.84	9.85	11.53
DS YPP	1590.934	J-P-95	5.8	5968.19	5969.43	1.24	0.89	6.45	10.65
DS YPP	1590.934	CH-5	57.4	5968.19	5970.25	2.06	3.49	16.43	14.26
DS YPP	1590.934	ST-5	244.7	5968.19	5970.57	2.38	11.4	21.47	17.05
DS YPP	1590.934	BT-5	41.5	5968.19	5970.01	1.82	3.16	13.12	12.82
DS YPP	1590.934	WC-5	255.5	5968.19	5970.62	2.43	11.51	22.21	17.21
DS YPP	1590.934	J-5	142.7	5968.19	5970.11	1.92	9.84	14.5	13.41
DS YPP	1587.467	CH-E-95	9.9	5967.93	5969.41	1.48	1.38	7.16	8.83
DS YPP	1587.467	ST-E-95	9.8	5967.93	5969.41	1.48	1.37	7.14	8.82
DS YPP	1587.467	BT-E-95	9.9	5967.93	5969.41	1.48	1.38	7.16	8.83
DS YPP	1587.467	WC-E-95	22.7	5967.93	5969.41	1.48	3.16	7.18	8.83
DS YPP	1587.467	J-E-95	8.5	5967.93	5969.35	1.42	1.29	6.61	8.56
DS YPP	1587.467	CH-P-95	6.6	5967.93	5969.25	1.32	1.13	5.8	8.01
DS YPP	1587.467	ST-P-95	6.4	5967.93	5969.24	1.31	1.12	5.73	7.96
DS YPP	1587.467	BT-P-95	6.6	5967.93	5969.25	1.32	1.13	5.82	8.02
DS YPP	1587.467	WC-P-95	18.1	5967.93	5969.5	1.57	2.27	7.97	9.29
DS YPP	1587.467	J-P-95	5.8	5967.93	5969.2	1.27	1.07	5.38	7.71
DS YPP	1587.467	CH-5	57.4	5967.93	5969.79	1.86	5.27	10.9	10.89
DS YPP	1587.467	ST-5	244.7	5967.93	5971.2	3.27	7.31	33.49	20.87
DS YPP	1587.467	BT-5	41.5	5967.93	5969.64	1.71	4.44	9.35	10.19
DS YPP	1587.467	WC-5	255.5	5967.93	5971.25	3.32	7.39	34.6	21.01
DS YPP	1587.467	J-5	142.7	5967.93	5970.64	2.71	6.35	22.48	18.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1585.694	CH-E-95	9.9	5967.88	5969.29	1.41	1.18	8.36	13.27
DS YPP	1585.694	ST-E-95	9.8	5967.88	5969.28	1.4	1.18	8.32	13.25
DS YPP	1585.694	BT-E-95	9.9	5967.88	5969.29	1.41	1.18	8.36	13.27
DS YPP	1585.694	WC-E-95	22.7	5967.88	5969.33	1.45	2.53	8.97	13.6
DS YPP	1585.694	J-E-95	8.5	5967.88	5969.21	1.33	1.14	7.46	11.86
DS YPP	1585.694	CH-P-95	6.6	5967.88	5969.12	1.23	1.03	6.35	10.61
DS YPP	1585.694	ST-P-95	6.4	5967.88	5969.11	1.23	1.02	6.26	10.52
DS YPP	1585.694	BT-P-95	6.6	5967.88	5969.12	1.24	1.03	6.38	10.65
DS YPP	1585.694	WC-P-95	18.1	5967.88	5969.4	1.52	1.83	9.89	14.13
DS YPP	1585.694	J-P-95	5.8	5967.88	5969.06	1.18	1	5.8	9.99
DS YPP	1585.694	CH-5	57.4	5967.88	5969.86	1.98	3.37	17.01	16.06
DS YPP	1585.694	ST-5	244.7	5967.88	5971.39	3.51	5.27	46.44	22.44
DS YPP	1585.694	BT-5	41.5	5967.88	5969.65	1.77	3.05	13.59	15.4
DS YPP	1585.694	WC-5	255.5	5967.88	5971.46	3.57	5.34	47.88	22.63
DS YPP	1585.694	J-5	142.7	5967.88	5970.77	2.89	4.29	33.27	20.08
DS YPP	1578.385	CH-E-95	9.9	5967.61	5969.08	1.47	0.74	13.33	14.51
DS YPP	1578.385	ST-E-95	9.8	5967.61	5969.08	1.47	0.74	13.3	14.5
DS YPP	1578.385	BT-E-95	9.9	5967.61	5969.08	1.47	0.74	13.33	14.51
DS YPP	1578.385	WC-E-95	22.7	5967.61	5969.23	1.62	1.47	15.44	15.01
DS YPP	1578.385	J-E-95	8.5	5967.61	5968.99	1.38	0.71	11.99	14.17
DS YPP	1578.385	CH-P-95	6.6	5967.61	5968.89	1.28	0.62	10.52	13.63
DS YPP	1578.385	ST-P-95	6.4	5967.61	5968.88	1.27	0.61	10.41	13.59
DS YPP	1578.385	BT-P-95	6.6	5967.61	5968.89	1.28	0.62	10.57	13.65
DS YPP	1578.385	WC-P-95	18.1	5967.61	5969.24	1.63	1.16	15.61	15.05
DS YPP	1578.385	J-P-95	5.8	5967.61	5968.83	1.22	0.59	9.82	13.26
DS YPP	1578.385	CH-5	57.4	5967.61	5969.8	2.19	2.34	24.5	16.64
DS YPP	1578.385	ST-5	244.7	5967.61	5971.35	3.74	4.61	53.08	20.3
DS YPP	1578.385	BT-5	41.5	5967.61	5969.57	1.96	2	20.75	16.06
DS YPP	1578.385	WC-5	255.5	5967.61	5971.42	3.81	4.7	54.37	20.48
DS YPP	1578.385	J-5	142.7	5967.61	5970.72	3.11	3.5	40.76	18.64
DS YPP	1572.187	CH-E-95	9.9	5967.61	5968.95	1.34	0.95	10.47	12.96
DS YPP	1572.187	ST-E-95	9.8	5967.61	5968.95	1.34	0.94	10.44	12.92
DS YPP	1572.187	BT-E-95	9.9	5967.61	5968.95	1.34	0.95	10.47	12.96
DS YPP	1572.187	WC-E-95	22.7	5967.61	5969.13	1.52	1.75	12.99	14.07
DS YPP	1572.187	J-E-95	8.5	5967.61	5968.85	1.24	0.91	9.36	10.04
DS YPP	1572.187	CH-P-95	6.6	5967.61	5968.75	1.14	0.78	8.38	9.7
DS YPP	1572.187	ST-P-95	6.4	5967.61	5968.74	1.13	0.77	8.31	9.67
DS YPP	1572.187	BT-P-95	6.6	5967.61	5968.75	1.14	0.78	8.41	9.71
DS YPP	1572.187	WC-P-95	18.1	5967.61	5969.12	1.51	1.41	12.82	14.02
DS YPP	1572.187	J-P-95	5.8	5967.61	5968.7	1.09	0.73	7.92	9.54
DS YPP	1572.187	CH-5	57.4	5967.61	5969.69	2.08	2.67	21.5	16.32
DS YPP	1572.187	ST-5	244.7	5967.61	5971.26	3.65	4.78	51.56	22.15
DS YPP	1572.187	BT-5	41.5	5967.61	5969.47	1.86	2.31	17.93	15.42
DS YPP	1572.187	WC-5	255.5	5967.61	5971.32	3.71	4.86	53.01	22.37
DS YPP	1572.187	J-5	142.7	5967.61	5970.61	3	3.75	38.03	19.71

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1567.427	CH-E-95	9.9	5967.27	5968.42	1.15	2.95	3.35	7.18
DS YPP	1567.427	ST-E-95	9.8	5967.27	5968.41	1.14	2.95	3.32	7.16
DS YPP	1567.427	BT-E-95	9.9	5967.27	5968.42	1.15	2.95	3.35	7.18
DS YPP	1567.427	WC-E-95	22.7	5967.27	5968.63	1.36	4.53	5.01	8.33
DS YPP	1567.427	J-E-95	8.5	5967.27	5968.37	1.1	2.83	3.01	6.93
DS YPP	1567.427	CH-P-95	6.6	5967.27	5968.27	1	2.74	2.39	6.3
DS YPP	1567.427	ST-P-95	6.4	5967.27	5968.27	1	2.73	2.34	6.24
DS YPP	1567.427	BT-P-95	6.6	5967.27	5968.28	1.01	2.74	2.41	6.32
DS YPP	1567.427	WC-P-95	18.1	5967.27	5968.53	1.26	4.27	4.24	7.83
DS YPP	1567.427	J-P-95	5.8	5967.27	5968.22	0.95	2.79	2.07	5.85
DS YPP	1567.427	CH-5	57.4	5967.27	5969.17	1.9	5.3	10.82	12.45
DS YPP	1567.427	ST-5	244.7	5967.27	5970.61	3.33	7.38	33.17	19.55
DS YPP	1567.427	BT-5	41.5	5967.27	5968.99	1.72	4.82	8.6	11.99
DS YPP	1567.427	WC-5	255.5	5967.27	5970.64	3.37	7.56	33.81	19.64
DS YPP	1567.427	J-5	142.7	5967.27	5969.91	2.64	6.84	20.87	15.03
DS YPP	1564.168	CH-E-95	9.9	5966.88	5968.32	1.44	0.8	12.3	12.85
DS YPP	1564.168	ST-E-95	9.8	5966.88	5968.32	1.44	0.8	12.25	12.84
DS YPP	1564.168	BT-E-95	9.9	5966.88	5968.32	1.44	0.8	12.3	12.85
DS YPP	1564.168	WC-E-95	22.7	5966.88	5968.5	1.62	1.56	14.56	13.06
DS YPP	1564.168	J-E-95	8.5	5966.88	5968.26	1.38	0.74	11.51	12.77
DS YPP	1564.168	CH-P-95	6.6	5966.88	5968.16	1.27	0.65	10.14	12.61
DS YPP	1564.168	ST-P-95	6.4	5966.88	5968.15	1.27	0.64	10.03	12.59
DS YPP	1564.168	BT-P-95	6.6	5966.88	5968.16	1.28	0.65	10.18	12.62
DS YPP	1564.168	WC-P-95	18.1	5966.88	5968.5	1.62	1.25	14.54	13.06
DS YPP	1564.168	J-P-95	5.8	5966.88	5968.1	1.22	0.61	9.42	12.46
DS YPP	1564.168	CH-5	57.4	5966.88	5969.02	2.14	2.67	21.48	13.63
DS YPP	1564.168	ST-5	244.7	5966.88	5969	2.12	11.49	21.29	13.61
DS YPP	1564.168	BT-5	41.5	5966.88	5968.81	1.93	2.22	18.69	13.43
DS YPP	1564.168	WC-5	255.5	5966.88	5969.06	2.18	11.55	22.12	13.67
DS YPP	1564.168	J-5	142.7	5966.88	5969.77	2.89	4.45	32.06	14.35
DS YPP	1554.47	CH-E-95	9.9	5966.25	5968.22	1.97	0.58	17.01	15.27
DS YPP	1554.47	ST-E-95	9.8	5966.25	5968.21	1.96	0.58	16.95	15.24
DS YPP	1554.47	BT-E-95	9.9	5966.25	5968.22	1.97	0.58	17.01	15.27
DS YPP	1554.47	WC-E-95	22.7	5966.25	5968.44	2.19	1.1	20.68	18.35
DS YPP	1554.47	J-E-95	8.5	5966.25	5968.16	1.91	0.53	16.14	14.6
DS YPP	1554.47	CH-P-95	6.6	5966.25	5968.06	1.81	0.44	14.77	13.48
DS YPP	1554.47	ST-P-95	6.4	5966.25	5968.05	1.8	0.44	14.65	13.38
DS YPP	1554.47	BT-P-95	6.6	5966.25	5968.06	1.81	0.45	14.8	13.51
DS YPP	1554.47	WC-P-95	18.1	5966.25	5968.41	2.16	0.9	20.07	17.56
DS YPP	1554.47	J-P-95	5.8	5966.25	5968.01	1.76	0.41	14.1	12.86
DS YPP	1554.47	CH-5	57.4	5966.25	5968.97	2.72	1.85	31.07	20.5
DS YPP	1554.47	ST-5	244.7	5966.25	5970.35	4.1	3.96	61.97	24.33
DS YPP	1554.47	BT-5	41.5	5966.25	5968.76	2.51	1.55	26.76	19.85
DS YPP	1554.47	WC-5	255.5	5966.25	5970.4	4.15	4.05	63.28	24.49
DS YPP	1554.47	J-5	142.7	5966.25	5969.78	3.53	2.94	48.56	22.73

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1544.906	CH-E-95	9.9	5967.23	5967.86	0.63	2.62	3.78	10.39
DS YPP	1544.906	ST-E-95	9.8	5967.23	5967.86	0.63	2.61	3.76	10.38
DS YPP	1544.906	BT-E-95	9.9	5967.23	5967.86	0.63	2.62	3.78	10.39
DS YPP	1544.906	WC-E-95	22.7	5967.23	5968.04	0.81	4	5.67	11.74
DS YPP	1544.906	J-E-95	8.5	5967.23	5967.84	0.61	2.42	3.51	10.25
DS YPP	1544.906	CH-P-95	6.6	5967.23	5967.79	0.56	2.15	3.05	10.01
DS YPP	1544.906	ST-P-95	6.4	5967.23	5967.79	0.56	2.12	3.02	9.99
DS YPP	1544.906	BT-P-95	6.6	5967.23	5967.79	0.56	2.15	3.07	10.01
DS YPP	1544.906	WC-P-95	18.1	5967.23	5967.98	0.75	3.59	5.04	11.24
DS YPP	1544.906	J-P-95	5.8	5967.23	5967.77	0.54	2.02	2.86	9.9
DS YPP	1544.906	CH-5	57.4	5967.23	5968.45	1.22	4.94	11.63	15.82
DS YPP	1544.906	ST-5	244.7	5967.23	5969.62	2.39	6.97	35.09	23.8
DS YPP	1544.906	BT-5	41.5	5967.23	5968.29	1.06	4.49	9.24	15.11
DS YPP	1544.906	WC-5	255.5	5967.23	5969.67	2.44	7.06	36.21	23.9
DS YPP	1544.906	J-5	142.7	5967.23	5969.11	1.88	6.09	23.43	20.62
DS YPP	1541.846	CH-E-95	9.9	5965.13	5966.49	1.36	2.61	3.8	5.15
DS YPP	1541.846	ST-E-95	9.8	5965.13	5966.49	1.36	2.59	3.78	5.14
DS YPP	1541.846	BT-E-95	9.9	5965.13	5966.49	1.36	2.61	3.8	5.15
DS YPP	1541.846	WC-E-95	22.7	5965.13	5966.36	1.23	7.2	3.15	4.93
DS YPP	1541.846	J-E-95	8.5	5965.13	5966.44	1.31	2.38	3.57	5.07
DS YPP	1541.846	CH-P-95	6.6	5965.13	5966.36	1.23	2.09	3.13	4.92
DS YPP	1541.846	ST-P-95	6.4	5965.13	5966.35	1.22	2.07	3.09	4.9
DS YPP	1541.846	BT-P-95	6.6	5965.13	5966.36	1.23	2.1	3.15	4.92
DS YPP	1541.846	WC-P-95	18.1	5965.13	5966.48	1.35	4.82	3.75	5.13
DS YPP	1541.846	J-P-95	5.8	5965.13	5966.31	1.18	2	2.89	4.81
DS YPP	1541.846	CH-5	57.4	5965.13	5966.92	1.79	8.84	6.49	7.67
DS YPP	1541.846	ST-5	244.7	5965.13	5967.96	2.83	11.29	21.67	18.99
DS YPP	1541.846	BT-5	41.5	5965.13	5966.69	1.56	8.47	4.9	6.02
DS YPP	1541.846	WC-5	255.5	5965.13	5968	2.87	11.39	22.44	19.16
DS YPP	1541.846	J-5	142.7	5965.13	5967.53	2.4	10.1	14.13	16.21
DS YPP	1538.201	CH-E-95	9.9	5964.67	5966.17	1.5	1.12	8.88	11.47
DS YPP	1538.201	ST-E-95	9.8	5964.67	5966.16	1.49	1.11	8.85	11.46
DS YPP	1538.201	BT-E-95	9.9	5964.67	5966.17	1.5	1.12	8.88	11.47
DS YPP	1538.201	WC-E-95	22.7	5964.67	5966.17	1.5	2.54	8.94	11.51
DS YPP	1538.201	J-E-95	8.5	5964.67	5966.12	1.45	1.01	8.41	11.17
DS YPP	1538.201	CH-P-95	6.6	5964.67	5966.05	1.38	0.86	7.6	10.62
DS YPP	1538.201	ST-P-95	6.4	5964.67	5966.04	1.37	0.85	7.54	10.58
DS YPP	1538.201	BT-P-95	6.6	5964.67	5966.05	1.38	0.87	7.62	10.64
DS YPP	1538.201	WC-P-95	18.1	5964.67	5966.24	1.57	1.86	9.71	11.96
DS YPP	1538.201	J-P-95	5.8	5964.67	5966.01	1.34	0.81	7.15	10.28
DS YPP	1538.201	CH-5	57.4	5964.67	5966.11	1.44	7	8.2	11.03
DS YPP	1538.201	ST-5	244.7	5964.67	5966.97	2.3	11.65	21.46	22.02
DS YPP	1538.201	BT-5	41.5	5964.67	5966.42	1.75	3.48	11.96	13.27
DS YPP	1538.201	WC-5	255.5	5964.67	5967	2.33	11.84	22.07	22.27
DS YPP	1538.201	J-5	142.7	5964.67	5966.66	1.99	9.33	15.43	15.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1534.823	CH-E-95	9.9	5964.19	5965.95	1.75	1.14	8.7	15.66
DS YPP	1534.823	ST-E-95	9.8	5964.19	5965.94	1.75	1.13	8.67	15.62
DS YPP	1534.823	BT-E-95	9.9	5964.19	5965.95	1.75	1.14	8.7	15.66
DS YPP	1534.823	WC-E-95	22.7	5964.19	5965.89	1.7	2.86	7.93	14.77
DS YPP	1534.823	J-E-95	8.5	5964.19	5965.91	1.72	1.04	8.21	15.05
DS YPP	1534.823	CH-P-95	6.6	5964.19	5965.86	1.67	0.89	7.39	14.32
DS YPP	1534.823	ST-P-95	6.4	5964.19	5965.85	1.66	0.87	7.33	14.28
DS YPP	1534.823	BT-P-95	6.6	5964.19	5965.86	1.67	0.89	7.41	14.34
DS YPP	1534.823	WC-P-95	18.1	5964.19	5965.99	1.8	1.93	9.39	16.58
DS YPP	1534.823	J-P-95	5.8	5964.19	5965.82	1.63	0.84	6.91	13.82
DS YPP	1534.823	CH-5	57.4	5964.19	5966.16	1.97	4.6	12.47	19.2
DS YPP	1534.823	ST-5	244.7	5964.19	5966.76	2.57	9.47	25.91	24.9
DS YPP	1534.823	BT-5	41.5	5964.19	5966.01	1.82	4.23	9.81	17.17
DS YPP	1534.823	WC-5	255.5	5964.19	5966.78	2.59	9.71	26.4	25.02
DS YPP	1534.823	J-5	142.7	5964.19	5966.62	2.43	6.35	22.5	23.85
DS YPP	1525.062	CH-E-95	9.9	5964.45	5965.54	1.09	0.66	15.01	29.12
DS YPP	1525.062	ST-E-95	9.8	5964.45	5965.54	1.09	0.66	14.96	29.12
DS YPP	1525.062	BT-E-95	9.9	5964.45	5965.54	1.09	0.66	15.01	29.12
DS YPP	1525.062	WC-E-95	22.7	5964.45	5965.6	1.15	1.36	16.72	29.27
DS YPP	1525.062	J-E-95	8.5	5964.45	5965.51	1.06	0.6	14.08	29.04
DS YPP	1525.062	CH-P-95	6.6	5964.45	5965.45	1	0.53	12.26	28.5
DS YPP	1525.062	ST-P-95	6.4	5964.45	5965.44	0.99	0.53	12.09	28.44
DS YPP	1525.062	BT-P-95	6.6	5964.45	5965.45	1	0.54	12.32	28.52
DS YPP	1525.062	WC-P-95	18.1	5964.45	5965.62	1.17	1.05	17.27	29.32
DS YPP	1525.062	J-P-95	5.8	5964.45	5965.41	0.96	0.52	11.14	26.95
DS YPP	1525.062	CH-5	57.4	5964.45	5965.99	1.54	2.02	28.37	30.32
DS YPP	1525.062	ST-5	244.7	5964.45	5967.09	2.64	3.9	62.95	32.98
DS YPP	1525.062	BT-5	41.5	5964.45	5965.83	1.38	1.77	23.42	29.86
DS YPP	1525.062	WC-5	255.5	5964.45	5967.13	2.68	3.98	64.42	33.12
DS YPP	1525.062	J-5	142.7	5964.45	5966.61	2.16	3.01	47.39	31.61
DS YPP	1520.285	CH-E-95	9.9	5963.94	5965.28	1.34	1.35	7.47	16.83
DS YPP	1520.285	ST-E-95	9.8	5963.94	5965.27	1.33	1.34	7.42	16.79
DS YPP	1520.285	BT-E-95	9.9	5963.94	5965.28	1.34	1.35	7.47	16.83
DS YPP	1520.285	WC-E-95	22.7	5963.94	5965.32	1.38	2.83	8.16	17.6
DS YPP	1520.285	J-E-95	8.5	5963.94	5965.24	1.3	1.26	6.86	16.17
DS YPP	1520.285	CH-P-95	6.6	5963.94	5965.17	1.23	1.14	5.8	13.91
DS YPP	1520.285	ST-P-95	6.4	5963.94	5965.16	1.22	1.15	5.65	13.64
DS YPP	1520.285	BT-P-95	6.6	5963.94	5965.17	1.23	1.14	5.84	13.98
DS YPP	1520.285	WC-P-95	18.1	5963.94	5965.36	1.42	2.07	8.92	18.28
DS YPP	1520.285	J-P-95	5.8	5963.94	5965.13	1.19	1.11	5.25	12.9
DS YPP	1520.285	CH-5	57.4	5963.94	5965.55	1.61	4.61	12.72	21.04
DS YPP	1520.285	ST-5	244.7	5963.94	5966.52	2.58	6.6	38.87	31.12
DS YPP	1520.285	BT-5	41.5	5963.94	5965.44	1.5	4.07	10.38	19.46
DS YPP	1520.285	WC-5	255.5	5963.94	5966.57	2.63	6.63	40.43	31.42
DS YPP	1520.285	J-5	142.7	5963.94	5966.09	2.15	5.67	26.06	28.43

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1517.471	CH-E-95	9.9	5963.26	5964.72	1.46	1.82	5.42	11.51
DS YPP	1517.471	ST-E-95	9.8	5963.26	5964.72	1.46	1.81	5.42	11.51
DS YPP	1517.471	BT-E-95	9.9	5963.26	5964.72	1.46	1.82	5.42	11.51
DS YPP	1517.471	WC-E-95	22.7	5963.26	5964.77	1.51	3.79	5.99	13.16
DS YPP	1517.471	J-E-95	8.5	5963.26	5964.7	1.44	1.66	5.11	10.92
DS YPP	1517.471	CH-P-95	6.6	5963.26	5964.65	1.39	1.41	4.63	10.6
DS YPP	1517.471	ST-P-95	6.4	5963.26	5964.65	1.39	1.39	4.61	10.59
DS YPP	1517.471	BT-P-95	6.6	5963.26	5964.65	1.39	1.42	4.64	10.61
DS YPP	1517.471	WC-P-95	18.1	5963.26	5964.78	1.52	2.97	6.1	13.54
DS YPP	1517.471	J-P-95	5.8	5963.26	5964.63	1.37	1.3	4.42	10.44
DS YPP	1517.471	CH-5	57.4	5963.26	5965.11	1.85	4.62	12.46	25.31
DS YPP	1517.471	ST-5	244.7	5963.26	5965.56	2.3	9.1	27.17	36.05
DS YPP	1517.471	BT-5	41.5	5963.26	5965.02	1.76	3.97	10.47	21.39
DS YPP	1517.471	WC-5	255.5	5963.26	5965.59	2.33	9.22	28.01	36.18
DS YPP	1517.471	J-5	142.7	5963.26	5965.36	2.1	7.19	19.98	34.23
DS YPP	1511.252	CH-E-95	9.9	5962.78	5963.83	1.05	1.16	8.51	17.17
DS YPP	1511.252	ST-E-95	9.8	5962.78	5963.83	1.04	1.16	8.48	17.15
DS YPP	1511.252	BT-E-95	9.9	5962.78	5963.83	1.05	1.16	8.51	17.17
DS YPP	1511.252	WC-E-95	22.7	5962.78	5963.81	1.03	2.77	8.2	16.98
DS YPP	1511.252	J-E-95	8.5	5962.78	5963.79	1.01	1.08	7.88	16.8
DS YPP	1511.252	CH-P-95	6.6	5962.78	5963.72	0.94	0.97	6.72	16.08
DS YPP	1511.252	ST-P-95	6.4	5962.78	5963.71	0.93	0.97	6.62	16.01
DS YPP	1511.252	BT-P-95	6.6	5962.78	5963.72	0.94	0.98	6.76	16.1
DS YPP	1511.252	WC-P-95	18.1	5962.78	5963.89	1.11	1.89	9.58	17.76
DS YPP	1511.252	J-P-95	5.8	5962.78	5963.68	0.9	0.95	6.08	15.67
DS YPP	1511.252	CH-5	57.4	5962.78	5964.14	1.36	3.93	14.62	24.94
DS YPP	1511.252	ST-5	244.7	5962.78	5964.67	1.89	8.09	30.25	32.65
DS YPP	1511.252	BT-5	41.5	5962.78	5964	1.22	3.56	11.67	19.51
DS YPP	1511.252	WC-5	255.5	5962.78	5964.69	1.91	8.27	30.89	32.79
DS YPP	1511.252	J-5	142.7	5962.78	5964.7	1.92	4.57	31.22	32.86
DS YPP	1506.792	CH-E-95	9.9	5962.34	5963.71	1.37	0.55	18.14	25.19
DS YPP	1506.792	ST-E-95	9.8	5962.34	5963.71	1.37	0.54	18.09	25.17
DS YPP	1506.792	BT-E-95	9.9	5962.34	5963.71	1.37	0.55	18.14	25.19
DS YPP	1506.792	WC-E-95	22.7	5962.34	5963.76	1.42	1.17	19.37	25.79
DS YPP	1506.792	J-E-95	8.5	5962.34	5963.68	1.34	0.49	17.22	24.71
DS YPP	1506.792	CH-P-95	6.6	5962.34	5963.61	1.27	0.42	15.6	23.83
DS YPP	1506.792	ST-P-95	6.4	5962.34	5963.61	1.27	0.41	15.47	23.76
DS YPP	1506.792	BT-P-95	6.6	5962.34	5963.61	1.27	0.42	15.66	23.86
DS YPP	1506.792	WC-P-95	18.1	5962.34	5963.79	1.45	0.9	20.15	26.09
DS YPP	1506.792	J-P-95	5.8	5962.34	5963.57	1.23	0.39	14.67	23.3
DS YPP	1506.792	CH-5	57.4	5962.34	5964.13	1.79	1.92	29.84	30.31
DS YPP	1506.792	ST-5	244.7	5962.34	5965.16	2.82	3.75	65.3	36.83
DS YPP	1506.792	BT-5	41.5	5962.34	5963.98	1.64	1.63	25.48	29.48
DS YPP	1506.792	WC-5	255.5	5962.34	5965.21	2.87	3.81	67.03	37.03
DS YPP	1506.792	J-5	142.7	5962.34	5964.72	2.38	2.9	49.24	35.8

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1501.328	CH-E-95	9.9	5962.35	5963.56	1.21	1.02	9.66	21.07
DS YPP	1501.328	ST-E-95	9.8	5962.35	5963.55	1.2	1.02	9.62	21.04
DS YPP	1501.328	BT-E-95	9.9	5962.35	5963.56	1.21	1.02	9.66	21.07
DS YPP	1501.328	WC-E-95	22.7	5962.35	5963.56	1.21	2.31	9.82	21.2
DS YPP	1501.328	J-E-95	8.5	5962.35	5963.53	1.18	0.94	9.05	20.57
DS YPP	1501.328	CH-P-95	6.6	5962.35	5963.47	1.12	0.83	7.93	19.67
DS YPP	1501.328	ST-P-95	6.4	5962.35	5963.47	1.12	0.82	7.84	19.59
DS YPP	1501.328	BT-P-95	6.6	5962.35	5963.47	1.12	0.83	7.97	19.7
DS YPP	1501.328	WC-P-95	18.1	5962.35	5963.61	1.26	1.69	10.72	21.92
DS YPP	1501.328	J-P-95	5.8	5962.35	5963.43	1.08	0.8	7.21	19.02
DS YPP	1501.328	CH-5	57.4	5962.35	5963.8	1.45	3.75	15.3	25.66
DS YPP	1501.328	ST-5	244.7	5962.35	5964.61	2.26	6.22	39.31	32.72
DS YPP	1501.328	BT-5	41.5	5962.35	5963.71	1.36	3.17	13.1	24.39
DS YPP	1501.328	WC-5	255.5	5962.35	5964.63	2.28	6.37	40.13	32.93
DS YPP	1501.328	J-5	142.7	5962.35	5964.2	1.85	5.35	26.67	30.36
DS YPP	1495.329	CH-E-95	9.9	5961.22	5963.06	1.84	1.05	9.39	20.03
DS YPP	1495.329	ST-E-95	9.8	5961.22	5963.06	1.84	1.05	9.35	20
DS YPP	1495.329	BT-E-95	9.9	5961.22	5963.06	1.84	1.05	9.39	20.03
DS YPP	1495.329	WC-E-95	22.7	5961.22	5963.07	1.85	2.35	9.66	20.25
DS YPP	1495.329	J-E-95	8.5	5961.22	5963.02	1.8	0.98	8.64	19.28
DS YPP	1495.329	CH-P-95	6.6	5961.22	5962.95	1.73	0.9	7.28	17.15
DS YPP	1495.329	ST-P-95	6.4	5961.22	5962.94	1.72	0.89	7.16	16.9
DS YPP	1495.329	BT-P-95	6.6	5961.22	5962.95	1.73	0.9	7.31	17.21
DS YPP	1495.329	WC-P-95	18.1	5961.22	5963.14	1.91	1.65	11	21.81
DS YPP	1495.329	J-P-95	5.8	5961.22	5962.9	1.68	0.89	6.47	14.97
DS YPP	1495.329	CH-5	57.4	5961.22	5963.51	2.29	2.74	20.98	30.18
DS YPP	1495.329	ST-5	244.7	5961.22	5964.54	3.32	4.32	56.68	36.75
DS YPP	1495.329	BT-5	41.5	5961.22	5963.33	2.11	2.61	15.89	27.66
DS YPP	1495.329	WC-5	255.5	5961.22	5964.57	3.35	4.4	58.08	36.85
DS YPP	1495.329	J-5	142.7	5961.22	5964.13	2.91	3.4	41.94	35.67
DS YPP	1487.877	CH-E-95	9.9	5961.5	5962.58	1.07	1.11	8.89	12.18
DS YPP	1487.877	ST-E-95	9.8	5961.5	5962.57	1.07	1.11	8.86	12.17
DS YPP	1487.877	BT-E-95	9.9	5961.5	5962.58	1.07	1.11	8.89	12.18
DS YPP	1487.877	WC-E-95	22.7	5961.5	5962.57	1.07	2.56	8.86	12.17
DS YPP	1487.877	J-E-95	8.5	5961.5	5962.54	1.04	1.01	8.42	11.98
DS YPP	1487.877	CH-P-95	6.6	5961.5	5962.46	0.96	0.87	7.55	11.64
DS YPP	1487.877	ST-P-95	6.4	5961.5	5962.46	0.96	0.86	7.48	11.61
DS YPP	1487.877	BT-P-95	6.6	5961.5	5962.47	0.96	0.87	7.58	11.65
DS YPP	1487.877	WC-P-95	18.1	5961.5	5962.64	1.14	1.87	9.7	12.5
DS YPP	1487.877	J-P-95	5.8	5961.5	5962.42	0.92	0.81	7.09	11.46
DS YPP	1487.877	CH-5	57.4	5961.5	5962.86	1.36	4.56	12.59	13.77
DS YPP	1487.877	ST-5	244.7	5961.5	5963.93	2.43	6.33	38.68	31.84
DS YPP	1487.877	BT-5	41.5	5961.5	5962.76	1.26	3.71	11.2	13.13
DS YPP	1487.877	WC-5	255.5	5961.5	5963.98	2.47	6.35	40.24	32.64
DS YPP	1487.877	J-5	142.7	5961.5	5963.51	2.01	5.44	26.23	27.78

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1483.313	CH-E-95	9.9	5960.96	5962.32	1.36	0.99	9.98	19.56
DS YPP	1483.313	ST-E-95	9.8	5960.96	5962.31	1.35	0.99	9.93	19.52
DS YPP	1483.313	BT-E-95	9.9	5960.96	5962.32	1.36	0.99	9.98	19.56
DS YPP	1483.313	WC-E-95	22.7	5960.96	5962.33	1.37	2.22	10.22	19.74
DS YPP	1483.313	J-E-95	8.5	5960.96	5962.28	1.32	0.92	9.27	18.95
DS YPP	1483.313	CH-P-95	6.6	5960.96	5962.21	1.24	0.83	7.9	17.55
DS YPP	1483.313	ST-P-95	6.4	5960.96	5962.2	1.24	0.82	7.78	17.42
DS YPP	1483.313	BT-P-95	6.6	5960.96	5962.21	1.25	0.83	7.94	17.6
DS YPP	1483.313	WC-P-95	18.1	5960.96	5962.39	1.43	1.58	11.44	20.63
DS YPP	1483.313	J-P-95	5.8	5960.96	5962.16	1.2	0.8	7.19	16.82
DS YPP	1483.313	CH-5	57.4	5960.96	5962.7	1.74	3.04	18.89	27.18
DS YPP	1483.313	ST-5	244.7	5960.96	5963.08	2.12	8.2	29.85	30.4
DS YPP	1483.313	BT-5	41.5	5960.96	5962.57	1.6	2.71	15.31	23.98
DS YPP	1483.313	WC-5	255.5	5960.96	5963.1	2.14	8.32	30.71	30.44
DS YPP	1483.313	J-5	142.7	5960.96	5963.21	2.25	4.2	33.96	30.69
DS YPP	1478.06	CH-E-95	9.9	5960.74	5962.09	1.35	0.82	12.1	19.05
DS YPP	1478.06	ST-E-95	9.8	5960.74	5962.09	1.35	0.81	12.05	19.02
DS YPP	1478.06	BT-E-95	9.9	5960.74	5962.09	1.35	0.82	12.1	19.05
DS YPP	1478.06	WC-E-95	22.7	5960.74	5962.16	1.41	1.7	13.33	20.07
DS YPP	1478.06	J-E-95	8.5	5960.74	5962.05	1.31	0.75	11.39	18.65
DS YPP	1478.06	CH-P-95	6.6	5960.74	5961.98	1.23	0.66	9.95	17.44
DS YPP	1478.06	ST-P-95	6.4	5960.74	5961.97	1.23	0.65	9.83	17.25
DS YPP	1478.06	BT-P-95	6.6	5960.74	5961.98	1.24	0.66	10	17.52
DS YPP	1478.06	WC-P-95	18.1	5960.74	5962.18	1.44	1.3	13.88	20.59
DS YPP	1478.06	J-P-95	5.8	5960.74	5961.93	1.19	0.63	9.19	16.67
DS YPP	1478.06	CH-5	57.4	5960.74	5962.55	1.81	2.52	22.82	27.45
DS YPP	1478.06	ST-5	244.7	5960.74	5963.51	2.77	4.62	53.01	34.17
DS YPP	1478.06	BT-5	41.5	5960.74	5962.41	1.67	2.17	19.12	25.35
DS YPP	1478.06	WC-5	255.5	5960.74	5963.55	2.81	4.7	54.36	34.38
DS YPP	1478.06	J-5	142.7	5960.74	5963.09	2.35	3.64	39.2	32.24
DS YPP	1474.185	CH-E-95	9.9	5960.88	5961.87	0.99	1.3	7.59	15.58
DS YPP	1474.185	ST-E-95	9.8	5960.88	5961.87	0.99	1.3	7.56	15.55
DS YPP	1474.185	BT-E-95	9.9	5960.88	5961.87	0.99	1.3	7.59	15.58
DS YPP	1474.185	WC-E-95	22.7	5960.88	5961.9	1.02	2.8	8.12	16.14
DS YPP	1474.185	J-E-95	8.5	5960.88	5961.84	0.96	1.19	7.12	15.1
DS YPP	1474.185	CH-P-95	6.6	5960.88	5961.76	0.88	1.08	6.09	12.93
DS YPP	1474.185	ST-P-95	6.4	5960.88	5961.76	0.88	1.06	6.01	12.72
DS YPP	1474.185	BT-P-95	6.6	5960.88	5961.77	0.89	1.08	6.11	13
DS YPP	1474.185	WC-P-95	18.1	5960.88	5961.94	1.06	2.06	8.79	16.84
DS YPP	1474.185	J-P-95	5.8	5960.88	5961.73	0.85	1.03	5.62	11.67
DS YPP	1474.185	CH-5	57.4	5960.88	5962.17	1.29	4.23	13.58	24.66
DS YPP	1474.185	ST-5	244.7	5960.88	5963.04	2.16	6.42	38.12	30.72
DS YPP	1474.185	BT-5	41.5	5960.88	5962.03	1.15	4.03	10.3	19.68
DS YPP	1474.185	WC-5	255.5	5960.88	5963.09	2.21	6.45	39.63	31.17
DS YPP	1474.185	J-5	142.7	5960.88	5962.64	1.76	5.46	26.13	28.87

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1472.39	CH-E-95	9.9	5960.87	5961.53	0.66	1.74	5.68	16.48
DS YPP	1472.39	ST-E-95	9.8	5960.87	5961.53	0.66	1.73	5.65	16.43
DS YPP	1472.39	BT-E-95	9.9	5960.87	5961.53	0.66	1.74	5.68	16.48
DS YPP	1472.39	WC-E-95	22.7	5960.87	5961.59	0.72	3.36	6.75	18.87
DS YPP	1472.39	J-E-95	8.5	5960.87	5961.5	0.63	1.67	5.1	15.19
DS YPP	1472.39	CH-P-95	6.6	5960.87	5961.42	0.54	1.63	4.01	12.03
DS YPP	1472.39	ST-P-95	6.4	5960.87	5961.41	0.54	1.63	3.93	11.92
DS YPP	1472.39	BT-P-95	6.6	5960.87	5961.42	0.55	1.63	4.04	12.08
DS YPP	1472.39	WC-P-95	18.1	5960.87	5961.58	0.71	2.8	6.46	18.06
DS YPP	1472.39	J-P-95	5.8	5960.87	5961.38	0.51	1.61	3.58	11.76
DS YPP	1472.39	CH-5	57.4	5960.87	5961.85	0.98	4.68	12.28	24.55
DS YPP	1472.39	ST-5	244.7	5960.87	5962.45	1.58	8.19	29.86	30.85
DS YPP	1472.39	BT-5	41.5	5960.87	5961.77	0.9	3.94	10.53	22.8
DS YPP	1472.39	WC-5	255.5	5960.87	5962.48	1.61	8.28	30.86	30.96
DS YPP	1472.39	J-5	142.7	5960.87	5962.16	1.29	6.77	21.09	29.43
DS YPP	1461.51	CH-E-95	9.9	5959.57	5961.03	1.46	0.7	14.23	19.31
DS YPP	1461.51	ST-E-95	9.8	5959.57	5961.03	1.46	0.69	14.19	19.3
DS YPP	1461.51	BT-E-95	9.9	5959.57	5961.03	1.46	0.7	14.23	19.31
DS YPP	1461.51	WC-E-95	22.7	5959.57	5961.05	1.48	1.57	14.48	19.35
DS YPP	1461.51	J-E-95	8.5	5959.57	5961	1.43	0.63	13.5	19.18
DS YPP	1461.51	CH-P-95	6.6	5959.57	5960.93	1.36	0.54	12.18	18.83
DS YPP	1461.51	ST-P-95	6.4	5959.57	5960.92	1.35	0.53	12.07	18.76
DS YPP	1461.51	BT-P-95	6.6	5959.57	5960.93	1.36	0.54	12.23	18.86
DS YPP	1461.51	WC-P-95	18.1	5959.57	5961.1	1.53	1.16	15.6	19.52
DS YPP	1461.51	J-P-95	5.8	5959.57	5960.89	1.32	0.5	11.48	18.42
DS YPP	1461.51	CH-5	57.4	5959.57	5961.38	1.81	2.69	21.36	21.76
DS YPP	1461.51	ST-5	244.7	5959.57	5962.48	2.91	4.54	54.18	35.38
DS YPP	1461.51	BT-5	41.5	5959.57	5961.24	1.67	2.25	18.41	20.75
DS YPP	1461.51	WC-5	255.5	5959.57	5962.53	2.96	4.6	55.85	35.61
DS YPP	1461.51	J-5	142.7	5959.57	5961.99	2.42	3.83	37.3	32.44
DS YPP	1458.422	CH-E-95	9.9	5959.97	5960.97	1	0.68	14.63	27.48
DS YPP	1458.422	ST-E-95	9.8	5959.97	5960.96	0.99	0.67	14.59	27.48
DS YPP	1458.422	BT-E-95	9.9	5959.97	5960.97	1	0.68	14.63	27.48
DS YPP	1458.422	WC-E-95	22.7	5959.97	5960.98	1.01	1.5	15.16	27.58
DS YPP	1458.422	J-E-95	8.5	5959.97	5960.93	0.96	0.63	13.59	27.29
DS YPP	1458.422	CH-P-95	6.6	5959.97	5960.86	0.89	0.56	11.69	26.44
DS YPP	1458.422	ST-P-95	6.4	5959.97	5960.85	0.88	0.56	11.52	26.36
DS YPP	1458.422	BT-P-95	6.6	5959.97	5960.86	0.89	0.56	11.76	26.47
DS YPP	1458.422	WC-P-95	18.1	5959.97	5961.04	1.07	1.08	16.69	27.86
DS YPP	1458.422	J-P-95	5.8	5959.97	5960.82	0.85	0.54	10.69	25.97
DS YPP	1458.422	CH-5	57.4	5959.97	5961.34	1.37	2.28	25.15	29.35
DS YPP	1458.422	ST-5	244.7	5959.97	5962.51	2.54	3.71	65.97	40.18
DS YPP	1458.422	BT-5	41.5	5959.97	5961.19	1.22	1.99	20.89	28.59
DS YPP	1458.422	WC-5	255.5	5959.97	5962.56	2.59	3.76	67.99	40.71
DS YPP	1458.422	J-5	142.7	5959.97	5961.97	2	3.13	45.53	35.8

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1442.815	CH-E-95	9.9	5959.13	5960.46	1.33	0.9	10.97	17.38
DS YPP	1442.815	ST-E-95	9.8	5959.13	5960.46	1.33	0.9	10.91	17.35
DS YPP	1442.815	BT-E-95	9.9	5959.13	5960.46	1.33	0.9	10.97	17.38
DS YPP	1442.815	WC-E-95	22.7	5959.13	5960.5	1.37	1.94	11.67	18.43
DS YPP	1442.815	J-E-95	8.5	5959.13	5960.41	1.28	0.84	10.08	16.11
DS YPP	1442.815	CH-P-95	6.6	5959.13	5960.31	1.18	0.76	8.61	14.47
DS YPP	1442.815	ST-P-95	6.4	5959.13	5960.3	1.17	0.75	8.49	14.32
DS YPP	1442.815	BT-P-95	6.6	5959.13	5960.32	1.19	0.76	8.65	14.52
DS YPP	1442.815	WC-P-95	18.1	5959.13	5960.56	1.42	1.43	12.68	19.35
DS YPP	1442.815	J-P-95	5.8	5959.13	5960.26	1.13	0.73	7.9	13.52
DS YPP	1442.815	CH-5	57.4	5959.13	5960.89	1.76	2.9	19.81	21.93
DS YPP	1442.815	ST-5	244.7	5959.13	5961.6	2.47	6.77	36.13	25.84
DS YPP	1442.815	BT-5	41.5	5959.13	5960.75	1.62	2.49	16.67	21.37
DS YPP	1442.815	WC-5	255.5	5959.13	5961.65	2.52	6.84	37.38	26.39
DS YPP	1442.815	J-5	142.7	5959.13	5961.37	2.24	4.68	30.49	23.28
DS YPP	1430.545	CH-E-95	9.9	5958.54	5959.75	1.21	1.23	8.04	15.35
DS YPP	1430.545	ST-E-95	9.8	5958.54	5959.75	1.21	1.22	8.01	15.3
DS YPP	1430.545	BT-E-95	9.9	5958.54	5959.75	1.21	1.23	8.04	15.35
DS YPP	1430.545	WC-E-95	22.7	5958.54	5959.73	1.19	2.93	7.76	14.85
DS YPP	1430.545	J-E-95	8.5	5958.54	5959.71	1.17	1.13	7.51	14.4
DS YPP	1430.545	CH-P-95	6.6	5958.54	5959.65	1.1	1	6.58	12.69
DS YPP	1430.545	ST-P-95	6.4	5958.54	5959.64	1.1	0.99	6.5	12.53
DS YPP	1430.545	BT-P-95	6.6	5958.54	5959.65	1.11	1	6.61	12.74
DS YPP	1430.545	WC-P-95	18.1	5958.54	5959.8	1.26	2.04	8.87	16.48
DS YPP	1430.545	J-P-95	5.8	5958.54	5959.6	1.06	0.95	6.06	11.66
DS YPP	1430.545	CH-5	57.4	5958.54	5960.01	1.46	4.54	12.64	20.37
DS YPP	1430.545	ST-5	244.7	5958.54	5960.91	2.36	6.76	36.21	29.96
DS YPP	1430.545	BT-5	41.5	5958.54	5959.88	1.33	4.09	10.15	17.93
DS YPP	1430.545	WC-5	255.5	5958.54	5960.93	2.39	6.94	36.86	30.11
DS YPP	1430.545	J-5	142.7	5958.54	5960.54	2	5.57	25.63	27.24
DS YPP	1424.881	CH-E-95	9.9	5958.28	5959.39	1.11	0.9	10.97	20.92
DS YPP	1424.881	ST-E-95	9.8	5958.28	5959.39	1.11	0.9	10.91	20.92
DS YPP	1424.881	BT-E-95	9.9	5958.28	5959.39	1.11	0.9	10.97	20.92
DS YPP	1424.881	WC-E-95	22.7	5958.28	5959.41	1.13	2.01	11.27	20.95
DS YPP	1424.881	J-E-95	8.5	5958.28	5959.36	1.08	0.83	10.2	20.62
DS YPP	1424.881	CH-P-95	6.6	5958.28	5959.29	1.01	0.74	8.8	19.68
DS YPP	1424.881	ST-P-95	6.4	5958.28	5959.28	1	0.73	8.72	19.58
DS YPP	1424.881	BT-P-95	6.6	5958.28	5959.29	1.01	0.75	8.84	19.73
DS YPP	1424.881	WC-P-95	18.1	5958.28	5959.46	1.18	1.46	12.36	21.06
DS YPP	1424.881	J-P-95	5.8	5958.28	5959.26	0.98	0.7	8.21	18.91
DS YPP	1424.881	CH-5	57.4	5958.28	5959.73	1.45	3.14	18.27	21.74
DS YPP	1424.881	ST-5	244.7	5958.28	5960.67	2.39	6.18	39.56	24.91
DS YPP	1424.881	BT-5	41.5	5958.28	5959.6	1.32	2.71	15.31	21.38
DS YPP	1424.881	WC-5	255.5	5958.28	5960.71	2.43	6.29	40.65	25.46
DS YPP	1424.881	J-5	142.7	5958.28	5960.28	2	4.67	30.53	22.91

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1419.26	CH-E-95	9.9	5958.33	5959.07	0.74	1.05	9.39	18.14
DS YPP	1419.26	ST-E-95	9.8	5958.33	5959.07	0.74	1.05	9.34	18.05
DS YPP	1419.26	BT-E-95	9.9	5958.33	5959.07	0.74	1.05	9.39	18.14
DS YPP	1419.26	WC-E-95	22.7	5958.33	5959.11	0.78	2.23	10.19	19.11
DS YPP	1419.26	J-E-95	8.5	5958.33	5959.03	0.7	0.98	8.65	17.05
DS YPP	1419.26	CH-P-95	6.6	5958.33	5958.96	0.63	0.88	7.48	15.55
DS YPP	1419.26	ST-P-95	6.4	5958.33	5958.95	0.62	0.86	7.41	15.51
DS YPP	1419.26	BT-P-95	6.6	5958.33	5958.96	0.63	0.88	7.51	15.57
DS YPP	1419.26	WC-P-95	18.1	5958.33	5959.15	0.82	1.65	10.98	19.95
DS YPP	1419.26	J-P-95	5.8	5958.33	5958.92	0.59	0.83	6.95	15.28
DS YPP	1419.26	CH-5	57.4	5958.33	5959.57	1.24	2.78	20.67	24.32
DS YPP	1419.26	ST-5	244.7	5958.33	5960.65	2.32	5.1	48.02	26.66
DS YPP	1419.26	BT-5	41.5	5958.33	5959.39	1.06	2.56	16.21	23.88
DS YPP	1419.26	WC-5	255.5	5958.33	5960.69	2.36	5.19	49.24	26.94
DS YPP	1419.26	J-5	142.7	5958.33	5960.19	1.86	3.96	36.04	25.54
DS YPP	1413.444	CH-E-95	9.9	5957.42	5958.91	1.49	0.64	15.41	21.84
DS YPP	1413.444	ST-E-95	9.8	5957.42	5958.91	1.49	0.64	15.33	21.83
DS YPP	1413.444	BT-E-95	9.9	5957.42	5958.91	1.49	0.64	15.41	21.84
DS YPP	1413.444	WC-E-95	22.7	5957.42	5959.04	1.62	1.25	18.19	22.36
DS YPP	1413.444	J-E-95	8.5	5957.42	5958.86	1.44	0.59	14.42	21.68
DS YPP	1413.444	CH-P-95	6.6	5957.42	5958.79	1.37	0.51	12.75	21.41
DS YPP	1413.444	ST-P-95	6.4	5957.42	5958.78	1.36	0.51	12.62	21.38
DS YPP	1413.444	BT-P-95	6.6	5957.42	5958.79	1.37	0.52	12.78	21.41
DS YPP	1413.444	WC-P-95	18.1	5957.42	5959.02	1.6	1.01	17.93	22.3
DS YPP	1413.444	J-P-95	5.8	5957.42	5958.75	1.33	0.48	11.95	21.22
DS YPP	1413.444	CH-5	57.4	5957.42	5959.53	2.11	1.9	30.2	26.05
DS YPP	1413.444	ST-5	244.7	5957.42	5960.68	3.26	3.96	62.35	30.27
DS YPP	1413.444	BT-5	41.5	5957.42	5959.33	1.91	1.65	25.09	25.14
DS YPP	1413.444	WC-5	255.5	5957.42	5960.73	3.31	4.04	63.83	30.56
DS YPP	1413.444	J-5	142.7	5957.42	5960.17	2.75	3	47.58	27.93
DS YPP	1407.636	CH-E-95	9.9	5957.79	5958.62	0.82	1.82	5.45	11.87
DS YPP	1407.636	ST-E-95	9.8	5957.79	5958.61	0.82	1.81	5.42	11.83
DS YPP	1407.636	BT-E-95	9.9	5957.79	5958.62	0.82	1.82	5.45	11.87
DS YPP	1407.636	WC-E-95	22.7	5957.79	5958.64	0.85	3.91	5.8	12.3
DS YPP	1407.636	J-E-95	8.5	5957.79	5958.56	0.77	1.75	4.87	11.07
DS YPP	1407.636	CH-P-95	6.6	5957.79	5958.47	0.68	1.67	3.91	9.95
DS YPP	1407.636	ST-P-95	6.4	5957.79	5958.46	0.67	1.67	3.83	9.89
DS YPP	1407.636	BT-P-95	6.6	5957.79	5958.48	0.68	1.68	3.94	9.97
DS YPP	1407.636	WC-P-95	18.1	5957.79	5958.69	0.9	2.82	6.42	13.29
DS YPP	1407.636	J-P-95	5.8	5957.79	5958.43	0.64	1.67	3.46	9.61
DS YPP	1407.636	CH-5	57.4	5957.79	5959.05	1.26	4.91	11.79	16.59
DS YPP	1407.636	ST-5	244.7	5957.79	5960.09	2.3	6.62	37.58	28.52
DS YPP	1407.636	BT-5	41.5	5957.79	5958.89	1.1	4.47	9.33	15.33
DS YPP	1407.636	WC-5	255.5	5957.79	5960.13	2.34	6.72	38.67	28.7
DS YPP	1407.636	J-5	142.7	5957.79	5959.77	1.98	5.04	28.69	26.98

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1400.798	CH-E-95	9.9	5956.71	5958.13	1.42	1.05	9.45	10.48
DS YPP	1400.798	ST-E-95	9.8	5956.71	5958.13	1.42	1.04	9.42	10.47
DS YPP	1400.798	BT-E-95	9.9	5956.71	5958.13	1.42	1.05	9.45	10.48
DS YPP	1400.798	WC-E-95	22.7	5956.71	5958.1	1.39	2.48	9.15	10.37
DS YPP	1400.798	J-E-95	8.5	5956.71	5958.09	1.38	0.94	9.01	10.31
DS YPP	1400.798	CH-P-95	6.6	5956.71	5958	1.29	0.81	8.11	9.99
DS YPP	1400.798	ST-P-95	6.4	5956.71	5957.99	1.28	0.8	8.05	9.96
DS YPP	1400.798	BT-P-95	6.6	5956.71	5958	1.29	0.81	8.16	10.01
DS YPP	1400.798	WC-P-95	18.1	5956.71	5958.22	1.51	1.74	10.38	11.06
DS YPP	1400.798	J-P-95	5.8	5956.71	5957.95	1.24	0.76	7.58	9.77
DS YPP	1400.798	CH-5	57.4	5956.71	5958.48	1.77	4.26	13.48	13.29
DS YPP	1400.798	ST-5	244.7	5956.71	5959.67	2.96	6.81	36.89	28.73
DS YPP	1400.798	BT-5	41.5	5956.71	5958.33	1.62	3.57	11.61	11.47
DS YPP	1400.798	WC-5	255.5	5956.71	5959.72	3	6.89	38.11	29.23
DS YPP	1400.798	J-5	142.7	5956.71	5959.05	2.34	6.35	22.61	18.99
DS YPP	1392.487	CH-E-95	9.9	5956.41	5957.18	0.77	2.86	3.67	13.97
DS YPP	1392.487	ST-E-95	9.8	5956.41	5957.17	0.76	2.87	3.62	13.86
DS YPP	1392.487	BT-E-95	9.9	5956.41	5957.18	0.77	2.86	3.67	13.97
DS YPP	1392.487	WC-E-95	22.7	5956.41	5957.37	0.96	3.55	6.73	17.37
DS YPP	1392.487	J-E-95	8.5	5956.41	5957.13	0.72	2.96	3.09	12.54
DS YPP	1392.487	CH-P-95	6.6	5956.41	5957.07	0.66	3.04	2.37	10.35
DS YPP	1392.487	ST-P-95	6.4	5956.41	5957.06	0.65	3.1	2.27	10.25
DS YPP	1392.487	BT-P-95	6.6	5956.41	5957.06	0.65	3.12	2.33	10.31
DS YPP	1392.487	WC-P-95	18.1	5956.41	5957.3	0.89	3.43	5.56	16.43
DS YPP	1392.487	J-P-95	5.8	5956.41	5957.06	0.65	2.8	2.26	10.25
DS YPP	1392.487	CH-5	57.4	5956.41	5957.69	1.28	4.88	12.49	18.73
DS YPP	1392.487	ST-5	244.7	5956.41	5958.45	2.04	9.25	28.21	22
DS YPP	1392.487	BT-5	41.5	5956.41	5957.55	1.14	4.46	9.85	18.08
DS YPP	1392.487	WC-5	255.5	5956.41	5958.5	2.09	9.34	29.15	22.26
DS YPP	1392.487	J-5	142.7	5956.41	5958.13	1.72	7.11	21.36	20.88
DS YPP	1387.704	CH-E-95	9.9	5954.98	5956.34	1.36	1.3	7.62	11.31
DS YPP	1387.704	ST-E-95	9.8	5954.98	5956.34	1.36	1.29	7.59	11.14
DS YPP	1387.704	BT-E-95	9.9	5954.98	5956.34	1.36	1.3	7.62	11.31
DS YPP	1387.704	WC-E-95	22.7	5954.98	5956.46	1.48	2.54	9.05	12.86
DS YPP	1387.704	J-E-95	8.5	5954.98	5956.29	1.31	1.19	7.13	9.85
DS YPP	1387.704	CH-P-95	6.6	5954.98	5956.2	1.22	1.04	6.28	9.37
DS YPP	1387.704	ST-P-95	6.4	5954.98	5956.19	1.21	1.03	6.21	9.32
DS YPP	1387.704	BT-P-95	6.6	5954.98	5956.21	1.22	1.05	6.31	9.39
DS YPP	1387.704	WC-P-95	18.1	5954.98	5956.48	1.5	1.98	9.31	13.11
DS YPP	1387.704	J-P-95	5.8	5954.98	5956.15	1.17	0.99	5.81	9.07
DS YPP	1387.704	CH-5	57.4	5954.98	5957.08	2.1	3.07	19.55	21.54
DS YPP	1387.704	ST-5	244.7	5954.98	5958.42	3.44	4.84	53.85	29.96
DS YPP	1387.704	BT-5	41.5	5954.98	5956.8	1.82	3.03	14.23	17.28
DS YPP	1387.704	WC-5	255.5	5954.98	5958.47	3.49	4.92	55.28	30.22
DS YPP	1387.704	J-5	142.7	5954.98	5957.93	2.95	3.79	39.82	27.66

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1382.153	CH-E-95	9.9	5954.69	5955.74	1.04	2.02	4.91	7.18
DS YPP	1382.153	ST-E-95	9.8	5954.69	5955.73	1.04	2	4.9	7.18
DS YPP	1382.153	BT-E-95	9.9	5954.69	5955.74	1.04	2.02	4.91	7.18
DS YPP	1382.153	WC-E-95	22.7	5954.69	5955.72	1.03	4.7	4.83	7.15
DS YPP	1382.153	J-E-95	8.5	5954.69	5955.69	1	1.85	4.6	7.06
DS YPP	1382.153	CH-P-95	6.6	5954.69	5955.61	0.92	1.63	4.03	6.83
DS YPP	1382.153	ST-P-95	6.4	5954.69	5955.6	0.91	1.61	3.98	6.81
DS YPP	1382.153	BT-P-95	6.6	5954.69	5955.61	0.92	1.63	4.04	6.83
DS YPP	1382.153	WC-P-95	18.1	5954.69	5955.76	1.07	3.58	5.06	7.24
DS YPP	1382.153	J-P-95	5.8	5954.69	5955.56	0.87	1.55	3.72	6.69
DS YPP	1382.153	CH-5	57.4	5954.69	5956.33	1.64	5.95	9.65	8.9
DS YPP	1382.153	ST-5	244.7	5954.69	5957.85	3.16	6.79	36.91	27.99
DS YPP	1382.153	BT-5	41.5	5954.69	5956.08	1.39	5.48	7.57	8.17
DS YPP	1382.153	WC-5	255.5	5954.69	5957.89	3.2	6.88	38.07	28.37
DS YPP	1382.153	J-5	142.7	5954.69	5957.34	2.65	6	23.97	22.6
DS YPP	1371.875	CH-E-95	9.9	5954.25	5955.51	1.26	0.58	16.96	19.03
DS YPP	1371.875	ST-E-95	9.8	5954.25	5955.51	1.26	0.58	16.91	19.01
DS YPP	1371.875	BT-E-95	9.9	5954.25	5955.51	1.26	0.58	16.96	19.03
DS YPP	1371.875	WC-E-95	22.7	5954.25	5955.55	1.3	1.28	17.78	19.18
DS YPP	1371.875	J-E-95	8.5	5954.25	5955.47	1.22	0.53	16.16	18.88
DS YPP	1371.875	CH-P-95	6.6	5954.25	5955.4	1.14	0.44	14.79	18.63
DS YPP	1371.875	ST-P-95	6.4	5954.25	5955.39	1.14	0.43	14.75	18.63
DS YPP	1371.875	BT-P-95	6.6	5954.25	5955.4	1.15	0.44	14.83	18.64
DS YPP	1371.875	WC-P-95	18.1	5954.25	5955.61	1.36	0.96	18.85	19.39
DS YPP	1371.875	J-P-95	5.8	5954.25	5955.36	1.1	0.41	14.05	18.5
DS YPP	1371.875	CH-5	57.4	5954.25	5956.02	1.77	2.11	27.14	20.86
DS YPP	1371.875	ST-5	244.7	5954.25	5957.5	3.25	3.97	62.15	26.47
DS YPP	1371.875	BT-5	41.5	5954.25	5955.83	1.58	1.79	23.13	20.08
DS YPP	1371.875	WC-5	255.5	5954.25	5957.56	3.31	4.04	63.74	26.74
DS YPP	1371.875	J-5	142.7	5954.25	5956.87	2.62	3.09	46.22	24.05
DS YPP	1360.251	CH-E-95	9.9	5954.28	5955.29	1.01	0.97	10.24	16.52
DS YPP	1360.251	ST-E-95	9.8	5954.28	5955.29	1.01	0.96	10.2	16.51
DS YPP	1360.251	BT-E-95	9.9	5954.28	5955.29	1.01	0.97	10.24	16.52
DS YPP	1360.251	WC-E-95	22.7	5954.28	5955.32	1.04	2.11	10.74	16.61
DS YPP	1360.251	J-E-95	8.5	5954.28	5955.25	0.97	0.88	9.63	16.41
DS YPP	1360.251	CH-P-95	6.6	5954.28	5955.2	0.92	0.75	8.74	16.21
DS YPP	1360.251	ST-P-95	6.4	5954.28	5955.2	0.92	0.73	8.71	16.2
DS YPP	1360.251	BT-P-95	6.6	5954.28	5955.2	0.92	0.75	8.77	16.22
DS YPP	1360.251	WC-P-95	18.1	5954.28	5955.38	1.1	1.54	11.75	16.8
DS YPP	1360.251	J-P-95	5.8	5954.28	5955.16	0.88	0.7	8.2	16.09
DS YPP	1360.251	CH-5	57.4	5954.28	5955.73	1.45	3.25	17.67	17.42
DS YPP	1360.251	ST-5	244.7	5954.28	5957.09	2.81	5.59	44.09	23.9
DS YPP	1360.251	BT-5	41.5	5954.28	5955.56	1.27	2.82	14.71	17.11
DS YPP	1360.251	WC-5	255.5	5954.28	5957.14	2.86	5.68	45.38	24.44
DS YPP	1360.251	J-5	142.7	5954.28	5956.52	2.24	4.43	32.18	19.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1352.754	CH-E-95	9.9	5953.43	5954.28	0.85	3.04	3.25	7.22
DS YPP	1352.754	ST-E-95	9.8	5953.43	5954.28	0.85	3.04	3.23	7.2
DS YPP	1352.754	BT-E-95	9.9	5953.43	5954.28	0.85	3.04	3.25	7.22
DS YPP	1352.754	WC-E-95	22.7	5953.43	5954.52	1.09	4.25	5.34	9.87
DS YPP	1352.754	J-E-95	8.5	5953.43	5954.22	0.79	3	2.84	6.79
DS YPP	1352.754	CH-P-95	6.6	5953.43	5954.1	0.67	3.15	2.08	6.16
DS YPP	1352.754	ST-P-95	6.4	5953.43	5954.08	0.65	3.27	1.96	6.05
DS YPP	1352.754	BT-P-95	6.6	5953.43	5954.11	0.68	3.16	2.09	6.17
DS YPP	1352.754	WC-P-95	18.1	5953.43	5954.43	1	4.03	4.49	9.19
DS YPP	1352.754	J-P-95	5.8	5953.43	5954.06	0.63	3.14	1.84	5.93
DS YPP	1352.754	CH-5	57.4	5953.43	5955.01	1.58	5.27	10.88	12.68
DS YPP	1352.754	ST-5	244.7	5953.43	5956.48	3.05	7.24	34.74	22.65
DS YPP	1352.754	BT-5	41.5	5953.43	5954.8	1.37	4.96	8.37	11.4
DS YPP	1352.754	WC-5	255.5	5953.43	5956.54	3.11	7.3	36.03	23.2
DS YPP	1352.754	J-5	142.7	5953.43	5955.72	2.29	6.94	20.55	14.05
DS YPP	1345.211	CH-E-95	9.9	5952.56	5954.23	1.67	0.54	18.48	15.92
DS YPP	1345.211	ST-E-95	9.8	5952.56	5954.23	1.67	0.53	18.42	15.91
DS YPP	1345.211	BT-E-95	9.9	5952.56	5954.23	1.67	0.54	18.48	15.92
DS YPP	1345.211	WC-E-95	22.7	5952.56	5954.31	1.75	1.15	19.79	16.22
DS YPP	1345.211	J-E-95	8.5	5952.56	5954.17	1.61	0.49	17.47	15.7
DS YPP	1345.211	CH-P-95	6.6	5952.56	5954.05	1.49	0.42	15.67	15.37
DS YPP	1345.211	ST-P-95	6.4	5952.56	5954.04	1.48	0.41	15.52	15.34
DS YPP	1345.211	BT-P-95	6.6	5952.56	5954.05	1.49	0.42	15.73	15.38
DS YPP	1345.211	WC-P-95	18.1	5952.56	5954.36	1.8	0.88	20.53	16.39
DS YPP	1345.211	J-P-95	5.8	5952.56	5953.99	1.43	0.39	14.73	15.03
DS YPP	1345.211	CH-5	57.4	5952.56	5954.92	2.36	1.93	30.24	18.1
DS YPP	1345.211	ST-5	244.7	5952.56	5956.44	3.88	4.09	62.66	24.37
DS YPP	1345.211	BT-5	41.5	5952.56	5954.67	2.11	1.62	25.85	17.43
DS YPP	1345.211	WC-5	255.5	5952.56	5956.5	3.94	4.18	64.12	24.63
DS YPP	1345.211	J-5	142.7	5952.56	5955.84	3.28	3.04	48.6	21.89
DS YPP	1334.842	CH-E-95	9.9	5952.5	5954.16	1.66	0.57	17.22	14.54
DS YPP	1334.842	ST-E-95	9.8	5952.5	5954.16	1.66	0.57	17.18	14.54
DS YPP	1334.842	BT-E-95	9.9	5952.5	5954.16	1.66	0.57	17.22	14.54
DS YPP	1334.842	WC-E-95	22.7	5952.5	5954.25	1.75	1.22	18.55	14.74
DS YPP	1334.842	J-E-95	8.5	5952.5	5954.1	1.6	0.52	16.31	14.41
DS YPP	1334.842	CH-P-95	6.6	5952.5	5953.99	1.49	0.45	14.7	14.17
DS YPP	1334.842	ST-P-95	6.4	5952.5	5953.98	1.48	0.44	14.56	14.15
DS YPP	1334.842	BT-P-95	6.6	5952.5	5953.99	1.49	0.45	14.76	14.18
DS YPP	1334.842	WC-P-95	18.1	5952.5	5954.29	1.79	0.95	19.07	14.81
DS YPP	1334.842	J-P-95	5.8	5952.5	5953.93	1.43	0.42	13.85	14.06
DS YPP	1334.842	CH-5	57.4	5952.5	5954.84	2.34	2.08	27.64	16.14
DS YPP	1334.842	ST-5	244.7	5952.5	5956.33	3.83	4.26	59.53	25.78
DS YPP	1334.842	BT-5	41.5	5952.5	5954.6	2.1	1.74	23.84	15.52
DS YPP	1334.842	WC-5	255.5	5952.5	5956.39	3.89	4.35	61.04	26.03
DS YPP	1334.842	J-5	142.7	5952.5	5955.73	3.23	3.22	44.85	22.72

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1328.598	CH-E-95	9.9	5952.43	5954.11	1.68	0.65	15.24	13.76
DS YPP	1328.598	ST-E-95	9.8	5952.43	5954.11	1.68	0.65	15.19	13.74
DS YPP	1328.598	BT-E-95	9.9	5952.43	5954.11	1.68	0.65	15.24	13.76
DS YPP	1328.598	WC-E-95	22.7	5952.43	5954.21	1.78	1.37	16.56	14.14
DS YPP	1328.598	J-E-95	8.5	5952.43	5954.05	1.62	0.59	14.4	13.48
DS YPP	1328.598	CH-P-95	6.6	5952.43	5953.94	1.51	0.51	12.94	13
DS YPP	1328.598	ST-P-95	6.4	5952.43	5953.93	1.5	0.5	12.82	12.97
DS YPP	1328.598	BT-P-95	6.6	5952.43	5953.94	1.51	0.51	12.99	13.02
DS YPP	1328.598	WC-P-95	18.1	5952.43	5954.23	1.8	1.07	16.96	14.26
DS YPP	1328.598	J-P-95	5.8	5952.43	5953.88	1.45	0.47	12.2	12.77
DS YPP	1328.598	CH-5	57.4	5952.43	5954.78	2.35	2.26	25.38	16.5
DS YPP	1328.598	ST-5	244.7	5952.43	5956.22	3.79	4.62	54.76	25.13
DS YPP	1328.598	BT-5	41.5	5952.43	5954.55	2.12	1.92	21.63	15.63
DS YPP	1328.598	WC-5	255.5	5952.43	5956.27	3.84	4.72	56.17	25.52
DS YPP	1328.598	J-5	142.7	5952.43	5955.64	3.21	3.47	41.31	21.15
DS YPP	1316.693	CH-E-95	9.9	5952.78	5953.8	1.02	1.48	6.71	11.76
DS YPP	1316.693	ST-E-95	9.8	5952.78	5953.79	1.01	1.47	6.67	11.73
DS YPP	1316.693	BT-E-95	9.9	5952.78	5953.8	1.02	1.48	6.71	11.76
DS YPP	1316.693	WC-E-95	22.7	5952.78	5953.73	0.95	3.82	5.94	11.26
DS YPP	1316.693	J-E-95	8.5	5952.78	5953.74	0.96	1.4	6.09	11.35
DS YPP	1316.693	CH-P-95	6.6	5952.78	5953.63	0.85	1.35	4.85	10.5
DS YPP	1316.693	ST-P-95	6.4	5952.78	5953.62	0.84	1.36	4.71	10.41
DS YPP	1316.693	BT-P-95	6.6	5952.78	5953.63	0.85	1.34	4.91	10.54
DS YPP	1316.693	WC-P-95	18.1	5952.78	5953.88	1.1	2.34	7.73	12.26
DS YPP	1316.693	J-P-95	5.8	5952.78	5953.56	0.78	1.4	4.13	10.02
DS YPP	1316.693	CH-5	57.4	5952.78	5954.18	1.4	4.98	11.52	13.23
DS YPP	1316.693	ST-5	244.7	5952.78	5955.63	2.85	6.57	37.64	22.93
DS YPP	1316.693	BT-5	41.5	5952.78	5954	1.22	4.52	9.19	12.61
DS YPP	1316.693	WC-5	255.5	5952.78	5955.69	2.91	6.63	39.01	23.35
DS YPP	1316.693	J-5	142.7	5952.78	5954.99	2.21	5.88	24.28	18.56
DS YPP	1312.46	CH-E-95	9.9	5952.09	5953.66	1.57	0.86	11.52	9.67
DS YPP	1312.46	ST-E-95	9.8	5952.09	5953.66	1.57	0.85	11.49	9.67
DS YPP	1312.46	BT-E-95	9.9	5952.09	5953.66	1.57	0.86	11.52	9.67
DS YPP	1312.46	WC-E-95	22.7	5952.09	5953.68	1.59	1.94	11.72	9.7
DS YPP	1312.46	J-E-95	8.5	5952.09	5953.61	1.52	0.77	11.02	9.62
DS YPP	1312.46	CH-P-95	6.6	5952.09	5953.49	1.4	0.66	9.88	9.44
DS YPP	1312.46	ST-P-95	6.4	5952.09	5953.47	1.38	0.66	9.72	9.42
DS YPP	1312.46	BT-P-95	6.6	5952.09	5953.5	1.4	0.66	9.95	9.45
DS YPP	1312.46	WC-P-95	18.1	5952.09	5953.76	1.67	1.45	12.49	9.87
DS YPP	1312.46	J-P-95	5.8	5952.09	5953.41	1.31	0.63	9.11	9.33
DS YPP	1312.46	CH-5	57.4	5952.09	5954.11	2.02	3.56	16.12	10.64
DS YPP	1312.46	ST-5	244.7	5952.09	5955.19	3.1	7.61	32.23	18.43
DS YPP	1312.46	BT-5	41.5	5952.09	5953.94	1.85	2.89	14.36	10.23
DS YPP	1312.46	WC-5	255.5	5952.09	5955.27	3.18	7.61	33.7	19.31
DS YPP	1312.46	J-5	142.7	5952.09	5954.79	2.7	5.61	25.42	15.82

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1299.116	CH-E-95	9.9	5951.81	5953.27	1.46	1.01	9.78	17.13
DS YPP	1299.116	ST-E-95	9.8	5951.81	5953.27	1.46	1.01	9.75	17.1
DS YPP	1299.116	BT-E-95	9.9	5951.81	5953.27	1.46	1.01	9.78	17.13
DS YPP	1299.116	WC-E-95	22.7	5951.81	5953.3	1.49	2.22	10.24	17.52
DS YPP	1299.116	J-E-95	8.5	5951.81	5953.24	1.42	0.93	9.13	16.58
DS YPP	1299.116	CH-P-95	6.6	5951.81	5953.15	1.34	0.84	7.77	13.06
DS YPP	1299.116	ST-P-95	6.4	5951.81	5953.14	1.33	0.84	7.65	11.95
DS YPP	1299.116	BT-P-95	6.6	5951.81	5953.15	1.34	0.84	7.85	13.6
DS YPP	1299.116	WC-P-95	18.1	5951.81	5953.36	1.55	1.61	11.25	18.43
DS YPP	1299.116	J-P-95	5.8	5951.81	5953.09	1.28	0.8	7.2	9.85
DS YPP	1299.116	CH-5	57.4	5951.81	5953.75	1.94	3.01	19.07	20.79
DS YPP	1299.116	ST-5	244.7	5951.81	5955.16	3.35	4.53	55.15	32.53
DS YPP	1299.116	BT-5	41.5	5951.81	5953.56	1.75	2.74	15.15	19.8
DS YPP	1299.116	WC-5	255.5	5951.81	5955.22	3.41	4.58	57.06	32.96
DS YPP	1299.116	J-5	142.7	5951.81	5954.55	2.74	3.83	37.31	25.94
DS YPP	1294.179	CH-E-95	9.9	5951.75	5953.17	1.42	0.57	17.22	23.92
DS YPP	1294.179	ST-E-95	9.8	5951.75	5953.17	1.42	0.57	17.18	23.91
DS YPP	1294.179	BT-E-95	9.9	5951.75	5953.17	1.42	0.57	17.22	23.92
DS YPP	1294.179	WC-E-95	22.7	5951.75	5953.25	1.5	1.18	19.16	24.14
DS YPP	1294.179	J-E-95	8.5	5951.75	5953.13	1.38	0.52	16.28	23.8
DS YPP	1294.179	CH-P-95	6.6	5951.75	5953.04	1.29	0.46	14.23	23.03
DS YPP	1294.179	ST-P-95	6.4	5951.75	5953.04	1.28	0.45	14.08	22.86
DS YPP	1294.179	BT-P-95	6.6	5951.75	5953.04	1.29	0.46	14.28	23.05
DS YPP	1294.179	WC-P-95	18.1	5951.75	5953.27	1.52	0.92	19.67	24.2
DS YPP	1294.179	J-P-95	5.8	5951.75	5953	1.25	0.43	13.3	22.38
DS YPP	1294.179	CH-5	57.4	5951.75	5953.75	2	1.82	31.48	25.56
DS YPP	1294.179	ST-5	244.7	5951.75	5955.22	3.46	3.36	75.46	35.82
DS YPP	1294.179	BT-5	41.5	5951.75	5953.54	1.79	1.58	26.23	24.95
DS YPP	1294.179	WC-5	255.5	5951.75	5955.28	3.52	3.42	77.62	36.19
DS YPP	1294.179	J-5	142.7	5951.75	5954.57	2.82	2.65	54.03	30.18
DS YPP	1282.677	CH-E-95	9.9	5951.78	5952.81	1.03	1.47	6.75	12.89
DS YPP	1282.677	ST-E-95	9.8	5951.78	5952.8	1.02	1.46	6.73	12.89
DS YPP	1282.677	BT-E-95	9.9	5951.78	5952.81	1.03	1.47	6.75	12.89
DS YPP	1282.677	WC-E-95	22.7	5951.78	5952.75	0.97	3.79	5.99	12.02
DS YPP	1282.677	J-E-95	8.5	5951.78	5952.77	0.99	1.36	6.24	12.65
DS YPP	1282.677	CH-P-95	6.6	5951.78	5952.67	0.89	1.27	5.17	10.51
DS YPP	1282.677	ST-P-95	6.4	5951.78	5952.67	0.89	1.25	5.1	10.43
DS YPP	1282.677	BT-P-95	6.6	5951.78	5952.68	0.9	1.27	5.2	10.54
DS YPP	1282.677	WC-P-95	18.1	5951.78	5952.87	1.09	2.4	7.53	13.1
DS YPP	1282.677	J-P-95	5.8	5951.78	5952.63	0.85	1.23	4.7	9.99
DS YPP	1282.677	CH-5	57.4	5951.78	5953.16	1.38	4.96	11.58	14.75
DS YPP	1282.677	ST-5	244.7	5951.78	5954.42	2.64	7.08	35.99	25.17
DS YPP	1282.677	BT-5	41.5	5951.78	5952.98	1.2	4.61	9	13.56
DS YPP	1282.677	WC-5	255.5	5951.78	5954.47	2.69	7.14	37.43	25.72
DS YPP	1282.677	J-5	142.7	5951.78	5953.84	2.06	6.22	22.98	19.38

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1272.779	CH-E-95	9.9	5950.79	5952.3	1.51	0.86	11.57	15.51
DS YPP	1272.779	ST-E-95	9.8	5950.79	5952.29	1.5	0.85	11.52	15.48
DS YPP	1272.779	BT-E-95	9.9	5950.79	5952.3	1.51	0.86	11.57	15.51
DS YPP	1272.779	WC-E-95	22.7	5950.79	5952.36	1.57	1.81	12.56	16.06
DS YPP	1272.779	J-E-95	8.5	5950.79	5952.25	1.46	0.78	10.87	15.11
DS YPP	1272.779	CH-P-95	6.6	5950.79	5952.16	1.37	0.68	9.58	14.33
DS YPP	1272.779	ST-P-95	6.4	5950.79	5952.15	1.36	0.68	9.46	14.25
DS YPP	1272.779	BT-P-95	6.6	5950.79	5952.17	1.37	0.69	9.61	14.35
DS YPP	1272.779	WC-P-95	18.1	5950.79	5952.41	1.62	1.36	13.33	16.48
DS YPP	1272.779	J-P-95	5.8	5950.79	5952.12	1.32	0.65	8.91	13.88
DS YPP	1272.779	CH-5	57.4	5950.79	5952.86	2.07	2.7	21.29	18.81
DS YPP	1272.779	ST-5	244.7	5950.79	5954.18	3.39	4.81	51.13	26.91
DS YPP	1272.779	BT-5	41.5	5950.79	5952.65	1.86	2.37	17.51	17.75
DS YPP	1272.779	WC-5	255.5	5950.79	5954.23	3.44	4.9	52.44	27.14
DS YPP	1272.779	J-5	142.7	5950.79	5953.65	2.86	3.77	37.82	23.15
DS YPP	1266.064	CH-E-95	9.9	5950.55	5951.99	1.44	1.27	7.77	11.16
DS YPP	1266.064	ST-E-95	9.8	5950.55	5951.99	1.44	1.27	7.74	11.15
DS YPP	1266.064	BT-E-95	9.9	5950.55	5951.99	1.44	1.27	7.77	11.16
DS YPP	1266.064	WC-E-95	22.7	5950.55	5952.04	1.49	2.71	8.38	11.57
DS YPP	1266.064	J-E-95	8.5	5950.55	5951.95	1.4	1.17	7.28	10.88
DS YPP	1266.064	CH-P-95	6.6	5950.55	5951.87	1.32	1.02	6.45	10.48
DS YPP	1266.064	ST-P-95	6.4	5950.55	5951.86	1.31	1.01	6.37	10.43
DS YPP	1266.064	BT-P-95	6.6	5950.55	5951.87	1.32	1.02	6.47	10.49
DS YPP	1266.064	WC-P-95	18.1	5950.55	5952.09	1.54	2.03	8.93	11.94
DS YPP	1266.064	J-P-95	5.8	5950.55	5951.82	1.27	0.96	5.99	10.21
DS YPP	1266.064	CH-5	57.4	5950.55	5952.38	1.83	4.51	12.72	13.78
DS YPP	1266.064	ST-5	244.7	5950.55	5953.59	3.04	6.82	35.87	24.09
DS YPP	1266.064	BT-5	41.5	5950.55	5952.24	1.69	3.83	10.83	13.04
DS YPP	1266.064	WC-5	255.5	5950.55	5953.64	3.09	6.89	37.11	24.52
DS YPP	1266.064	J-5	142.7	5950.55	5953.05	2.5	5.95	23.99	20.64
DS YPP	1259.571	CH-E-95	9.9	5949.85	5951.18	1.32	1.8	5.5	10.83
DS YPP	1259.571	ST-E-95	9.8	5949.85	5951.17	1.32	1.79	5.47	10.8
DS YPP	1259.571	BT-E-95	9.9	5949.85	5951.18	1.32	1.8	5.5	10.83
DS YPP	1259.571	WC-E-95	22.7	5949.85	5951.17	1.32	4.14	5.49	10.82
DS YPP	1259.571	J-E-95	8.5	5949.85	5951.14	1.29	1.67	5.08	10.34
DS YPP	1259.571	CH-P-95	6.6	5949.85	5951.06	1.21	1.51	4.32	9.38
DS YPP	1259.571	ST-P-95	6.4	5949.85	5951.05	1.2	1.5	4.27	9.31
DS YPP	1259.571	BT-P-95	6.6	5949.85	5951.06	1.21	1.52	4.35	9.42
DS YPP	1259.571	WC-P-95	18.1	5949.85	5951.22	1.36	3.04	5.95	11.42
DS YPP	1259.571	J-P-95	5.8	5949.85	5951.02	1.17	1.46	3.95	8.82
DS YPP	1259.571	CH-5	57.4	5949.85	5951.64	1.79	5.18	11.08	13.01
DS YPP	1259.571	ST-5	244.7	5949.85	5952.93	3.08	7.93	30.87	17.54
DS YPP	1259.571	BT-5	41.5	5949.85	5951.46	1.61	4.71	8.82	12.32
DS YPP	1259.571	WC-5	255.5	5949.85	5953	3.15	7.95	32.14	17.82
DS YPP	1259.571	J-5	142.7	5949.85	5952.36	2.51	6.65	21.47	15.6

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1251.969	CH-E-95	9.9	5949.76	5951	1.24	0.54	18.33	22.67
DS YPP	1251.969	ST-E-95	9.8	5949.76	5951	1.24	0.54	18.29	22.67
DS YPP	1251.969	BT-E-95	9.9	5949.76	5951	1.24	0.54	18.33	22.67
DS YPP	1251.969	WC-E-95	22.7	5949.76	5951.08	1.32	1.13	20.05	22.88
DS YPP	1251.969	J-E-95	8.5	5949.76	5950.96	1.2	0.49	17.41	22.58
DS YPP	1251.969	CH-P-95	6.6	5949.76	5950.89	1.13	0.42	15.68	22.42
DS YPP	1251.969	ST-P-95	6.4	5949.76	5950.88	1.12	0.41	15.62	22.42
DS YPP	1251.969	BT-P-95	6.6	5949.76	5950.89	1.13	0.42	15.74	22.43
DS YPP	1251.969	WC-P-95	18.1	5949.76	5951.12	1.35	0.87	20.85	22.98
DS YPP	1251.969	J-P-95	5.8	5949.76	5950.85	1.09	0.39	14.81	22.33
DS YPP	1251.969	CH-5	57.4	5949.76	5951.56	1.8	1.83	31.37	24.79
DS YPP	1251.969	ST-5	244.7	5949.76	5952.75	2.99	3.87	63.25	28.12
DS YPP	1251.969	BT-5	41.5	5949.76	5951.36	1.6	1.56	26.68	23.95
DS YPP	1251.969	WC-5	255.5	5949.76	5952.81	3.05	3.94	64.91	28.25
DS YPP	1251.969	J-5	142.7	5949.76	5952.22	2.46	2.93	48.73	27
DS YPP	1251.589	CH-E-95	9.9	5949.89	5950.99	1.1	0.81	12.23	15.74
DS YPP	1251.589	ST-E-95	9.8	5949.89	5950.99	1.1	0.8	12.22	15.74
DS YPP	1251.589	BT-E-95	9.9	5949.89	5950.99	1.1	0.81	12.23	15.74
DS YPP	1251.589	WC-E-95	22.7	5949.89	5951.05	1.16	1.74	13.08	15.87
DS YPP	1251.589	J-E-95	8.5	5949.89	5950.95	1.06	0.73	11.62	15.65
DS YPP	1251.589	CH-P-95	6.6	5949.89	5950.88	0.99	0.63	10.44	15.46
DS YPP	1251.589	ST-P-95	6.4	5949.89	5950.88	0.98	0.62	10.41	15.46
DS YPP	1251.589	BT-P-95	6.6	5949.89	5950.88	0.99	0.63	10.49	15.47
DS YPP	1251.589	WC-P-95	18.1	5949.89	5951.09	1.2	1.31	13.85	15.99
DS YPP	1251.589	J-P-95	5.8	5949.89	5950.84	0.95	0.59	9.86	15.37
DS YPP	1251.589	CH-5	57.4	5949.89	5951.47	1.58	2.82	20.35	18.77
DS YPP	1251.589	ST-5	244.7	5949.89	5952.23	2.33	6.74	36.81	24.77
DS YPP	1251.589	BT-5	41.5	5949.89	5951.3	1.41	2.4	17.27	17.17
DS YPP	1251.589	WC-5	255.5	5949.89	5952.24	2.35	6.96	37.21	24.84
DS YPP	1251.589	J-5	142.7	5949.89	5952	2.11	4.59	31.42	23.76
DS YPP	1242.873	CH-E-95	9.9	5949.71	5950.22	0.51	3.05	3.25	10.59
DS YPP	1242.873	ST-E-95	9.8	5949.71	5950.21	0.5	3.09	3.17	10.53
DS YPP	1242.873	BT-E-95	9.9	5949.71	5950.22	0.51	3.05	3.25	10.59
DS YPP	1242.873	WC-E-95	22.7	5949.71	5950.45	0.74	3.87	5.87	12.15
DS YPP	1242.873	J-E-95	8.5	5949.71	5950.19	0.48	2.96	2.87	10.26
DS YPP	1242.873	CH-P-95	6.6	5949.71	5950.14	0.43	2.75	2.38	9.55
DS YPP	1242.873	ST-P-95	6.4	5949.71	5950.11	0.4	2.97	2.15	8.99
DS YPP	1242.873	BT-P-95	6.6	5949.71	5950.14	0.43	2.77	2.38	9.55
DS YPP	1242.873	WC-P-95	18.1	5949.71	5950.37	0.66	3.73	4.85	11.67
DS YPP	1242.873	J-P-95	5.8	5949.71	5950.1	0.39	2.84	2.03	8.46
DS YPP	1242.873	CH-5	57.4	5949.71	5950.87	1.16	4.61	12.46	19.07
DS YPP	1242.873	ST-5	244.7	5949.71	5951.8	2.09	6.68	37.03	28.65
DS YPP	1242.873	BT-5	41.5	5949.71	5950.72	1.01	4.22	9.84	17.21
DS YPP	1242.873	WC-5	255.5	5949.71	5951.89	2.18	6.57	39.36	28.88
DS YPP	1242.873	J-5	142.7	5949.71	5951.41	1.7	5.51	25.99	27.51

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1232.886	CH-E-95	9.9	5947.05	5949.22	2.17	0.52	20.88	25.39
DS YPP	1232.886	ST-E-95	9.8	5947.05	5949.22	2.17	0.52	20.81	25.34
DS YPP	1232.886	BT-E-95	9.9	5947.05	5949.22	2.17	0.52	20.88	25.39
DS YPP	1232.886	WC-E-95	22.7	5947.05	5949.33	2.28	1.05	23.87	27.28
DS YPP	1232.886	J-E-95	8.5	5947.05	5949.17	2.12	0.48	19.54	24.47
DS YPP	1232.886	CH-P-95	6.6	5947.05	5949.07	2.02	0.42	17.24	23.21
DS YPP	1232.886	ST-P-95	6.4	5947.05	5949.06	2.01	0.41	17.04	23.11
DS YPP	1232.886	BT-P-95	6.6	5947.05	5949.07	2.02	0.42	17.32	23.26
DS YPP	1232.886	WC-P-95	18.1	5947.05	5949.35	2.3	0.81	24.45	27.57
DS YPP	1232.886	J-P-95	5.8	5947.05	5949.02	1.97	0.39	16.13	22.49
DS YPP	1232.886	CH-5	57.4	5947.05	5949.85	2.8	1.65	38.55	29.4
DS YPP	1232.886	ST-5	244.7	5947.05	5951.16	4.11	3.47	79.48	33.21
DS YPP	1232.886	BT-5	41.5	5947.05	5949.65	2.6	1.4	32.71	28.8
DS YPP	1232.886	WC-5	255.5	5947.05	5951.21	4.16	3.54	81.26	33.37
DS YPP	1232.886	J-5	142.7	5947.05	5950.61	3.56	2.58	61.68	31.56
DS YPP	1227.769	CH-E-95	9.9	5947.09	5949.18	2.09	0.65	16.25	13.35
DS YPP	1227.769	ST-E-95	9.8	5947.09	5949.18	2.08	0.64	16.21	13.34
DS YPP	1227.769	BT-E-95	9.9	5947.09	5949.18	2.09	0.65	16.25	13.35
DS YPP	1227.769	WC-E-95	22.7	5947.09	5949.29	2.2	1.37	17.75	13.99
DS YPP	1227.769	J-E-95	8.5	5947.09	5949.13	2.04	0.58	15.57	13.25
DS YPP	1227.769	CH-P-95	6.6	5947.09	5949.03	1.94	0.48	14.35	13.07
DS YPP	1227.769	ST-P-95	6.4	5947.09	5949.03	1.94	0.47	14.24	13.06
DS YPP	1227.769	BT-P-95	6.6	5947.09	5949.04	1.95	0.48	14.4	13.08
DS YPP	1227.769	WC-P-95	18.1	5947.09	5949.31	2.22	1.08	17.98	14.21
DS YPP	1227.769	J-P-95	5.8	5947.09	5948.99	1.9	0.44	13.77	12.98
DS YPP	1227.769	CH-5	57.4	5947.09	5949.76	2.67	2.37	25.99	20.13
DS YPP	1227.769	ST-5	244.7	5947.09	5950.93	3.84	4.73	56.06	29.28
DS YPP	1227.769	BT-5	41.5	5947.09	5949.57	2.48	1.99	22.42	18.61
DS YPP	1227.769	WC-5	255.5	5947.09	5950.98	3.89	4.83	57.42	29.47
DS YPP	1227.769	J-5	142.7	5947.09	5950.44	3.35	3.64	42.21	26.68
DS YPP	1217.144	CH-E-95	9.9	5947.48	5949.09	1.61	0.57	17.36	19.93
DS YPP	1217.144	ST-E-95	9.8	5947.48	5949.09	1.61	0.57	17.3	19.93
DS YPP	1217.144	BT-E-95	9.9	5947.48	5949.09	1.61	0.57	17.36	19.93
DS YPP	1217.144	WC-E-95	22.7	5947.48	5949.23	1.75	1.13	20.15	20.19
DS YPP	1217.144	J-E-95	8.5	5947.48	5949.04	1.56	0.52	16.42	19.8
DS YPP	1217.144	CH-P-95	6.6	5947.48	5948.96	1.48	0.44	14.74	19.52
DS YPP	1217.144	ST-P-95	6.4	5947.48	5948.95	1.47	0.44	14.58	19.49
DS YPP	1217.144	BT-P-95	6.6	5947.48	5948.96	1.48	0.45	14.79	19.53
DS YPP	1217.144	WC-P-95	18.1	5947.48	5949.22	1.74	0.91	19.98	20.18
DS YPP	1217.144	J-P-95	5.8	5947.48	5948.92	1.44	0.41	13.96	19.37
DS YPP	1217.144	CH-5	57.4	5947.48	5949.67	2.19	1.97	29.19	21.01
DS YPP	1217.144	ST-5	244.7	5947.48	5950.79	3.31	4.55	54.25	23.91
DS YPP	1217.144	BT-5	41.5	5947.48	5949.49	2.01	1.62	25.56	20.68
DS YPP	1217.144	WC-5	255.5	5947.48	5950.84	3.36	4.66	55.29	24.06
DS YPP	1217.144	J-5	142.7	5947.48	5950.31	2.83	3.31	43.08	22.42

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1209.244	CH-E-95	9.9	5947.63	5948.78	1.15	2.09	4.75	13.82
DS YPP	1209.244	ST-E-95	9.8	5947.63	5948.78	1.15	2.08	4.7	13.76
DS YPP	1209.244	BT-E-95	9.9	5947.63	5948.78	1.15	2.09	4.75	13.82
DS YPP	1209.244	WC-E-95	22.7	5947.63	5948.89	1.26	3.56	6.38	15.72
DS YPP	1209.244	J-E-95	8.5	5947.63	5948.74	1.11	2.03	4.18	12.67
DS YPP	1209.244	CH-P-95	6.6	5947.63	5948.66	1.03	1.99	3.29	10.24
DS YPP	1209.244	ST-P-95	6.4	5947.63	5948.65	1.02	1.98	3.24	10.09
DS YPP	1209.244	BT-P-95	6.6	5947.63	5948.66	1.03	1.99	3.32	10.31
DS YPP	1209.244	WC-P-95	18.1	5947.63	5948.83	1.2	3.32	5.44	14.8
DS YPP	1209.244	J-P-95	5.8	5947.63	5948.62	0.99	1.97	2.93	9.29
DS YPP	1209.244	CH-5	57.4	5947.63	5949.24	1.61	4.43	12.97	20.99
DS YPP	1209.244	ST-5	244.7	5947.63	5950.41	2.78	5.9	42.39	28.17
DS YPP	1209.244	BT-5	41.5	5947.63	5949.11	1.48	4	10.37	19.97
DS YPP	1209.244	WC-5	255.5	5947.63	5950.44	2.81	6.05	43.19	28.33
DS YPP	1209.244	J-5	142.7	5947.63	5949.94	2.31	4.83	29.68	25.54
DS YPP	1205.628	CH-E-95	9.9	5947.44	5948.6	1.16	0.79	12.52	16.41
DS YPP	1205.628	ST-E-95	9.8	5947.44	5948.6	1.16	0.79	12.46	16.39
DS YPP	1205.628	BT-E-95	9.9	5947.44	5948.6	1.16	0.79	12.52	16.41
DS YPP	1205.628	WC-E-95	22.7	5947.44	5948.63	1.19	1.74	13.06	16.94
DS YPP	1205.628	J-E-95	8.5	5947.44	5948.54	1.1	0.73	11.6	16.14
DS YPP	1205.628	CH-P-95	6.6	5947.44	5948.43	0.99	0.67	9.83	15.57
DS YPP	1205.628	ST-P-95	6.4	5947.44	5948.42	0.98	0.66	9.69	15.52
DS YPP	1205.628	BT-P-95	6.6	5947.44	5948.44	1	0.67	9.89	15.59
DS YPP	1205.628	WC-P-95	18.1	5947.44	5948.72	1.28	1.24	14.61	18.26
DS YPP	1205.628	J-P-95	5.8	5947.44	5948.38	0.94	0.64	9	15.28
DS YPP	1205.628	CH-5	57.4	5947.44	5949.19	1.75	2.43	23.65	20.44
DS YPP	1205.628	ST-5	244.7	5947.44	5950.49	3.05	4.55	54.67	27.42
DS YPP	1205.628	BT-5	41.5	5947.44	5948.97	1.53	2.14	19.4	19.53
DS YPP	1205.628	WC-5	255.5	5947.44	5950.53	3.09	4.66	55.75	27.64
DS YPP	1205.628	J-5	142.7	5947.44	5949.97	2.53	3.47	41.17	24.62
DS YPP	1198.51	CH-E-95	9.9	5946.72	5948.39	1.67	1.03	9.58	11.21
DS YPP	1198.51	ST-E-95	9.8	5946.72	5948.39	1.67	1.03	9.53	11.18
DS YPP	1198.51	BT-E-95	9.9	5946.72	5948.39	1.67	1.03	9.58	11.21
DS YPP	1198.51	WC-E-95	22.7	5946.72	5948.39	1.67	2.38	9.54	11.18
DS YPP	1198.51	J-E-95	8.5	5946.72	5948.33	1.61	0.95	8.92	10.8
DS YPP	1198.51	CH-P-95	6.6	5946.72	5948.21	1.49	0.86	7.61	9.83
DS YPP	1198.51	ST-P-95	6.4	5946.72	5948.2	1.48	0.85	7.51	9.74
DS YPP	1198.51	BT-P-95	6.6	5946.72	5948.21	1.49	0.86	7.65	9.86
DS YPP	1198.51	WC-P-95	18.1	5946.72	5948.51	1.79	1.66	10.87	11.84
DS YPP	1198.51	J-P-95	5.8	5946.72	5948.14	1.42	0.82	7	9.25
DS YPP	1198.51	CH-5	57.4	5946.72	5948.91	2.19	3.54	16.23	14.62
DS YPP	1198.51	ST-5	244.7	5946.72	5950.09	3.37	5.98	40.94	25.19
DS YPP	1198.51	BT-5	41.5	5946.72	5948.72	2	3.05	13.61	13.36
DS YPP	1198.51	WC-5	255.5	5946.72	5950	3.28	6.59	38.78	24.53
DS YPP	1198.51	J-5	142.7	5946.72	5949.63	2.91	4.75	30.01	22.18

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1189.613	CH-E-95	9.9	5946.41	5948.18	1.76	0.81	12.25	12.07
DS YPP	1189.613	ST-E-95	9.8	5946.41	5948.17	1.76	0.8	12.2	12.03
DS YPP	1189.613	BT-E-95	9.9	5946.41	5948.18	1.76	0.81	12.25	12.07
DS YPP	1189.613	WC-E-95	22.7	5946.41	5948.19	1.78	1.83	12.42	12.25
DS YPP	1189.613	J-E-95	8.5	5946.41	5948.12	1.71	0.73	11.62	11.69
DS YPP	1189.613	CH-P-95	6.6	5946.41	5948	1.59	0.64	10.24	10.82
DS YPP	1189.613	ST-P-95	6.4	5946.41	5947.99	1.58	0.63	10.13	10.76
DS YPP	1189.613	BT-P-95	6.6	5946.41	5948	1.59	0.64	10.28	10.84
DS YPP	1189.613	WC-P-95	18.1	5946.41	5948.27	1.86	1.34	13.48	13.79
DS YPP	1189.613	J-P-95	5.8	5946.41	5947.94	1.53	0.6	9.64	10.49
DS YPP	1189.613	CH-5	57.4	5946.41	5948.69	2.28	2.72	21.09	21.01
DS YPP	1189.613	ST-5	244.7	5946.41	5950.08	3.67	4.32	56.87	30
DS YPP	1189.613	BT-5	41.5	5946.41	5948.49	2.08	2.44	17.02	18.66
DS YPP	1189.613	WC-5	255.5	5946.41	5949.99	3.58	4.73	54.14	29.48
DS YPP	1189.613	J-5	142.7	5946.41	5949.5	3.09	3.54	40.36	26.33
DS YPP	1185.692	CH-E-95	9.9	5946.48	5948.11	1.63	0.62	16	22.23
DS YPP	1185.692	ST-E-95	9.8	5946.48	5948.11	1.63	0.62	15.91	22.22
DS YPP	1185.692	BT-E-95	9.9	5946.48	5948.11	1.63	0.62	16	22.23
DS YPP	1185.692	WC-E-95	22.7	5946.48	5948.15	1.66	1.36	16.68	22.32
DS YPP	1185.692	J-E-95	8.5	5946.48	5948.06	1.58	0.57	14.82	22.07
DS YPP	1185.692	CH-P-95	6.6	5946.48	5947.94	1.46	0.53	12.45	16.56
DS YPP	1185.692	ST-P-95	6.4	5946.48	5947.93	1.45	0.52	12.29	16.47
DS YPP	1185.692	BT-P-95	6.6	5946.48	5947.95	1.47	0.53	12.52	16.6
DS YPP	1185.692	WC-P-95	18.1	5946.48	5948.22	1.73	0.99	18.26	22.5
DS YPP	1185.692	J-P-95	5.8	5946.48	5947.89	1.41	0.5	11.56	16.06
DS YPP	1185.692	CH-5	57.4	5946.48	5948.67	2.19	1.99	29.68	29.84
DS YPP	1185.692	ST-5	244.7	5946.48	5950.15	3.67	3.23	86.88	42.1
DS YPP	1185.692	BT-5	41.5	5946.48	5948.46	1.97	1.75	23.76	24.23
DS YPP	1185.692	WC-5	255.5	5946.48	5950.08	3.59	3.49	83.69	41.81
DS YPP	1185.692	J-5	142.7	5946.48	5949.52	3.04	2.61	61.18	39.74
DS YPP	1172.767	CH-E-95	9.9	5946.56	5947.91	1.35	0.71	13.85	14.94
DS YPP	1172.767	ST-E-95	9.8	5946.56	5947.91	1.35	0.71	13.79	14.92
DS YPP	1172.767	BT-E-95	9.9	5946.56	5947.91	1.35	0.71	13.85	14.94
DS YPP	1172.767	WC-E-95	22.7	5946.56	5947.96	1.4	1.56	14.52	15.18
DS YPP	1172.767	J-E-95	8.5	5946.56	5947.86	1.3	0.65	13.04	14.69
DS YPP	1172.767	CH-P-95	6.6	5946.56	5947.76	1.2	0.56	11.62	14.26
DS YPP	1172.767	ST-P-95	6.4	5946.56	5947.75	1.19	0.56	11.49	14.22
DS YPP	1172.767	BT-P-95	6.6	5946.56	5947.76	1.2	0.57	11.67	14.27
DS YPP	1172.767	WC-P-95	18.1	5946.56	5948.02	1.46	1.17	15.48	15.55
DS YPP	1172.767	J-P-95	5.8	5946.56	5947.71	1.15	0.53	10.87	14.03
DS YPP	1172.767	CH-5	57.4	5946.56	5948.48	1.92	2.49	23.08	17.54
DS YPP	1172.767	ST-5	244.7	5946.56	5949.75	3.19	5.12	48.6	22.5
DS YPP	1172.767	BT-5	41.5	5946.56	5948.27	1.71	2.12	19.53	16.62
DS YPP	1172.767	WC-5	255.5	5946.56	5949.9	3.34	4.2	73.16	37.97
DS YPP	1172.767	J-5	142.7	5946.56	5949.25	2.69	3.8	37.81	20.54

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1163.784	CH-E-95	9.9	5946.4	5947.78	1.38	0.69	14.34	16.17
DS YPP	1163.784	ST-E-95	9.8	5946.4	5947.78	1.38	0.69	14.28	16.15
DS YPP	1163.784	BT-E-95	9.9	5946.4	5947.78	1.38	0.69	14.34	16.17
DS YPP	1163.784	WC-E-95	22.7	5946.4	5947.84	1.44	1.47	15.4	16.4
DS YPP	1163.784	J-E-95	8.5	5946.4	5947.73	1.32	0.63	13.46	15.97
DS YPP	1163.784	CH-P-95	6.6	5946.4	5947.63	1.23	0.55	11.95	15.61
DS YPP	1163.784	ST-P-95	6.4	5946.4	5947.62	1.22	0.54	11.81	15.58
DS YPP	1163.784	BT-P-95	6.6	5946.4	5947.63	1.23	0.55	12	15.62
DS YPP	1163.784	WC-P-95	18.1	5946.4	5947.89	1.49	1.12	16.13	16.56
DS YPP	1163.784	J-P-95	5.8	5946.4	5947.58	1.18	0.52	11.14	15.43
DS YPP	1163.784	CH-5	57.4	5946.4	5948.37	1.97	2.35	24.47	18.33
DS YPP	1163.784	ST-5	244.7	5946.4	5949.64	3.24	4.9	50.62	23.52
DS YPP	1163.784	BT-5	41.5	5946.4	5948.16	1.76	2	20.76	17.58
DS YPP	1163.784	WC-5	255.5	5946.4	5949.87	3.47	3.62	89.75	49.93
DS YPP	1163.784	J-5	142.7	5946.4	5949.13	2.73	3.64	39.41	20.76
DS YPP	1160.211	CH-E-95	9.9	5945.8	5947.76	1.96	0.44	22.41	17.75
DS YPP	1160.211	ST-E-95	9.8	5945.8	5947.76	1.96	0.44	22.35	17.75
DS YPP	1160.211	BT-E-95	9.9	5945.8	5947.76	1.96	0.44	22.41	17.75
DS YPP	1160.211	WC-E-95	22.7	5945.8	5947.84	2.04	0.95	23.83	17.92
DS YPP	1160.211	J-E-95	8.5	5945.8	5947.7	1.9	0.4	21.45	17.65
DS YPP	1160.211	CH-P-95	6.6	5945.8	5947.61	1.81	0.33	19.8	17.46
DS YPP	1160.211	ST-P-95	6.4	5945.8	5947.6	1.8	0.33	19.65	17.44
DS YPP	1160.211	BT-P-95	6.6	5945.8	5947.61	1.81	0.33	19.85	17.46
DS YPP	1160.211	WC-P-95	18.1	5945.8	5947.87	2.07	0.74	24.45	18
DS YPP	1160.211	J-P-95	5.8	5945.8	5947.56	1.76	0.31	18.9	17.36
DS YPP	1160.211	CH-5	57.4	5945.8	5948.37	2.57	1.7	33.73	19.5
DS YPP	1160.211	ST-5	244.7	5945.8	5949.69	3.89	3.96	63.52	25.03
DS YPP	1160.211	BT-5	41.5	5945.8	5948.16	2.36	1.4	29.72	18.75
DS YPP	1160.211	WC-5	255.5	5945.8	5949.75	3.95	4.05	65.02	25.25
DS YPP	1160.211	J-5	142.7	5945.8	5949.15	3.35	2.86	50.53	23.11
DS YPP	1151.663	CH-E-95	9.9	5946.22	5947.7	1.48	0.67	14.73	15.41
DS YPP	1151.663	ST-E-95	9.8	5946.22	5947.7	1.48	0.67	14.68	15.4
DS YPP	1151.663	BT-E-95	9.9	5946.22	5947.7	1.48	0.67	14.73	15.41
DS YPP	1151.663	WC-E-95	22.7	5946.22	5947.77	1.55	1.43	15.87	15.8
DS YPP	1151.663	J-E-95	8.5	5946.22	5947.65	1.43	0.61	13.95	15.19
DS YPP	1151.663	CH-P-95	6.6	5946.22	5947.56	1.34	0.52	12.62	14.78
DS YPP	1151.663	ST-P-95	6.4	5946.22	5947.55	1.33	0.51	12.5	14.75
DS YPP	1151.663	BT-P-95	6.6	5946.22	5947.56	1.34	0.52	12.67	14.8
DS YPP	1151.663	WC-P-95	18.1	5946.22	5947.8	1.58	1.11	16.36	15.93
DS YPP	1151.663	J-P-95	5.8	5946.22	5947.51	1.29	0.48	11.91	14.56
DS YPP	1151.663	CH-5	57.4	5946.22	5948.26	2.04	2.35	24.38	19.16
DS YPP	1151.663	ST-5	244.7	5946.22	5949.46	3.24	4.93	50.26	24.3
DS YPP	1151.663	BT-5	41.5	5946.22	5948.07	1.85	1.99	20.81	17.71
DS YPP	1151.663	WC-5	255.5	5946.22	5949.51	3.29	5.02	51.62	24.55
DS YPP	1151.663	J-5	142.7	5946.22	5948.98	2.76	3.65	39.2	22.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1136.075	CH-E-95	9.9	5946.03	5947.22	1.3	1.37	7.56	15.28
DS YPP	1136.075	ST-E-95	9.8	5946.03	5947.22	1.3	1.37	7.52	15.24
DS YPP	1136.075	BT-E-95	9.9	5946.03	5947.22	1.3	1.37	7.56	15.28
DS YPP	1136.075	WC-E-95	22.7	5946.03	5947.16	1.24	3.58	6.65	14.38
DS YPP	1136.075	J-E-95	8.5	5946.03	5947.18	1.26	1.27	6.99	14.7
DS YPP	1136.075	CH-P-95	6.6	5946.03	5947.11	1.19	1.15	5.93	13.7
DS YPP	1136.075	ST-P-95	6.4	5946.03	5947.1	1.18	1.15	5.83	13.6
DS YPP	1136.075	BT-P-95	6.6	5946.03	5947.11	1.19	1.16	5.96	13.72
DS YPP	1136.075	WC-P-95	18.1	5946.03	5947.28	1.36	2.25	8.44	16.24
DS YPP	1136.075	J-P-95	5.8	5946.03	5947.07	1.15	1.12	5.38	13.14
DS YPP	1136.075	CH-5	57.4	5946.03	5947.52	1.6	4.74	12.81	18.86
DS YPP	1136.075	ST-5	244.7	5946.03	5948.64	2.72	7.15	36.83	24.13
DS YPP	1136.075	BT-5	41.5	5946.03	5947.38	1.46	4.27	10.24	18.16
DS YPP	1136.075	WC-5	255.5	5946.03	5948.67	2.75	7.33	37.51	24.24
DS YPP	1136.075	J-5	142.7	5946.03	5948.1	2.18	6.24	24.49	21.6
DS YPP	1126.919	CH-E-95	9.9	5945.81	5946.78	1.16	0.83	11.86	16.54
DS YPP	1126.919	ST-E-95	9.8	5945.81	5946.78	1.15	0.83	11.81	16.52
DS YPP	1126.919	BT-E-95	9.9	5945.81	5946.78	1.16	0.83	11.86	16.54
DS YPP	1126.919	WC-E-95	22.7	5945.81	5946.9	1.28	1.63	13.96	17.34
DS YPP	1126.919	J-E-95	8.5	5945.81	5946.74	1.12	0.76	11.16	16.25
DS YPP	1126.919	CH-P-95	6.6	5945.81	5946.66	1.04	0.66	9.96	15.84
DS YPP	1126.919	ST-P-95	6.4	5945.81	5946.66	1.04	0.65	9.9	15.82
DS YPP	1126.919	BT-P-95	6.6	5945.81	5946.66	1.04	0.66	10	15.85
DS YPP	1126.919	WC-P-95	18.1	5945.81	5946.91	1.29	1.28	14.17	17.4
DS YPP	1126.919	J-P-95	5.8	5945.81	5946.63	1.01	0.61	9.5	15.68
DS YPP	1126.919	CH-5	57.4	5945.81	5947.35	1.73	2.57	22.3	19.82
DS YPP	1126.919	ST-5	244.7	5945.81	5948.38	2.76	2.79	124.59	87.1
DS YPP	1126.919	BT-5	41.5	5945.81	5947.19	1.56	2.17	19.1	19.06
DS YPP	1126.919	WC-5	255.5	5945.81	5948.44	2.82	2.79	130.23	87.83
DS YPP	1126.919	J-5	142.7	5945.81	5947.71	2.08	2.64	71.74	64.97
DS YPP	1122.115	CH-E-95	9.9	5945.61	5946.35	1.07	2.35	4.22	10.87
DS YPP	1122.115	ST-E-95	9.8	5945.61	5946.35	1.07	2.34	4.18	10.83
DS YPP	1122.115	BT-E-95	9.9	5945.61	5946.35	1.07	2.35	4.22	10.87
DS YPP	1122.115	WC-E-95	22.7	5945.61	5946.5	1.22	3.86	5.88	12.22
DS YPP	1122.115	J-E-95	8.5	5945.61	5946.3	1.02	2.31	3.68	10.37
DS YPP	1122.115	CH-P-95	6.6	5945.61	5946.21	0.92	2.42	2.71	9.31
DS YPP	1122.115	ST-P-95	6.4	5945.61	5946.2	0.92	2.44	2.63	9.21
DS YPP	1122.115	BT-P-95	6.6	5945.61	5946.21	0.93	2.41	2.74	9.34
DS YPP	1122.115	WC-P-95	18.1	5945.61	5946.41	1.13	3.76	4.81	11.37
DS YPP	1122.115	J-P-95	5.8	5945.61	5946.14	0.86	2.72	2.12	8.31
DS YPP	1122.115	CH-5	57.4	5945.61	5946.91	1.63	4.7	12.2	16.88
DS YPP	1122.115	ST-5	244.7	5945.61	5948.39	3.11	1.84	168.35	93.26
DS YPP	1122.115	BT-5	41.5	5945.61	5946.72	1.44	4.62	8.97	15.64
DS YPP	1122.115	WC-5	255.5	5945.61	5948.46	3.18	1.86	174.38	93.72
DS YPP	1122.115	J-5	142.7	5945.61	5947.71	2.43	1.79	106.17	85.1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1113.988	CH-E-95	9.9	5944.72	5946.17	1.7	0.6	16.46	17.46
DS YPP	1113.988	ST-E-95	9.8	5944.72	5946.16	1.7	0.6	16.4	17.45
DS YPP	1113.988	BT-E-95	9.9	5944.72	5946.17	1.7	0.6	16.46	17.46
DS YPP	1113.988	WC-E-95	22.7	5944.72	5946.26	1.8	1.26	18.08	17.85
DS YPP	1113.988	J-E-95	8.5	5944.72	5946.11	1.65	0.55	15.48	17.18
DS YPP	1113.988	CH-P-95	6.6	5944.72	5946.01	1.55	0.48	13.77	16.65
DS YPP	1113.988	ST-P-95	6.4	5944.72	5946	1.54	0.47	13.62	16.61
DS YPP	1113.988	BT-P-95	6.6	5944.72	5946.01	1.55	0.48	13.82	16.67
DS YPP	1113.988	WC-P-95	18.1	5944.72	5946.29	1.83	0.97	18.73	18
DS YPP	1113.988	J-P-95	5.8	5944.72	5945.95	1.49	0.45	12.85	16.3
DS YPP	1113.988	CH-5	57.4	5944.72	5946.84	2.38	1.99	28.91	19.14
DS YPP	1113.988	ST-5	244.7	5944.72	5948.37	3.91	1.82	177.08	82.55
DS YPP	1113.988	BT-5	41.5	5944.72	5946.6	2.14	1.7	24.45	18.75
DS YPP	1113.988	WC-5	255.5	5944.72	5948.44	3.98	1.85	182.52	83.72
DS YPP	1113.988	J-5	142.7	5944.72	5947.68	3.22	1.47	124.26	70.96
DS YPP	1106.575	CH-E-95	9.9	5944.46	5945.97	1.58	1.44	6.89	10.31
DS YPP	1106.575	ST-E-95	9.8	5944.46	5945.96	1.57	1.43	6.86	10.26
DS YPP	1106.575	BT-E-95	9.9	5944.46	5945.97	1.58	1.44	6.89	10.31
DS YPP	1106.575	WC-E-95	22.7	5944.46	5945.94	1.55	3.42	6.63	9.87
DS YPP	1106.575	J-E-95	8.5	5944.46	5945.92	1.53	1.33	6.41	9.49
DS YPP	1106.575	CH-P-95	6.6	5944.46	5945.83	1.44	1.17	5.59	8.48
DS YPP	1106.575	ST-P-95	6.4	5944.46	5945.82	1.43	1.16	5.53	8.43
DS YPP	1106.575	BT-P-95	6.6	5944.46	5945.83	1.44	1.18	5.61	8.5
DS YPP	1106.575	WC-P-95	18.1	5944.46	5946.06	1.67	2.29	7.89	11.79
DS YPP	1106.575	J-P-95	5.8	5944.46	5945.78	1.39	1.12	5.17	8.03
DS YPP	1106.575	CH-5	57.4	5944.46	5946.31	1.92	5.16	11.13	13.73
DS YPP	1106.575	ST-5	244.7	5944.46	5947.58	3.19	6.84	35.8	24.3
DS YPP	1106.575	BT-5	41.5	5944.46	5946.16	1.77	4.55	9.11	12.48
DS YPP	1106.575	WC-5	255.5	5944.46	5947.61	3.22	6.96	36.73	24.58
DS YPP	1106.575	J-5	142.7	5944.46	5947.03	2.64	6.04	23.62	20.54
DS YPP	1100.044	CH-E-95	9.9	5944.34	5945.85	1.5	0.58	16.99	18.13
DS YPP	1100.044	ST-E-95	9.8	5944.34	5945.84	1.5	0.58	16.93	18.11
DS YPP	1100.044	BT-E-95	9.9	5944.34	5945.85	1.5	0.58	16.99	18.13
DS YPP	1100.044	WC-E-95	22.7	5944.34	5945.93	1.59	1.22	18.62	18.51
DS YPP	1100.044	J-E-95	8.5	5944.34	5945.8	1.46	0.53	16.16	17.92
DS YPP	1100.044	CH-P-95	6.6	5944.34	5945.71	1.37	0.45	14.65	17.52
DS YPP	1100.044	ST-P-95	6.4	5944.34	5945.71	1.37	0.44	14.52	17.48
DS YPP	1100.044	BT-P-95	6.6	5944.34	5945.72	1.38	0.45	14.69	17.53
DS YPP	1100.044	WC-P-95	18.1	5944.34	5945.97	1.63	0.94	19.22	18.63
DS YPP	1100.044	J-P-95	5.8	5944.34	5945.66	1.32	0.42	13.78	17.28
DS YPP	1100.044	CH-5	57.4	5944.34	5946.39	2.04	2.1	27.37	20.33
DS YPP	1100.044	ST-5	244.7	5944.34	5947.55	3.21	2.49	128.13	74.19
DS YPP	1100.044	BT-5	41.5	5944.34	5946.21	1.87	1.74	23.86	19.62
DS YPP	1100.044	WC-5	255.5	5944.34	5947.6	3.26	2.54	131.82	77.28
DS YPP	1100.044	J-5	142.7	5944.34	5947	2.66	3.5	40.82	24.7

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1091.123	CH-E-95	9.9	5944.05	5945.74	1.69	0.66	15.02	17.81
DS YPP	1091.123	ST-E-95	9.8	5944.05	5945.74	1.69	0.65	14.97	17.8
DS YPP	1091.123	BT-E-95	9.9	5944.05	5945.74	1.69	0.66	15.02	17.81
DS YPP	1091.123	WC-E-95	22.7	5944.05	5945.85	1.8	1.33	17.06	18.36
DS YPP	1091.123	J-E-95	8.5	5944.05	5945.7	1.65	0.6	14.28	17.61
DS YPP	1091.123	CH-P-95	6.6	5944.05	5945.62	1.57	0.51	12.91	17.21
DS YPP	1091.123	ST-P-95	6.4	5944.05	5945.61	1.56	0.5	12.79	17.17
DS YPP	1091.123	BT-P-95	6.6	5944.05	5945.62	1.57	0.51	12.95	17.22
DS YPP	1091.123	WC-P-95	18.1	5944.05	5945.87	1.82	1.05	17.32	18.43
DS YPP	1091.123	J-P-95	5.8	5944.05	5945.57	1.52	0.48	12.1	16.93
DS YPP	1091.123	CH-5	57.4	5944.05	5946.27	2.22	2.26	25.52	22.79
DS YPP	1091.123	ST-5	244.7	5944.05	5947.11	3.06	5.16	50.85	38.18
DS YPP	1091.123	BT-5	41.5	5944.05	5946.11	2.06	1.89	22	20.75
DS YPP	1091.123	WC-5	255.5	5944.05	5947.14	3.09	5.29	51.98	38.62
DS YPP	1091.123	J-5	142.7	5944.05	5946.83	2.77	3.63	40.49	33.03
DS YPP	1083.34	CH-E-95	9.9	5944.43	5945.33	2.43	2.16	4.57	13.15
DS YPP	1083.34	ST-E-95	9.8	5944.43	5945.33	2.43	2.15	4.56	13.14
DS YPP	1083.34	BT-E-95	9.9	5944.43	5945.33	2.43	2.16	4.57	13.15
DS YPP	1083.34	WC-E-95	22.7	5944.43	5945.46	2.56	3.48	6.52	16.53
DS YPP	1083.34	J-E-95	8.5	5944.43	5945.31	2.41	1.94	4.38	12.98
DS YPP	1083.34	CH-P-95	6.6	5944.43	5945.26	2.36	1.73	3.79	11.4
DS YPP	1083.34	ST-P-95	6.4	5944.43	5945.26	2.36	1.71	3.75	11.27
DS YPP	1083.34	BT-P-95	6.6	5944.43	5945.27	2.37	1.73	3.81	11.46
DS YPP	1083.34	WC-P-95	18.1	5944.43	5945.38	2.48	3.41	5.31	15.09
DS YPP	1083.34	J-P-95	5.8	5944.43	5945.24	2.34	1.66	3.48	10.48
DS YPP	1083.34	CH-5	57.4	5944.43	5945.81	2.91	4.2	13.67	23.67
DS YPP	1083.34	ST-5	244.7	5944.43	5946.7	3.8	5.93	42.79	40.96
DS YPP	1083.34	BT-5	41.5	5944.43	5945.67	2.77	3.9	10.64	21.62
DS YPP	1083.34	WC-5	255.5	5944.43	5946.73	3.83	6.03	44.06	41.29
DS YPP	1083.34	J-5	142.7	5944.43	5946.33	3.43	5.06	28.36	36.6
DS YPP	1076.03	CH-E-95	9.9	5943.3	5944.12	1.02	1.29	7.7	13.11
DS YPP	1076.03	ST-E-95	9.8	5943.3	5944.11	1.01	1.28	7.67	13.11
DS YPP	1076.03	BT-E-95	9.9	5943.3	5944.12	1.02	1.29	7.7	13.11
DS YPP	1076.03	WC-E-95	22.7	5943.3	5944.11	1.01	3	7.57	13.1
DS YPP	1076.03	J-E-95	8.5	5943.3	5944.08	0.98	1.18	7.19	13.05
DS YPP	1076.03	CH-P-95	6.6	5943.3	5944.01	0.91	1.03	6.34	12.93
DS YPP	1076.03	ST-P-95	6.4	5943.3	5944.01	0.91	1.02	6.27	12.91
DS YPP	1076.03	BT-P-95	6.6	5943.3	5944.01	0.91	1.04	6.36	12.93
DS YPP	1076.03	WC-P-95	18.1	5943.3	5944.18	1.08	2.11	8.58	13.19
DS YPP	1076.03	J-P-95	5.8	5943.3	5943.98	0.88	0.98	5.92	12.86
DS YPP	1076.03	CH-5	57.4	5943.3	5944.61	1.51	3.91	14.69	16.44
DS YPP	1076.03	ST-5	244.7	5943.3	5945.15	2.05	9.62	25.44	20.95
DS YPP	1076.03	BT-5	41.5	5943.3	5944.46	1.36	3.36	12.35	15.01
DS YPP	1076.03	WC-5	255.5	5943.3	5945.2	2.1	9.67	26.41	21.08
DS YPP	1076.03	J-5	142.7	5943.3	5944.77	1.67	8.1	17.62	19.68

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1069.31	CH-E-95	9.9	5942.27	5943.67	1.4	1.15	8.58	12.39
DS YPP	1069.31	ST-E-95	9.8	5942.27	5943.67	1.4	1.15	8.53	12.36
DS YPP	1069.31	BT-E-95	9.9	5942.27	5943.67	1.4	1.15	8.58	12.39
DS YPP	1069.31	WC-E-95	22.7	5942.27	5943.73	1.46	2.44	9.31	12.81
DS YPP	1069.31	J-E-95	8.5	5942.27	5943.61	1.34	1.08	7.85	11.93
DS YPP	1069.31	CH-P-95	6.6	5942.27	5943.5	1.23	1	6.58	11.09
DS YPP	1069.31	ST-P-95	6.4	5942.27	5943.49	1.22	0.99	6.47	11.02
DS YPP	1069.31	BT-P-95	6.6	5942.27	5943.51	1.23	1	6.62	11.12
DS YPP	1069.31	WC-P-95	18.1	5942.27	5943.8	1.53	1.77	10.25	13.35
DS YPP	1069.31	J-P-95	5.8	5942.27	5943.44	1.17	0.97	5.93	10.65
DS YPP	1069.31	CH-5	57.4	5942.27	5944.49	2.22	2.3	24.95	31.97
DS YPP	1069.31	ST-5	244.7	5942.27	5945.56	3.29	2.71	112.78	76.7
DS YPP	1069.31	BT-5	41.5	5942.27	5944.28	2.01	2.25	18.46	26.04
DS YPP	1069.31	WC-5	255.5	5942.27	5945.61	3.34	2.74	116.54	77.65
DS YPP	1069.31	J-5	142.7	5942.27	5945.08	2.81	3.21	44.43	33.85
DS YPP	1059.992	CH-E-95	9.9	5941.33	5943.07	1.74	1.65	6	4.97
DS YPP	1059.992	ST-E-95	9.8	5941.33	5943.06	1.73	1.64	5.99	4.97
DS YPP	1059.992	BT-E-95	9.9	5941.33	5943.07	1.74	1.65	6	4.97
DS YPP	1059.992	WC-E-95	22.7	5941.33	5942.98	1.65	4.07	5.58	4.83
DS YPP	1059.992	J-E-95	8.5	5941.33	5943.02	1.68	1.48	5.75	4.89
DS YPP	1059.992	CH-P-95	6.6	5941.33	5942.92	1.59	1.24	5.27	4.73
DS YPP	1059.992	ST-P-95	6.4	5941.33	5942.91	1.58	1.22	5.23	4.72
DS YPP	1059.992	BT-P-95	6.6	5941.33	5942.92	1.59	1.25	5.29	4.74
DS YPP	1059.992	WC-P-95	18.1	5941.33	5943.13	1.8	2.87	6.31	5.07
DS YPP	1059.992	J-P-95	5.8	5941.33	5942.87	1.53	1.15	5.03	4.65
DS YPP	1059.992	CH-5	57.4	5941.33	5943.71	2.38	5.21	11.02	13
DS YPP	1059.992	ST-5	244.7	5941.33	5944.87	3.54	6.21	39.78	34.14
DS YPP	1059.992	BT-5	41.5	5941.33	5943.17	1.84	6.34	6.54	5.14
DS YPP	1059.992	WC-5	255.5	5941.33	5944.91	3.58	6.25	41.29	34.26
DS YPP	1059.992	J-5	142.7	5941.33	5944.46	3.13	5.37	26.6	29.07
DS YPP	1052.699	CH-E-95	9.9	5941.25	5942.77	1.52	0.81	12.28	17.47
DS YPP	1052.699	ST-E-95	9.8	5941.25	5942.77	1.52	0.8	12.25	17.44
DS YPP	1052.699	BT-E-95	9.9	5941.25	5942.77	1.52	0.81	12.28	17.47
DS YPP	1052.699	WC-E-95	22.7	5941.25	5942.77	1.52	1.84	12.33	17.5
DS YPP	1052.699	J-E-95	8.5	5941.25	5942.73	1.48	0.73	11.6	16.88
DS YPP	1052.699	CH-P-95	6.6	5941.25	5942.66	1.4	0.63	10.36	15.79
DS YPP	1052.699	ST-P-95	6.4	5941.25	5942.65	1.4	0.62	10.27	15.75
DS YPP	1052.699	BT-P-95	6.6	5941.25	5942.66	1.41	0.63	10.4	15.82
DS YPP	1052.699	WC-P-95	18.1	5941.25	5942.84	1.59	1.34	13.54	18.5
DS YPP	1052.699	J-P-95	5.8	5941.25	5942.62	1.37	0.59	9.77	15.48
DS YPP	1052.699	CH-5	57.4	5941.25	5943.14	1.89	2.92	19.67	22.76
DS YPP	1052.699	ST-5	244.7	5941.25	5944.21	2.96	3.51	86.24	72.66
DS YPP	1052.699	BT-5	41.5	5941.25	5942.99	1.74	2.53	16.4	20.59
DS YPP	1052.699	WC-5	255.5	5941.25	5944.26	3	3.51	89.87	73.16
DS YPP	1052.699	J-5	142.7	5941.25	5943.74	2.49	3.92	36.37	34.62

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1041.4	CH-E-95	9.9	5941.45	5942.48	1.03	0.69	14.37	24.05
DS YPP	1041.4	ST-E-95	9.8	5941.45	5942.48	1.03	0.69	14.31	24.03
DS YPP	1041.4	BT-E-95	9.9	5941.45	5942.48	1.03	0.69	14.37	24.05
DS YPP	1041.4	WC-E-95	22.7	5941.45	5942.51	1.06	1.51	15.03	24.21
DS YPP	1041.4	J-E-95	8.5	5941.45	5942.45	1	0.63	13.5	23.77
DS YPP	1041.4	CH-P-95	6.6	5941.45	5942.38	0.93	0.54	12.04	23.22
DS YPP	1041.4	ST-P-95	6.4	5941.45	5942.38	0.93	0.54	11.92	23.17
DS YPP	1041.4	BT-P-95	6.6	5941.45	5942.39	0.94	0.55	12.09	23.24
DS YPP	1041.4	WC-P-95	18.1	5941.45	5942.55	1.1	1.13	16.06	24.43
DS YPP	1041.4	J-P-95	5.8	5941.45	5942.35	0.9	0.52	11.2	22.87
DS YPP	1041.4	CH-5	57.4	5941.45	5942.91	1.46	2.29	25.04	25.95
DS YPP	1041.4	ST-5	244.7	5941.45	5943.75	2.3	5.08	48.39	68.93
DS YPP	1041.4	BT-5	41.5	5941.45	5942.74	1.29	2.01	20.68	25.31
DS YPP	1041.4	WC-5	255.5	5941.45	5943.78	2.33	5.22	49.24	69.08
DS YPP	1041.4	J-5	142.7	5941.45	5943.5	2.05	3.47	41.09	54.79
DS YPP	1035.537	CH-E-95	9.9	5941.04	5942.26	1.22	1.03	9.63	17.78
DS YPP	1035.537	ST-E-95	9.8	5941.04	5942.26	1.22	1.02	9.6	17.76
DS YPP	1035.537	BT-E-95	9.9	5941.04	5942.26	1.22	1.03	9.63	17.78
DS YPP	1035.537	WC-E-95	22.7	5941.04	5942.25	1.21	2.4	9.47	17.73
DS YPP	1035.537	J-E-95	8.5	5941.04	5942.22	1.18	0.95	8.93	17.54
DS YPP	1035.537	CH-P-95	6.6	5941.04	5942.16	1.11	0.84	7.82	17.07
DS YPP	1035.537	ST-P-95	6.4	5941.04	5942.15	1.11	0.83	7.72	17.04
DS YPP	1035.537	BT-P-95	6.6	5941.04	5942.16	1.12	0.84	7.85	17.09
DS YPP	1035.537	WC-P-95	18.1	5941.04	5942.33	1.29	1.67	10.86	18.06
DS YPP	1035.537	J-P-95	5.8	5941.04	5942.12	1.08	0.8	7.25	16.86
DS YPP	1035.537	CH-5	57.4	5941.04	5942.64	1.6	3.36	17.08	22.51
DS YPP	1035.537	ST-5	244.7	5941.04	5943.58	2.54	5.31	50.85	68.82
DS YPP	1035.537	BT-5	41.5	5941.04	5942.47	1.43	3.07	13.51	18.83
DS YPP	1035.537	WC-5	255.5	5941.04	5943.64	2.6	5.29	53.35	69.08
DS YPP	1035.537	J-5	142.7	5941.04	5943.33	2.29	3.87	39.88	67.8
DS YPP	1027.466	CH-E-95	9.9	5940.83	5941.98	1.15	0.73	13.53	19.93
DS YPP	1027.466	ST-E-95	9.8	5940.83	5941.99	1.15	0.72	13.54	19.93
DS YPP	1027.466	BT-E-95	9.9	5940.83	5941.98	1.15	0.73	13.53	19.93
DS YPP	1027.466	WC-E-95	22.7	5940.83	5942.01	1.18	1.61	14.07	20.15
DS YPP	1027.466	J-E-95	8.5	5940.83	5941.94	1.11	0.67	12.62	19.56
DS YPP	1027.466	CH-P-95	6.6	5940.83	5941.84	1.01	0.61	10.77	19
DS YPP	1027.466	ST-P-95	6.4	5940.83	5941.84	1.01	0.6	10.68	18.97
DS YPP	1027.466	BT-P-95	6.6	5940.83	5941.85	1.02	0.61	10.83	19.02
DS YPP	1027.466	WC-P-95	18.1	5940.83	5942.08	1.25	1.17	15.47	20.73
DS YPP	1027.466	J-P-95	5.8	5940.83	5941.8	0.97	0.58	9.91	18.71
DS YPP	1027.466	CH-5	57.4	5940.83	5942.49	1.66	2.31	24.8	24.09
DS YPP	1027.466	ST-5	244.7	5940.83	5942.96	2.13	6.7	36.5	63.26
DS YPP	1027.466	BT-5	41.5	5940.83	5942.3	1.47	2.06	20.17	22.94
DS YPP	1027.466	WC-5	255.5	5940.83	5943.01	2.18	6.79	37.62	63.38
DS YPP	1027.466	J-5	142.7	5940.83	5943.21	2.38	3.33	42.89	64.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	1018.479	CH-E-95	9.9	5940.16	5941.69	1.53	1.11	8.94	12.26
DS YPP	1018.479	ST-E-95	9.8	5940.16	5941.69	1.53	1.09	8.97	12.51
DS YPP	1018.479	BT-E-95	9.9	5940.16	5941.69	1.53	1.11	8.94	12.26
DS YPP	1018.479	WC-E-95	22.7	5940.16	5941.64	1.47	2.73	8.3	11.44
DS YPP	1018.479	J-E-95	8.5	5940.16	5941.65	1.49	1.01	8.44	11.61
DS YPP	1018.479	CH-P-95	6.6	5940.16	5941.53	1.37	0.91	7.18	10.21
DS YPP	1018.479	ST-P-95	6.4	5940.16	5941.53	1.37	0.9	7.15	10.18
DS YPP	1018.479	BT-P-95	6.6	5940.16	5941.53	1.37	0.91	7.22	10.24
DS YPP	1018.479	WC-P-95	18.1	5940.16	5941.76	1.6	1.83	9.87	13.39
DS YPP	1018.479	J-P-95	5.8	5940.16	5941.48	1.32	0.86	6.69	9.72
DS YPP	1018.479	CH-5	57.4	5940.16	5941.97	1.81	4.43	12.97	16.75
DS YPP	1018.479	ST-5	244.7	5940.16	5942.88	2.72	4.23	70.13	50.63
DS YPP	1018.479	BT-5	41.5	5940.16	5941.83	1.67	3.82	10.85	13.81
DS YPP	1018.479	WC-5	255.5	5940.16	5942.88	2.72	4.41	70.13	50.63
DS YPP	1018.479	J-5	142.7	5940.16	5942.54	2.38	6.07	23.53	48.6
DS YPP	1008.683	CH-E-95	9.9	5939.49	5940.13	0.64	3.76	2.63	6.01
DS YPP	1008.683	ST-E-95	9.8	5939.49	5940.13	0.64	3.72	2.63	6.01
DS YPP	1008.683	BT-E-95	9.9	5939.49	5940.13	0.64	3.76	2.63	6.01
DS YPP	1008.683	WC-E-95	22.7	5939.49	5940.48	0.99	4.16	5.45	9.88
DS YPP	1008.683	J-E-95	8.5	5939.49	5940.05	0.56	3.89	2.18	5.68
DS YPP	1008.683	CH-P-95	6.6	5939.49	5940.02	0.52	3.29	1.99	5.55
DS YPP	1008.683	ST-P-95	6.4	5939.49	5940	0.5	3.4	1.88	5.47
DS YPP	1008.683	BT-P-95	6.6	5939.49	5940.01	0.52	3.33	1.98	5.54
DS YPP	1008.683	WC-P-95	18.1	5939.49	5940.39	0.9	3.95	4.58	8.99
DS YPP	1008.683	J-P-95	5.8	5939.49	5939.97	0.48	3.28	1.76	5.37
DS YPP	1008.683	CH-5	57.4	5939.49	5940.95	1.46	4.86	11.81	15.53
DS YPP	1008.683	ST-5	244.7	5939.49	5942.05	2.56	5.58	54.96	45.12
DS YPP	1008.683	BT-5	41.5	5939.49	5940.79	1.3	4.38	9.48	15.02
DS YPP	1008.683	WC-5	255.5	5939.49	5942.05	2.56	5.83	54.96	45.12
DS YPP	1008.683	J-5	142.7	5939.49	5941.44	1.95	7.13	20.02	17.55
DS YPP	1001.275	CH-E-95	9.9	5938.21	5939.86	1.65	0.6	16.53	15.28
DS YPP	1001.275	ST-E-95	9.8	5938.21	5939.85	1.64	0.59	16.47	15.27
DS YPP	1001.275	BT-E-95	9.9	5938.21	5939.86	1.65	0.6	16.53	15.28
DS YPP	1001.275	WC-E-95	22.7	5938.21	5939.9	1.69	1.32	17.14	15.39
DS YPP	1001.275	J-E-95	8.5	5938.21	5939.82	1.6	0.54	15.88	15.16
DS YPP	1001.275	CH-P-95	6.6	5938.21	5939.72	1.51	0.45	14.5	14.9
DS YPP	1001.275	ST-P-95	6.4	5938.21	5939.71	1.5	0.45	14.31	14.87
DS YPP	1001.275	BT-P-95	6.6	5938.21	5939.73	1.52	0.45	14.54	14.91
DS YPP	1001.275	WC-P-95	18.1	5938.21	5939.95	1.74	1.01	17.96	15.53
DS YPP	1001.275	J-P-95	5.8	5938.21	5939.67	1.46	0.42	13.76	14.78
DS YPP	1001.275	CH-5	57.4	5938.21	5940.33	2.12	2.39	23.98	16.58
DS YPP	1001.275	ST-5	244.7	5938.21	5941.43	3.22	5.15	47.76	37.08
DS YPP	1001.275	BT-5	41.5	5938.21	5940.16	1.95	1.95	21.25	16.15
DS YPP	1001.275	WC-5	255.5	5938.21	5941.48	3.27	5.25	48.97	37.76
DS YPP	1001.275	J-5	142.7	5938.21	5940.97	2.76	3.94	36.25	33.31

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	995.5477	CH-E-95	9.9	5938.42	5939.81	1.39	0.51	19.56	22.26
DS YPP	995.5477	ST-E-95	9.8	5938.42	5939.81	1.39	0.5	19.48	22.25
DS YPP	995.5477	BT-E-95	9.9	5938.42	5939.81	1.39	0.51	19.56	22.26
DS YPP	995.5477	WC-E-95	22.7	5938.42	5939.86	1.44	1.1	20.68	22.4
DS YPP	995.5477	J-E-95	8.5	5938.42	5939.77	1.35	0.46	18.66	22.15
DS YPP	995.5477	CH-P-95	6.6	5938.42	5939.68	1.26	0.39	16.67	21.87
DS YPP	995.5477	ST-P-95	6.4	5938.42	5939.67	1.25	0.39	16.38	21.83
DS YPP	995.5477	BT-P-95	6.6	5938.42	5939.69	1.27	0.39	16.73	21.88
DS YPP	995.5477	WC-P-95	18.1	5938.42	5939.91	1.49	0.84	21.66	22.52
DS YPP	995.5477	J-P-95	5.8	5938.42	5939.64	1.22	0.37	15.69	19.98
DS YPP	995.5477	CH-5	57.4	5938.42	5940.3	1.88	1.87	30.64	23.67
DS YPP	995.5477	ST-5	244.7	5938.42	5941.47	3.05	3.99	62	30.73
DS YPP	995.5477	BT-5	41.5	5938.42	5940.13	1.71	1.56	26.66	23.12
DS YPP	995.5477	WC-5	255.5	5938.42	5941.52	3.1	4.07	63.57	31.38
DS YPP	995.5477	J-5	142.7	5938.42	5940.96	2.54	3.02	47.31	27.01
DS YPP	993.0036	CH-E-95	9.9	5938.29	5939.76	1.46	1.06	9.37	18.67
DS YPP	993.0036	ST-E-95	9.8	5938.29	5939.75	1.46	1.05	9.31	18.6
DS YPP	993.0036	BT-E-95	9.9	5938.29	5939.76	1.46	1.06	9.37	18.67
DS YPP	993.0036	WC-E-95	22.7	5938.29	5939.74	1.45	2.52	9.02	18.37
DS YPP	993.0036	J-E-95	8.5	5938.29	5939.72	1.43	0.98	8.69	18.01
DS YPP	993.0036	CH-P-95	6.6	5938.29	5939.63	1.34	0.9	7.27	13.46
DS YPP	993.0036	ST-P-95	6.4	5938.29	5939.62	1.33	0.9	7.08	13.27
DS YPP	993.0036	BT-P-95	6.6	5938.29	5939.63	1.34	0.9	7.3	14.04
DS YPP	993.0036	WC-P-95	18.1	5938.29	5939.83	1.54	1.68	10.8	20.6
DS YPP	993.0036	J-P-95	5.8	5938.29	5939.59	1.3	0.86	6.73	12.91
DS YPP	993.0036	CH-5	57.4	5938.29	5940.13	1.84	3.28	17.48	22.7
DS YPP	993.0036	ST-5	244.7	5938.29	5941.01	2.72	6.34	39.32	27.99
DS YPP	993.0036	BT-5	41.5	5938.29	5939.98	1.69	2.96	14.04	22
DS YPP	993.0036	WC-5	255.5	5938.29	5941.05	2.76	6.47	40.3	28.39
DS YPP	993.0036	J-5	142.7	5938.29	5940.7	2.41	4.63	31.06	25.2
DS YPP	982.5369	CH-E-95	9.9	5938.16	5939.24	1.08	0.89	11.66	16.56
DS YPP	982.5369	ST-E-95	9.8	5938.16	5939.24	1.08	0.88	11.6	16.53
DS YPP	982.5369	BT-E-95	9.9	5938.16	5939.24	1.08	0.89	11.66	16.56
DS YPP	982.5369	WC-E-95	22.7	5938.16	5939.4	1.24	1.65	14.38	17.95
DS YPP	982.5369	J-E-95	8.5	5938.16	5939.19	1.03	0.82	10.85	16.26
DS YPP	982.5369	CH-P-95	6.6	5938.16	5939.1	0.94	0.73	9.37	15.74
DS YPP	982.5369	ST-P-95	6.4	5938.16	5939.1	0.93	0.72	9.27	15.7
DS YPP	982.5369	BT-P-95	6.6	5938.16	5939.1	0.94	0.73	9.43	15.75
DS YPP	982.5369	WC-P-95	18.1	5938.16	5939.42	1.25	1.29	14.65	18.07
DS YPP	982.5369	J-P-95	5.8	5938.16	5939.06	0.9	0.69	8.67	15.42
DS YPP	982.5369	CH-5	57.4	5938.16	5939.86	1.7	2.54	23.69	22.39
DS YPP	982.5369	ST-5	244.7	5938.16	5940.83	2.67	5.18	50.11	31.14
DS YPP	982.5369	BT-5	41.5	5938.16	5939.71	1.55	2.14	20.31	20.76
DS YPP	982.5369	WC-5	255.5	5938.16	5940.87	2.71	5.28	51.39	31.32
DS YPP	982.5369	J-5	142.7	5938.16	5940.44	2.28	3.93	38.32	28.61

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	974.3318	CH-E-95	9.9	5937.27	5938.5	1.23	2.73	3.7	5.25
DS YPP	974.3318	ST-E-95	9.8	5937.27	5938.5	1.23	2.71	3.69	5.25
DS YPP	974.3318	BT-E-95	9.9	5937.27	5938.5	1.23	2.73	3.7	5.25
DS YPP	974.3318	WC-E-95	22.7	5937.27	5938.69	1.42	4.82	4.83	6.91
DS YPP	974.3318	J-E-95	8.5	5937.27	5938.47	1.2	2.43	3.57	5.14
DS YPP	974.3318	CH-P-95	6.6	5937.27	5938.42	1.15	2.02	3.3	4.87
DS YPP	974.3318	ST-P-95	6.4	5937.27	5938.41	1.14	1.99	3.27	4.85
DS YPP	974.3318	BT-P-95	6.6	5937.27	5938.42	1.15	2.03	3.3	4.88
DS YPP	974.3318	WC-P-95	18.1	5937.27	5938.51	1.24	4.88	3.79	5.33
DS YPP	974.3318	J-P-95	5.8	5937.27	5938.38	1.11	1.87	3.13	4.71
DS YPP	974.3318	CH-5	57.4	5937.27	5939.31	2.04	4.37	13.42	23.18
DS YPP	974.3318	ST-5	244.7	5937.27	5940.22	2.95	6.67	37.75	28.69
DS YPP	974.3318	BT-5	41.5	5937.27	5939.15	1.88	4.2	10.1	19.2
DS YPP	974.3318	WC-5	255.5	5937.27	5940.26	2.99	6.76	38.94	28.87
DS YPP	974.3318	J-5	142.7	5937.27	5939.79	2.52	5.64	25.9	26.96
DS YPP	969.8831	CH-E-95	9.9	5937.06	5938.38	1.32	0.61	16.22	24.41
DS YPP	969.8831	ST-E-95	9.8	5937.06	5938.38	1.32	0.61	16.16	24.4
DS YPP	969.8831	BT-E-95	9.9	5937.06	5938.38	1.32	0.61	16.22	24.41
DS YPP	969.8831	WC-E-95	22.7	5937.06	5938.41	1.35	1.35	16.82	24.52
DS YPP	969.8831	J-E-95	8.5	5937.06	5938.35	1.29	0.55	15.39	24.26
DS YPP	969.8831	CH-P-95	6.6	5937.06	5938.29	1.23	0.47	13.93	24
DS YPP	969.8831	ST-P-95	6.4	5937.06	5938.28	1.22	0.46	13.81	23.98
DS YPP	969.8831	BT-P-95	6.6	5937.06	5938.29	1.23	0.47	13.97	24.01
DS YPP	969.8831	WC-P-95	18.1	5937.06	5938.45	1.39	1.01	17.87	24.66
DS YPP	969.8831	J-P-95	5.8	5937.06	5938.25	1.19	0.44	13.1	23.85
DS YPP	969.8831	CH-5	57.4	5937.06	5938.74	1.68	2.29	25.05	25.7
DS YPP	969.8831	ST-5	244.7	5937.06	5938.67	1.61	10.45	23.41	25.45
DS YPP	969.8831	BT-5	41.5	5937.06	5938.6	1.54	1.92	21.64	25.18
DS YPP	969.8831	WC-5	255.5	5937.06	5938.7	1.64	10.57	24.18	25.57
DS YPP	969.8831	J-5	142.7	5937.06	5939.29	2.23	3.56	40.07	28.65
DS YPP	958.9428	CH-E-95	9.9	5937.02	5938.08	1.06	0.88	11.19	24.48
DS YPP	958.9428	ST-E-95	9.8	5937.02	5938.07	1.05	0.88	11.13	24.45
DS YPP	958.9428	BT-E-95	9.9	5937.02	5938.08	1.06	0.88	11.19	24.48
DS YPP	958.9428	WC-E-95	22.7	5937.02	5938.13	1.11	1.81	12.56	25.15
DS YPP	958.9428	J-E-95	8.5	5937.02	5938.04	1.02	0.82	10.41	24.11
DS YPP	958.9428	CH-P-95	6.6	5937.02	5937.98	0.96	0.73	8.95	23.33
DS YPP	958.9428	ST-P-95	6.4	5937.02	5937.98	0.96	0.72	8.83	23.26
DS YPP	958.9428	BT-P-95	6.6	5937.02	5937.98	0.96	0.74	8.97	23.34
DS YPP	958.9428	WC-P-95	18.1	5937.02	5938.16	1.14	1.38	13.15	25.4
DS YPP	958.9428	J-P-95	5.8	5937.02	5937.95	0.93	0.71	8.16	22.22
DS YPP	958.9428	CH-5	57.4	5937.02	5938.43	1.41	2.83	20.26	26.38
DS YPP	958.9428	ST-5	244.7	5937.02	5939.08	2.06	6.45	37.96	28.16
DS YPP	958.9428	BT-5	41.5	5937.02	5938.32	1.3	2.4	17.33	26.08
DS YPP	958.9428	WC-5	255.5	5937.02	5939.12	2.1	6.6	39	28.26
DS YPP	958.9428	J-5	142.7	5937.02	5938.85	1.83	4.53	31.49	27.52

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	951.7118	CH-E-95	9.9	5935.92	5937.31	1.39	1.81	5.48	9.57
DS YPP	951.7118	ST-E-95	9.8	5935.92	5937.31	1.39	1.8	5.46	9.56
DS YPP	951.7118	BT-E-95	9.9	5935.92	5937.31	1.39	1.81	5.48	9.57
DS YPP	951.7118	WC-E-95	22.7	5935.92	5937.31	1.39	4.16	5.46	9.56
DS YPP	951.7118	J-E-95	8.5	5935.92	5937.28	1.36	1.66	5.13	9.24
DS YPP	951.7118	CH-P-95	6.6	5935.92	5937.19	1.27	1.51	4.35	7.81
DS YPP	951.7118	ST-P-95	6.4	5935.92	5937.18	1.26	1.49	4.29	7.73
DS YPP	951.7118	BT-P-95	6.6	5935.92	5937.19	1.27	1.51	4.37	7.83
DS YPP	951.7118	WC-P-95	18.1	5935.92	5937.4	1.48	2.81	6.44	12.2
DS YPP	951.7118	J-P-95	5.8	5935.92	5937.14	1.22	1.44	4.02	7.42
DS YPP	951.7118	CH-5	57.4	5935.92	5937.8	1.88	4.25	13.52	24.56
DS YPP	951.7118	ST-5	244.7	5935.92	5938.55	2.63	6.74	36.51	36.56
DS YPP	951.7118	BT-5	41.5	5935.92	5937.63	1.7	4.26	9.75	17.74
DS YPP	951.7118	WC-5	255.5	5935.92	5938.56	2.64	6.97	36.88	36.63
DS YPP	951.7118	J-5	142.7	5935.92	5938.27	2.35	5.31	26.92	31.97
DS YPP	943.9922	CH-E-95	9.9	5935.3	5936.25	0.95	1.36	7.28	12.41
DS YPP	943.9922	ST-E-95	9.8	5935.3	5936.24	0.94	1.35	7.25	12.39
DS YPP	943.9922	BT-E-95	9.9	5935.3	5936.25	0.95	1.36	7.28	12.41
DS YPP	943.9922	WC-E-95	22.7	5935.3	5936.24	0.94	3.15	7.2	12.37
DS YPP	943.9922	J-E-95	8.5	5935.3	5936.21	0.91	1.25	6.82	12.2
DS YPP	943.9922	CH-P-95	6.6	5935.3	5936.13	0.83	1.11	5.9	11.13
DS YPP	943.9922	ST-P-95	6.4	5935.3	5936.13	0.82	1.09	5.85	11.09
DS YPP	943.9922	BT-P-95	6.6	5935.3	5936.13	0.83	1.11	5.92	11.14
DS YPP	943.9922	WC-P-95	18.1	5935.3	5936.31	1.01	2.23	8.13	12.84
DS YPP	943.9922	J-P-95	5.8	5935.3	5936.09	0.79	1.05	5.47	10.84
DS YPP	943.9922	CH-5	57.4	5935.3	5936.49	1.19	5.51	10.43	13.91
DS YPP	943.9922	ST-5	244.7	5935.3	5937.35	2.05	8.42	29.06	26.11
DS YPP	943.9922	BT-5	41.5	5935.3	5936.44	1.14	4.23	9.82	13.59
DS YPP	943.9922	WC-5	255.5	5935.3	5937.39	2.09	8.48	30.11	26.33
DS YPP	943.9922	J-5	142.7	5935.3	5937	1.7	7	20.39	24.21
DS YPP	932.6895	CH-E-95	9.9	5934.17	5935.48	1.31	1.05	9.41	13.96
DS YPP	932.6895	ST-E-95	9.8	5934.17	5935.48	1.31	1.05	9.37	13.94
DS YPP	932.6895	BT-E-95	9.9	5934.17	5935.48	1.31	1.05	9.41	13.96
DS YPP	932.6895	WC-E-95	22.7	5934.17	5935.48	1.31	2.42	9.38	13.94
DS YPP	932.6895	J-E-95	8.5	5934.17	5935.44	1.27	0.96	8.82	13.72
DS YPP	932.6895	CH-P-95	6.6	5934.17	5935.36	1.19	0.84	7.77	13.32
DS YPP	932.6895	ST-P-95	6.4	5934.17	5935.35	1.18	0.83	7.68	13.28
DS YPP	932.6895	BT-P-95	6.6	5934.17	5935.36	1.19	0.85	7.81	13.34
DS YPP	932.6895	WC-P-95	18.1	5934.17	5935.56	1.39	1.72	10.54	14.42
DS YPP	932.6895	J-P-95	5.8	5934.17	5935.32	1.15	0.8	7.2	13.04
DS YPP	932.6895	CH-5	57.4	5934.17	5935.86	1.69	3.81	15.08	16.5
DS YPP	932.6895	ST-5	244.7	5934.17	5936.74	2.57	7.33	33.77	24.72
DS YPP	932.6895	BT-5	41.5	5934.17	5935.7	1.53	3.28	12.64	15.24
DS YPP	932.6895	WC-5	255.5	5934.17	5936.81	2.64	7.31	35.42	25.75
DS YPP	932.6895	J-5	142.7	5934.17	5936.42	2.25	5.46	26.21	22.65

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	920.6554	CH-E-95	9.9	5933.61	5934.91	1.3	0.94	10.54	17.39
DS YPP	920.6554	ST-E-95	9.8	5933.61	5934.91	1.3	0.93	10.51	17.36
DS YPP	920.6554	BT-E-95	9.9	5933.61	5934.91	1.3	0.94	10.54	17.39
DS YPP	920.6554	WC-E-95	22.7	5933.61	5934.93	1.32	2.07	10.97	17.67
DS YPP	920.6554	J-E-95	8.5	5933.61	5934.87	1.26	0.86	9.91	16.94
DS YPP	920.6554	CH-P-95	6.6	5933.61	5934.8	1.19	0.75	8.78	16.1
DS YPP	920.6554	ST-P-95	6.4	5933.61	5934.8	1.19	0.73	8.72	16.06
DS YPP	920.6554	BT-P-95	6.6	5933.61	5934.81	1.19	0.75	8.81	16.12
DS YPP	920.6554	WC-P-95	18.1	5933.61	5935	1.39	1.49	12.18	19.4
DS YPP	920.6554	J-P-95	5.8	5933.61	5934.77	1.16	0.7	8.24	15.68
DS YPP	920.6554	CH-5	57.4	5933.61	5935.21	1.6	3.5	16.41	21.13
DS YPP	920.6554	ST-5	244.7	5933.61	5935.85	2.24	7.35	33.3	30.89
DS YPP	920.6554	BT-5	41.5	5933.61	5935.11	1.5	2.9	14.33	20.28
DS YPP	920.6554	WC-5	255.5	5933.61	5935.87	2.26	7.51	34	31.04
DS YPP	920.6554	J-5	142.7	5933.61	5935.68	2.07	5.05	28.25	29.82
DS YPP	909.9668	CH-E-95	9.9	5933.13	5933.9	0.77	1.54	6.43	19.15
DS YPP	909.9668	ST-E-95	9.8	5933.13	5933.9	0.77	1.53	6.39	19.13
DS YPP	909.9668	BT-E-95	9.9	5933.13	5933.9	0.77	1.54	6.43	19.15
DS YPP	909.9668	WC-E-95	22.7	5933.13	5933.92	0.79	3.37	6.74	19.26
DS YPP	909.9668	J-E-95	8.5	5933.13	5933.88	0.75	1.43	5.94	18.68
DS YPP	909.9668	CH-P-95	6.6	5933.13	5933.83	0.7	1.3	5.06	17
DS YPP	909.9668	ST-P-95	6.4	5933.13	5933.82	0.69	1.28	4.99	16.87
DS YPP	909.9668	BT-P-95	6.6	5933.13	5933.83	0.7	1.3	5.08	17.05
DS YPP	909.9668	WC-P-95	18.1	5933.13	5933.93	0.8	2.62	6.91	19.36
DS YPP	909.9668	J-P-95	5.8	5933.13	5933.8	0.67	1.25	4.63	16.57
DS YPP	909.9668	CH-5	57.4	5933.13	5934.22	1.09	4.44	12.93	21.6
DS YPP	909.9668	ST-5	244.7	5933.13	5935.16	2.03	6.85	35.98	28.88
DS YPP	909.9668	BT-5	41.5	5933.13	5934.09	0.96	4.05	10.25	20.94
DS YPP	909.9668	WC-5	255.5	5933.13	5935.2	2.07	6.94	37.14	29.32
DS YPP	909.9668	J-5	142.7	5933.13	5934.73	1.6	5.8	24.61	24.14
DS YPP	906.5929	CH-E-95	9.9	5932.69	5933.61	0.92	0.88	11.26	21.3
DS YPP	906.5929	ST-E-95	9.8	5932.69	5933.61	0.92	0.87	11.22	21.28
DS YPP	906.5929	BT-E-95	9.9	5932.69	5933.61	0.92	0.88	11.26	21.3
DS YPP	906.5929	WC-E-95	22.7	5932.69	5933.64	0.95	1.92	11.85	21.49
DS YPP	906.5929	J-E-95	8.5	5932.69	5933.57	0.88	0.82	10.4	20.81
DS YPP	906.5929	CH-P-95	6.6	5932.69	5933.5	0.81	0.73	8.96	19.86
DS YPP	906.5929	ST-P-95	6.4	5932.69	5933.49	0.8	0.72	8.84	19.75
DS YPP	906.5929	BT-P-95	6.6	5932.69	5933.5	0.81	0.73	9	19.89
DS YPP	906.5929	WC-P-95	18.1	5932.69	5933.69	1	1.39	13.06	21.89
DS YPP	906.5929	J-P-95	5.8	5932.69	5933.46	0.77	0.7	8.2	19.13
DS YPP	906.5929	CH-5	57.4	5932.69	5934.15	1.46	2.41	23.77	25.18
DS YPP	906.5929	ST-5	244.7	5932.69	5935.26	2.57	4.55	54.39	31.65
DS YPP	906.5929	BT-5	41.5	5932.69	5933.94	1.25	2.21	18.74	23.83
DS YPP	906.5929	WC-5	255.5	5932.69	5935.3	2.61	4.65	55.69	31.89
DS YPP	906.5929	J-5	142.7	5932.69	5934.81	2.12	3.46	41.22	27.34

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	896.3598	CH-E-95	9.9	5932	5933.12	1.12	1.15	8.59	11.19
DS YPP	896.3598	ST-E-95	9.8	5932	5933.12	1.12	1.14	8.56	11.18
DS YPP	896.3598	BT-E-95	9.9	5932	5933.12	1.12	1.15	8.59	11.19
DS YPP	896.3598	WC-E-95	22.7	5932	5933.27	1.27	2.21	10.28	11.85
DS YPP	896.3598	J-E-95	8.5	5932	5933.07	1.07	1.06	7.99	10.95
DS YPP	896.3598	CH-P-95	6.6	5932	5932.98	0.98	0.93	7.01	10.58
DS YPP	896.3598	ST-P-95	6.4	5932	5932.97	0.97	0.92	6.93	10.55
DS YPP	896.3598	BT-P-95	6.6	5932	5932.98	0.98	0.94	7.05	10.59
DS YPP	896.3598	WC-P-95	18.1	5932	5933.27	1.27	1.76	10.28	11.85
DS YPP	896.3598	J-P-95	5.8	5932	5932.93	0.93	0.88	6.54	10.42
DS YPP	896.3598	CH-5	57.4	5932	5933.83	1.83	3.1	18.54	18.42
DS YPP	896.3598	ST-5	244.7	5932	5934.87	2.87	5.64	47.14	34.81
DS YPP	896.3598	BT-5	41.5	5932	5933.62	1.62	2.76	15.02	15.33
DS YPP	896.3598	WC-5	255.5	5932	5934.91	2.91	5.73	48.57	35.1
DS YPP	896.3598	J-5	142.7	5932	5934.43	2.43	4.51	32.91	29.08
DS YPP	892.994	CH-E-95	9.9	5931.28	5932.4	1.12	4	2.47	5.12
DS YPP	892.994	ST-E-95	9.8	5931.28	5932.4	1.11	3.97	2.47	5.11
DS YPP	892.994	BT-E-95	9.9	5931.28	5932.4	1.12	4	2.47	5.12
DS YPP	892.994	WC-E-95	22.7	5931.28	5932.75	1.47	4.64	4.89	7.76
DS YPP	892.994	J-E-95	8.5	5931.28	5932.33	1.05	3.93	2.16	4.5
DS YPP	892.994	CH-P-95	6.6	5931.28	5932.22	0.94	3.87	1.69	3.79
DS YPP	892.994	ST-P-95	6.4	5931.28	5932.21	0.93	3.84	1.66	3.77
DS YPP	892.994	BT-P-95	6.6	5931.28	5932.22	0.94	3.9	1.69	3.79
DS YPP	892.994	WC-P-95	18.1	5931.28	5932.65	1.37	4.37	4.14	7.36
DS YPP	892.994	J-P-95	5.8	5931.28	5932.18	0.9	3.73	1.55	3.65
DS YPP	892.994	CH-5	57.4	5931.28	5933.41	2.13	4.8	11.96	16.63
DS YPP	892.994	ST-5	244.7	5931.28	5934.5	3.22	6.88	39.26	30.9
DS YPP	892.994	BT-5	41.5	5931.28	5933.15	1.87	4.87	8.52	11.63
DS YPP	892.994	WC-5	255.5	5931.28	5934.55	3.27	6.93	40.82	31.17
DS YPP	892.994	J-5	142.7	5931.28	5934	2.72	5.98	24.95	25.55
DS YPP	888.9301	CH-E-95	9.9	5930.36	5932.14	1.78	1.09	9.12	8.08
DS YPP	888.9301	ST-E-95	9.8	5930.36	5932.13	1.77	1.08	9.09	8.06
DS YPP	888.9301	BT-E-95	9.9	5930.36	5932.14	1.78	1.09	9.12	8.08
DS YPP	888.9301	WC-E-95	22.7	5930.36	5932.25	1.89	2.26	10.04	8.61
DS YPP	888.9301	J-E-95	8.5	5930.36	5932.08	1.72	0.98	8.66	7.98
DS YPP	888.9301	CH-P-95	6.6	5930.36	5931.97	1.61	0.84	7.79	7.84
DS YPP	888.9301	ST-P-95	6.4	5930.36	5931.96	1.6	0.83	7.71	7.83
DS YPP	888.9301	BT-P-95	6.6	5930.36	5931.97	1.61	0.84	7.81	7.85
DS YPP	888.9301	WC-P-95	18.1	5930.36	5932.29	1.93	1.74	10.38	8.81
DS YPP	888.9301	J-P-95	5.8	5930.36	5931.91	1.55	0.79	7.3	7.75
DS YPP	888.9301	CH-5	57.4	5930.36	5932.84	2.48	3.54	16.23	12.53
DS YPP	888.9301	ST-5	244.7	5930.36	5933.55	3.19	9.16	26.96	22.61
DS YPP	888.9301	BT-5	41.5	5930.36	5932.62	2.26	3.05	13.6	11.05
DS YPP	888.9301	WC-5	255.5	5930.36	5933.6	3.24	9.21	28.3	26.24
DS YPP	888.9301	J-5	142.7	5930.36	5933.71	3.35	4.77	31.23	27.51

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	879.0299	CH-E-95	9.9	5930.44	5931.49	1.05	1.87	5.29	8.98
DS YPP	879.0299	ST-E-95	9.8	5930.44	5931.49	1.05	1.87	5.25	8.96
DS YPP	879.0299	BT-E-95	9.9	5930.44	5931.49	1.05	1.87	5.29	8.98
DS YPP	879.0299	WC-E-95	22.7	5930.44	5931.48	1.04	4.36	5.21	8.93
DS YPP	879.0299	J-E-95	8.5	5930.44	5931.44	1	1.76	4.82	8.71
DS YPP	879.0299	CH-P-95	6.6	5930.44	5931.34	0.9	1.63	4.01	7.64
DS YPP	879.0299	ST-P-95	6.4	5930.44	5931.33	0.89	1.62	3.94	7.57
DS YPP	879.0299	BT-P-95	6.6	5930.44	5931.34	0.9	1.63	4.04	7.66
DS YPP	879.0299	WC-P-95	18.1	5930.44	5931.55	1.11	3.11	5.82	9.51
DS YPP	879.0299	J-P-95	5.8	5930.44	5931.28	0.84	1.6	3.61	7.25
DS YPP	879.0299	CH-5	57.4	5930.44	5932.02	1.57	5.35	10.72	12.12
DS YPP	879.0299	ST-5	244.7	5930.44	5933.63	3.19	6.89	40.19	31.74
DS YPP	879.0299	BT-5	41.5	5930.44	5931.77	1.33	5.17	8.03	10.14
DS YPP	879.0299	WC-5	255.5	5930.44	5933.67	3.23	6.98	41.65	31.97
DS YPP	879.0299	J-5	142.7	5930.44	5932.75	2.31	7.07	20.19	13.28
DS YPP	873.0217	CH-E-95	9.9	5929.41	5931.29	1.88	0.78	12.73	12.14
DS YPP	873.0217	ST-E-95	9.8	5929.41	5931.29	1.88	0.77	12.65	12.12
DS YPP	873.0217	BT-E-95	9.9	5929.41	5931.29	1.88	0.78	12.73	12.14
DS YPP	873.0217	WC-E-95	22.7	5929.41	5931.33	1.92	1.72	13.21	12.2
DS YPP	873.0217	J-E-95	8.5	5929.41	5931.24	1.83	0.7	12.06	12.04
DS YPP	873.0217	CH-P-95	6.6	5929.41	5931.14	1.73	0.6	10.93	11.88
DS YPP	873.0217	ST-P-95	6.4	5929.41	5931.13	1.72	0.59	10.8	11.87
DS YPP	873.0217	BT-P-95	6.6	5929.41	5931.14	1.73	0.6	10.95	11.89
DS YPP	873.0217	WC-P-95	18.1	5929.41	5931.4	1.98	1.29	14	12.31
DS YPP	873.0217	J-P-95	5.8	5929.41	5931.09	1.68	0.56	10.31	11.8
DS YPP	873.0217	CH-5	57.4	5929.41	5931.87	2.46	2.88	19.96	13.03
DS YPP	873.0217	ST-5	244.7	5929.41	5932.1	2.69	10.61	23.07	13.36
DS YPP	873.0217	BT-5	41.5	5929.41	5931.65	2.24	2.41	17.19	12.72
DS YPP	873.0217	WC-5	255.5	5929.41	5933.19	3.78	6.63	38.57	15.08
DS YPP	873.0217	J-5	142.7	5929.41	5932.63	3.22	4.71	30.29	14.17
DS YPP	866.6783	CH-E-95	9.9	5930.11	5931.16	1.05	0.92	10.75	12.26
DS YPP	866.6783	ST-E-95	9.8	5930.11	5931.15	1.04	0.92	10.66	12.24
DS YPP	866.6783	BT-E-95	9.9	5930.11	5931.16	1.05	0.92	10.75	12.26
DS YPP	866.6783	WC-E-95	22.7	5930.11	5931.2	1.08	2.03	11.16	12.33
DS YPP	866.6783	J-E-95	8.5	5930.11	5931.11	1	0.84	10.1	12.16
DS YPP	866.6783	CH-P-95	6.6	5930.11	5931.02	0.91	0.73	9.01	11.99
DS YPP	866.6783	ST-P-95	6.4	5930.11	5931.01	0.9	0.72	8.89	11.97
DS YPP	866.6783	BT-P-95	6.6	5930.11	5931.02	0.91	0.73	9.04	12
DS YPP	866.6783	WC-P-95	18.1	5930.11	5931.26	1.15	1.52	11.92	12.51
DS YPP	866.6783	J-P-95	5.8	5930.11	5930.97	0.86	0.68	8.43	11.85
DS YPP	866.6783	CH-5	57.4	5930.11	5931.7	1.59	3.22	17.83	13.82
DS YPP	866.6783	ST-5	244.7	5930.11	5932.69	2.58	7.46	33.01	17.76
DS YPP	866.6783	BT-5	41.5	5930.11	5931.5	1.39	2.76	15.06	13.25
DS YPP	866.6783	WC-5	255.5	5930.11	5932.73	2.62	7.66	33.59	17.99
DS YPP	866.6783	J-5	142.7	5930.11	5932.39	2.28	5.1	28	15.58

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	857.0686	CH-E-95	9.9	5929.68	5930.75	1.07	1.29	7.69	11.32
DS YPP	857.0686	ST-E-95	9.8	5929.68	5930.75	1.07	1.28	7.67	11.31
DS YPP	857.0686	BT-E-95	9.9	5929.68	5930.75	1.07	1.29	7.69	11.32
DS YPP	857.0686	WC-E-95	22.7	5929.68	5930.74	1.06	3	7.57	11.25
DS YPP	857.0686	J-E-95	8.5	5929.68	5930.71	1.03	1.17	7.25	11.02
DS YPP	857.0686	CH-P-95	6.6	5929.68	5930.63	0.95	1.02	6.42	10.37
DS YPP	857.0686	ST-P-95	6.4	5929.68	5930.62	0.94	1.01	6.34	10.04
DS YPP	857.0686	BT-P-95	6.6	5929.68	5930.63	0.95	1.03	6.44	10.38
DS YPP	857.0686	WC-P-95	18.1	5929.68	5930.82	1.14	2.12	8.53	11.8
DS YPP	857.0686	J-P-95	5.8	5929.68	5930.59	0.91	0.96	5.99	9.95
DS YPP	857.0686	CH-5	57.4	5929.68	5931.11	1.43	4.64	12.37	14.86
DS YPP	857.0686	ST-5	244.7	5929.68	5932.29	2.61	7.3	33.73	20.45
DS YPP	857.0686	BT-5	41.5	5929.68	5930.95	1.27	4.11	10.1	13.21
DS YPP	857.0686	WC-5	255.5	5929.68	5932.33	2.65	7.44	34.58	20.49
DS YPP	857.0686	J-5	142.7	5929.68	5931.72	2.04	6.28	22.71	18.07
DS YPP	854.6812	CH-E-95	9.9	5929.43	5930.66	1.23	0.85	11.66	15.38
DS YPP	854.6812	ST-E-95	9.8	5929.43	5930.66	1.23	0.84	11.62	15.37
DS YPP	854.6812	BT-E-95	9.9	5929.43	5930.66	1.23	0.85	11.66	15.38
DS YPP	854.6812	WC-E-95	22.7	5929.43	5930.71	1.28	1.84	12.36	15.68
DS YPP	854.6812	J-E-95	8.5	5929.43	5930.62	1.19	0.77	11.08	15.17
DS YPP	854.6812	CH-P-95	6.6	5929.43	5930.55	1.12	0.66	9.96	14.69
DS YPP	854.6812	ST-P-95	6.4	5929.43	5930.54	1.11	0.65	9.86	14.64
DS YPP	854.6812	BT-P-95	6.6	5929.43	5930.55	1.12	0.66	9.98	14.69
DS YPP	854.6812	WC-P-95	18.1	5929.43	5930.75	1.32	1.39	13.06	15.88
DS YPP	854.6812	J-P-95	5.8	5929.43	5930.51	1.08	0.62	9.38	14.43
DS YPP	854.6812	CH-5	57.4	5929.43	5931.16	1.73	2.89	19.86	17.72
DS YPP	854.6812	ST-5	244.7	5929.43	5931.47	2.04	9.52	25.71	18.94
DS YPP	854.6812	BT-5	41.5	5929.43	5930.97	1.54	2.5	16.58	16.85
DS YPP	854.6812	WC-5	255.5	5929.43	5931.51	2.08	9.67	26.41	19.03
DS YPP	854.6812	J-5	142.7	5929.43	5931.78	2.35	4.51	31.62	19.61
DS YPP	842.8578	CH-E-95	9.9	5929.04	5930.09	1.05	1.36	7.3	13.58
DS YPP	842.8578	ST-E-95	9.8	5929.04	5930.09	1.05	1.35	7.27	13.58
DS YPP	842.8578	BT-E-95	9.9	5929.04	5930.09	1.05	1.36	7.3	13.58
DS YPP	842.8578	WC-E-95	22.7	5929.04	5930.1	1.06	3.08	7.37	13.6
DS YPP	842.8578	J-E-95	8.5	5929.04	5930.06	1.02	1.24	6.85	13.5
DS YPP	842.8578	CH-P-95	6.6	5929.04	5930	0.96	1.08	6.05	13.34
DS YPP	842.8578	ST-P-95	6.4	5929.04	5929.99	0.95	1.07	5.99	13.33
DS YPP	842.8578	BT-P-95	6.6	5929.04	5930	0.96	1.09	6.07	13.35
DS YPP	842.8578	WC-P-95	18.1	5929.04	5930.16	1.12	2.21	8.2	13.75
DS YPP	842.8578	J-P-95	5.8	5929.04	5929.97	0.93	1.02	5.68	13.28
DS YPP	842.8578	CH-5	57.4	5929.04	5930.44	1.4	4.69	12.23	14.56
DS YPP	842.8578	ST-5	244.7	5929.04	5931.55	2.51	7.04	35.29	23.8
DS YPP	842.8578	BT-5	41.5	5929.04	5930.29	1.25	4.13	10.06	14.08
DS YPP	842.8578	WC-5	255.5	5929.04	5931.61	2.57	7.06	36.79	23.97
DS YPP	842.8578	J-5	142.7	5929.04	5931.16	2.11	5.49	26.1	22.76

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	833.6452	CH-E-95	9.9	5928.17	5929.27	1.1	1.32	7.53	10.98
DS YPP	833.6452	ST-E-95	9.8	5928.17	5929.27	1.1	1.31	7.5	10.98
DS YPP	833.6452	BT-E-95	9.9	5928.17	5929.27	1.1	1.32	7.53	10.98
DS YPP	833.6452	WC-E-95	22.7	5928.17	5929.27	1.1	3.02	7.53	10.98
DS YPP	833.6452	J-E-95	8.5	5928.17	5929.23	1.06	1.2	7.07	10.87
DS YPP	833.6452	CH-P-95	6.6	5928.17	5929.15	0.98	1.05	6.23	10.65
DS YPP	833.6452	ST-P-95	6.4	5928.17	5929.14	0.97	1.04	6.16	10.64
DS YPP	833.6452	BT-P-95	6.6	5928.17	5929.15	0.98	1.05	6.26	10.66
DS YPP	833.6452	WC-P-95	18.1	5928.17	5929.35	1.18	2.16	8.39	11.25
DS YPP	833.6452	J-P-95	5.8	5928.17	5929.11	0.94	1	5.79	10.54
DS YPP	833.6452	CH-5	57.4	5928.17	5929.66	1.49	4.73	12.12	12.79
DS YPP	833.6452	ST-5	244.7	5928.17	5930.86	2.69	7.73	31.75	22.27
DS YPP	833.6452	BT-5	41.5	5928.17	5929.5	1.33	4.09	10.15	11.9
DS YPP	833.6452	WC-5	255.5	5928.17	5930.9	2.73	7.88	32.57	22.4
DS YPP	833.6452	J-5	142.7	5928.17	5930.33	2.16	6.59	21.66	15.67
DS YPP	829.7084	CH-E-95	9.9	5927.49	5929.04	1.55	1.12	8.8	12.31
DS YPP	829.7084	ST-E-95	9.8	5927.49	5929.04	1.55	1.12	8.77	12.3
DS YPP	829.7084	BT-E-95	9.9	5927.49	5929.04	1.55	1.12	8.8	12.31
DS YPP	829.7084	WC-E-95	22.7	5927.49	5929.09	1.6	2.42	9.38	12.52
DS YPP	829.7084	J-E-95	8.5	5927.49	5929	1.51	1.02	8.3	12.13
DS YPP	829.7084	CH-P-95	6.6	5927.49	5928.92	1.43	0.89	7.39	11.69
DS YPP	829.7084	ST-P-95	6.4	5927.49	5928.92	1.43	0.88	7.31	11.66
DS YPP	829.7084	BT-P-95	6.6	5927.49	5928.93	1.44	0.89	7.42	11.7
DS YPP	829.7084	WC-P-95	18.1	5927.49	5929.13	1.64	1.82	9.93	12.73
DS YPP	829.7084	J-P-95	5.8	5927.49	5928.88	1.39	0.83	6.91	11.46
DS YPP	829.7084	CH-5	57.4	5927.49	5929.55	2.06	3.68	15.6	14.29
DS YPP	829.7084	ST-5	244.7	5927.49	5930.36	2.87	8.63	28.36	17.43
DS YPP	829.7084	BT-5	41.5	5927.49	5929.36	1.87	3.2	12.97	13.64
DS YPP	829.7084	WC-5	255.5	5927.49	5930.43	2.94	8.65	29.53	18.17
DS YPP	829.7084	J-5	142.7	5927.49	5930.23	2.74	5.47	26.09	16.69
DS YPP	822.4241	CH-E-95	9.9	5927.66	5928.79	1.13	0.83	11.95	16.23
DS YPP	822.4241	ST-E-95	9.8	5927.66	5928.78	1.12	0.82	11.93	16.23
DS YPP	822.4241	BT-E-95	9.9	5927.66	5928.79	1.13	0.83	11.95	16.23
DS YPP	822.4241	WC-E-95	22.7	5927.66	5928.96	1.3	1.53	14.85	16.68
DS YPP	822.4241	J-E-95	8.5	5927.66	5928.75	1.09	0.75	11.34	16.14
DS YPP	822.4241	CH-P-95	6.6	5927.66	5928.68	1.02	0.64	10.3	15.96
DS YPP	822.4241	ST-P-95	6.4	5927.66	5928.68	1.02	0.63	10.23	15.93
DS YPP	822.4241	BT-P-95	6.6	5927.66	5928.69	1.02	0.64	10.34	15.97
DS YPP	822.4241	WC-P-95	18.1	5927.66	5928.93	1.27	1.27	14.29	16.59
DS YPP	822.4241	J-P-95	5.8	5927.66	5928.65	0.99	0.59	9.81	15.81
DS YPP	822.4241	CH-5	57.4	5927.66	5929.48	1.82	2.42	23.75	17.45
DS YPP	822.4241	ST-5	244.7	5927.66	5930.82	3.16	5.04	48.79	20.68
DS YPP	822.4241	BT-5	41.5	5927.66	5929.27	1.61	2.06	20.14	17.15
DS YPP	822.4241	WC-5	255.5	5927.66	5930.87	3.21	5.15	49.96	20.86
DS YPP	822.4241	J-5	142.7	5927.66	5930.21	2.55	3.88	36.82	18.6

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	819.2559	CH-E-95	9.9	5927.69	5928.5	0.81	2.21	4.48	10.21
DS YPP	819.2559	ST-E-95	9.8	5927.69	5928.5	0.81	2.19	4.47	10.2
DS YPP	819.2559	BT-E-95	9.9	5927.69	5928.5	0.81	2.21	4.48	10.21
DS YPP	819.2559	WC-E-95	22.7	5927.69	5928.61	0.92	4.04	5.62	10.9
DS YPP	819.2559	J-E-95	8.5	5927.69	5928.49	0.8	1.97	4.31	10.1
DS YPP	819.2559	CH-P-95	6.6	5927.69	5928.46	0.77	1.62	4.04	9.91
DS YPP	819.2559	ST-P-95	6.4	5927.69	5928.46	0.77	1.59	4.02	9.89
DS YPP	819.2559	BT-P-95	6.6	5927.69	5928.46	0.77	1.63	4.05	9.91
DS YPP	819.2559	WC-P-95	18.1	5927.69	5928.54	0.85	3.74	4.84	10.43
DS YPP	819.2559	J-P-95	5.8	5927.69	5928.45	0.76	1.47	3.93	9.82
DS YPP	819.2559	CH-5	57.4	5927.69	5929.1	1.41	4.78	12	16.62
DS YPP	819.2559	ST-5	244.7	5927.69	5930.23	2.54	7.4	33.06	19.64
DS YPP	819.2559	BT-5	41.5	5927.69	5928.88	1.19	4.67	8.89	13.02
DS YPP	819.2559	WC-5	255.5	5927.69	5930.3	2.61	7.45	34.29	19.95
DS YPP	819.2559	J-5	142.7	5927.69	5929.69	2	6.29	22.69	18.55
DS YPP	814.5821	CH-E-95	9.9	5926.69	5927.57	0.88	1.56	6.36	10.75
DS YPP	814.5821	ST-E-95	9.8	5926.69	5927.57	0.88	1.55	6.31	10.71
DS YPP	814.5821	BT-E-95	9.9	5926.69	5927.57	0.88	1.56	6.36	10.75
DS YPP	814.5821	WC-E-95	22.7	5926.69	5927.43	0.74	4.64	4.89	9.72
DS YPP	814.5821	J-E-95	8.5	5926.69	5927.51	0.82	1.49	5.72	10.31
DS YPP	814.5821	CH-P-95	6.6	5926.69	5927.4	0.71	1.43	4.58	9.52
DS YPP	814.5821	ST-P-95	6.4	5926.69	5927.39	0.7	1.42	4.49	9.46
DS YPP	814.5821	BT-P-95	6.6	5926.69	5927.4	0.71	1.43	4.61	9.54
DS YPP	814.5821	WC-P-95	18.1	5926.69	5927.67	0.98	2.44	7.42	11.83
DS YPP	814.5821	J-P-95	5.8	5926.69	5927.33	0.64	1.44	4	9.14
DS YPP	814.5821	CH-5	57.4	5926.69	5927.69	1	7.49	7.67	11.9
DS YPP	814.5821	ST-5	244.7	5926.69	5928.76	2.07	10.92	22.41	14.83
DS YPP	814.5821	BT-5	41.5	5926.69	5927.57	0.88	6.57	6.31	10.71
DS YPP	814.5821	WC-5	255.5	5926.69	5928.81	2.12	11	23.23	14.9
DS YPP	814.5821	J-5	142.7	5926.69	5928.25	1.56	9.5	15.03	13.91
DS YPP	799.5959	CH-E-95	9.9	5925.42	5927.33	1.91	0.61	16.14	11.13
DS YPP	799.5959	ST-E-95	9.8	5925.42	5927.33	1.91	0.61	16.1	11.12
DS YPP	799.5959	BT-E-95	9.9	5925.42	5927.33	1.91	0.61	16.14	11.13
DS YPP	799.5959	WC-E-95	22.7	5925.42	5927.36	1.94	1.38	16.43	11.19
DS YPP	799.5959	J-E-95	8.5	5925.42	5927.29	1.86	0.54	15.6	11.01
DS YPP	799.5959	CH-P-95	6.6	5925.42	5927.2	1.78	0.45	14.63	10.81
DS YPP	799.5959	ST-P-95	6.4	5925.42	5927.19	1.77	0.44	14.55	10.79
DS YPP	799.5959	BT-P-95	6.6	5925.42	5927.2	1.78	0.45	14.66	10.81
DS YPP	799.5959	WC-P-95	18.1	5925.42	5927.43	2.01	1.05	17.23	11.37
DS YPP	799.5959	J-P-95	5.8	5925.42	5927.15	1.73	0.41	14.12	10.71
DS YPP	799.5959	CH-5	57.4	5925.42	5927.83	2.41	2.62	21.92	12.36
DS YPP	799.5959	ST-5	244.7	5925.42	5928.6	3.18	7.6	32.19	14.42
DS YPP	799.5959	BT-5	41.5	5925.42	5927.65	2.23	2.1	19.74	11.91
DS YPP	799.5959	WC-5	255.5	5925.42	5928.6	3.18	7.92	32.24	14.44
DS YPP	799.5959	J-5	142.7	5925.42	5928.43	3.01	4.79	29.8	13.91

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	781.2999	CH-E-95	9.9	5926.06	5927.11	1.05	0.85	11.68	18.17
DS YPP	781.2999	ST-E-95	9.8	5926.06	5927.11	1.04	0.84	11.64	18.16
DS YPP	781.2999	BT-E-95	9.9	5926.06	5927.11	1.05	0.85	11.68	18.17
DS YPP	781.2999	WC-E-95	22.7	5926.06	5927.12	1.06	1.91	11.88	18.2
DS YPP	781.2999	J-E-95	8.5	5926.06	5927.07	1.01	0.77	11.02	18.02
DS YPP	781.2999	CH-P-95	6.6	5926.06	5927	0.94	0.67	9.81	17.68
DS YPP	781.2999	ST-P-95	6.4	5926.06	5927	0.94	0.66	9.71	17.65
DS YPP	781.2999	BT-P-95	6.6	5926.06	5927.01	0.94	0.67	9.85	17.69
DS YPP	781.2999	WC-P-95	18.1	5926.06	5927.18	1.12	1.39	13.01	18.4
DS YPP	781.2999	J-P-95	5.8	5926.06	5926.97	0.91	0.63	9.17	17.5
DS YPP	781.2999	CH-5	57.4	5926.06	5927.47	1.41	3.07	18.68	20.33
DS YPP	781.2999	ST-5	244.7	5926.06	5928.51	2.45	5.06	48.37	30.94
DS YPP	781.2999	BT-5	41.5	5926.06	5927.34	1.28	2.6	15.99	19.39
DS YPP	781.2999	WC-5	255.5	5926.06	5928.56	2.5	5.13	49.76	31.07
DS YPP	781.2999	J-5	142.7	5926.06	5928.07	2.01	4.07	35.07	29.73
DS YPP	768.488	CH-E-95	9.9	5925.64	5926.64	1	0.95	10.46	18.39
DS YPP	768.488	ST-E-95	9.8	5925.64	5926.64	1	0.94	10.42	18.38
DS YPP	768.488	BT-E-95	9.9	5925.64	5926.64	1	0.95	10.46	18.39
DS YPP	768.488	WC-E-95	22.7	5925.64	5926.65	1.01	2.12	10.71	18.46
DS YPP	768.488	J-E-95	8.5	5925.64	5926.61	0.97	0.86	9.83	18.2
DS YPP	768.488	CH-P-95	6.6	5925.64	5926.6	0.91	0.75	8.74	17.78
DS YPP	768.488	ST-P-95	6.4	5925.64	5926.54	0.9	0.74	8.65	17.74
DS YPP	768.488	BT-P-95	6.6	5925.64	5926.6	0.91	0.75	8.77	17.79
DS YPP	768.488	WC-P-95	18.1	5925.64	5926.71	1.06	1.55	11.65	18.73
DS YPP	768.488	J-P-95	5.8	5925.64	5926.51	0.87	0.71	8.1	17.52
DS YPP	768.488	CH-5	57.4	5925.64	5926.99	1.35	3.35	17.13	20.34
DS YPP	768.488	ST-5	244.7	5925.64	5928	2.36	6	40.77	26.07
DS YPP	768.488	BT-5	41.5	5925.64	5926.85	1.21	2.89	14.38	19.52
DS YPP	768.488	WC-5	255.5	5925.64	5928.05	2.41	6.1	41.89	26.29
DS YPP	768.488	J-5	142.7	5925.64	5927.56	1.92	4.79	29.8	23.6
DS YPP	754.8537	CH-E-95	9.9	5924.26	5925.87	1.61	1.11	8.9	15.04
DS YPP	754.8537	ST-E-95	9.8	5924.26	5925.86	1.6	1.11	8.85	15.01
DS YPP	754.8537	BT-E-95	9.9	5924.26	5925.87	1.61	1.11	8.9	15.04
DS YPP	754.8537	WC-E-95	22.7	5924.26	5925.87	1.61	2.52	9	15.12
DS YPP	754.8537	J-E-95	8.5	5924.26	5925.82	1.56	1.04	8.17	14.38
DS YPP	754.8537	CH-P-95	6.6	5924.26	5925.71	1.45	0.97	6.75	12.86
DS YPP	754.8537	ST-P-95	6.4	5924.26	5925.7	1.44	0.96	6.64	12.71
DS YPP	754.8537	BT-P-95	6.6	5924.26	5925.72	1.46	0.97	6.79	12.91
DS YPP	754.8537	WC-P-95	18.1	5924.26	5925.95	1.69	1.78	10.15	15.8
DS YPP	754.8537	J-P-95	5.8	5924.26	5925.66	1.4	0.95	6.08	12.03
DS YPP	754.8537	CH-5	57.4	5924.26	5926.24	1.98	3.78	15.19	17.87
DS YPP	754.8537	ST-5	244.7	5924.26	5927.27	3.01	6.83	35.85	23.15
DS YPP	754.8537	BT-5	41.5	5924.26	5926.09	1.83	3.3	12.56	17.05
DS YPP	754.8537	WC-5	255.5	5924.26	5927.31	3.05	6.92	36.94	23.45
DS YPP	754.8537	J-5	142.7	5924.26	5926.87	2.61	5.24	27.21	20.57

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	738.1886	CH-E-95	9.9	5923.35	5925.23	1.88	0.66	14.99	14.07
DS YPP	738.1886	ST-E-95	9.8	5923.35	5925.23	1.88	0.66	14.96	14.06
DS YPP	738.1886	BT-E-95	9.9	5923.35	5925.23	1.88	0.66	14.99	14.07
DS YPP	738.1886	WC-E-95	22.7	5923.35	5925.26	1.9	1.48	15.37	14.17
DS YPP	738.1886	J-E-95	8.5	5923.35	5925.18	1.83	0.59	14.32	13.89
DS YPP	738.1886	CH-P-95	6.6	5923.35	5925.09	1.74	0.5	13.11	13.51
DS YPP	738.1886	ST-P-95	6.4	5923.35	5925.08	1.73	0.49	13.01	13.47
DS YPP	738.1886	BT-P-95	6.6	5923.35	5925.1	1.74	0.5	13.15	13.52
DS YPP	738.1886	WC-P-95	18.1	5923.35	5925.32	1.97	1.11	16.32	14.45
DS YPP	738.1886	J-P-95	5.8	5923.35	5925.04	1.69	0.46	12.47	13.25
DS YPP	738.1886	CH-5	57.4	5923.35	5925.71	2.36	2.56	22.43	16.84
DS YPP	738.1886	ST-5	244.7	5923.35	5927.02	3.67	4.93	49.8	24.85
DS YPP	738.1886	BT-5	41.5	5923.35	5925.53	2.18	2.14	19.4	15.68
DS YPP	738.1886	WC-5	255.5	5923.35	5927.07	3.72	5.02	51.13	25.2
DS YPP	738.1886	J-5	142.7	5923.35	5926.48	3.13	3.83	37.25	21.65
DS YPP	721.5939	CH-E-95	9.9	5923.74	5925.04	1.3	0.72	13.81	17.43
DS YPP	721.5939	ST-E-95	9.8	5923.74	5925.04	1.3	0.71	13.77	17.41
DS YPP	721.5939	BT-E-95	9.9	5923.74	5925.04	1.3	0.72	13.81	17.43
DS YPP	721.5939	WC-E-95	22.7	5923.74	5925.08	1.34	1.58	14.41	17.65
DS YPP	721.5939	J-E-95	8.5	5923.74	5925	1.26	0.65	13.11	17.15
DS YPP	721.5939	CH-P-95	6.6	5923.74	5924.93	1.19	0.55	11.87	16.6
DS YPP	721.5939	ST-P-95	6.4	5923.74	5924.92	1.18	0.54	11.77	16.53
DS YPP	721.5939	BT-P-95	6.6	5923.74	5924.93	1.19	0.55	11.91	16.63
DS YPP	721.5939	WC-P-95	18.1	5923.74	5925.13	1.38	1.19	15.25	17.94
DS YPP	721.5939	J-P-95	5.8	5923.74	5924.89	1.15	0.51	11.23	16.12
DS YPP	721.5939	CH-5	57.4	5923.74	5925.5	1.75	2.59	22.14	19.21
DS YPP	721.5939	ST-5	244.7	5923.74	5926.75	3.01	5.01	49.17	24.48
DS YPP	721.5939	BT-5	41.5	5923.74	5925.32	1.58	2.2	18.83	18.64
DS YPP	721.5939	WC-5	255.5	5923.74	5926.81	3.06	5.1	50.52	24.75
DS YPP	721.5939	J-5	142.7	5923.74	5926.2	2.46	3.91	36.47	21.64
DS YPP	709.5619	CH-E-95	9.9	5923.58	5924.73	1.15	1.11	8.95	15.17
DS YPP	709.5619	ST-E-95	9.8	5923.58	5924.73	1.15	1.1	8.91	15.16
DS YPP	709.5619	BT-E-95	9.9	5923.58	5924.73	1.15	1.11	8.95	15.17
DS YPP	709.5619	WC-E-95	22.7	5923.58	5924.73	1.15	2.51	9.03	15.19
DS YPP	709.5619	J-E-95	8.5	5923.58	5924.69	1.11	1.01	8.41	15.06
DS YPP	709.5619	CH-P-95	6.6	5923.58	5924.63	1.05	0.87	7.5	14.87
DS YPP	709.5619	ST-P-95	6.4	5923.58	5924.63	1.05	0.86	7.42	14.85
DS YPP	709.5619	BT-P-95	6.6	5923.58	5924.63	1.05	0.88	7.51	14.87
DS YPP	709.5619	WC-P-95	18.1	5923.58	5924.79	1.21	1.83	9.89	15.36
DS YPP	709.5619	J-P-95	5.8	5923.58	5924.6	1.02	0.82	7.02	14.76
DS YPP	709.5619	CH-5	57.4	5923.58	5925.06	1.48	4.08	14.08	16.2
DS YPP	709.5619	ST-5	244.7	5923.58	5926.1	2.52	7.21	35.32	22.81
DS YPP	709.5619	BT-5	41.5	5923.58	5924.92	1.34	3.48	11.93	15.8
DS YPP	709.5619	WC-5	255.5	5923.58	5926.15	2.57	7.31	36.41	22.99
DS YPP	709.5619	J-5	142.7	5923.58	5925.65	2.07	5.73	25.44	20.85

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	689.8103	CH-E-95	9.9	5922.82	5923.95	1.13	0.83	11.89	15.33
DS YPP	689.8103	ST-E-95	9.8	5922.82	5923.94	1.12	0.83	11.85	15.33
DS YPP	689.8103	BT-E-95	9.9	5922.82	5923.95	1.13	0.83	11.89	15.33
DS YPP	689.8103	WC-E-95	22.7	5922.82	5924	1.18	1.79	12.67	15.43
DS YPP	689.8103	J-E-95	8.5	5922.82	5923.9	1.08	0.76	11.15	15.23
DS YPP	689.8103	CH-P-95	6.6	5922.82	5923.81	0.99	0.67	9.82	15.04
DS YPP	689.8103	ST-P-95	6.4	5922.82	5923.8	0.98	0.66	9.71	15.02
DS YPP	689.8103	BT-P-95	6.6	5922.82	5923.81	0.99	0.67	9.86	15.04
DS YPP	689.8103	WC-P-95	18.1	5922.82	5924.04	1.22	1.35	13.41	15.53
DS YPP	689.8103	J-P-95	5.8	5922.82	5923.76	0.94	0.64	9.07	14.92
DS YPP	689.8103	CH-5	57.4	5922.82	5924.51	1.69	2.74	20.94	16.49
DS YPP	689.8103	ST-5	244.7	5922.82	5925.6	2.78	6.06	40.44	19.41
DS YPP	689.8103	BT-5	41.5	5922.82	5924.31	1.49	2.36	17.57	16.13
DS YPP	689.8103	WC-5	255.5	5922.82	5925.64	2.82	6.21	41.17	19.52
DS YPP	689.8103	J-5	142.7	5922.82	5925.21	2.39	4.32	33.02	18.31
DS YPP	679.3548	CH-E-95	9.9	5922.44	5923.8	1.36	0.73	13.6	14.23
DS YPP	679.3548	ST-E-95	9.8	5922.44	5923.8	1.35	0.72	13.56	14.22
DS YPP	679.3548	BT-E-95	9.9	5922.44	5923.8	1.36	0.73	13.6	14.23
DS YPP	679.3548	WC-E-95	22.7	5922.44	5923.88	1.44	1.53	14.83	14.51
DS YPP	679.3548	J-E-95	8.5	5922.44	5923.75	1.31	0.66	12.93	14.12
DS YPP	679.3548	CH-P-95	6.6	5922.44	5923.67	1.22	0.56	11.73	13.92
DS YPP	679.3548	ST-P-95	6.4	5922.44	5923.66	1.22	0.55	11.63	13.91
DS YPP	679.3548	BT-P-95	6.6	5922.44	5923.67	1.23	0.56	11.77	13.93
DS YPP	679.3548	WC-P-95	18.1	5922.44	5923.9	1.46	1.2	15.09	14.58
DS YPP	679.3548	J-P-95	5.8	5922.44	5923.61	1.17	0.52	11.02	13.81
DS YPP	679.3548	CH-5	57.4	5922.44	5924.4	1.96	2.5	22.96	17.19
DS YPP	679.3548	ST-5	244.7	5922.44	5925.5	3.05	5.47	45.74	24.76
DS YPP	679.3548	BT-5	41.5	5922.44	5924.2	1.76	2.12	19.62	15.8
DS YPP	679.3548	WC-5	255.5	5922.44	5925.54	3.1	5.6	46.75	25
DS YPP	679.3548	J-5	142.7	5922.44	5925.08	2.64	3.98	36.07	21.74
DS YPP	668.9289	CH-E-95	9.9	5922.26	5923.51	1.25	1.46	6.8	12.14
DS YPP	668.9289	ST-E-95	9.8	5922.26	5923.51	1.25	1.45	6.78	12.12
DS YPP	668.9289	BT-E-95	9.9	5922.26	5923.51	1.25	1.46	6.8	12.14
DS YPP	668.9289	WC-E-95	22.7	5922.26	5923.46	1.2	3.7	6.14	11.65
DS YPP	668.9289	J-E-95	8.5	5922.26	5923.48	1.22	1.33	6.38	11.83
DS YPP	668.9289	CH-P-95	6.6	5922.26	5923.41	1.15	1.17	5.6	11.25
DS YPP	668.9289	ST-P-95	6.4	5922.26	5923.41	1.15	1.16	5.54	11.2
DS YPP	668.9289	BT-P-95	6.6	5922.26	5923.41	1.15	1.17	5.63	11.26
DS YPP	668.9289	WC-P-95	18.1	5922.26	5923.56	1.3	2.44	7.43	12.58
DS YPP	668.9289	J-P-95	5.8	5922.26	5923.37	1.11	1.11	5.18	9.92
DS YPP	668.9289	CH-5	57.4	5922.26	5923.87	1.61	4.82	11.92	16.16
DS YPP	668.9289	ST-5	244.7	5922.26	5924.98	2.72	6.78	36.77	26.9
DS YPP	668.9289	BT-5	41.5	5922.26	5923.71	1.45	4.43	9.36	14.8
DS YPP	668.9289	WC-5	255.5	5922.26	5925.03	2.77	6.87	37.98	27.18
DS YPP	668.9289	J-5	142.7	5922.26	5924.51	2.25	5.78	24.7	23.92

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	656.1871	CH-E-95	9.9	5922.06	5923.2	1.14	0.55	17.99	22.04
DS YPP	656.1871	ST-E-95	9.8	5922.06	5923.2	1.14	0.55	17.92	22.03
DS YPP	656.1871	BT-E-95	9.9	5922.06	5923.2	1.14	0.55	17.99	22.04
DS YPP	656.1871	WC-E-95	22.7	5922.06	5923.23	1.17	1.21	18.75	22.13
DS YPP	656.1871	J-E-95	8.5	5922.06	5923.16	1.1	0.5	17.09	21.92
DS YPP	656.1871	CH-P-95	6.6	5922.06	5923.07	1.01	0.43	15.13	21.45
DS YPP	656.1871	ST-P-95	6.4	5922.06	5923.06	1	0.43	14.95	21.41
DS YPP	656.1871	BT-P-95	6.6	5922.06	5923.07	1.01	0.43	15.21	21.47
DS YPP	656.1871	WC-P-95	18.1	5922.06	5923.29	1.23	0.91	19.97	22.29
DS YPP	656.1871	J-P-95	5.8	5922.06	5923.03	0.97	0.41	14.22	21.25
DS YPP	656.1871	CH-5	57.4	5922.06	5923.62	1.56	2.08	27.54	23.23
DS YPP	656.1871	ST-5	244.7	5922.06	5924.67	2.61	4.53	54.48	29.71
DS YPP	656.1871	BT-5	41.5	5922.06	5923.47	1.41	1.73	24.05	22.81
DS YPP	656.1871	WC-5	255.5	5922.06	5924.71	2.65	4.63	55.75	30.05
DS YPP	656.1871	J-5	142.7	5922.06	5924.24	2.18	3.36	42.49	25.79
DS YPP	640.4722	CH-E-95	9.9	5921.92	5922.95	1.03	0.91	10.92	19.86
DS YPP	640.4722	ST-E-95	9.8	5921.92	5922.95	1.03	0.9	10.86	19.82
DS YPP	640.4722	BT-E-95	9.9	5921.92	5922.95	1.03	0.91	10.92	19.86
DS YPP	640.4722	WC-E-95	22.7	5921.92	5922.97	1.05	2.01	11.31	20.08
DS YPP	640.4722	J-E-95	8.5	5921.92	5922.92	1	0.83	10.25	19.46
DS YPP	640.4722	CH-P-95	6.6	5921.92	5922.83	0.91	0.75	8.69	15.49
DS YPP	640.4722	ST-P-95	6.4	5921.92	5922.82	0.9	0.75	8.54	15.34
DS YPP	640.4722	BT-P-95	6.6	5921.92	5922.84	0.92	0.75	8.75	15.73
DS YPP	640.4722	WC-P-95	18.1	5921.92	5923.04	1.12	1.43	12.65	21.19
DS YPP	640.4722	J-P-95	5.8	5921.92	5922.79	0.87	0.71	8.12	15.12
DS YPP	640.4722	CH-5	57.4	5921.92	5923.32	1.4	2.98	19.23	24.24
DS YPP	640.4722	ST-5	244.7	5921.92	5924.25	2.33	5.62	44.46	31.39
DS YPP	640.4722	BT-5	41.5	5921.92	5923.19	1.27	2.57	16.18	23.9
DS YPP	640.4722	WC-5	255.5	5921.92	5924.29	2.37	5.71	45.84	31.55
DS YPP	640.4722	J-5	142.7	5921.92	5923.85	1.93	4.36	32.72	27.13
DS YPP	614.0947	CH-E-95	9.9	5920.68	5922.08	1.4	0.68	14.57	20
DS YPP	614.0947	ST-E-95	9.8	5920.68	5922.08	1.4	0.67	14.55	20
DS YPP	614.0947	BT-E-95	9.9	5920.68	5922.08	1.4	0.68	14.57	20
DS YPP	614.0947	WC-E-95	22.7	5920.68	5922.27	1.59	1.22	18.57	20.93
DS YPP	614.0947	J-E-95	8.5	5920.68	5922.03	1.35	0.62	13.68	19.59
DS YPP	614.0947	CH-P-95	6.6	5920.68	5921.96	1.28	0.54	12.21	18.72
DS YPP	614.0947	ST-P-95	6.4	5920.68	5921.95	1.27	0.53	12.06	18.67
DS YPP	614.0947	BT-P-95	6.6	5920.68	5921.96	1.28	0.54	12.19	18.71
DS YPP	614.0947	WC-P-95	18.1	5920.68	5922.23	1.55	1.02	17.69	20.73
DS YPP	614.0947	J-P-95	5.8	5920.68	5921.92	1.24	0.5	11.44	18.48
DS YPP	614.0947	CH-5	57.4	5920.68	5922.72	2.04	2.02	28.42	22.87
DS YPP	614.0947	ST-5	244.7	5920.68	5923.76	3.08	4.41	57.88	34.16
DS YPP	614.0947	BT-5	41.5	5920.68	5922.57	1.89	1.67	24.91	22.19
DS YPP	614.0947	WC-5	255.5	5920.68	5923.81	3.13	4.5	59.37	34.66
DS YPP	614.0947	J-5	142.7	5920.68	5923.32	2.64	3.31	43.68	29.89

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	608.0435	CH-E-95	9.9	5921.06	5921.65	0.59	3.26	3.04	8.68
DS YPP	608.0435	ST-E-95	9.8	5921.06	5921.64	0.57	3.35	2.93	8.49
DS YPP	608.0435	BT-E-95	9.9	5921.06	5921.65	0.59	3.26	3.04	8.68
DS YPP	608.0435	WC-E-95	22.7	5921.06	5921.87	0.81	4.28	5.31	11.07
DS YPP	608.0435	J-E-95	8.5	5921.06	5921.61	0.55	3.16	2.69	8.25
DS YPP	608.0435	CH-P-95	6.6	5921.06	5921.53	0.47	3.15	2.08	7.46
DS YPP	608.0435	ST-P-95	6.4	5921.06	5921.53	0.47	3.07	2.08	7.46
DS YPP	608.0435	BT-P-95	6.6	5921.06	5921.54	0.48	3	2.2	7.54
DS YPP	608.0435	WC-P-95	18.1	5921.06	5921.83	0.77	3.75	4.83	10.73
DS YPP	608.0435	J-P-95	5.8	5921.06	5921.51	0.45	2.98	1.94	7.35
DS YPP	608.0435	CH-5	57.4	5921.06	5922.38	1.32	4.2	13.66	24.19
DS YPP	608.0435	ST-5	244.7	5921.06	5923.3	2.23	6.39	39.98	33.38
DS YPP	608.0435	BT-5	41.5	5921.06	5922.23	1.17	4.07	10.19	20.13
DS YPP	608.0435	WC-5	255.5	5921.06	5923.33	2.27	6.49	41.26	33.63
DS YPP	608.0435	J-5	142.7	5921.06	5922.86	1.8	5.49	26.37	28.9
DS YPP	601.987	CH-E-95	9.9	5920.1	5921.56	1.46	0.59	16.85	19.7
DS YPP	601.987	ST-E-95	9.8	5920.1	5921.56	1.46	0.58	16.78	19.7
DS YPP	601.987	BT-E-95	9.9	5920.1	5921.56	1.46	0.59	16.85	19.7
DS YPP	601.987	WC-E-95	22.7	5920.1	5921.72	1.61	1.14	19.91	20.38
DS YPP	601.987	J-E-95	8.5	5920.1	5921.52	1.42	0.53	16.02	19.63
DS YPP	601.987	CH-P-95	6.6	5920.1	5921.44	1.34	0.45	14.52	19.49
DS YPP	601.987	ST-P-95	6.4	5920.1	5921.43	1.33	0.45	14.37	19.47
DS YPP	601.987	BT-P-95	6.6	5920.1	5921.44	1.34	0.45	14.54	19.49
DS YPP	601.987	WC-P-95	18.1	5920.1	5921.68	1.58	0.95	19.19	19.92
DS YPP	601.987	J-P-95	5.8	5920.1	5921.4	1.3	0.42	13.74	19.42
DS YPP	601.987	CH-5	57.4	5920.1	5922.15	2.04	1.93	29.9	24.58
DS YPP	601.987	ST-5	244.7	5920.1	5923.31	3.21	4.08	62.37	32.35
DS YPP	601.987	BT-5	41.5	5920.1	5921.98	1.88	1.61	25.94	24.01
DS YPP	601.987	WC-5	255.5	5920.1	5923.36	3.26	4.16	64.01	32.7
DS YPP	601.987	J-5	142.7	5920.1	5922.78	2.68	3.11	46.53	27.96
DS YPP	595.2605	CH-E-95	9.9	5920.55	5921.36	0.81	1.82	5.43	13.24
DS YPP	595.2605	ST-E-95	9.8	5920.55	5921.35	0.8	1.82	5.39	13.18
DS YPP	595.2605	BT-E-95	9.9	5920.55	5921.36	0.81	1.82	5.43	13.24
DS YPP	595.2605	WC-E-95	22.7	5920.55	5921.42	0.87	3.63	6.26	15.03
DS YPP	595.2605	J-E-95	8.5	5920.55	5921.32	0.77	1.7	5.01	12.37
DS YPP	595.2605	CH-P-95	6.6	5920.55	5921.26	0.71	1.52	4.31	11.23
DS YPP	595.2605	ST-P-95	6.4	5920.55	5921.26	0.71	1.52	4.22	11.12
DS YPP	595.2605	BT-P-95	6.6	5920.55	5921.27	0.71	1.53	4.32	11.25
DS YPP	595.2605	WC-P-95	18.1	5920.55	5921.39	0.84	3.1	5.83	13.95
DS YPP	595.2605	J-P-95	5.8	5920.55	5921.23	0.68	1.47	3.91	10.77
DS YPP	595.2605	CH-5	57.4	5920.55	5921.78	1.23	4.34	13.22	21.88
DS YPP	595.2605	ST-5	244.7	5920.55	5922.73	2.18	6.67	36.69	26.51
DS YPP	595.2605	BT-5	41.5	5920.55	5921.63	1.08	4.09	10.15	20.22
DS YPP	595.2605	WC-5	255.5	5920.55	5922.78	2.23	6.74	37.95	26.85
DS YPP	595.2605	J-5	142.7	5920.55	5922.28	1.73	5.64	25.28	24.65

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	584.7578	CH-E-95	9.9	5919.84	5920.84	1	0.85	11.71	17.38
DS YPP	584.7578	ST-E-95	9.8	5919.84	5920.84	1	0.84	11.69	17.38
DS YPP	584.7578	BT-E-95	9.9	5919.84	5920.84	1	0.85	11.71	17.38
DS YPP	584.7578	WC-E-95	22.7	5919.84	5920.88	1.04	1.83	12.44	17.49
DS YPP	584.7578	J-E-95	8.5	5919.84	5920.8	0.96	0.77	11.04	17.28
DS YPP	584.7578	CH-P-95	6.6	5919.84	5920.73	0.89	0.66	9.86	17.09
DS YPP	584.7578	ST-P-95	6.4	5919.84	5920.73	0.89	0.66	9.76	17.08
DS YPP	584.7578	BT-P-95	6.6	5919.84	5920.74	0.9	0.67	9.9	17.1
DS YPP	584.7578	WC-P-95	18.1	5919.84	5920.92	1.08	1.37	13.16	17.6
DS YPP	584.7578	J-P-95	5.8	5919.84	5920.7	0.86	0.62	9.25	16.99
DS YPP	584.7578	CH-5	57.4	5919.84	5921.32	1.48	2.83	20.32	18.72
DS YPP	584.7578	ST-5	244.7	5919.84	5922.74	2.9	4.77	51.56	25.95
DS YPP	584.7578	BT-5	41.5	5919.84	5921.14	1.3	2.44	17.03	18.13
DS YPP	584.7578	WC-5	255.5	5919.84	5922.79	2.95	4.87	52.79	26.23
DS YPP	584.7578	J-5	142.7	5919.84	5922.08	2.24	3.98	35.81	22.05
DS YPP	575.4656	CH-E-95	9.9	5919.53	5920.5	0.97	1.26	7.86	13.19
DS YPP	575.4656	ST-E-95	9.8	5919.53	5920.49	0.96	1.25	7.83	13.19
DS YPP	575.4656	BT-E-95	9.9	5919.53	5920.5	0.97	1.26	7.86	13.19
DS YPP	575.4656	WC-E-95	22.7	5919.53	5920.5	0.97	2.86	7.95	13.21
DS YPP	575.4656	J-E-95	8.5	5919.53	5920.46	0.93	1.16	7.34	13.11
DS YPP	575.4656	CH-P-95	6.6	5919.53	5920.39	0.86	1.02	6.43	12.97
DS YPP	575.4656	ST-P-95	6.4	5919.53	5920.38	0.85	1.01	6.35	12.96
DS YPP	575.4656	BT-P-95	6.6	5919.53	5920.39	0.86	1.02	6.45	12.98
DS YPP	575.4656	WC-P-95	18.1	5919.53	5920.57	1.04	2.05	8.82	13.34
DS YPP	575.4656	J-P-95	5.8	5919.53	5920.36	0.83	0.96	6.02	12.91
DS YPP	575.4656	CH-5	57.4	5919.53	5920.9	1.36	4.21	13.64	15.82
DS YPP	575.4656	ST-5	244.7	5919.53	5921.98	2.45	7.53	32.5	19.34
DS YPP	575.4656	BT-5	41.5	5919.53	5920.74	1.21	3.71	11.18	15
DS YPP	575.4656	WC-5	255.5	5919.53	5922.09	2.56	7.36	34.71	20.23
DS YPP	575.4656	J-5	142.7	5919.53	5921.48	1.95	6.11	23.36	17.38
DS YPP	562.297	CH-E-95	9.9	5918.94	5920.16	1.22	0.67	14.84	18.46
DS YPP	562.297	ST-E-95	9.8	5918.94	5920.15	1.21	0.66	14.78	18.44
DS YPP	562.297	BT-E-95	9.9	5918.94	5920.16	1.22	0.67	14.84	18.46
DS YPP	562.297	WC-E-95	22.7	5918.94	5920.32	1.38	1.26	17.96	19.2
DS YPP	562.297	J-E-95	8.5	5918.94	5920.11	1.17	0.61	13.96	18.26
DS YPP	562.297	CH-P-95	6.6	5918.94	5920.02	1.08	0.53	12.39	17.71
DS YPP	562.297	ST-P-95	6.4	5918.94	5920.01	1.07	0.52	12.26	17.64
DS YPP	562.297	BT-P-95	6.6	5918.94	5920.02	1.08	0.53	12.44	17.74
DS YPP	562.297	WC-P-95	18.1	5918.94	5920.29	1.35	1.04	17.43	19.08
DS YPP	562.297	J-P-95	5.8	5918.94	5919.98	1.04	0.5	11.61	17.31
DS YPP	562.297	CH-5	57.4	5918.94	5920.8	1.86	2.08	27.63	20.99
DS YPP	562.297	ST-5	244.7	5918.94	5922.06	3.12	4.32	57.75	27.41
DS YPP	562.297	BT-5	41.5	5918.94	5920.61	1.67	1.75	23.7	20.27
DS YPP	562.297	WC-5	255.5	5918.94	5922.11	3.17	4.41	59.24	27.72
DS YPP	562.297	J-5	142.7	5918.94	5921.5	2.56	3.29	43.43	24.4

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Max Chl Dpth (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)
DS YPP	554.4048	CH-E-95	9.9	5919.09	5919.83	0.74	2.16	4.58	10.33
DS YPP	554.4048	ST-E-95	9.8	5919.09	5919.83	0.74	2.15	4.55	10.3
DS YPP	554.4048	BT-E-95	9.9	5919.09	5919.83	0.74	2.16	4.58	10.33
DS YPP	554.4048	WC-E-95	22.7	5919.09	5919.94	0.85	3.93	5.8	11.95
DS YPP	554.4048	J-E-95	8.5	5919.09	5919.79	0.69	2.07	4.11	9.85
DS YPP	554.4048	CH-P-95	6.6	5919.09	5919.7	0.61	1.98	3.31	8.97
DS YPP	554.4048	ST-P-95	6.4	5919.09	5919.69	0.6	1.98	3.24	8.88
DS YPP	554.4048	BT-P-95	6.6	5919.09	5919.7	0.61	1.98	3.33	8.99
DS YPP	554.4048	WC-P-95	18.1	5919.09	5919.89	0.79	3.51	5.15	10.95
DS YPP	554.4048	J-P-95	5.8	5919.09	5919.65	0.56	1.99	2.9	8.46
DS YPP	554.4048	CH-5	57.4	5919.09	5920.37	1.28	4.63	12.41	18
DS YPP	554.4048	ST-5	244.7	5919.09	5921.44	2.35	6.92	35.38	23.37
DS YPP	554.4048	BT-5	41.5	5919.09	5920.19	1.1	4.45	9.33	15.45
DS YPP	554.4048	WC-5	255.5	5919.09	5921.48	2.39	7.01	36.47	23.75
DS YPP	554.4048	J-5	142.7	5919.09	5920.94	1.85	5.92	24.11	22.15
DS YPP	537.8449	CH-E-95	9.9	5918.16	5919.68	1.52	0.42	23.55	25.14
DS YPP	537.8449	ST-E-95	9.8	5918.16	5919.68	1.52	0.42	23.49	25.13
DS YPP	537.8449	BT-E-95	9.9	5918.16	5919.68	1.52	0.42	23.55	25.14
DS YPP	537.8449	WC-E-95	22.7	5918.16	5919.91	1.75	0.78	29.28	25.79
DS YPP	537.8449	J-E-95	8.5	5918.16	5919.64	1.48	0.38	22.36	24.9
DS YPP	537.8449	CH-P-95	6.6	5918.16	5919.56	1.4	0.32	20.52	24.45
DS YPP	537.8449	ST-P-95	6.4	5918.16	5919.56	1.39	0.31	20.34	24.4
DS YPP	537.8449	BT-P-95	6.6	5918.16	5919.56	1.4	0.32	20.58	24.47
DS YPP	537.8449	WC-P-95	18.1	5918.16	5919.85	1.69	0.65	27.75	25.61
DS YPP	537.8449	J-P-95	5.8	5918.16	5919.53	1.37	0.29	19.66	24.23
DS YPP	537.8449	CH-5	57.4	5918.16	5920.31	2.15	1.44	39.82	27.07
DS YPP	537.8449	ST-5	244.7	5918.16	5921.64	3.48	3.18	82.98	40.59
DS YPP	537.8449	BT-5	41.5	5918.16	5920.14	1.98	1.17	35.37	26.51
DS YPP	537.8449	WC-5	255.5	5918.16	5921.69	3.53	3.25	85.03	40.7
DS YPP	537.8449	J-5	142.7	5918.16	5921.1	2.94	2.32	63.01	32.59
DS YPP	534.3307	CH-E-95	9.9	5918.52	5919.47	0.95	3.17	3.12	10.47
DS YPP	534.3307	ST-E-95	9.8	5918.52	5919.46	0.94	3.22	3.05	10.33
DS YPP	534.3307	BT-E-95	9.9	5918.52	5919.47	0.95	3.17	3.12	10.47
DS YPP	534.3307	WC-E-95	22.7	5918.52	5919.7	1.18	3.38	6.72	19.38
DS YPP	534.3307	J-E-95	8.5	5918.52	5919.44	0.92	3	2.83	9.92
DS YPP	534.3307	CH-P-95	6.6	5918.52	5919.38	0.86	2.92	2.24	8.52
DS YPP	534.3307	ST-P-95	6.4	5918.52	5919.38	0.86	2.82	2.27	8.59
DS YPP	534.3307	BT-P-95	6.6	5918.52	5919.38	0.86	2.92	2.26	8.58
DS YPP	534.3307	WC-P-95	18.1	5918.52	5919.64	1.12	3.28	5.52	17.53
DS YPP	534.3307	J-P-95	5.8	5918.52	5919.34	0.82	2.96	1.95	7.69
DS YPP	534.3307	CH-5	57.4	5918.52	5920.1	1.58	3.59	16.01	25.88
DS YPP	534.3307	ST-5	244.7	5918.52	5921.44	2.92	4.56	58.88	41.84
DS YPP	534.3307	BT-5	41.5	5918.52	5919.89	1.37	3.82	10.85	23.38
DS YPP	534.3307	WC-5	255.5	5918.52	5921.49	2.97	4.63	60.95	41.98
DS YPP	534.3307	J-5	142.7	5918.52	5920.95	2.42	3.66	40.21	32.23

Attachment D:

Supplemental Tunnel Hydraulic Modeling

Technical Memorandum

To:	Gene Bosley, P.E.	Project:	Stibnite Gold Project
From:	Kevin Jensen, P.E.	cc:	File
Date:	December 9, 2022	Job No.:	22-095
Subject:	Supplemental Tunnel Hydraulic Modeling		

Revision No.	Date	Description
0	09/02/2022	Initial draft
1	10/03/2022	Revised draft based on Perpetua Resources comments
2	11/12/2022	Final draft based on Perpetua Resources comments
3	12/09/2022	Final

1.0 Introduction

This Technical Memorandum (TM) provides supplemental hydraulic modeling results evaluating low-flow performance of the proposed tunnel fishway for Perpetua Resources Idaho, Inc.'s (Perpetua's) Stibnite Gold Project (Project). Section 1 presents the Project overview, including background, task description, purpose, and design criteria adopted in previous Project-related research. Sections 2 and 3 introduce hydraulic calculations and modeling for evaluating weir flow in the fishway, respectively. Conclusions are provided in Section 4.

1.1 Background and Purpose

1.1.1 Project Background

Perpetua intends to re-open and expand the Stibnite Mine leading to eventual restoration and closure. In accordance with the mine development plan, the East Fork South Fork Salmon River (EFSFSR) must be diverted through a tunnel around the Yellow Pine pit (YPP). The EFSFSR Diversion Tunnel is a critical component of the successful development of the Stibnite Gold Project.

McMillen Jacobs Associates (2017; 2018; 2019) previously performed the preliminary tunnel design, including tunnel routing, hydraulic analysis, and civil design, to support the inclusion of an in-tunnel fishway. The previous study introduced hydraulic modeling using a Computational Fluid Dynamics (CFD) model.

1.2 Project Description

The location of the Project is approximately 10 miles east of the town of Yellow Pine, Idaho, in the Boise National Forest, but administered by the Payette National Forest. The area surrounding the Project has been mined since the late nineteenth century by several different companies. Because of this mining legacy, the EFSFSR presently flows through the open YPP, forming a pit lake in the pit bottom, below a steep section of stream where the EFSFSR flows over the abandoned highwall. The existing YPP lake has an estimated maximum depth of 35 feet and a volume of 92 acre-feet (Brown and Caldwell 2017). Based on LiDAR data collected in 2009, the stream reach immediately upstream of the YPP has a 27% slope for at least 230 feet, reducing to 13% for the next 220 feet. These conditions are impassable for even the strongest salmonids (e.g., steelhead).

As noted above, the Project proposes to design a tunnel that will adequately convey water around the YPP for up to 12 years following mine commissioning to provide water diversion and fish passage around the YPP during future mining operations. Typical fish passage is designed to operate successfully within a narrow range of flows that have been diverted specifically for the passage component. For this Project, the design will need to account for the full range of EFSFSR flows between 95% and 5% exceedance during the respective migration periods for Chinook salmon, bull trout, steelhead, and potentially westslope cutthroat trout.

Diverting flows of the EFSFSR into a tunnel will require a diversion structure to re-route flows of the EFSFSR from its normal path. This diversion is expected to be located several hundred feet upstream of the upstream tunnel portal. Between the diversion and the upstream tunnel portal, an excavated approach channel is anticipated that will transition the river from its historical channel to the tunnel portal at the base of the hillside. The approach channel would have a low gradient to allow large-diameter bedload to fall out prior to reaching the tunnel portal. A debris rack is also anticipated as part of the design and would be located upstream of the upstream tunnel portal within the approach channel. The debris rack would exclude large woody debris and sediment larger than cobble size from the tunnel. An area for debris and sediment accumulation would be provided near the debris rack that could be accessed by tunnel maintenance equipment and personnel to clear out debris as part of routine maintenance.

The tunnel would be designed to convey the at least 500-year flow of the EFSFSR, which is approximately 721 cfs at the anticipated downstream tunnel portal location. The tunnel is also expected to provide vehicular access along the entire length of the tunnel for routine maintenance. Vehicular access would allow access to for routine cleanout; access to lighting, conduit, and structural features such as tunnel supports; and fish passage feature repair. To accommodate vehicular access, promote sediment passage, and accommodate the 500-year flow with a freeboard allowance of approximately 20% of the tunnel height, the tunnel section will be 15 feet high by 15 feet wide and D-shaped. This shape and size will provide sufficient space between the 500-year water surface elevation and the crown of the tunnel to allow for any lighting fixtures incorporated into the design.

As part of the site-wide water management plan, Perpetua plans to construct a contact water pond (Midnight Pond) upstream of the YPP with a booster tank from which water will be pumped for either water treatment and discharge or use in the process plant. In times of site-wide water deficit, Perpetua intends to supplement the site water balance with as much as 4.5 cfs of raw water from the EFSFSR. This

raw water is to be supplied by a new intake and pipeline from the EFSFSR to the booster tank, and would consist of the following elements: (1) an approved National Marine Fisheries Service (NMFS) compliant fish screen and intake, (2) a small wet well and pump house that will house the pumps, valves, controls, and other appurtenances, and (3) a pipeline extending up the adjacent hillside to the proposed location of the booster tank. The intake and screens would be situated at the tunnel headworks, upstream of the control weir.

Because of the possibility of flow depletions in the EFSFSR as a result of both pit dewatering and surface and groundwater withdrawals for process makeup water during low flow periods, the low fish passage design flow could be reduced from the current 95% exceedance flow of 8.2 cfs. For this reason, it is of interest to determine the minimum flow rate that the fishway can accommodate while meeting fish passage design criteria.

1.2.1 Task Purpose

The purpose of this task is to provide supplemental hydraulic modeling of the tunnel fishway and to investigate the lowest possible tunnel fishway flow that satisfies established fish passage design criteria by modifying the fishway weir geometry. Specifically, the analysis determines the lowest possible inflows that meet threshold flow depth and velocity criteria by way of iterative hydraulic modeling.

To this end, the following TM presents simple hydraulic calculations used to develop an approximate range of inflow boundary conditions to the CFD model, the CFD modeling setup and approach, and CFD model optimization and results.

1.3 Summary of Design Criteria

McMillen Jacobs Associates (2017; 2018) developed several design criteria related to fish passage, a subset of which is presented in Table 1 and is pertinent to this task.

Because the interest of this analysis is on determining the minimum flow through the fishway that can still meet the design criteria identified in NMFS (2022) and McMillen Jacobs Associates (2018), adjusting the fishway weir width to reduce the overall flow area over the weir would be one method of investigation. Although NMFS (2022) does not provide explicit criteria for pool-and-weir fishway weir lengths, a minimum width of 15 inches is presented for orifices, based on Bell (1991). This minimum width is considered adequate to accommodate large-bodied salmonids such as Chinook salmon and provides slightly more horizontal space for passage than does the 10-inch criterion for bar spacing of coarse trash racks in the presence of Chinook (NMFS 2022). For these reasons, a minimum weir length of 15 inches is assumed.

Table 1. Design Criteria to be Reviewed

Criteria	Value	Reference
Minimum Flow Depth	1 ft	McMillen Jacobs Associates (2018)
Maximum Flow Velocity over Weir – Bull Trout Burst Speed	6.6 ft/s	McMillen Jacobs Associates (2018)
Maximum Flow Velocity over Weir – Chinook Salmon Burst Speed	22 ft/s	McMillen Jacobs Associates (2018)
Maximum Hydraulic Drop between Fish Ladder Pools	12 in.	NMFS (2011)
Minimum weir length	15 in.	See text above.

2.0 Hydraulic Calculations

Hydraulic calculations were developed to identify a flow range for CFD simulations. Because the CFD exercise was designed to be iterative, it was of interest to reduce the "computational expense" of the modeling effort by identifying this range first using hand calculations. As an additional benefit, these calculations also serve to cross-validate model results.

2.1 Assumptions

Hydraulic calculations were predicated on the following assumptions:

1. Flow over the upstream control weir is not considered because the crest elevation of the 5-foot control weir is higher than the water surface upstream of the first fishway weir at a 1-foot flow depth over the weir and therefore the upstream control weir is not activated over the range of flows considered in this analysis. The control weir is activated at approximately 25 cfs approach flow – considerably greater than the baseflow conditions analyzed herein, with or without depletions.

2. The energy loss over the fishway weir is small and can be ignored.

3. The depth over the weir is estimated as the average of the upstream and downstream heads. The value is used for the evaluation of flow depth design criteria.

2.2 Calculation Method

The fishway weir is a submerged weir, with the submerged weir flow theoretically calculated as the difference between the free-flow discharges due to upstream and downstream heads (Villemonte, 1947). The flow can also be approximated with the upstream and downstream head using experimental results (Villemonte, 1947; Fox and McDonald, 1994). The weir flow and head can be calculated by comparing both flow values. Consequently, the overall procedure for the hydraulic calculation can be derived as shown in Figure 1. At first, the upstream head is assumed, then the downstream head is calculated with the required flow depth. Secondly, free-flow discharges from both heads are calculated, and then the theoretical weir flow is computed as the difference between the free-flow discharges. Thirdly, experimental weir flow is computed, assuming the hydraulic loss can be ignored. Lastly, the upstream

head is repeatedly adjusted to minimize the difference between both calculated weir flows. For the upstream head adjustment, the "solver" function in Excel is used in this calculation. Detailed equations and input parameters are discussed in the next section.

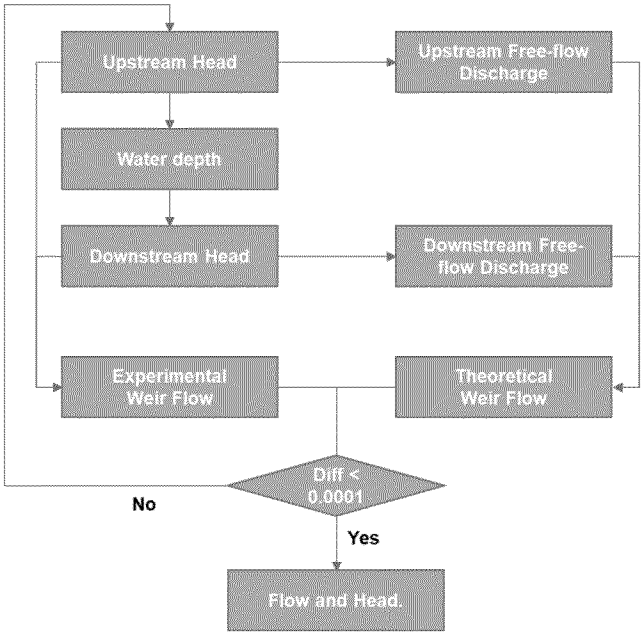


Figure 1. Hydraulic Calculation Procedure

2.3 Hydraulic Calculation

2.3.1 Input Variables

Figure 2 shows the definition of several hydraulic and geometric variables. Upstream head (H_1) and downstream head (H_2) are both measured from the channel bottom. The weir crest height (z_w) from the channel bottom is fixed at 2 ft, and the minimum flow depth over the crest is 1 ft, satisfying design criteria. Finally, the minimum weir flow height is 3 ft by adding the minimum flow depth to the weir crest height.

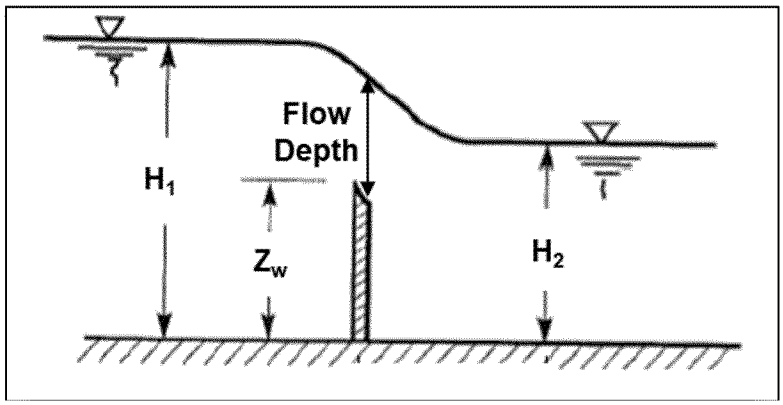


Figure 2. Schematic of a submerged weir flow

2.3.2 Hydraulic Equation

For the free-flow discharge due to hydraulic head, the following equation is used (Fox and McDonald, 1994):

$$Q_f = C_d L\sqrt{g}(H - z_w)^{3/2} \quad (1)$$

where, Q_f = free-flow discharge, [ft^3/s]
C_d = discharge coefficient
L = weir width, [ft]
g = gravitational acceleration (32.17 ft/s^2)
H = hydraulic head, [ft]
z_w = weir crest height (2 ft)

The discharge coefficient is mainly affected by geometry and can be approximated using (Fox and McDonald, 1994):

$$C_d = 0.59 + 0.08\left(\frac{H}{z_w} - 1\right) \quad (2)$$

As a reasonable first guess, the upstream head (H_1) is assumed to equal 3.500 ft. Because the downstream head (H_2) is equidistant from the weir flow elevation, and the weir flow elevation is assumed to be 1 ft above the weir crest (i.e., 3 ft above the channel bottom), the downstream head is calculated as 2.500 ft, and the free-flow discharges upstream and downstream are determined initially as shown in Table 2.

Table 2. Calculation example on upstream and downstream free-flow discharge

	H [ft]	Z_w [ft]	C_d	H-z_w [ft]	L [ft]	Q_f [ft^3/s]
Upstream	3.500	2	0.650	1.500	1.25	8.466
Downstream	2.500	2	0.610	0.500	1.25	1.529

Therefore, as the difference between the upstream and downstream free-flow discharges, the theoretical flow over the submerged weir is calculated as 6.937 ft^3/s.

The weir flow can also be determined based on the experimental relationship of the head ratio over the crest, according to (Villemonte, 1947):

$$Q_w = Q_f\left(1 - \left(\frac{H_2 - z_w}{H_1 - z_w}\right)^n\right)^m \quad (3)$$

where, Q_w = weir flow over the submerged weir, [ft^3/s]
n, m = exponents

Typically, *m* equals 0.385, and for a rectangular contracted weir, the exponent *n* is 1.45 (Villemonte, 1947). Although the weirs in the proposed fishway are only contracted on one side, these values are nevertheless adopted for simplicity. Assuming that energy loss can be ignored, the weir flow can be determined approximately as:

$$Q_w \approx Q_f \left(1 - \left(\frac{H_2}{H_1}\right)^{1.45}\right)^{0.385} \quad (4)$$

Based on this equation and the initial assumptions above, the weir flow is approximately 5.869 ft^3/s.

Using these methods, the upstream head is determined by iteratively adjusting its value so that the weir flow in Eq. (4) is the same as the weir flow calculated from Table 2. Going through this exercise, the resulting upstream head is 3.255 ft, and the weir flow is 3.556 ft^3/s.

2.3.3 Results and Simulation Cases

As demonstrated above, when flow depth is 1 ft, the upstream head and weir flow are expected to be 3.255 ft and 3.556 ft^3/s, respectively. The average velocity over the weir is estimated as 2.84 ft/s. This satisfies the design criteria of Table 1. In this equation, the hydraulic drop (the subtraction of the downstream head from the upstream head) is 0.5 ft, which is substantially larger than zero, suggesting that the actual flow rate might be more than calculated in the spreadsheet. Therefore, CFD simulation flows were derived by multiplying the previously-calculated flow rates by a scaling factor. Scaling factors were developed using judgment in an attempt to bound the results that would be reflected in the CFD model. The scaling factors range from 1.40 to 2.25, and the simulation flows range from 5.0 ft^3/s to 8.0 ft^3/s. Consequently, the cases shown in Table 3 were simulated in CFD and evaluated against the minimum flow depth design criterion. The flow rates are used for CFD model inflow boundary conditions in each case.

Table 3. Simulation cases for 1-foot flow depth

Simulation Cases	Case 1	Case 2	Case 3	Case 4
Scaling Factor	1.40	1.85	2.00	2.25
Volumetric Flow Rates, [ft^3/s]	5.0	6.6	7.1	8.0

Additionally, flow at 2 feet of depth was also calculated to determine the maximum flow rate over the weir beyond which the upper portion of the weir wall would be overtopped. Overtopping of the upper portion of the weir wall is not ideal from a fish passage perspective because it could falsely attract fish to pass over that portion of the weir, which is inherently more difficult, rather than attempting to pass over the weir notch, which is much more passable by design. This upper flow limit was calculated to be 16.1 ft^3/s. Applying scaling factors ranging from 0.90 to 1.55, simulation flow rates ranged from 14.5 ft^3/s to 25.0 ft^3/s for the cases shown in Table 4.

Table 4. Simulation cases for 2-foot flow depth

Simulation Cases	Case 5	Case 6	Case 7	Case 8
Scaling Factor	0.90	1.00	1.25	1.55
Volumetric Flow Rates, [ft^3/s]	14.5	16.1	20.2	25.0

3.0 Hydraulic Modeling

3.1 Model Development

The commercial software, FLOW-3D by Flow Science, Inc, was used for the fish passage modeling. The software solves the Navier-Stokes equations of fluid flow in three dimensions. It is widely used for analyzing open channel flow on water resources projects. The simulation results are solved and evaluated in a quasi-steady state. Less than 1 percent variation from the mean indicates that the simulation is nearly steady state. Post-simulation work for analyzing the results was performed using FLOW-3D POST 1.1.0. All simulations were solved with 16 cores in a Microsoft workstation (Operating system: Windows Server 2019, Memory: 128 GB, CPU: Intel Xeon 2.20 GHz). Details on model setup are discussed in the sections below.

3.1.1 Assumptions

The CFD model setup includes the following assumptions:

1. Isothermal conditions are used. Even though the effect will be very minor, heat can nevertheless affect the viscosity of flow.

2. The flow over the weir is affected by the adjacent upstream and downstream fishway pool. Because the model only includes three weirs, the interior weir was adopted as the representative weir because it is unaffected by upstream and downstream boundary conditions.

3. The hydraulic modeling ignores any materials entrained in the flow path such as debris or sediment. The modeling simulates low-flow conditions during which little or no debris or sediment is transported; in addition, control measures are in place upstream for capturing debris and sediment. Therefore, this is expected to be a reasonable assumption.

3.1.2 Governing Equations

The volume-averaged conservation of mass and momentum in steady state are given by the following equations, respectively:

$$\nabla \cdot (\rho V) = 0 \tag{5}$$

$$\nabla \cdot (\rho VV) = -\nabla \mathrm{p} + \nabla \cdot (\mu \nabla V) + \rho \mathrm{g} \tag{6}$$

where, ρ = density [lb/ft^3]
V = velocity [ft/s]
μ = viscosity [lb s/ft^2]
p = pressure [lb/ft^2]

The Renormalized Group (RNG) model was used for solving turbulence closure, which is widely accepted for open channel water flow problems.

3.1.3 Geometry and Mesh

The simulation domain and geometry are shown in Figure 3. The geometry of the simulated area is 120 x 40 x 9.5 ft, presenting a part of the upstream end of the fishway. It includes the 4-foot-tall control weir, a 5-foot-tall divider wall, and three fishway weirs. The distance between the adjacent fishway weirs is 22 ft. The 1st and 3rd weirs are affected by inflow and outflow boundary conditions, respectively. The 2nd weir is chosen for the detailed analysis of simulation results. The fishway weir crest is 2 ft from the channel bottom, and its width is 1.25 ft (15 inches). The width was established initially as 2 ft (McMillen Jacobs Associates, 2018), but is modified here to help identify the lowest possible fishway flow that still meets the fish passage design criteria (see discussion in Section 1.3). The width of the fishway and accessway are 5 ft and 9 ft, respectively. The thickness of the divider wall is 1 ft. Thus, the overall width of the EFSFSR tunnel is 15 ft. The longitudinal slope of the tunnel accessway and fishway is 4.5%.

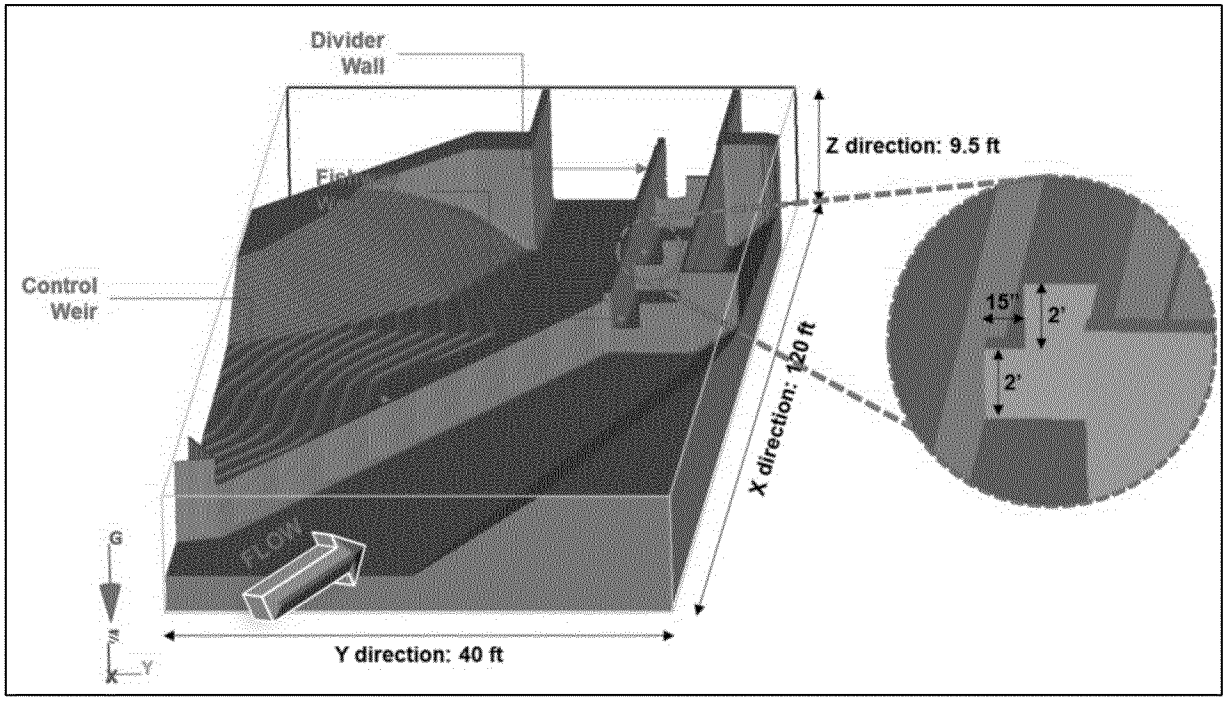


Figure 3. Simulation Domain and Geometry

3.1.4 Initial and Boundary Conditions

The initial water surface elevation is 61.5 ft, which is referenced to an arbitrary model-only datum. All computed fluid regions are submerged to some extent, but all water is discharged through outflow boundaries. The closer the initial condition to the steady state results, the shorter the overall simulation time. The simulation boundary conditions specify a user-specified volumetric flow rate at the upstream end and an outflow boundary condition at the downstream end of the domain. Symmetry boundary conditions are applied to other boundaries. The flow rate boundary condition uses a fluid elevation of 60.5 ft to initially approximate the 1 foot of flow depth over the weirs. The symmetry boundary condition is subject to a zero-gradient condition at the boundary and a zero-velocity condition normal to the boundary (Flow Science, 2015).

Roughness is applied at the solid boundary. The roughness in FLOW-3D is simulated with roughness height (Flow Science, 2015). A roughness height of 0.001 ft is used for the concrete surface.

3.2 Results and Discussion

3.2.1 Mesh Adjustment

Typically, fine meshing leads to accurate simulation results. However, it also incurs a high "computational expense" due to the associated small timestep size and resulting large number of solutions required. Cell size was therefore investigated to determine the optimum cell size for widescale simulation. Results are shown in Table 5 along with associated simulation runtimes and results.

Table 5. Model cell size vs. model performance.

Cell size [ft]	Numbers of Cells	Runtime [hrs]	Flow Depth [ft]
0.350	1,055,754	6.1	0.54
0.300	1,702,400	6.1	0.72
0.275	2,212,700	16.5	0.74
0.250	2,918,400	25.3	0.72

Table 5 shows the simulation cases that were run to define the optimal mesh size. The simulation was run with a 5 ft^3/sec inflow condition. From the table, as cell size decreases from 0.350 ft to 0.250 ft, the number of cells increases by approximately 2.9 times from 1 million to 2.9 million. Runtime is also significantly increased by more than three times. At a cell size of 0.350 ft, it takes about 6 hours, while over 25 hours are needed using a cell size of 0.250 ft. The flow depth can be obtained from point data in the cross-section flow over the weir crest. Figure 4 shows the relationship between the number of cells/runtime and the flow depth. In Figure 4, the abscissa presents flow depth over the 2nd weir crest, and the left ordinate and right ordinate denote the number of cells and runtime, respectively. As previously mentioned, fine meshing can lead to more accurate results, but runtimes are significantly increased. As shown in Table 5 and Figure 4, the model error gradually decreases with decreasing cell size, with decreases in model error tapering off sharply as the mesh cell size approaches 0.300 ft. Therefore, a cell size of 0.300 ft was determined to be optimal for running the various models to acquire flow depth over the weir, considering computational load and accuracy of simulation results.

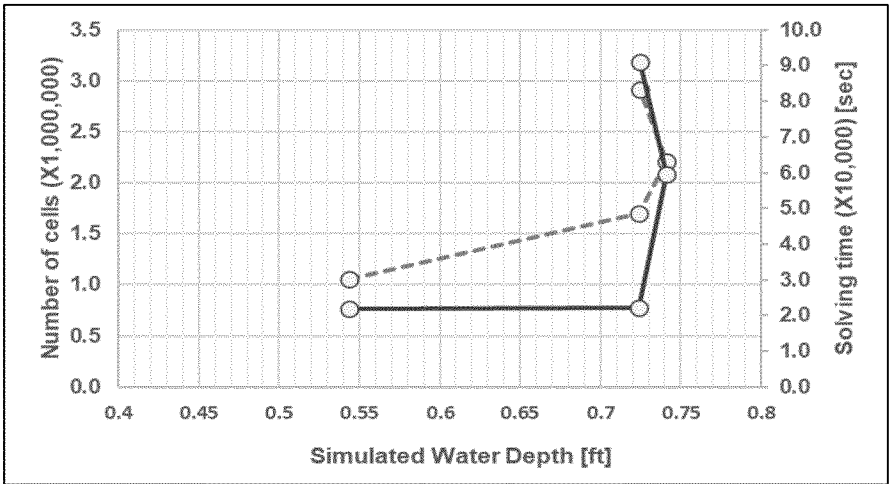


Figure 4. Simulation results with cell numbers and solving time

3.2.2 Simulation Cases

The following section presents the CFD simulation case results for both 1 foot and 2 feet of depth over the fishway weir. The section provides results for water depth over the weirs, associated flow rates, and average cross-sectional velocities over the weirs.

3.2.2.1 1-foot Flow Depth

The point data in each cell is used to determine the 1-foot flow depth. The points are limited to the cross-section in the middle of the 2nd weir. The 1-foot flow depth is derived by subtracting the weir crest elevation from the free surface elevation. The point data were also evaluated against other design criteria, such as velocity over the weir and hydraulic drop between pools. Table 6 shows the simulation results to determine the flow rate for 1-foot flow depth over the weir.

Table 6. Results for Cases 1 through 4.

Case	Flow Rate [cfs]	Weir Depth [ft]
1	5.0	0.72
2	6.6	0.92
3	7.1	0.99
4	8.0	1.08

The values presented in Table 6 result in the following linear regression line:

$$Flow\ Depth\ [ft] = 0.1213 \times Flow\ Rate[ft^3/s] + 0.1206 \quad (7)$$

This regression line has a p-value much less than 0.05 and a coefficient of determination (R^2) of 0.997. Therefore, the relationship shown in Equation 7 is considered statistically significant and reliable for estimating the flow depth. The 1-foot flow depth calculated by this curve occurs at **7.25 ft^3/s**, and ranges from 6.89 to 7.61 ft^3/s considering a ±5% confidence level, as shown in Figure 5.

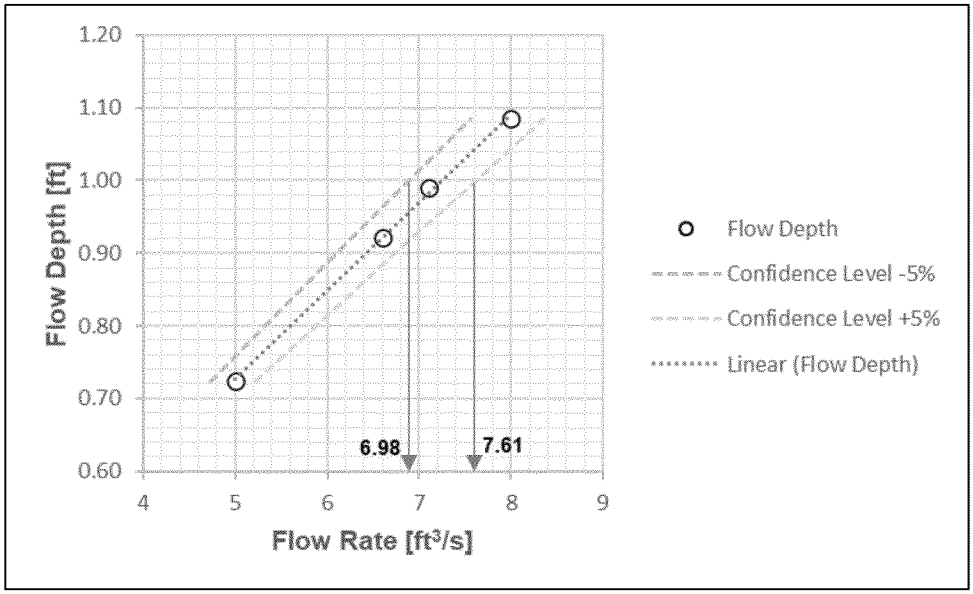


Figure 5. Case study results for estimating the flow rate corresponding to 1 foot depth

The simulated velocities over the weir are presented in Table 7, along with associated standard deviations. Although the velocities vary, the average velocity is less than the maximum design criterion of 6.6 ft/s.

Table 7. Velocity over the weir in 1-foot depth cases

	Case 1	Case 2	Case 3	Case 4
Volumetric Flow Rate [ft³/s]	5.0	6.6	7.1	8.0
Average velocity [ft/s]	5.80	6.13	6.10	6.20
Standard deviation [ft/s]	0.58	0.64	0.63	0.62

For calculating the hydraulic drop between pools, upstream and downstream cross-section data are used. The upstream and downstream cross sections are located 10 ft from the weir in the upstream and downstream directions. As depicted in Figure 6, both upstream and downstream heads increase with flow rates, but the hydraulic drop between pools is nearly uniform at 0.66 ft in all cases. Because the hydraulic drop between pools is less than the design criterion of 1.0 ft in all cases, each case satisfies the design requirement for hydraulic drop. **Consequently, 7.25 ft³/s of volumetric flow rate will meet the minimum flow depth of 1 ft as well as the other design criteria such as velocity and hydraulic drop. Lower flow rates will meet velocity and hydraulic drop criteria, but will have less than 1 foot of depth over the weir.**

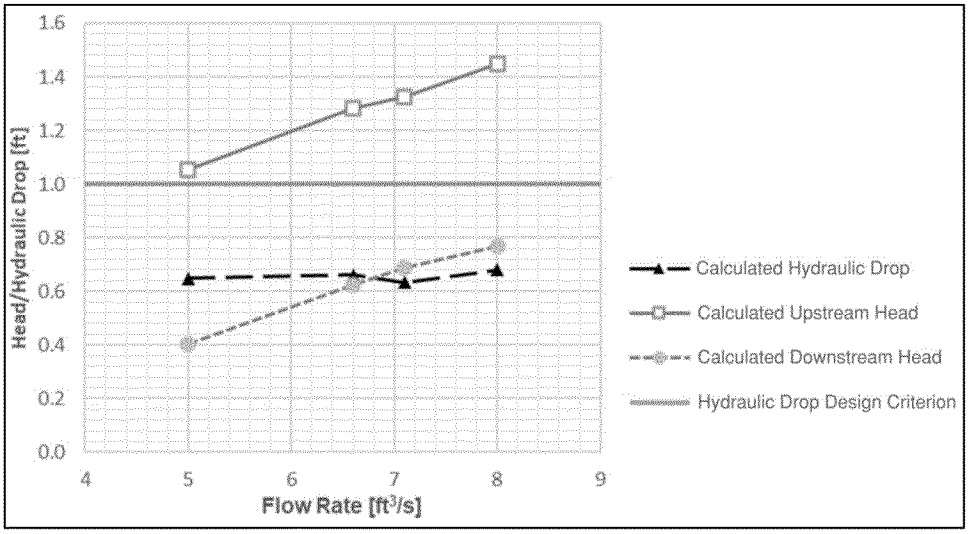


Figure 6. The hydraulic drop between pools in Case 1 to Case 4 (1-ft depth scenario)

3.2.2.2 2-foot Flow Depth

This section presents the results in Case 5 through Case 8 to determine the volumetric flow rate for 2 feet of flow depth over the weir. The calculation of the flow depth utilizes point data in the cross-section, as explained in the previous section. To prevent overflow from the upstream control weir, the modeled control weir crest height artificially increases for the high flow rates. As shown in Figure 7, each point presents simulation results between flow rates and flow depth in the 2nd weir. To determine the flow rate for 2-foot flow depth, a linear regression was performed as in the previous case analysis. The linear regression is derived as

$$Flow\ Depth\ [ft] = 0.0359 \times Flow\ Rate[ft^3/s] + 1.319 \quad (8)$$

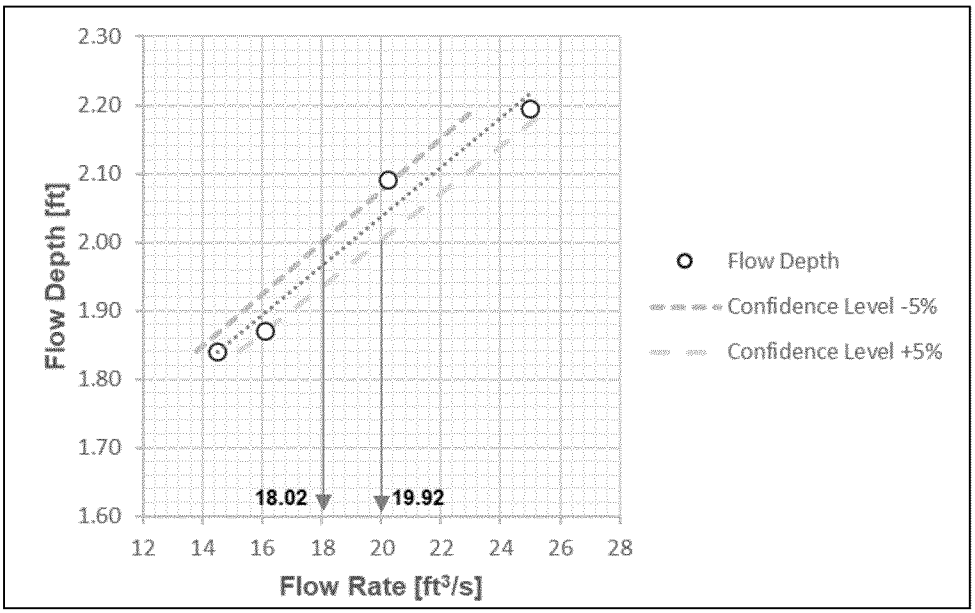


Figure 7. Case study results for estimating the flow rate corresponding to a 2-foot depth

The regression curve has a p-value of 0.019 and a coefficient of determination greater than 0.96. Thus, the curve is statistically significant and reliable. Eq. (8) results in **a flow rate of 18.97 ft^3/s for 2 feet of depth**. Applying a ±5% confidence level, the flow rate is between 18.02 and 19.92 ft^3/s, as depicted in Figure 7.

The average velocities for Case 7 and Case 8 are over 6.6 ft/s, as reported in Table 8. However, the average velocity is derived from the flow over the submerged weir in those cases, which is higher than the anticipated threshold flow rate of 18.97 ft^3/s. For this reason, weir flows at 2 feet of depth are expected to have associated velocities at or below 6.6 ft/s.

Table 8. Velocity over the weir in 2-foot depth cases

	Case 5	Case 6	Case 7	Case 8
Volumetric Flow Rate [ft^3/s]	14.5	16.1	20.2	25.0
Average velocity [ft/s]	6.28	6.30	6.69	7.29
Standard deviation [ft/s]	1.44	1.22	0.89	1.08

The hydraulic drop between fishway pools for Cases 5 through 8 is greater than in the 1-foot depth cases, as shown in Figure 8. Nevertheless, the maximum hydraulic drop is still less than the 1-foot design criterion. **Consequently, the hydraulic simulations presented above show that the flow rate over the weir at 2 feet of depth is 18.97 ft^3/s and that this flow rate meets the pertinent design criteria for depth, hydraulic drop and velocity.** The control weir will therefore have a crest elevation set to pass the remainder of the 5% exceedance flow (54.00 cfs – 18.97 cfs = 35.03 cfs). This is expected to be approximately 0.3 feet below the contracted fishway weir, leaving approximately 1.7 feet of vertical space over the fishway weir for river flows below the 5% exceedance flow. In other words, at the low fish passage design flow water will not be split between the fishway and the control weir.

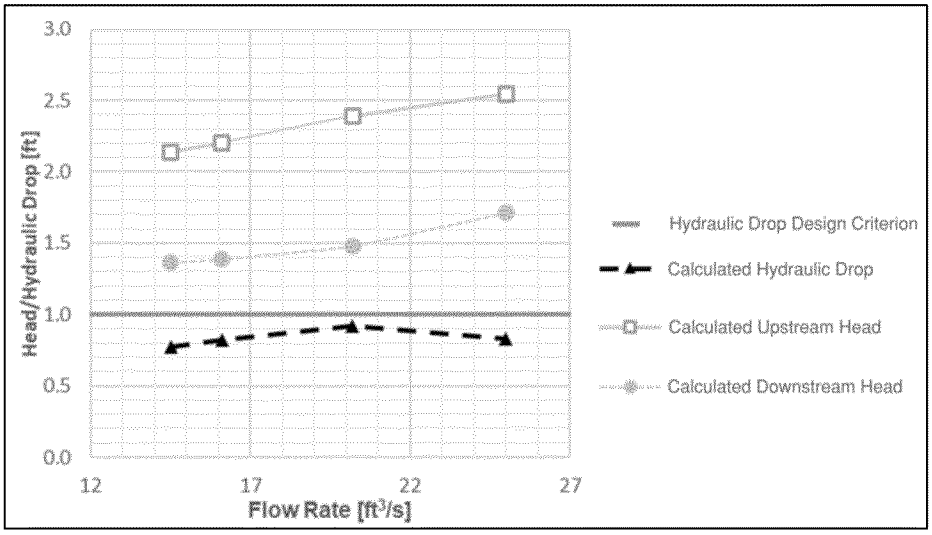


Figure 8. Hydraulic drop between pools in Cases 5 through 8 (2-ft depth scenario)

4.0 Summary and Conclusions

The hydraulic modeling described in this TM was developed to determine the volumetric flow rates that lead to a 1- and 2-foot flow depth over the fishway weir in the EFSFSR Tunnel. These flow depths are of interest because a 1-foot depth meets an important fish passage criterion for minimum depth at the low fish passage design flow (95% exceedance flow) and a 2-foot depth corresponds with the outer wall height of the weir and the high fish passage design flow (5% exceedance flow). These two flow depths therefore capture the range of fish passage design flows for the facility. A variety of inflow rates were used as boundary conditions to a CFD model of the fishway. The inflow rates were determined by a spreadsheet model to develop a finite set of cases that would allow the modeler to identify flow rates corresponding with 1 foot and 2 feet of weir flow depth at a lower computational cost.

Hydraulic calculations using the spreadsheet model estimated flow rates of 3.5 ft^3/s for 1 foot of weir flow depth and 16.1 ft^3/s for 2 feet of weir flow depth. Several scaling factors were determined using engineering judgment to arrive at a series of cases with different flow rates to help minimize the number of iterations required for CFD model simulation. The resulting flow ranges for CFD modeling were 5.0 ft^3/s to 8.0 ft^3/s for the 1-foot depth, and 14.5 to 25.0 ft^3/s for 2-foot flow depth.

Prior to commencing with CFD simulation, the cell size was reviewed in order to identify the optimal cell size in terms of model accuracy and computational efficiency. Results indicate that a 0.3-foot cell size is optimal.

Results of the CFD simulations indicate that a flow rate of 7.25 ft^3/s (6.89 to 7.61 ft^3/s, ±5% confidence level) is required to achieve a 1-foot weir flow depth over a 15-inch-wide weir; lower flows will result in flow depths not meeting the 1-foot criterion. Results also indicate that a flow rate of 18.97 ft^3/s (18.02 to 19.92 ft^3/s, ±5% confidence level) is required to achieve a 2-foot weir flow depth. In both of these cases, the average velocity over the weir is expected to be less than 6.6 ft/s, which satisfies fish passage criteria for maximum velocity.

For smaller non-anadromous species such as Cutthroat trout, the flow depth criterion will be lower. Although passage criteria for these species do not govern the overall design, it is of interest to Project stakeholders what the lower limits of passability through the fishway for these and other species might be. To this end, the results presented above for the lowest flow case (Case 1) may be instructive, whereby a total fishway flow of only 5 cfs leads to a weir flow depth of 0.72 feet, an average velocity of approximately 5.8 ft/s, and a hydraulic drop from pool to pool of approximately 0.64 feet.

5.0 References

Brown and Caldwell, 2017. Stibnite Gold Project Water Resources Summary Report, prepared for Midas Gold Inc., Valley County, Idaho, June 30, 2017.

Flow Science (2015). FLOW-3D Version 11.1 User's Manual.

Fox, R.W., and McDonald, A.T. (1994). Introduction to Fluid Mechanics 4th Ed. New York: John Wiley & Sons.

McMillen Jacobs Associates (2017). Technical Memorandum No. 01: EFSFSR Fish Passage Design Guidance Criteria and Preliminary Alternatives Analysis.

McMillen Jacobs Associates (2018). Midas Gold Idaho, Inc. Stibnite Gold Project Feasibility Study - East Fork South Fork Salmon River (EFSFSR) Tunnel Design Documentation Report.

McMillen Jacobs Associates (2019). Technical Memorandum No. 11: EFSFSR Fish Passage Tunnel – Accessway and Fishway Hydraulics.

NMFS – National Marine Fisheries Service (2011). Anadromous Salmonid Passage Facility Design. July 2011.

Villemonte, J.R. (1947). Submerged-Weir Discharge Studies. Engineering News-Record. 139(26). 54-46.