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Bed-Material Characteristics of the Sacramento–San Joaquin Delta, California, 2010–13

Data Series 1026

U.S. Department of the Interior
U.S. Geological Survey

Cover. Streams of the Sacramento–San Joaquin Delta.

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By Mathieu D. Marineau and Scott A. Wright

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SALLY JEWELL, Secretary

U.S. Geological Survey
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U.S. Geological Survey, Reston, Virginia: 2017

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Suggested citation:
Marineau, M.D., and Wright, S.A., 2017, Bed-material characteristics of the Sacramento–San Joaquin Delta, California, 2010–13: U.S. Geological Survey Data Series 1026, 55 p., https://doi.org/10.3133/ds1026.

ISSN 2327-638X (online)

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Conversion Factors

International System of Units to Inch/Pound

Multiply	By	To obtain
	Length	
centimeter (cm)	0.3937	inch (in.)
millimeter (mm)	0.03937	inch (in.)
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
	Area	
square kilometer (km^2)	247.1	acre
square kilometer (km^2)	0.3861	square mile (mi2)
	Flow rate	
cubic meter per second (m^3/s)	70.07	acre-foot per day (acre-ft/d)
	Mass	
gram (g)	0.03527	ounce, avoirdupois (oz)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as

$$°F = (1.8 \times °C) + 32.$$

Datum

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Elevation, as used in this report, refers to distance above the vertical datum.

Abbreviations

analyzer	Laser Diffraction Particle Size Analyzer
CDEC	California Data Exchange Center
D_{50}	50th-percentile (median) particle size
D_{90}	90th-percentile particle size
Delta	Sacramento–San Joaquin Delta
GPS	Global Positioning System
ID	identification
LOI	loss on ignition
No.	number
NWIS	National Water Information System
PST	Pacific Standard Time
Riffler	Quantachrome Instruments Sieving Riffler
RSD	relative standard deviation
USGS	U.S. Geological Survey

Bed-Material Characteristics of the Sacramento–San Joaquin Delta, California, 2010–13

By Mathieu D. Marineau and Scott A. Wright

Abstract

The characteristics of bed material at selected sites within the Sacramento–San Joaquin Delta, California, during 2010–13 are described in a study conducted by the U.S. Geological Survey in cooperation with the Bureau of Reclamation. During 2010–13, six complete sets of samples were collected. Samples were initially collected at 30 sites; however, starting in 2012, samples were collected at 7 additional sites. These sites are generally collocated with an active streamgage. At all but one site, a separate bed-material sample was collected at three locations within the channel (left, right, and center). Bed-material samples were collected using either a US BMH–60 or a US BM–54 (for sites with higher stream velocity) cable-suspended, scoop sampler. Samples from each location were oven-dried and sieved. Bed material finer than 2 millimeters was subsampled using a sieving riffler and processed using a Beckman Coulter LS 13–320 laser diffraction particle-size analyzer. To determine the organic content of the bed material, the loss on ignition method was used for one subsample from each location. Particle-size distributions are presented as cumulative percent finer than a given size. Median and 90th-percentile particle size, and the percentage of subsample mass lost using the loss on ignition method for each sample are also presented in this report.

Introduction

The Sacramento–San Joaquin Delta (the Delta) is a large interconnected network of mixed fluvial-tidal channels formed by the confluence of the Sacramento and San Joaquin Rivers. These two major rivers drain most of California's Central Valley (fig. 1). The Delta is important ecologically and economically to the region. Bed material in the Delta is of particular importance as it relates directly to channel morphology, sediment load and availability for marsh restoration, habitat for benthic invertebrates, potential contaminant transport (and exposure of those contaminants to aquatic organisms), and dredging activities in major shipping channels. Numerical models that predict hydrodynamics and sediment transport in the Delta are often used to evaluate management scenarios (for example, Bever and MacWilliams, 2013; Achete and others, 2015). These models, however, require accurate sediment data such as bed-material particle size for calibration and validation. In response to this need for sediment data, the U.S. Geological Survey (USGS), in cooperation with the Bureau of Reclamation, began a sampling program in 2010 to collect and analyze bed-material samples at 37 sites throughout the Delta, which continued through 2013.

Purpose and Scope

The purpose of this report is to present the methods used to collect, process, and analyze bed-material samples collected at selected sites in the Sacramento–San Joaquin Delta and to report characteristics of those samples. The characteristics presented in this paper are cumulative particle-size distributions, median and 90th-percentile particle sizes (D_{50} and D_{90}, respectively), and loss on ignition (LOI) data for bed-material samples. These data can be used to develop sediment transport models for the Delta and support ongoing scientific investigations of sediment dynamics in the Delta.

Description of the Study Area

The study area lies within the Sacramento–San Joaquin Delta which is a triangular area generally defined by the confluence of the Sacramento and San Joaquin Rivers in the west, the Sacramento River reach near the Freeport Bridge in the north, and the San Joaquin River reach near the Mossdale Bridge in the south (Thompson, 1969). The study area and sample sites are shown in figure 1.

The hydrodynamics of the Delta are driven externally by climate, upstream dam operation, wind, and tides and internally by water diversions and a gate at the Delta Cross Channel (fig. 1). The Delta watershed has a drainage area of approximately 153,000 square kilometers (km^2), which includes most of the Central Valley. Discharge in the Delta is primarily from the Sacramento and San Joaquin Rivers, which drain most of the north and south Central Valley area, respectively; the Mokelumne and Calaveras Rivers, which drain parts of the Sierra Nevada to the east; and a few smaller tributaries, which drain part of the eastern flank of

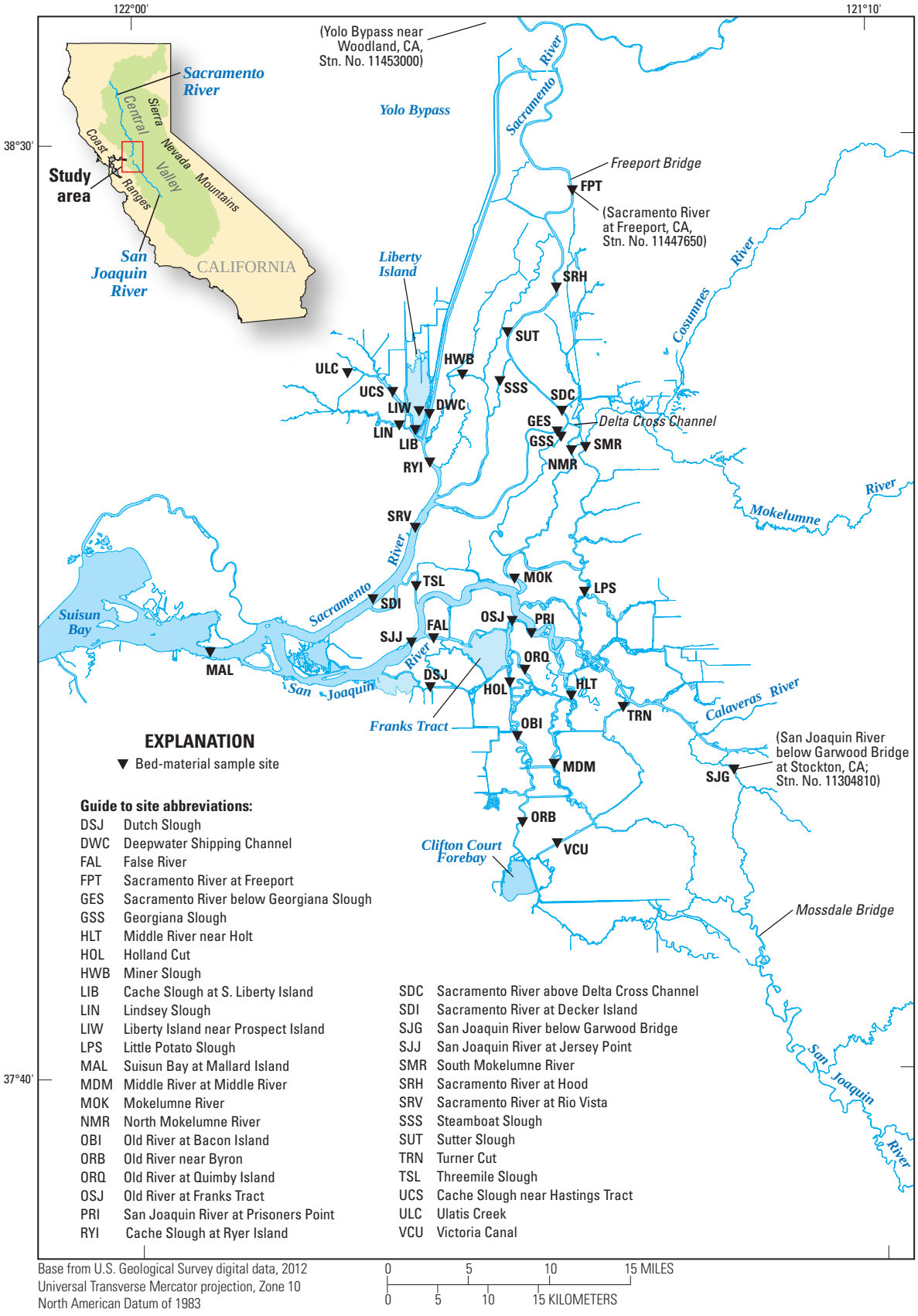

Figure 1. Study area and sample sites, Sacramento–San Joaquin Delta, California.

the Coast Ranges. Average annual discharge to the Delta is 660 cubic meters per second (m^3/s) from the Sacramento River and 126 m^3/s from the San Joaquin River; the maximum recorded instantaneous peak discharges are 3,300 m^3/s and 2,240 m^3/s, respectively (U.S. Geological Survey National Water Information System, variously dated). Climate in the Central Valley is characterized by hot, dry summers and cool, wet winters but with highly variable annual precipitation (Mount, 1995). In general, average annual precipitation in the low-lying areas of the Central Valley can range from 38 centimeters (cm) in the northern areas to less than 20 cm in the southern areas and, on the western slope of the Sierra Nevada, can exceed 127 cm (National Oceanic and Atmospheric Administration, 1985). During high-flow events on the Sacramento River, water can spill over two weirs, which serves to provide flood protection to the city of Sacramento. Water spilling over the weir enters the Yolo Bypass where it flows into the Delta at the northern end of now-flooded Liberty Island (fig. 1). The major tributary rivers are regulated by upstream dams, which maintain constant freshwater discharge during the summer (for water exports through the Clifton Court Forebay) and, to some extent, reduce peak flows during storm events that usually occur during the winter and spring. Discharge and stage data are available for most bed-material sample sites through the USGS National Water Information System (NWIS) web data server (U.S. Geological Survey National Water Information System, variously dated).

Methods

Bed-Material Sample Collection

Samples were collected from a motorized boat using US BM–54 and US BMH–60 cable-suspended, bed-material scoop samplers following standard USGS protocols for use of these samplers (Subcommittee on Sedimentation, 1958; Edwards and Glysson, 1999; Davis, 2005). At all but one site, a sample of the bed material was collected from the center of the channel and from the left and right sides of the channel (at the approximate midpoint between the channel center and the bank). One site was not in a channel (Liberty Island near Prospect Island near Rio Vista, CA, Station 381504121404001 at http://waterdata.usgs.gov/nwis/inventory/?site_no=381504121404001&agency_cd=USGS) (table 1), and at this site, only one sample of the bed material was collected. At most sites, the edge of the channel was a well-defined armored bank; however, at some sites emergent vegetation grew near the bank. At these locations, the edge of the main channel was defined as the edge of the emergent vegetation. All references to the left or right side of the river in this report refer to the perspective of an observer looking downstream. The coordinates for each sample were logged using the boat's on-board Global Positioning System (GPS). Site information, location in the channel (expressed as percent of channel width from left bank), date, and time were recorded for each sample. Approximate sample depth, in feet below water surface, was also recorded for most samples.

Bed-material samples were collected initially from 30 sites in the Delta, all of which are collocated with active USGS streamgages, except for the Sacramento River at Hood, CA, Station 382205121311300, which is a California Department of Water Resources streamgage (table 1). Samples were collected at an additional seven sites starting in fall 2012 at locations corresponding to new streamgages or water-quality monitoring stations in the Delta. The additional sample sites are at Cache Slough at South Liberty Island near Rio Vista, CA, Station 11455315 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11455315&agency_cd=USGS), Lindsey Slough near Liberty Farms, CA, Station 3814481214208010 (http://waterdata.usgs.gov/nwis/inventory/?site_no=381448121420801&agency_cd=USGS), Liberty Island near Prospect Island near Rio Vista, CA, Station 381504121404001 (http://waterdata.usgs.gov/nwis/inventory/?site_no=381504121404001&agency_cd=USGS), Suisun Bay at Mallard Island, CA, Station 11185185 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11185185&agency_cd=USGS), North Mokelumne River near Walnut Grove, CA, Station 11336685 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11336685&agency_cd=USGS), South Mokelumne River at New Hope Bridge near Walnut Grove, CA, Station 11336680 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11336680&agency_cd=USGS), and Ulatis Creek near Elmira, CA, Station 11455268 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11455268&agency_cd=USGS). Sample sets were generally collected each fall (prior to the winter–spring flood season) and again after the winter–spring flood season (if one or more high-flow events occurred) to document any variability in the particle-size distribution, which could have occurred as a result of the high-flow event. However, because there were no major high-flow events during winter–spring of water years[1] 2012 or 2014, a second sample set was not collected later in those water years. The approximate sampling periods in relation to streamflow discharge recorded at USGS streamgages on three of the major tributaries to the Delta are shown in figure 2.

Collection of Supplemental Bed-Material Samples

Supplemental bed-material samples were collected at seven sites during the winter 2013 sampling period. Five of those sites were sampled more intensely to determine whether three samples per site were sufficient to describe bed-material composition at the site. The other two sites are near bridges, which could induce scour at the sample site; therefore, additional samples were collected downstream.

[1]A water year is the 12-month period from October 1 to September 30. It is designated by the calendar year in which it ends.

Table 1. Bed-material sample site and location information, Sacramento–San Joaquin Delta, California.

[m, meter; n/a, not available; USGS, U.S. Geological Survey]

Sample-location identifier [1]	CDEC code [2]	USGS station identification	USGS streamgage site name	Latitude [3] (decimal degrees)	Longitude [3] (decimal degrees)	Easting [3,4] (m)	Northing [3,4] (m)
DSJ-C	DSJ	11313433	DUTCH SLOUGH BELOW JERSEY ISLAND RD AT JERSEY ISLAND	38.0126	–121.6708	616685	4208052
DSJ-L	DSJ	11313433	DUTCH SLOUGH BELOW JERSEY ISLAND RD AT JERSEY ISLAND	38.0124	–121.6707	616689	4208023
DSJ-R	DSJ	11313433	DUTCH SLOUGH BELOW JERSEY ISLAND RD AT JERSEY ISLAND	38.0129	–121.6708	616681	4208081
DWC-C	DWC	11455335	SACRAMENTO RIVER DEEP WATER SHIP CHANNEL NEAR RIO VISTA	38.2565	–121.6673	616604	4235118
DWC-L	DWC	11455335	SACRAMENTO RIVER DEEP WATER SHIP CHANNEL NEAR RIO VISTA	38.2567	–121.6680	616542	4235131
DWC-R	DWC	11455335	SACRAMENTO RIVER DEEP WATER SHIP CHANNEL NEAR RIO VISTA	38.2564	–121.6666	616665	4235104
FAL-C	FAL	11313440	FALSE RIVER NEAR OAKLEY CA	38.0564	–121.6664	617002	4212918
FAL-L	FAL	11313440	FALSE RIVER NEAR OAKLEY CA	38.0559	–121.6664	617000	4212856
FAL-R	FAL	11313440	FALSE RIVER NEAR OAKLEY CA	38.0570	–121.6663	617004	4212979
FPT-C	FPT	11447650	SACRAMENTO RIVER AT FREEPORT CA	38.4542	–121.5017	630738	4257274
FPT-L	FPT	11447650	SACRAMENTO RIVER AT FREEPORT CA	38.4542	–121.5012	630782	4257280
FPT-R	FPT	11447650	SACRAMENTO RIVER AT FREEPORT CA	38.4541	–121.5022	630694	4257268
GES-C	GES	11447905	SACRAMENTO RIVER BELOW GEORGIANA SLOUGH CA	38.2394	–121.5228	629271	4233406
GES-L	GES	11447905	SACRAMENTO RIVER BELOW GEORGIANA SLOUGH CA	38.2392	–121.5228	629274	4233383
GES-R	GES	11447905	SACRAMENTO RIVER BELOW GEORGIANA SLOUGH CA	38.2396	–121.5229	629267	4233429
GSS-C	GSS	11447903	GEORGIANA SLOUGH NEAR SACRAMENTO R	38.2346	–121.5187	629643	4232878
GSS-L	GSS	11447903	GEORGIANA SLOUGH NEAR SACRAMENTO R	38.2345	–121.5186	629653	4232870
GSS-R	GSS	11447903	GEORGIANA SLOUGH NEAR SACRAMENTO R	38.2346	–121.5188	629633	4232886
HLT-C	HLT	11312685	MIDDLE RIVER NEAR HOLT CA	38.0031	–121.5120	630644	4207209
HLT-L	HLT	11312685	MIDDLE RIVER NEAR HOLT CA	38.0031	–121.5125	630595	4207207
HLT-R	HLT	11312685	MIDDLE RIVER NEAR HOLT CA	38.0032	–121.5114	630693	4207211
HOL-C	HOL	11313431	HOLLAND CUT NEAR BETHEL ISLAND CA	38.0159	–121.5812	624542	4208531
HOL-L	HOL	11313431	HOLLAND CUT NEAR BETHEL ISLAND CA	38.0159	–121.5807	624585	4208534
HOL-R	HOL	11313431	HOLLAND CUT NEAR BETHEL ISLAND CA	38.0159	–121.5817	624499	4208529
HWB-C	HWB	11455165	MINER SLOUGH AT HWY 84 BRIDGE	38.2913	–121.6295	619855	4239029
HWB-L	HWB	11455165	MINER SLOUGH AT HWY 84 BRIDGE	38.2912	–121.6295	619850	4239014
HWB-R	HWB	11455165	MINER SLOUGH AT HWY 84 BRIDGE	38.2915	–121.6294	619861	4239043
LIB-C	LIB	11455315	CACHE SLOUGH AT SOUTH LIBERTY ISLAND NEAR RIO VISTA CA	38.2427	–121.6839	615170	4233557
LIB-L	LIB	11455315	CACHE SLOUGH AT SOUTH LIBERTY ISLAND NEAR RIO VISTA CA	38.2423	–121.6834	615212	4233518
LIB-R	LIB	11455315	CACHE SLOUGH AT SOUTH LIBERTY ISLAND NEAR RIO VISTA CA	38.2430	–121.6844	615125	4233592
LIN-C	n/a [5]	381448121420801	LINDSEY SLOUGH NEAR LIBERTY FARMS CA	38.2468	–121.7019	613585	4233994
LIN-L	n/a [5]	381448121420801	LINDSEY SLOUGH NEAR LIBERTY FARMS CA	38.2471	–121.7020	613582	4234031
LIN-R	n/a [5]	381448121420801	LINDSEY SLOUGH NEAR LIBERTY FARMS CA	38.2464	–121.7019	613591	4233952
LIW [6]	n/a [5]	381504121404001	LIBERTY ISLAND NEAR PROSPECT ISLAND NEAR RIO VISTA CA	38.2592	–121.6789	615583	4235396
LPS-C	LPS	11336790	LITTLE POTATO SLOUGH AT TERMINOUS CA	38.0959	–121.4953	631938	4217525
LPS-L	LPS	11336790	LITTLE POTATO SLOUGH AT TERMINOUS CA	38.0960	–121.4950	631965	4217536
LPS-R	LPS	11336790	LITTLE POTATO SLOUGH AT TERMINOUS CA	38.0958	–121.4956	631911	4217515
MAL-C	MAL	11185185	SUISUN BAY AT MALLARD ISLAND	38.0464	–121.9188	594864	4211514
MAL-L	MAL	11185185	SUISUN BAY AT MALLARD ISLAND	38.0444	–121.9193	594830	4211290
MAL-R	MAL	11185185	SUISUN BAY AT MALLARD ISLAND	38.0484	–121.9184	594899	4211739

Table 1. Bed-material sample site and location information, Sacramento–San Joaquin Delta, California.—Continued

[m, meter; n/a, not available; USGS, U.S. Geological Survey]

Sample-location identifier [1]	CDEC code [2]	USGS station identification	USGS streamgage site name	Latitude [3] (decimal degrees)	Longitude [3] (decimal degrees)	Easting [3,4] (m)	Northing [3,4] (m)
MDM-C	MDM	11312676	MIDDLE RIVER AT MIDDLE RIVER CA	37.9427	–121.5327	628933	4200474
MDM-L	MDM	11312676	MIDDLE RIVER AT MIDDLE RIVER CA	37.9427	–121.5333	628880	4200475
MDM-R	MDM	11312676	MIDDLE RIVER AT MIDDLE RIVER CA	37.9427	–121.5320	628986	4200474
MOK-C	MOK	11336930	MOKELUMNE RIVER AT ANDRUS ISLAND NEAR TERMINOUS CA	38.1085	–121.5740	625016	4218813
MOK-L	MOK	11336930	MOKELUMNE RIVER AT ANDRUS ISLAND NEAR TERMINOUS CA	38.1090	–121.5738	625037	4218871
MOK-R	MOK	11336930	MOKELUMNE RIVER AT ANDRUS ISLAND NEAR TERMINOUS CA	38.1080	–121.5743	624996	4218756
NMR-C	NMR	11336685	NORTH MOKELUMNE NEAR WALNUT GROVE CA	38.2225	–121.5075	630647	4231552
NMR-L	NMR	11336685	NORTH MOKELUMNE NEAR WALNUT GROVE CA	38.2224	–121.5073	630665	4231550
NMR-R	NMR	11336685	NORTH MOKELUMNE NEAR WALNUT GROVE CA	38.2225	–121.5077	630630	4231555
NMR2-C	n/a [5]	11336685	NORTH MOKELUMNE NEAR WALNUT GROVE CA	38.2206	–121.5072	630677	4231345
NMR2-L	n/a [5]	11336685	NORTH MOKELUMNE NEAR WALNUT GROVE CA	38.2206	–121.5070	630693	4231345
NMR2-R	n/a [5]	11336685	NORTH MOKELUMNE NEAR WALNUT GROVE CA	38.2206	–121.5074	630062	4231339
OBI-C	OBI	11313405	OLD RIVER AT BACON ISLAND CA	37.9680	–121.5735	625299	4203224
OBI-L	OBI	11313405	OLD RIVER AT BACON ISLAND CA	37.9680	–121.5740	625257	4203227
OBI-R	OBI	11313405	OLD RIVER AT BACON ISLAND CA	37.9680	–121.5730	625341	4203220
ORB-C	ORB	11313315	OLD RIVER NEAR BYRON CA	37.8912	–121.5692	625806	4194709
ORB-L	ORB	11313315	OLD RIVER NEAR BYRON CA	37.8915	–121.5694	625787	4194739
ORB-R	ORB	11313315	OLD RIVER NEAR BYRON CA	37.8909	–121.5690	625825	4194678
ORQ-C	ORQ	11313434	OLD RIVER AT QUIMBY ISLAND NEAR BETHEL ISLAND CA	38.0270	–121.5637	626058	4209790
ORQ-L	ORQ	11313434	OLD RIVER AT QUIMBY ISLAND NEAR BETHEL ISLAND CA	38.0271	–121.5643	626008	4209791
ORQ-R	ORQ	11313434	OLD RIVER AT QUIMBY ISLAND NEAR BETHEL ISLAND CA	38.0270	–121.5632	626107	4209789
OSJ-C	OSJ	11313452	OLD RIVER AT FRANKS TRACT NEAR TERMINOUS CA	38.0709	–121.5773	624788	4214633
OSJ-L	OSJ	11313452	OLD RIVER AT FRANKS TRACT NEAR TERMINOUS CA	38.0704	–121.5771	624814	4214586
OSJ-R	OSJ	11313452	OLD RIVER AT FRANKS TRACT NEAR TERMINOUS CA	38.0713	–121.5776	624763	4214680
PRI-C	PRI	11313460	SAN JOAQUIN RIVER AT PRISONERS POINT NEAR TERMINOUS CA	38.0596	–121.5557	626708	4213411
PRI-L	PRI	11313460	SAN JOAQUIN RIVER AT PRISONERS POINT NEAR TERMINOUS CA	38.0602	–121.5553	626742	4213476
PRI-R	PRI	11313460	SAN JOAQUIN RIVER AT PRISONERS POINT NEAR TERMINOUS CA	38.0590	–121.5561	626673	4213346
RYI-C	RYI	11455350	CACHE SLOUGH AT RYER ISLAND	38.2135	–121.6677	616636	4230338
RYI-L	RYI	11455350	CACHE SLOUGH AT RYER ISLAND	38.2138	–121.6671	616690	4230382
RYI-R	RYI	11455350	CACHE SLOUGH AT RYER ISLAND	38.2131	–121.6683	616582	4230294
SDC-C	SDC	11447890	SACRAMENTO RIVER AB DELTA CROSS CHANNEL CA	38.2577	–121.5175	629703	4235450
SDC-L	SDC	11447890	SACRAMENTO RIVER AB DELTA CROSS CHANNEL CA	38.2579	–121.5173	629722	4235469
SDC-R	SDC	11447890	SACRAMENTO RIVER AB DELTA CROSS CHANNEL CA	38.2576	–121.5178	629684	4235431
SDI-C	SDI	11455478	SACRAMENTO RIVER AT DECKER ISLAND NEAR RIO VISTA CA	38.0921	–121.7342	610993	4216787
SDI-L	SDI	11455478	SACRAMENTO RIVER AT DECKER ISLAND NEAR RIO VISTA CA	38.0906	–121.7326	611136	4216627
SDI-R	SDI	11455478	SACRAMENTO RIVER AT DECKER ISLAND NEAR RIO VISTA CA	38.0935	–121.7359	610850	4216948
SJG-C	SJG	11304810	SAN JOAQUIN RIVER BELOW GARWOOD BRIDGE AT STOCKTON CA	37.9349	–121.3297	646779	4199903
SJG-L	SJG	11304810	SAN JOAQUIN RIVER BELOW GARWOOD BRIDGE AT STOCKTON CA	37.9347	–121.3299	646769	4199889
SJG-R	SJG	11304810	SAN JOAQUIN RIVER BELOW GARWOOD BRIDGE AT STOCKTON CA	37.9350	–121.3296	646789	4199916
SJJ-C	SJJ	11337190	SAN JOAQUIN RIVER AT JERSEY POINT CA	38.0530	–121.6911	614836	4212503

Table 1. Bed-material sample site and location information, Sacramento–San Joaquin Delta, California.—Continued

[m, meter; n/a, not available; USGS, U.S. Geological Survey]

Sample-location identifier [1]	CDEC code [2]	USGS station identification	USGS streamgage site name	Latitude [3] (decimal degrees)	Longitude [3] (decimal degrees)	Easting [3,4] (m)	Northing [3,4] (m)
SJJ-L	SJJ	11337190	SAN JOAQUIN RIVER AT JERSEY POINT CA	38.0524	–121.6902	614920	4212444
SJJ-R	SJJ	11337190	SAN JOAQUIN RIVER AT JERSEY POINT CA	38.0536	–121.6922	614740	4212572
SMR-C	SMR	11336680	SOUTH MOKELUMNE RIVER AT NEW HOPE BR NEAR WALNUT GROVE CA	38.2249	–121.4914	632052	4231842
SMR-L	SMR	11336680	SOUTH MOKELUMNE RIVER AT NEW HOPE BR NEAR WALNUT GROVE CA	38.2249	–121.4912	632064	4231841
SMR-R	SMR	11336680	SOUTH MOKELUMNE RIVER AT NEW HOPE BR NEAR WALNUT GROVE CA	38.2249	–121.4915	632041	4231843
SRH-C	SRH	382205121311300	SACRAMENTO RIVER AT HOOD CA	38.3676	–121.5213	629177	4247642
SRH-L	SRH	382205121311300	SACRAMENTO RIVER AT HOOD CA	38.3677	–121.5208	629219	4247646
SRH-R	SRH	382205121311300	SACRAMENTO RIVER AT HOOD CA	38.3676	–121.5218	629134	4247639
SRV-C	SRV	11455420	SACRAMENTO RIVER AT RIO VISTA CA	38.1550	–121.6852	615199	4223829
SRV-L	SRV	11455420	SACRAMENTO RIVER AT RIO VISTA CA	38.1543	–121.6832	615371	4223758
SRV-R	SRV	11455420	SACRAMENTO RIVER AT RIO VISTA CA	38.1557	–121.6871	615028	4223901
SSS-C	SSS	11447850	STEAMBOAT SLOUGH NEAR WALNUT GROVE CA	38.2849	–121.5870	623577	4238373
SSS-L	SSS	11447850	STEAMBOAT SLOUGH NEAR WALNUT GROVE CA	38.2848	–121.5869	623589	4238360
SSS-R	SSS	11447850	STEAMBOAT SLOUGH NEAR WALNUT GROVE CA	38.2850	–121.5872	623565	4238386
SUT-C	SUT	11447830	SUTTER SLOUGH AT COURTLAND CA	38.3285	–121.5779	624301	4243224
SUT-L	SUT	11447830	SUTTER SLOUGH AT COURTLAND CA	38.3284	–121.5780	624291	4243213
SUT-R	SUT	11447830	SUTTER SLOUGH AT COURTLAND CA	38.3286	–121.5778	624310	4243235
SUT2-C	n/a [5]	11447830	SUTTER SLOUGH AT COURTLAND CA	38.3296	–121.5793	624180	4243343
SUT2-L	n/a [5]	11447830	SUTTER SLOUGH AT COURTLAND CA	38.3296	–121.5794	624169	4243338
SUT2-R	n/a [5]	11447830	SUTTER SLOUGH AT COURTLAND CA	38.3296	–121.5791	624192	4243351
TRN-C	TRN	11311300	TURNER CUT NEAR HOLT CA	37.9923	–121.4538	635771	4206093
TRN-L	TRN	11311300	TURNER CUT NEAR HOLT CA	37.9925	–121.4540	635755	4206111
TRN-R	TRN	11311300	TURNER CUT NEAR HOLT CA	37.9922	–121.4536	635788	4206074
TSL-C	TSL	11337080	THREEMILE SLOUGH NEAR RIO VISTA CA	38.1031	–121.6853	615272	4218071
TSL-L	TSL	11337080	THREEMILE SLOUGH NEAR RIO VISTA CA	38.1032	–121.6857	615229	4218078
TSL-R	TSL	11337080	THREEMILE SLOUGH NEAR RIO VISTA CA	38.1030	–121.6848	615315	4218063
UCS-C	n/a [5]	11455280	CACHE SLOUGH NEAR HASTINGS TRACT NEAR RIO VISTA CA	38.2769	–121.7089	612931	4237322
UCS-L	n/a [5]	11455280	CACHE SLOUGH NEAR HASTINGS TRACT NEAR RIO VISTA CA	38.2772	–121.7083	612984	4237361
UCS-R	n/a [5]	11455280	CACHE SLOUGH NEAR HASTINGS TRACT NEAR RIO VISTA CA	38.2765	–121.7095	612877	4237283
ULC-C	n/a [5]	11455268	ULATIS CREEK NEAR ELMIRA CA	38.2940	–121.7596	608471	4239164
ULC-L	n/a [5]	11455268	ULATIS CREEK NEAR ELMIRA CA	38.2941	–121.7597	608465	4239171
ULC-R	n/a [5]	11455268	ULATIS CREEK NEAR ELMIRA CA	38.2939	–121.7596	608473	4239156
VCU-C	VCU	11312672	VICTORIA CANAL NEAR BYRON CA	37.8715	–121.5302	629275	4192580
VCU-L	VCU	11312672	VICTORIA CANAL NEAR BYRON CA	37.8719	–121.5304	629253	4192615
VCU-R	VCU	11312672	VICTORIA CANAL NEAR BYRON CA	37.8712	–121.5299	629296	4192544

[1] Sample location identifier refers to the site's CDEC code, where applicable, and location in channel (L, left; C, center; R, right).

[2] CDEC, California Data Exchange Center.

[3] North American Datum of 1983 (NAD 83) geodetic reference system.

[4] Universal Transverse Mercator (UTM) Zone 10N.

[5] CDEC code does not exist for this site.

[6] Site is in open water and therefore does not have a channel location.

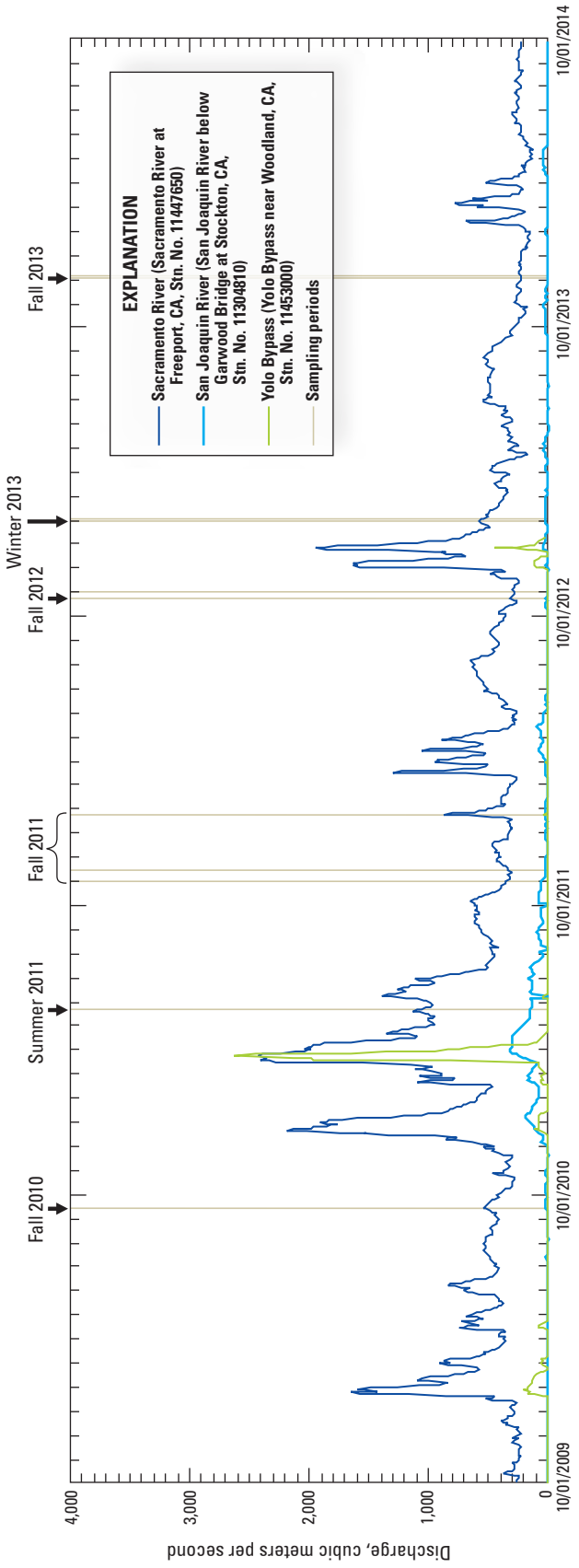

Figure 2. Hydrograph of major tributaries in the Sacramento–San Joaquin Delta, California, with vertical lines indicating bed-material sampling periods.

The five sites selected for more intensive sampling are Sacramento River Deep Water Ship Channel near Rio Vista, CA, Station 11455335 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11455335&agency_cd=USGS), Little Potato Slough at Terminous, CA, Station 11336790 (http://waterdata.usgs.gov/ca/nwis/inventory/?site_no=11336790&agency_cd=USGS), Middle River at Middle River, CA, Station 11312676 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11312676&agency_cd=USGS), Mokelumne River at Andrus Island near Terminous, CA, Station 11336930 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11336930&agency_cd=USGS), and Cache Slough at Ryer Island, CA, Station 11455350 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11455350&agency_cd=USGS). The supplemental samples, numbered 1–4, were collected between each primary sample location and between the bank and the nearest primary sample location, such that there were seven evenly spaced sample locations ordered 1, left, 2, center, 3, right, and 4 (fig. 3).

The results of the intensive sampling show that when the results were averaged across the channel, there was little difference between sampling at only three locations within the channel and sampling at seven locations. The site averages for the 50th (median) and 90th percentiles of particle size (D_{50}, D_{90}) and the LOI were compared simply, by calculating the averages from the typical three sample locations at each site (left, center, and right) and the averages from the seven sample locations (left, center, right, 1, 2, 3, and 4) and determining the difference between the two. The D_{50} differed among the five sites by 0.01–0.03 millimeter (mm), D_{90} differed by 0.02–0.04 mm, and there was less than 0.5 percent difference in LOI test results.

The mass of sample material collected at two sites—North Mokelumne River near Walnut Grove, CA, Station 11336685 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11336685&agency_cd=USGS) and Sutter Slough at Courtland, CA, Station 11447830 (http://waterdata.usgs.gov/nwis/inventory/?site_no=11447830&agency_cd=USGS)—was sometimes insufficient to process and analyze. A small sample quantity will often occur if the sampler encounters either a bed composed of hard-pan clay or material that is too large for the scoop. Because both of these sites were adjacent to bridges, it is possible that bridge-induced scour prevented accumulation of bed material at the sample locations and that the bed composition at the sample location differed from that found downstream. Therefore, during the winter 2013 bed-material sample collection, additional bed-material samples were collected about 90–120 meters downstream from the streamgage at those two sample sites.

Sampling downstream from the original North Mokelumne River site resulted in samples with generally greater mass than those collected at the original site. At the original site during the winter 2013 sampling period, the sampler failed to collect any bed material at the sample location on the right side of the channel, and the sample mass collected at the remaining two locations was only about 4 grams (g). At

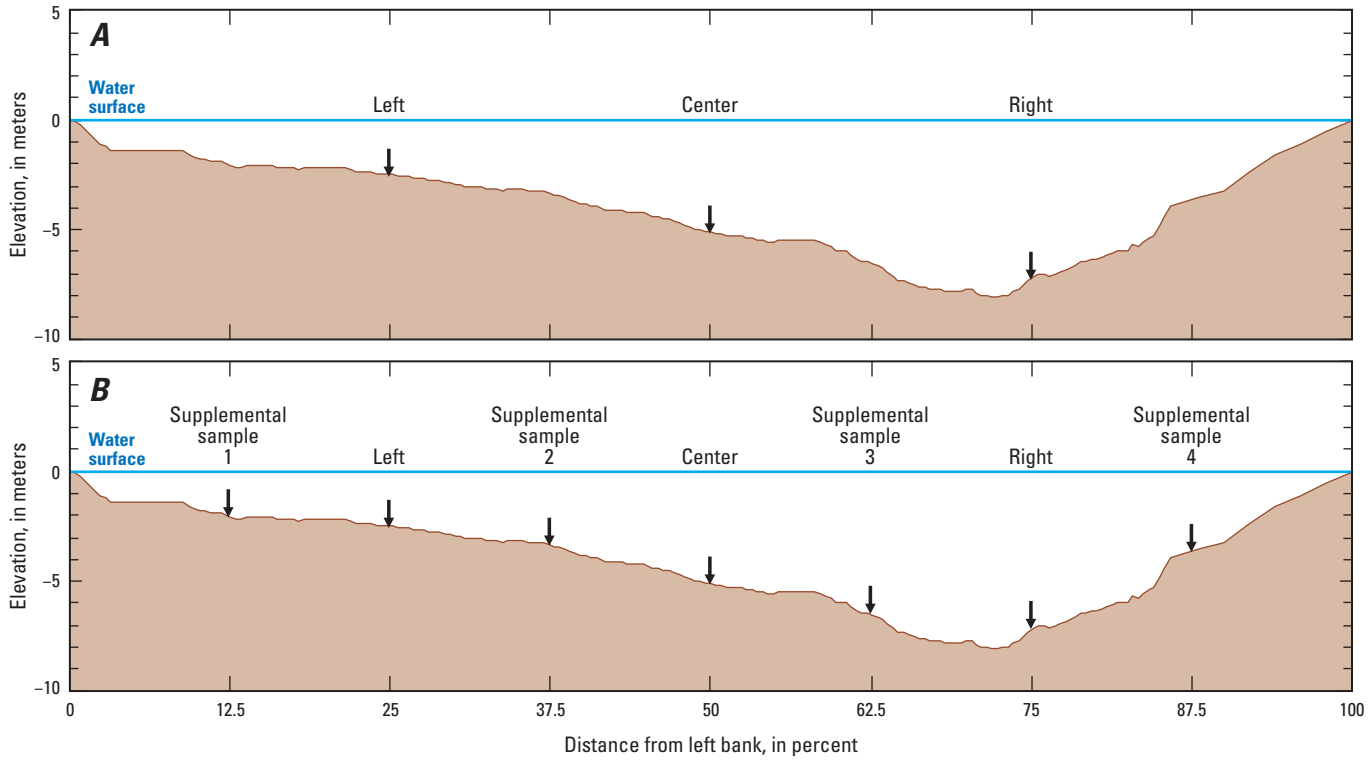

Figure 3. Channel cross-sections showing *A*, typical sample locations left, center, and right (L, C, and R) and *B*, supplemental sample locations (numbered 1–4) in addition to the three primary L, C, and R sample locations, Sacramento–San Joaquin Delta, California.

the downstream North Mokelumne River site, samples were collected at all three channel locations; however, the mass collected from the left side of the channel was small (only about 13 g). At the original Sutter Slough site, bed material was collected at all three channel locations, but the sample mass from the left channel location was small (about 17 g). At the downstream Sutter Slough site, the sample mass of each additional channel location was very similar to that of the original site, and the mass of the sample collected at the left channel location was small. Thus, sampling downstream from the original Sutter Slough sample site did not result in an increase in the volume of sample material obtained. The results from those two sites are best used with caution for any of the six sample sets, particularly if the quantity of the sample material is small. None of the collected samples were excluded from the resulting dataset used for this report.

Sample Preparation

Bed-material samples were first dried in an oven at 105 degrees Celsius. After samples were dried and cooled to room temperature, clumps of sediment were disaggregated using a mortar and pestle. Mollusk shells (which were often found in samples) were removed, and the total mass of sediment in each sample was recorded. The average mass of sediment samples after shell removal was 155 g. Samples were then split into subsamples using a Quantachrome Instruments Sieving Riffler™ (Riffler). Sample material was poured into a 2-mm sieve mounted directly above the Riffler's cylindrical hopper. If coarse material (greater than 2 mm) was present, it was weighed and set aside for further evaluation (see section "Samples Containing Coarse Material" for a detailed explanation). The Riffler was used to split each sample into eight well-mixed subsamples. Large samples were often split a second time to reduce the size of the subsample. After a subsample of adequate size (generally 2–10 g) was obtained, it was placed in a ceramic saucer and wetted with a solution containing 5 percent sodium hexametaphosphate to deflocculate clay particles. Two to three subsamples were treated with the deflocculating solution prior to processing (as explained in the next section). One additional subsample from each sample was set aside for LOI analysis. The subsample used for LOI analysis was not treated with deflocculating solution.

Particle-Size Distribution Analysis

The primary instrument used to measure the particle-size distribution of bed-material samples was a Beckman Coulter LS™ 13–320 Laser Diffraction Particle Size Analyzer (analyzer) with an Aqueous Liquid Module. The steps used for the particle-size distribution analysis are described briefly here and then explained in further detail in the following subsections. First, two subsamples were processed, and the results were compared to determine whether a third subsample was needed. Results of the analyzed subsamples were then averaged. The analyzer is limited to processing material finer

than 2 mm. Therefore, if coarser material was present in the original sample, it was sieved and measured separately. The results of the sieving (for the coarse material) were then combined with the analyzer data. In addition to processing samples using the analyzer, one sample set was processed using both the standard sieving method and the analyzer. A comparison of these results is provided in subsequent sections along with an explanation of the limitations of the sieving method and the rationale for using the analyzer to process all remaining samples.

Comparison of Sieving and Analyzer Methods

The first set of bed-material samples was processed using the standard wet-sieving method (Guy, 1969), which uses wire-mesh square-hole sieves, and also using the analyzer. For sieved samples, the fraction of particles finer than 0.063 mm, 0.125 mm, 0.25 mm, 0.5 mm, 1 mm, and 2 mm were weighed and recorded. The analyzer measures the percent volume of particles for 96 size classes between 0.000375 mm and 2 mm. The D_{50} was calculated using linear interpolation between the nearest sieve sizes or between the nearest size classes recorded by the analyzer. The D_{50} and silt/clay fraction (finer than 0.0625 mm) for both methods are plotted in figure 4*A* and 4*B*. The precision of the wire-mesh sieve is limited to 0.001 mm; therefore, for the silt/clay fraction (typically considered finer than 0.0625 mm), the results for fraction of particles finer than the 0.063-mm sieve were used. The D_{50} could not be calculated using the sieve results for 16 samples because more than one-half of the particles were finer than the smallest sieve size (0.063 mm); therefore, these data could not be shown on figure 4*B*. In addition, one of the original samples was lost (therefore was not processed with the analyzer), and the original sieving notes for a different sample were lost, so the comparisons of results for these two samples are not shown in figure 4*A* and 4*B* (data provided in appendix 1, table 1-1). The number of samples shown in figure 4*A* and 4*C* is 88, and the number of samples shown in figure 4*B* and 4*D* is 72. Residuals from the line of equivalence were also calculated and are shown in figure 4*C* and 4*D*.

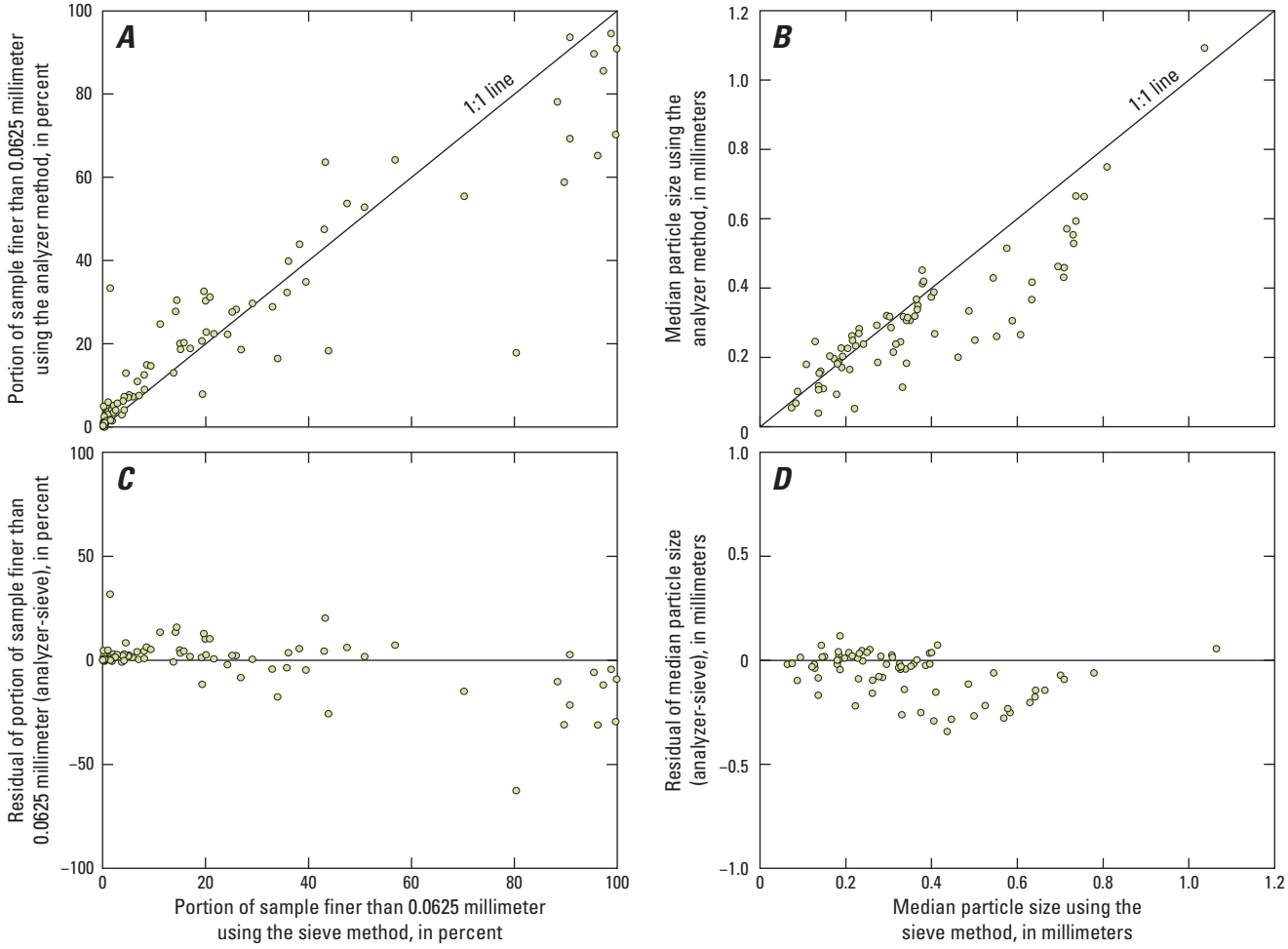

Figure 4. Relations between, *A*, portions of sample finer than 0.0625 millimeter using analyzer and sieving methods; *B*, median particle size using analyzer and sieving methods; *C*, residual (analyzer result minus sieve result) and measured portion of sample finer than 0.0625 millimeter; and *D*, residual (analyzer result minus sieve result) of median particle size and measured median particle size by sieving method, Sacramento-San Joaquin Delta, California, fall 2010.

A visual inspection and statistical test show that the two datasets shown in figure 4*A* and 4*C* were correlated. Visual inspection of the plots in figure 4*A* and 4*C* reveals that the portion of sediment finer than sand measured using the sieving method and the analyzer method is generally linearly correlated. The visual appearance of correlation strength also agrees with calculations of the Pearson's *r* coefficients, which were 0.92 and 0.88 for figure 4*A* and 4*B*, respectively.

The residuals were also calculated for the two datasets and are shown in figure 4*C* and 4*D*. The probability plot correlation coefficient test (Looney and Gulledge, 1985) was used to check if the residuals were normally distributed. The *r* value calculated in this test was 0.93 for the portion finer than 0.0625 millimeter dataset (fig. 4*A*) and 0.87 for the median grain size dataset (fig. 4*D*). Neither value exceeded the *r* critical value for α=0.05 (table B3 in Helsel and Hirsch, 2002), indicating that they were not normally distributed. For non-normal distributions, a nonparametric test—the signed-rank test (Wilcoxon, 1945)—was used to check for differences between the sieve and analyzer data in each dataset.

The Wilcoxon signed-rank test was used to test for differences between the sieve data and the analyzer data for both the median grain-size dataset (fig. 4*B*) and the portion finer than 0.0625 millimeter dataset (fig. 4*A*). The *p*-values calculated from the Wilcoxon signed rank test were 0.00002 and 0.040 for the median grain size and portion finer than 0.0625 millimeter datasets, respectively (fig. 4*B* and 4*A*).

A linear regression equation was also calculated for the two residual datasets (that is, the data plotted in fig. 4*C* and 4*D*). The slope coefficients calculated from linear regression for these datasets were –0.22 and –0.28 (for the median dataset and the silt/clay fraction dataset, respectively). This indicates there was negative bias for the finer samples and there was a slightly positive, possibly negligible, bias for the coarser samples.

The sieves and the analyzer measured sample percentages finer than 0.063 mm, whereas the samples' D_{50} was calculated through linear interpolation between sieve sizes or analyzer bin sizes. Therefore, a greater number of sieves or analyzer bins will improve the approximation of the D_{50}. The sieving method provided only 5 size classes; the analyzer method provided 96 size classes.

The analyzer method was the preferred method for calculating particle-size distribution because of the greater number of size classes and because size classes are much smaller than those of the sieving method. As indicated above, it was not possible to calculate the D_{50} using the sieving method for samples when more than one-half of the particles were finer than the 0.063-mm sieve (the smallest sieve size). Owing to these limitations, the sieving method was not used for other sample sets. The results from the sieve analysis are provided in appendix 1 of this report.

Particle-Size Distribution Using the Analyzer

Subsamples of bed material for all sample sets were processed using the analyzer. This instrument is limited, however, in its ability to accurately analyze particles with a nominal diameter greater than 2 mm (Beckman Coulter Inc., 2009). If such coarse material was present in any sample, it was sieved during sample preparation and weighed separately using sieves ranging from 2 mm to 32 mm (no samples contained particles larger than 32 mm). The analyzer measures the percent volume of particles for 96 size classes ranging from 0.000375 to 2 mm. The D_{50} and D_{90} were calculated using linear interpolation between the nearest size classes. The analyzer used the Fraunhofer Model to estimate particle size on the basis of the measurements of light diffraction. Size classes for 0.004 mm, 0.008 mm, 0.016 mm, 0.0313 mm, 0.0625 mm, 0.125 mm, 0.25 mm, 0.5 mm, 1 mm, and 2 mm (corresponding to 1 phi increments) were interpolated between the nearest size classes recorded by the analyzer. For samples containing particles larger than 2 mm, the percent by mass of particles larger than 2 mm was used to recalculate the particle-size distribution, and D_{50} and D_{90}. Details on this procedure are described later in the section "Samples containing coarse material."

Replicate Analyzer Measurements

To assure that subsamples were well mixed during splitting (and thus representative of the original sample), the selected subsamples were processed, and the D_{50} of each subsample was compared to the original and (or) to the previous subsample by calculating the relative standard deviation (RSD). The RSD is calculated by dividing the standard deviation of the subsamples' D_{50} (S) by the mean of the subsamples' D_{50} ($\overline{X}$) using equation 1.

$$RSD = 100\frac{S}{\overline{X}} \quad (1)$$

If RSD for a pair of subsamples was less than 10 percent, the particle-size distribution results for the two initially selected subsamples were averaged for each of the 96 size classes. If the RSD was 10 percent or greater and the absolute difference was greater than 0.05 mm, a third subsample (triplicate) was processed. The particle-size distribution results of all three subsamples were averaged unless the D_{50} of one subsample deviated substantially from the D_{50} of the other two subsamples; in which case, the results of that subsample were discarded and the results of the remaining two subsamples were averaged. Using these criteria, additional subsamples were needed in about 5 percent of all cases.

Samples Containing Coarse Material

Samples containing coarse material (greater than 2 mm) required separate measurement because the analyzer is limited to measuring only particles up to 2 mm in size. Particles between 2 mm and 19 mm were dry sieved in a Ro-Tap® sieve shaker using the standard sieving method (Guy, 1969). Particles larger than 19 mm were measured by hand using an SAH–97 Hand-Held Particle Size Analyzer (Potyondy and Bunte, 2002). The analyzer method particle-size distribution, along with sieved (2–19 mm) and hand-measured portions (19–32 mm), were combined to recalculate the full-range particle-size distribution. The particle-size distribution output from the analyzer is in the form of volumetric percentage of each size class. To obtain the gravimetric distribution, the volumetric particle-size distribution was multiplied by the mass of the sample portion that was finer than 2 mm, as shown in the following equation:

$$\left(M_{<2\text{ mm}}\right)\left[Vp_{0.000375\text{ mm}}\ldots Vp_{2\text{ mm}}\right]=\left[m_{0.000375\text{ mm}}\ldots m_{2\text{ mm}}\right] \quad (2)$$

where

$M_{<2\text{ mm}}$ represents the mass of that portion of a sample finer than 2 mm;

V_P represents the percent volume for each size class, as measured by the analyzer; and

m represents the mass of the particles for each size class (subscripts of V_P and m denote the upper limit of the size class).

The calculated values of mass for the particles finer than 2 mm were combined with all measurements of mass in the sieved and hand-measured portions (2 mm and coarser) to calculate the full-range particle-size distribution.

Loss on Ignition

The LOI method (Heiri and others, 2001) was used on one subsample from each sample to determine the fraction of organic material. The samples were heated to 550 degrees Celsius for 4 hours (Heiri and others, 2001) and then weighed; this weight was then subtracted from the initial weight. The difference between the two weights is the weight of organic material. Next, the weight of the organic material was divided by the initial weight and multiplied by 100 to obtain the percentage of organic material in the subsample. The mass of material combusted during heating is assumed to equal the amount of organic material that was initially present in the subsample (Heiri and others, 2001). In this study only one subsample from each sample was tested using the LOI method. The uncertainty of the LOI results were not measured for this study.

Results

For each of the 37 sample sites, the sample-location identifier, California Data Exchange Center (CDEC) code, nearest USGS streamgage site name and identification, and GPS coordinates of sample locations are presented in table 1. The sample-location identifier for each sample is a combination of the CDEC code of the site and a letter designating the location in the channel (L, left; C, center; R, right). If a CDEC code did not exist for a site, an alternative three-letter abbreviation was used, and in some cases appending a single digit as necessary for uniqueness. Coordinates of the sample locations are referenced to the North American Datum of 1983 (NAD 83) geodetic reference system and are provided as latitude and longitude, in decimal degrees, and as eastings and northings, in meters (using the Universal Transverse Mercator) coordinate system in Zone 10 North).

Particle-size distribution results for the six sample sets are presented in tables 2–13. Tables 2–7 contain particle characteristic and other information, including (1) date and time of collection, (2) approximate water depth at sample locations, (3) total sample mass, D_{50}, D_{90}, site-average D_{50}, site-average D_{90}, LOI subsample mass, LOI as a percentage of total mass, and site-average LOI. Tables 8–13 contain the cumulative particle-size distribution data for the full range of particle sizes observed, reported as the fractions of sediment finer than 0.004 mm, 0.008 mm, 0.016 mm, 0.0313 mm, 0.0625 mm, 0.125 mm, 0.25 mm, 0.5 mm, 1 mm, 2 mm, 2.8 mm, 4 mm, 4.75 mm, 5.6 mm, 8 mm, 9.5 mm, 11.2 mm, 16 mm, 19 mm, 22.4 mm, and 32 mm. The size classes for sand, silt, and clay, which are the classes 2 mm and finer, were based on 1 phi increments. The larger-size classes listed above correspond to the original sieve sizes used after the first sample set. Over time, other sieves were added or removed. A map showing the spatial distribution of average D_{50} for the study period (2010–13) at each site is shown in figure 5.

Cumulative particle-size distributions for selected sites are plotted in figure 6*A*–*F* using results from the fall 2012 sample set. For each of these sites, the cumulative particle-size distribution for samples collected in the center, left, and right is plotted, as well as the site average cumulative particle-size distribution.

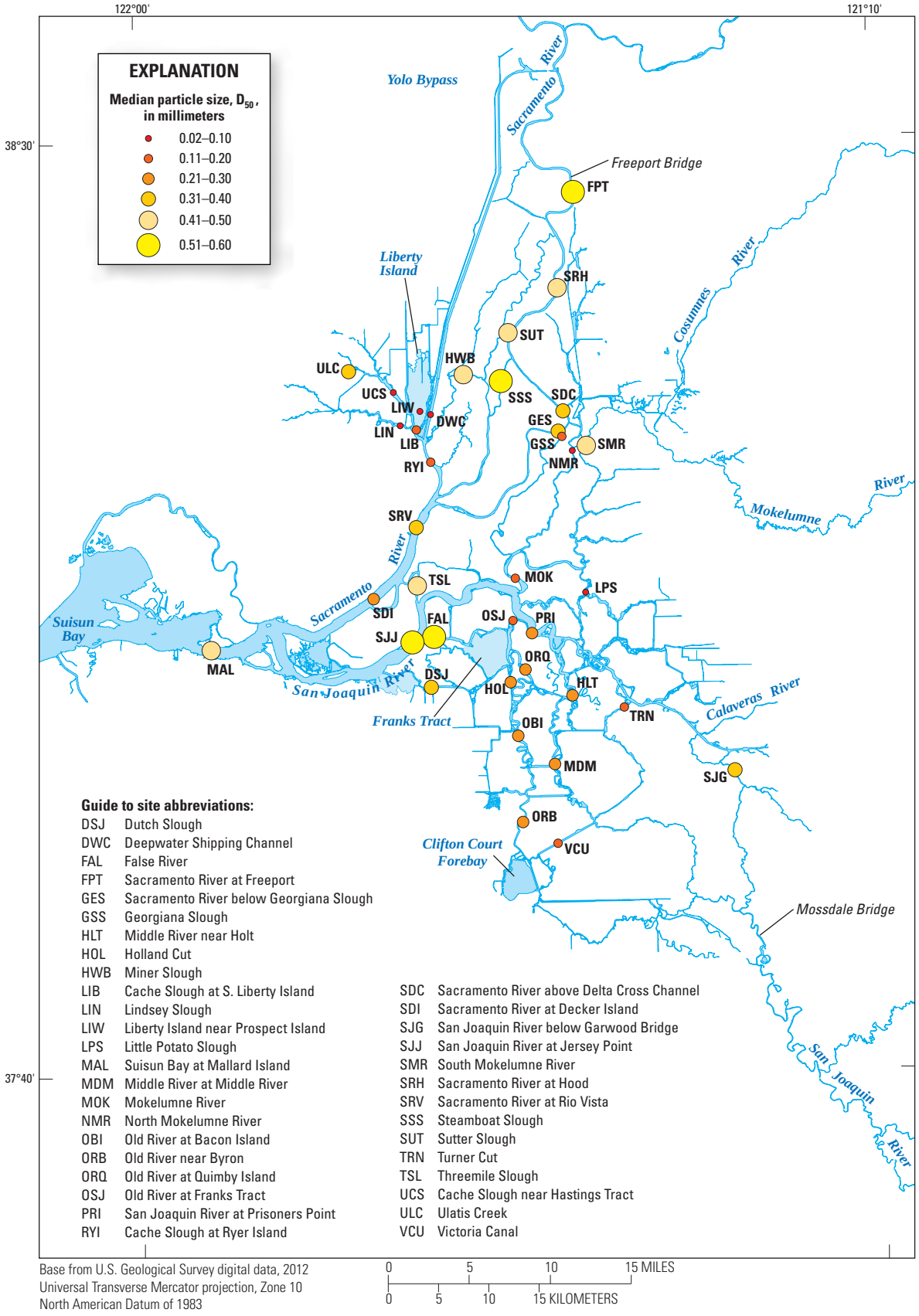

Figure 5. Average D_{50} for each site, calculated from samples collected, Sacramento–San Joaquin Delta, California, 2010–13. (D_{50}, median particle size)

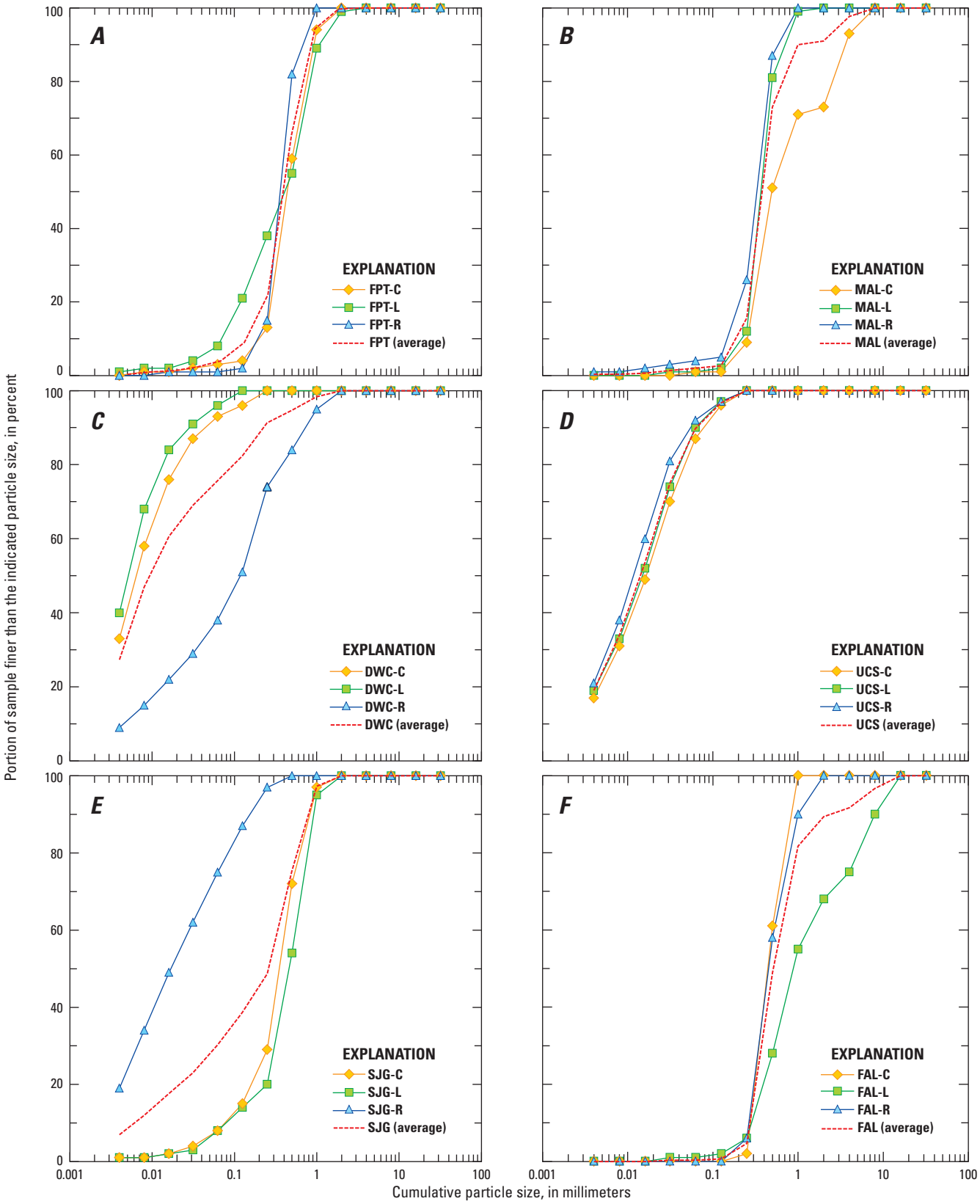

Figure 6. Cumulative particle size in relation to portion of sample finer than the indicated cumulative particle size at center (C), left (L), and right (R) locations and the average at selected sites in the Sacramento–San Joaquin Delta, California, fall 2012: *A*, FPT, Sacramento River at Freeport; *B*, MAL, Suisun Bay at Mallard Island; *C*, DWC, Sacramento Deep Water Shipping Channel; *D*, UCS, Upper Cache Slough; *E*, SJG, San Joaquin River at Garwood Bridge at Stockton; and *F*, FAL, False River.

Table 2. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2010, Sacramento–San Joaquin Delta, California.

[D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; LOI, loss on ignition; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; <, less than; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
DSJ-C	09/17/2010	11:38	2.3	7.5	248.1	0.26	0.29	0.38	0.45	30.9	<1	1
DSJ-L	09/17/2010	11:39	2.9	9.5	208.2	0.28	0.29	0.48	0.45	26.1	1	1
DSJ-R	09/17/2010	11:40	4.3	14.1	312.5	0.32	0.29	0.50	0.45	37.2	1	1
DWC-C	09/13/2010	10:19	11.9	39.0	5.3	0.17	0.08	0.38	0.21	1.1	<1	3
DWC-L	09/13/2010	10:20	11.6	38.1	175.6	0.05	0.08	0.19	0.21	31.0	2	3
DWC-R	09/13/2010	10:21	6.7	22.0	52.0	0.01	0.08	0.05	0.21	6.8	7	3
FAL-C	09/17/2010	12:50	8.1	26.6	323.9	0.46	0.41	0.69	0.70	39.5	<1	<1
FAL-L	09/17/2010	12:51	11.4	37.4	310.7	0.43	0.41	0.90	0.70	37.7	<1	<1
FAL-R	09/17/2010	12:52	6.6	21.7	277.0	0.35	0.41	0.50	0.70	34.2	<1	<1
FPT-C	09/14/2010	08:10	6.7	22.0	164.2	0.37	0.25	0.71	0.61	20.4	1	1
FPT-L	09/14/2010	08:11	7.0	23.0	15.7	0.11	0.25	0.58	0.61	2.9	2	1
FPT-R	09/14/2010	08:12	7.6	24.9	319.8	0.26	0.25	0.53	0.61	39.8	1	1
GES-C	09/14/2010	11:40	5.8	19.0	171.4	0.34	0.23	0.49	2.40	21.3	1	2
GES-L	09/14/2010	11:41	6.4	21.0	44.4	0.20	0.23	6.41	2.40	5.2	3	2
GES-R	09/14/2010	11:42	6.1	20.0	198.3	0.16	0.23	0.31	2.40	24.5	2	2
GSS-C	09/14/2010	11:05	8.2	26.9	221.4	0.18	0.12	0.53	0.36	23.5	1	3
GSS-L	09/14/2010	11:06	6.1	20.0	54.7	0.07	0.12	0.24	0.36	5.9	4	3
GSS-R	09/14/2010	11:07	6.7	22.0	112.8	0.11	0.12	0.31	0.36	17.7	3	3
HLT-C	09/15/2010	13:45	10.9	35.8	104.8	0.24	0.14	0.52	0.32	10.2	2	5
HLT-L	09/15/2010	13:46	4.8	15.7	223.5	0.05	0.14	0.23	0.32	26.9	2	5
HLT-R	09/15/2010	13:47	14.0	45.9	164.7	0.12	0.14	0.21	0.32	15.6	10	5
HOL-C	09/16/2010	11:15	3.2	10.5	41.0	0.18	0.24	1.00	0.61	4.9	12	4
HOL-L	09/16/2010	11:16	8.4	27.6	112.0	0.29	0.24	0.46	0.61	13.2	1	4
HOL-R	09/16/2010	11:17	8.3	27.2	244.3	0.24	0.24	0.37	0.61	7.4	<1	4
HWB-C	09/13/2010	11:15	4.5	14.8	356.0	0.53	0.50	0.84	0.80	44.8	1	1
HWB-L	09/13/2010	11:16	4.8	15.7	294.5	0.55	0.50	0.83	0.80	36.1	1	1
HWB-R	09/13/2010	11:17	4.7	15.4	354.3	0.42	0.50	0.73	0.80	44.5	1	1
LPS-C	09/16/2010	08:40	4.8	15.7	144.5	0.02	0.10	0.13	0.39	16.5	12	14
LPS-L	09/16/2010	08:41	4.0	13.1	123.0	0.03	0.10	0.19	0.39	3.9	13	14
LPS-R	09/16/2010	08:42	7.2	23.6	63.3	0.25	0.10	0.86	0.39	6.4	17	14
MDM-C	09/15/2010	00:00	—	—	100.4	0.04	0.19	0.31	0.65	11.5	3	15

Table 2. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2010, Sacramento–San Joaquin Delta, California.—Continued

[D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; LOI, loss on ignition; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; <, less than; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
MDM-L	09/15/2010	00:01	—	—	14.9	0.24	0.19	1.08	0.65	1.5	40	15
MDM-R	09/15/2010	00:02	—	—	176.6	0.30	0.19	0.55	0.65	21.4	1	15
MOK-C	09/16/2010	12:04	4.3	14.1	33.3	0.06	0.11	0.18	0.23	3.6	5	4
MOK-L	09/16/2010	12:05	1.4	4.6	140.9	0.04	0.11	0.16	0.23	17.5	6	4
MOK-R	09/16/2010	12:06	7.5	24.6	151.5	0.23	0.11	0.35	0.23	17.9	2	4
OBI-C	09/15/2010	13:08	4.4	14.4	106.6	0.32	0.24	0.62	0.55	11.6	1	2
OBI-L	09/15/2010	13:09	11.5	37.7	78.7	0.20	0.24	0.53	0.55	7.8	3	2
OBI-R	09/15/2010	13:10	3.8	12.5	182.3	0.20	0.24	0.49	0.55	21.5	1	2
ORB-C	09/15/2010	00:00	—	—	276.1	0.27	0.39	0.49	0.70	12.4	2	2
ORB-L	09/15/2010	00:01	—	—	83.7	0.32	0.39	0.59	0.70	9.3	3	2
ORB-R	09/15/2010	00:02	—	—	196.7	0.59	0.39	1.02	0.70	21.8	1	2
ORQ-C	09/16/2010	10:41	4.7	15.4	96.9	0.19	0.25	0.33	0.50	11.8	1	1
ORQ-L	09/16/2010	10:42	8.3	27.2	129.7	0.33	0.25	0.66	0.50	13.4	1	1
ORQ-R	09/16/2010	10:43	5.2	17.1	108.9	0.23	0.25	0.50	0.50	12.9	1	1
OSJ-C	09/16/2010	10:50	1.7	5.6	271.7	0.18	0.18	0.38	0.41	8.4	3	7
OSJ-L	09/16/2010	10:51	3.2	10.5	141.4	0.03	0.18	0.30	0.41	16.7	13	7
OSJ-R	09/16/2010	10:52	3.1	10.2	—	0.31	0.18	0.54	0.41	50.3	4	7
PRI-C	09/16/2010	09:44	17.4	57.1	288.8	0.31	0.26	0.60	0.54	32.0	1	1
PRI-L	09/16/2010	09:45	11.8	38.7	237.5	0.25	0.26	0.58	0.54	29.2	1	1
PRI-R	09/16/2010	09:46	10.5	34.4	167.5	0.21	0.26	0.43	0.54	20.7	1	1
RYI-C	09/13/2010	12:10	14.3	46.9	16.1	0.01	0.13	0.07	0.25	5.5	16	12
RYI-L	09/13/2010	12:11	17.1	56.1	293.9	0.37	0.13	0.58	0.25	36.4	1	12
RYI-R	09/13/2010	12:12	8.0	26.2	42.1	0.01	0.13	0.10	0.25	5.2	18	12
SDC-C	09/14/2010	10:32	8.5	27.9	107.4	0.32	0.34	0.53	0.55	23.1	2	2
SDC-L	09/14/2010	10:33	8.5	27.9	234.1	0.31	0.34	0.51	0.55	28.6	2	2
SDC-R	09/14/2010	10:34	8.8	28.9	175.9	0.41	0.34	0.61	0.55	21.3	1	2
SDI-C	09/17/2010	10:40	5.7	18.7	321.3	0.24	0.22	0.37	0.35	39.5	2	2
SDI-L	09/17/2010	10:41	7.2	23.6	223.9	0.23	0.22	0.34	0.35	27.9	2	2
SDI-R	09/17/2010	10:42	8.1	26.6	260.8	0.20	0.22	0.33	0.35	30.8	3	2
SJG-C	09/15/2010	00:00	—	—	222.8	0.25	0.22	0.58	0.69	25.5	2	2
SJG-L	09/15/2010	00:01	—	—	251.7	0.26	0.22	0.93	0.69	31.2	2	2

Table 2. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2010, Sacramento–San Joaquin Delta, California.—Continued

[D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; LOI, loss on ignition; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; <, less than; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
SJG-R	09/15/2010	00:02	—	—	5.5	0.16	0.22	0.56	0.69	2.6	3	2
SJJ-C	09/17/2010	12:05	15.4	50.5	14.5	0.29	0.34	0.53	0.53	3.5	3	2
SJJ-L	09/17/2010	12:06	15.5	50.9	290.6	0.37	0.34	0.58	0.53	35.8	1	2
SJJ-R [2]	09/17/2010	12:07	—	—	—	0.36	0.34	0.48	0.53	—	—	2
SRH-C	09/14/2010	08:40	7.3	24.0	188.2	0.39	0.38	0.59	2.17	23.7	1	2
SRH-L	09/14/2010	08:41	7.6	24.9	11.9	0.10	0.38	4.90	2.17	3.8	4	2
SRH-R	09/14/2010	08:42	7.0	23.0	272.7	0.66	0.38	1.02	2.17	30.8	1	2
SRV-C	09/13/2010	13:10	8.2	26.9	337.3	0.31	0.30	0.50	0.54	42.8	1	2
SRV-L	09/13/2010	13:11	5.5	18.0	159.9	0.18	0.30	0.27	0.54	19.0	2	2
SRV-R	09/13/2010	13:12	9.1	29.9	186.4	0.42	0.30	0.85	0.54	21.3	2	2
SSS-C	09/14/2010	09:52	4.0	13.1	207.2	0.51	0.54	0.76	0.80	24.8	1	1
SSS-L	09/14/2010	09:53	4.3	14.1	276.0	0.66	0.54	1.02	0.80	34.2	1	1
SSS-R	09/14/2010	09:54	4.6	15.1	306.7	0.43	0.54	0.64	0.80	19.0	1	1
SUT-C	09/14/2010	09:18	4.9	16.1	239.3	0.75	0.70	1.11	1.22	29.4	1	2
SUT-L	09/14/2010	09:19	5.5	18.0	212.7	1.09	0.70	1.93	1.22	20.0	2	2
SUT-R	09/14/2010	09:20	4.6	15.1	301.6	0.27	0.70	0.62	1.22	44.1	2	2
TRN-C	09/15/2010	00:00	—	—	182.6	0.12	0.13	0.60	0.44	20.5	8	6
TRN-L	09/15/2010	00:01	—	—	71.5	0.15	0.13	0.38	0.44	14.1	4	6
TRN-R	09/15/2010	00:02	—	—	119.8	0.11	0.13	0.35	0.44	15.8	6	6
TSL-C	09/17/2010	09:35	8.4	27.6	330.2	0.46	0.49	0.75	0.77	41.6	1	1
TSL-L	09/17/2010	09:36	8.5	27.9	269.6	0.45	0.49	0.70	0.77	33.5	1	1
TSL-R	09/17/2010	09:37	7.5	24.6	277.8	0.57	0.49	0.84	0.77	35.0	1	1
UCS-C	09/13/2010	09:35	4.1	13.5	178.5	0.01	0.02	0.05	0.09	13.1	8	8
UCS-L	09/13/2010	09:36	4.4	14.4	143.0	0.03	0.02	0.17	0.09	11.2	8	8
UCS-R	09/13/2010	09:37	6.6	21.7	136.9	0.01	0.02	0.06	0.09	13.8	7	8
VCU-C	09/15/2010	00:00	—	—	81.1	0.05	0.10	0.24	0.31	10.8	14	7
VCU-L	09/15/2010	00:01	—	—	240.0	0.09	0.10	0.40	0.31	28.5	5	7
VCU-R	09/15/2010	00:02	—	—	85.5	0.15	0.10	0.30	0.31	16.3	2	7

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Sample not processed using analyzer; sieve data substituted.

Table 3. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during summer 2011, Sacramento–San Joaquin Delta, California.

[D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; LOI, loss on ignition; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; <, less than]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meter)	Depth (feet)	Sample mass (gram)	D_{50} (millimeter)	Site average D_{50} (millimeter)	D_{90} (millimeter)	Site average D_{90} (millimeter)	LOI subsample mass (gram)	LOI (percent)	Site average LOI (percent)
DSJ-C	05/26/2011	10:43	2.3	7.5	184.5	0.44	0.34	0.71	0.61	23.0	<1	23
DSJ-L	05/26/2011	10:46	2.4	7.9	198.8	0.33	0.34	0.55	0.61	24.6	<1	23
DSJ-R	05/26/2011	10:50	4.6	15.1	56.2	0.24	0.34	0.55	0.61	44.0	68	23
DWC-C	05/24/2011	09:40	11.7	38.4	122.4	0.23	0.10	0.66	0.34	15.3	4	9
DWC-L	05/24/2011	09:36	5.6	18.4	103.4	0.03	0.10	0.22	0.34	12.7	13	9
DWC-R	05/24/2011	09:43	2.7	8.9	150.0	0.02	0.10	0.13	0.34	18.7	10	9
FAL-C	05/26/2011	09:40	6.6	21.7	327.4	0.52	0.61	0.77	3.03	40.7	<1	<1
FAL-L	05/26/2011	09:45	12.0	39.4	173.7	0.88	0.61	7.65	3.03	36.5	<1	<1
FAL-R	05/26/2011	09:50	5.4	17.7	301.0	0.43	0.61	0.66	3.03	37.4	1	<1
FPT-C	05/24/2011	11:59	8.1	26.6	379.9	0.51	0.51	0.87	0.88	47.3	1	1
FPT-L	05/24/2011	12:09	7.6	24.9	314.8	0.52	0.51	0.85	0.88	38.8	1	1
FPT-R	05/24/2011	12:06	8.5	27.9	635.0	0.50	0.51	0.92	0.88	45.8	1	1
GES-C	05/24/2011	14:10	6.6	21.7	334.2	0.33	0.50	0.50	0.83	31.4	1	1
GES-L	05/24/2011	14:07	6.9	22.6	379.0	0.88	0.50	1.52	0.83	34.8	1	1
GES-R	05/24/2011	14:12	6.6	21.7	268.2	0.30	0.50	0.47	0.83	33.6	2	1
GSS-C	05/24/2011	13:53	8.2	26.9	316.9	0.47	0.30	0.71	0.47	19.7	1	1
GSS-L	05/24/2011	13:47	7.0	23.0	167.2	0.14	0.30	0.25	0.47	21.0	2	1
GSS-R	05/24/2011	13:56	8.1	26.6	340.6	0.29	0.30	0.46	0.47	31.9	1	1
HLT-C	05/25/2011	11:10	10.4	34.1	90.2	0.19	0.27	0.32	0.58	11.2	1	2
HLT-L	05/25/2011	11:01	12.2	40.0	156.1	0.35	0.27	0.59	0.58	19.4	1	2
HLT-R	05/25/2011	11:12	5.0	16.4	19.5	0.26	0.27	0.83	0.58	4.9	4	2
HOL-C	05/26/2011	11:38	5.8	19.0	90.9	0.10	0.20	0.25	0.85	9.5	9	17
HOL-L	05/26/2011	11:43	7.7	25.3	12.3	0.23	0.20	0.86	0.85	6.1	9	17
HOL-R	05/26/2011	11:53	6.7	22.0	24.1	0.27	0.20	1.44	0.85	4.5	33	17
HWB-C	05/24/2011	10:11	4.9	16.1	329.8	0.56	0.61	0.86	0.92	41.8	1	1
HWB-L	05/24/2011	10:21	5.3	17.4	345.5	0.61	0.61	0.91	0.92	32.5	1	1
HWB-R	05/24/2011	10:16	5.0	16.4	238.5	0.65	0.61	0.98	0.92	29.8	1	1
LPS-C	05/26/2011	13:25	5.9	19.4	116.5	0.02	0.07	0.14	0.35	13.1	11	11
LPS-L	05/26/2011	13:31	4.0	13.1	109.4	0.06	0.07	0.29	0.35	11.5	10	11
LPS-R	05/26/2011	13:36	8.4	27.6	124.8	0.12	0.07	0.63	0.35	14.3	11	11
MDM-C	05/27/2011	11:52	5.3	17.4	213.3	0.38	0.32	0.70	0.89	26.6	1	8
MDM-L	05/27/2011	11:42	5.8	19.0	185.2	0.38	0.32	0.76	0.89	22.9	1	8

Table 3. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during summer 2011, Sacramento–San Joaquin Delta, California.—Continued

[D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; LOI, loss on ignition; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; <, less than]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meter)	Depth (feet)	Sample mass (gram)	D_{50} (millimeter)	Site average D_{50} (millimeter)	D_{90} (millimeter)	Site average D_{90} (millimeter)	LOI subsample mass (gram)	LOI (percent)	Site average LOI (percent)
MDM-R	05/27/2011	11:48	4.4	14.4	36.4	0.20	0.32	1.20	0.89	9.0	23	8
MOK-C	05/25/2011	08:32	3.8	12.5	64.1	0.10	0.14	0.20	0.24	7.9	3	4
MOK-L	05/25/2011	08:26	1.8	5.9	193.6	0.03	0.14	0.12	0.24	9.0	6	4
MOK-R	05/25/2011	08:36	7.2	23.6	283.5	0.27	0.14	0.39	0.24	17.9	1	4
OBI-C	05/27/2011	13:30	4.9	16.1	105.8	0.17	0.18	0.26	0.35	13.4	2	2
OBI-L	05/27/2011	13:25	3.8	12.5	107.4	0.20	0.18	0.44	0.35	13.5	1	2
OBI-R	05/27/2011	13:40	8.7	28.5	74.6	0.18	0.18	0.35	0.35	9.3	2	2
ORB-C	05/27/2011	12:50	7.5	24.6	98.2	0.09	0.12	0.47	0.51	12.1	5	4
ORB-L	05/27/2011	12:48	3.4	11.2	174.6	0.18	0.12	0.25	0.51	22.1	1	4
ORB-R	05/27/2011	12:58	7.0	23.0	102.5	0.09	0.12	0.81	0.51	12.8	5	4
ORQ-C	05/26/2011	12:13	4.9	16.1	124.2	0.16	0.22	0.27	0.42	15.3	2	2
ORQ-L	05/26/2011	12:19	8.5	27.9	125.6	0.17	0.22	0.34	0.42	15.6	2	2
ORQ-R	05/26/2011	12:24	6.2	20.3	221.3	0.33	0.22	0.64	0.42	20.8	1	2
OSJ-C	05/26/2011	12:43	6.9	22.6	153.8	0.07	0.09	0.22	0.56	16.3	8	14
OSJ-L	05/26/2011	12:53	7.1	23.3	69.6	0.16	0.09	1.28	0.56	7.4	23	14
OSJ-R	05/26/2011	13:02	3.2	10.5	94.4	0.05	0.09	0.17	0.56	10.1	10	14
PRI-C	05/24/2011	09:10	16.6	54.5	173.1	0.44	0.29	0.97	0.66	21.4	1	2
PRI-L	05/24/2011	09:04	11.4	37.4	127.5	0.23	0.29	0.54	0.66	15.9	2	2
PRI-R	05/24/2011	09:12	11.1	36.4	25.6	0.21	0.29	0.47	0.66	6.4	2	2
RYI-C	05/24/2011	08:42	18.6	61.0	19.8	0.02	0.04	0.22	0.24	2.8	6	7
RYI-L	05/24/2011	08:36	16.5	54.1	57.5	0.04	0.04	0.27	0.24	12.3	9	7
RYI-R	05/24/2011	08:47	13.0	42.7	74.4	0.05	0.04	0.22	0.24	15.8	5	7
SDC-C	05/24/2011	13:12	8.8	28.9	354.6	0.35	0.38	0.57	0.60	44.4	1	1
SDC-L	05/24/2011	13:20	8.8	28.9	357.6	0.40	0.38	0.61	0.60	44.6	1	1
SDC-R	05/24/2011	13:15	9.4	30.8	376.6	0.40	0.38	0.62	0.60	47.0	1	1
SDI-C	05/26/2011	08:30	7.3	24.0	256.5	0.23	0.17	0.33	0.32	31.8	1	6
SDI-L	05/26/2011	08:40	4.6	15.1	206.9	0.24	0.17	0.37	0.32	25.9	2	6
SDI-R	05/26/2011	08:50	9.3	30.5	92.4	0.05	0.17	0.26	0.32	11.5	16	6
SJG-C	05/25/2011	09:59	5.0	16.4	321.9	0.40	0.28	0.84	0.58	39.8	1	2
SJG-L	05/25/2011	10:01	4.0	13.1	226.3	0.41	0.28	0.72	0.58	27.9	1	2
SJG-R	05/25/2011	09:54	5.9	19.4	17.7	0.02	0.28	0.17	0.58	4.4	4	2

Table 3. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during summer 2011, Sacramento–San Joaquin Delta, California.—Continued

[D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; LOI, loss on ignition; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; <, less than]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meter)	Depth (feet)	Sample mass (gram)	D_{50} (millimeter)	Site average D_{50} (millimeter)	D_{90} (millimeter)	Site average D_{90} (millimeter)	LOI subsample mass (gram)	LOI (percent)	Site average LOI (percent)
SJJ-C	05/26/2011	10:02	15.0	49.2	139.5	0.53	0.43	15.31	6.78	15.8	1	1
SJJ-L	05/26/2011	10:12	14.1	46.3	205.8	0.41	0.43	4.44	6.78	21.4	1	1
SJJ-R	05/26/2011	10:23	15.2	49.9	29.2	0.36	0.43	0.59	6.78	7.3	1	1
SRH-C	05/24/2011	11:23	8.5	27.9	344.6	0.41	0.58	0.66	0.89	21.4	1	1
SRH-L	05/24/2011	11:30	9.8	32.2	283.4	0.55	0.58	0.83	0.89	17.6	1	1
SRH-R	05/24/2011	11:14	8.2	26.9	371.1	0.79	0.58	1.17	0.89	22.7	1	1
SRV-C	05/24/2011	14:45	7.6	24.9	330.4	0.33	0.36	0.56	0.61	15.4	1	2
SRV-L	05/24/2011	14:48	4.6	15.1	279.2	0.21	0.36	0.31	0.61	17.6	2	2
SRV-R	05/24/2011	14:41	8.8	28.9	208.6	0.53	0.36	0.97	0.61	25.2	2	2
SSS-C	05/24/2011	12:47	4.9	16.1	321.7	0.49	0.56	0.72	0.83	40.2	1	1
SSS-L	05/24/2011	12:45	4.7	15.4	348.3	0.73	0.56	1.13	0.83	43.0	1	1
SSS-R	05/24/2011	12:49	5.0	16.4	333.8	0.45	0.56	0.65	0.83	41.7	1	1
SUT-C	05/24/2011	10:51	6.1	20.0	179.8	0.72	0.34	1.10	0.54	22.2	4	4
SUT-L	05/24/2011	10:48	7.0	23.0	14.8	0.01	0.34	0.03	0.54	3.8	7	4
SUT-R	05/24/2011	10:54	5.9	19.4	250.0	0.30	0.34	0.50	0.54	23.4	2	4
TRN-C	05/27/2011	10:30	7.9	25.9	117.7	0.15	0.14	0.38	0.43	12.6	6	7
TRN-L	05/27/2011	10:26	7.3	24.0	138.0	0.15	0.14	0.62	0.43	29.2	6	7
TRN-R	05/27/2011	10:35	4.1	13.5	29.6	0.11	0.14	0.29	0.43	7.3	8	7
TSL-C	05/26/2011	09:13	6.8	22.3	353.3	0.46	0.45	0.70	0.69	33.1	1	1
TSL-L	05/26/2011	09:18	7.2	23.6	298.5	0.44	0.45	0.69	0.69	28.2	1	1
TSL-R	05/26/2011	09:21	8.5	27.9	300.9	0.46	0.45	0.67	0.69	28.1	1	1
UCS-C	05/24/2011	09:15	4.6	15.1	201.3	0.01	0.02	0.05	0.09	21.3	8	9
UCS-L	05/24/2011	09:07	4.6	15.1	147.2	0.04	0.02	0.18	0.09	15.5	9	9
UCS-R	05/24/2011	09:11	6.7	22.0	144.1	0.01	0.02	0.04	0.09	15.1	10	9
VCU-C	05/25/2011	12:30	3.2	10.5	142.1	0.12	0.17	0.35	0.43	17.7	7	4
VCU-L	05/25/2011	12:24	4.4	14.4	141.4	0.17	0.17	0.50	0.43	17.6	4	4
VCU-R	05/25/2011	12:31	5.2	17.1	183.7	0.22	0.17	0.45	0.43	23.1	2	4

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

Table 4. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2011 and winter 2012, Sacramento–San Joaquin Delta, California.

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
DSJ-C	11/21/2011	11:46	2.7	8.9	158.8	0.32	0.38	0.53	0.62	24.2	0	0
DSJ-L	11/21/2011	11:43	2.7	8.9	235.7	0.46	0.38	0.76	0.62	36.3	0	0
DSJ-R	11/21/2011	11:48	4.8	15.7	141.1	0.34	0.38	0.57	0.62	23.7	1	0
DWC-C	01/24/2012	13:11	11.1	36.4	142.6	0.13	0.06	0.31	0.30	21.1	3	5
DWC-L	01/24/2012	13:17	5.7	18.7	18.2	0.03	0.06	0.47	0.30	12.0	7	5
DWC-R	01/24/2012	13:14	2.0	6.6	116.3	0.03	0.06	0.12	0.30	17.1	6	5
FAL-C	11/21/2011	12:28	9.0	29.5	277.3	0.94	0.73	1.95	1.24	38.7	0	0
FAL-L	11/21/2011	12:24	11.8	38.7	225.2	0.90	0.73	1.25	1.24	34.7	0	0
FAL-R	11/21/2011	12:31	5.7	18.7	229.0	0.36	0.73	0.50	1.24	35.1	1	0
FPT-C	01/24/2012	08:15	7.7	25.3	71.8	3.06	1.16	8.57	3.13	14.7	1	2
FPT-L	01/24/2012	08:22	7.3	24.0	122.9	0.08	1.16	0.25	3.13	18.0	4	2
FPT-R	01/24/2012	08:25	9.6	31.5	5.6	0.35	1.16	0.58	3.13	n/a	n/a	2
GES-C	01/24/2012	11:06	5.7	18.7	111.5	0.30	0.40	0.48	0.77	17.2	1	1
GES-L	01/24/2012	11:09	5.7	18.7	198.2	0.59	0.40	1.36	0.77	30.6	1	1
GES-R	01/24/2012	11:11	6.1	20.0	195.4	0.30	0.40	0.46	0.77	30.3	1	1
GSS-C	01/24/2012	10:54	8.2	26.9	42.5	0.10	0.24	0.43	0.62	14.7	6	3
GSS-L	01/24/2012	10:56	4.4	14.4	133.9	0.10	0.24	0.32	0.62	16.6	4	3
GSS-R	01/24/2012	10:59	7.5	24.6	310.0	0.53	0.24	1.11	0.62	47.0	1	3
HLT-C	01/31/2012	13:31	11.2	36.7	59.4	0.36	0.26	0.90	0.60	11.8	1	2
HLT-L	01/31/2012	13:28	8.7	28.5	118.8	0.31	0.26	0.64	0.60	18.3	1	2
HLT-R	01/31/2012	13:33	5.7	18.7	50.5	0.10	0.26	0.26	0.60	17.7	5	2
HOL-C	01/31/2012	14:04	2.9	9.5	25.7	0.05	0.16	0.24	0.34	8.9	11	5
HOL-L	01/31/2012	14:02	8.3	27.2	127.1	0.24	0.16	0.34	0.34	19.3	1	5
HOL-R	01/31/2012	14:06	9.1	29.9	54.8	0.20	0.16	0.43	0.34	8.5	4	5
HWB-C	01/24/2012	13:41	4.5	14.8	192.8	0.59	0.46	0.94	0.83	30.2	1	2
HWB-L	01/24/2012	13:44	4.9	16.1	257.5	0.66	0.46	1.02	0.83	39.4	1	2
HWB-R	01/24/2012	13:45	3.0	9.8	147.8	0.12	0.46	0.52	0.83	21.9	4	2
LPS-C	10/31/2011	10:37	8.1	26.6	96.3	0.03	0.04	0.20	0.23	14.9	11	10
LPS-L	10/31/2011	10:43	5.6	18.4	77.5	0.03	0.04	0.23	0.23	11.4	10	10
LPS-R	10/31/2011	10:46	5.3	17.4	104.5	0.06	0.04	0.25	0.23	15.5	8	10
MAL-C	12/02/2011	00:00	—	—	272.0	0.40	0.44	0.67	3.14	40.3	1	1
MAL-L	12/02/2011	00:01	—	—	50.4	0.45	0.44	7.93	3.14	12.6	2	1
MAL-R	12/02/2011	00:02	—	—	208.4	0.48	0.44	0.82	3.14	31.9	1	1

Table 4. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2011 and winter 2012, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
MDM-C	11/17/2011	10:20	5.2	17.1	83.3	0.40	0.20	0.81	0.50	16.4	1	4
MDM-L	11/17/2011	09:11	5.4	17.7	95.8	0.08	0.20	0.44	0.50	14.1	3	4
MDM-R	11/17/2011	10:26	3.8	12.5	96.3	0.12	0.20	0.25	0.50	14.1	7	4
MOK-C	10/31/2011	11:10	4.3	14.1	25.1	0.14	0.17	0.23	0.29	9.5	4	3
MOK-L	10/31/2011	11:18	3.7	12.1	155.5	0.06	0.17	0.16	0.29	22.8	5	3
MOK-R	10/31/2011	11:14	6.3	20.7	91.3	0.31	0.17	0.46	0.29	14.0	2	3
NMR-C	10/31/2011	09:01	8.2	26.9	6.6	0.02	0.02	0.22	0.22	n/a	n/a	n/a
NMR-L	10/31/2011	09:08	—	—	—	n/a	0.02	n/a	0.22	n/a	n/a	n/a
NMR-R	10/31/2011	09:12	2.3	7.5	—	n/a	0.02	n/a	0.22	n/a	n/a	n/a
OBI-C	11/16/2011	14:59	5.9	19.4	97.6	0.17	0.17	0.35	0.38	24.5	2	3
OBI-L	11/16/2011	15:02	11.7	38.4	130.2	0.19	0.17	0.44	0.38	19.1	4	3
OBI-R	11/16/2011	14:56	3.7	12.1	197.1	0.15	0.17	0.35	0.38	24.5	2	3
ORB-C	11/16/2011	14:35	6.5	21.3	162.9	0.51	0.42	0.87	0.69	25.0	1	1
ORB-L	11/16/2011	14:32	4.2	13.8	225.9	0.21	0.42	0.29	0.69	34.7	1	1
ORB-R	11/16/2011	14:31	6.5	21.3	64.7	0.54	0.42	0.91	0.69	16.2	1	1
ORQ-C	01/31/2012	13:47	9.1	29.9	71.1	0.08	0.23	0.36	0.48	17.7	4	2
ORQ-L	01/31/2012	13:49	6.5	21.3	101.0	0.38	0.23	0.68	0.48	25.4	1	2
ORQ-R	01/31/2012	13:45	8.1	26.6	152.9	0.23	0.23	0.41	0.48	19.0	1	2
OSJ-C	11/16/2011	15:20	3.7	12.1	189.4	0.08	0.10	0.32	0.58	23.9	5	18
OSJ-L	11/16/2011	15:28	7.1	23.3	41.4	0.20	0.10	1.30	0.58	10.2	31	18
OSJ-R	11/16/2011	15:32	3.8	12.5	3.3	0.02	0.10	0.12	0.58	n/a	n/a	18
PRI-C	01/31/2012	09:11	8.1	26.6	120.6	0.04	0.23	0.27	0.84	14.9	3	10
PRI-L	01/31/2012	09:08	12.6	41.3	89.6	0.21	0.23	0.60	0.84	11.2	2	10
PRI-R	01/31/2012	09:15	8.0	26.2	53.2	0.43	0.23	1.66	0.84	6.6	24	10
RYI-C	01/24/2012	12:15	17.1	56.1	26.9	0.01	0.12	0.20	0.30	6.7	7	5
RYI-L	01/24/2012	12:20	16.1	52.8	224.7	0.27	0.12	0.40	0.30	27.9	2	5
RYI-R	01/24/2012	12:27	10.9	35.8	49.6	0.08	0.12	0.32	0.30	12.4	5	5
SDC-C	01/24/2012	10:30	8.9	29.2	232.0	0.37	0.36	0.58	0.57	28.9	1	1
SDC-L	01/24/2012	10:32	8.4	27.6	103.2	0.34	0.36	0.55	0.57	25.8	2	1
SDC-R	01/24/2012	10:38	8.6	28.2	238.3	0.38	0.36	0.57	0.57	29.7	1	1
SDI-C	11/21/2011	11:11	6.8	22.3	177.5	0.21	0.23	0.30	0.33	22.3	2	1
SDI-L	11/21/2011	11:01	6.6	21.7	182.0	0.22	0.23	0.33	0.33	23.1	2	1
SDI-R	11/21/2011	11:15	8.1	26.6	237.7	0.25	0.23	0.35	0.33	30.1	1	1
SJG-C	11/17/2011	11:19	5.0	16.4	95.2	0.32	0.43	0.61	0.77	11.8	2	1

Table 4. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2011 and winter 2012, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
SJG-L	11/17/2011	11:23	4.3	14.1	295.7	0.54	0.43	0.96	0.77	36.6	1	1
SJG-R	11/17/2011	11:26	7.1	23.3	174.7	0.44	0.43	0.75	0.77	22.0	1	1
SJJ-C	11/21/2011	12:02	14.2	46.6	159.4	0.43	0.36	0.69	0.62	19.9	3	2
SJJ-L	11/21/2011	12:05	15.3	50.2	124.7	0.36	0.36	0.65	0.62	15.5	1	2
SJJ-R	11/21/2011	12:14	12.3	40.4	251.2	0.29	0.36	0.53	0.62	31.5	2	2
SMR-C	10/31/2011	09:50	3.2	10.5	284.3	0.56	0.49	0.97	0.93	35.1	1	2
SMR-L	10/31/2011	09:55	4.4	14.4	203.5	0.75	0.49	1.22	0.93	25.3	1	2
SMR-R	10/31/2011	09:58	2.0	6.6	227.4	0.16	0.49	0.59	0.93	28.6	4	2
SRH-C	01/24/2012	08:55	8.2	26.9	284.9	0.51	0.53	0.86	0.82	35.8	1	1
SRH-L	01/24/2012	08:57	9.2	30.2	240.7	0.33	0.53	0.48	0.82	30.4	1	1
SRH-R	01/24/2012	09:03	7.7	25.3	333.4	0.75	0.53	1.11	0.82	41.5	1	1
SRV-C	01/24/2012	11:53	6.0	19.7	145.7	0.25	0.33	0.56	0.62	18.2	2	2
SRV-L	01/24/2012	11:50	11.9	39.0	61.6	0.43	0.33	0.68	0.62	15.2	1	2
SRV-R	01/24/2012	11:57	6.4	21.0	148.6	0.32	0.33	0.60	0.62	18.7	1	2
SSS-C	01/24/2012	09:56	5.0	16.4	287.2	0.50	0.54	0.72	0.81	36.1	1	1
SSS-L	01/24/2012	09:58	4.0	13.1	314.5	0.69	0.54	1.05	0.81	39.6	1	1
SSS-R	01/24/2012	10:02	5.0	16.4	224.0	0.44	0.54	0.65	0.81	28.0	1	1
SUT-C	01/24/2012	09:25	6.1	20.0	337.9	0.72	0.28	1.07	0.57	42.3	1	7
SUT-L	01/24/2012	09:29	6.8	22.3	13.0	0.01	0.28	0.41	0.57	4.9	16	7
SUT-R	01/24/2012	09:33	4.8	15.7	151.8	0.11	0.28	0.23	0.57	19.0	5	7
TRN-C	11/17/2011	12:01	7.5	24.6	57.3	0.12	0.11	0.47	0.37	7.2	6	7
TRN-L	11/17/2011	11:57	7.6	24.9	72.2	0.11	0.11	0.31	0.37	9.0	8	7
TRN-R	11/17/2011	12:04	3.1	10.2	172.4	0.11	0.11	0.31	0.37	21.7	7	7
TSL-C	11/21/2011	10:47	8.5	27.9	223.7	0.38	0.48	0.69	0.80	28.0	2	1
TSL-L	11/21/2011	10:05	7.8	25.6	332.0	0.53	0.48	0.95	0.80	41.3	1	1
TSL-R	11/21/2011	10:43	8.6	28.2	307.0	0.51	0.48	0.76	0.80	38.4	1	1
UCS-C	01/24/2012	12:43	4.6	15.1	112.9	0.02	0.02	0.08	0.08	16.7	6	8
UCS-L	01/24/2012	12:47	3.4	11.2	103.1	0.02	0.02	0.09	0.08	15.7	8	8
UCS-R	01/24/2012	12:51	6.3	20.7	89.8	0.01	0.02	0.09	0.08	13.4	9	8
VCU-C	11/16/2011	14:12	1.9	6.2	50.7	0.05	0.08	0.17	0.29	6.2	14	10
VCU-L	11/16/2011	14:14	4.0	13.1	189.3	0.15	0.08	0.53	0.29	23.6	3	10
VCU-R	11/16/2011	14:10	4.9	16.1	145.2	0.04	0.08	0.17	0.29	18.1	12	10

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

Table 5. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2012, Sacramento–San Joaquin Delta, California.

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
DSJ-C	10/23/2012	09:32	4.3	14.1	327.2	0.51	0.39	0.83	0.78	41.3	0	1
DSJ-L	10/23/2012	09:30	3.8	12.5	181.0	0.37	0.39	0.78	0.78	21.3	1	1
DSJ-R	10/23/2012	09:34	4.7	15.4	153.1	0.30	0.39	0.72	0.78	19.2	2	1
DWC-C	10/23/2012	12:56	6.8	22.3	30.7	0.01	0.04	0.04	0.27	3.8	7	9
DWC-L	10/23/2012	12:51	5.0	16.4	73.6	0.01	0.04	0.03	0.27	9.2	10	9
DWC-R	10/23/2012	12:54	11.8	38.7	18.6	0.12	0.04	0.72	0.27	2.3	10	9
FAL-C	10/23/2012	10:17	7.7	25.3	300.4	0.46	0.59	0.66	3.26	18.6	0	0
FAL-L	10/23/2012	10:15	12.7	41.7	219.6	0.88	0.59	8.11	3.26	18.6	0	0
FAL-R	10/23/2012	10:20	5.5	18.0	311.2	0.44	0.59	1.01	3.26	19.3	0	0
FPT-C	10/25/2012	08:04	6.8	22.3	127.2	0.45	0.42	0.86	0.82	16.2	1	1
FPT-L	10/25/2012	08:01	5.4	17.7	80.8	0.44	0.42	1.03	0.82	10.0	2	1
FPT-R	10/25/2012	08:06	7.9	25.9	90.5	0.37	0.42	0.57	0.82	11.2	1	1
GES-C	10/25/2012	11:41	6.0	19.7	85.9	0.38	0.36	0.56	0.54	10.8	1	1
GES-L	10/25/2012	11:37	5.5	18.0	107.2	0.43	0.36	0.63	0.54	13.3	1	1
GES-R	10/25/2012	11:42	6.0	19.7	70.6	0.27	0.36	0.42	0.54	8.9	2	1
GSS-C	10/25/2012	11:52	8.5	27.9	134.6	0.10	0.10	0.24	0.26	6.3	1	1
GSS-L	10/25/2012	11:49	2.8	9.2	132.3	0.09	0.10	0.20	0.26	16.9	1	1
GSS-R	10/25/2012	11:55	7.4	24.3	57.0	0.11	0.10	0.33	0.26	7.2	2	1
HLT-C	10/31/2012	10:55	13.9	45.6	87.3	0.42	0.20	0.68	0.42	10.8	0	5
HLT-L	10/31/2012	10:56	3.9	12.8	87.8	0.05	0.20	0.18	0.42	5.4	9	5
HLT-R	10/31/2012	10:51	13.8	45.3	104.1	0.14	0.20	0.39	0.42	9.6	6	5
HOL-C	10/31/2012	13:44	6.5	21.3	48.7	0.22	0.25	1.17	0.86	5.9	14	6
HOL-L	10/31/2012	13:42	7.8	25.6	120.8	0.27	0.25	0.77	0.86	15.0	3	6
HOL-R	10/31/2012	13:46	6.8	22.3	16.2	0.28	0.25	0.64	0.86	1.9	2	6
HWB-C	10/25/2012	09:18	5.4	17.7	111.6	0.52	0.29	1.11	2.36	13.9	2	3
HWB-L	10/25/2012	09:16	5.2	17.1	20.2	0.31	0.29	5.77	2.36	1.9	4	3
HWB-R	10/25/2012	09:21	3.4	11.2	51.3	0.04	0.29	0.21	2.36	6.4	5	3
LIB-L	10/23/2012	12:40	4.7	15.4	24.2	0.19	0.10	1.54	0.87	5.3	18	17
LIB-C	10/23/2012	12:38	3.5	11.5	26.8	0.03	0.10	0.47	0.87	6.5	11	17
LIB-R	10/23/2012	12:43	5.6	18.4	18.6	0.09	0.10	0.58	0.87	4.6	21	17
LIN-C	11/02/2012	09:34	6.5	21.3	105.5	0.01	0.02	0.07	0.09	4.3	9	9
LIN-L	11/02/2012	09:38	5.6	18.4	126.7	0.03	0.02	0.11	0.09	5.1	9	9
LIN-R	11/02/2012	09:41	7.5	24.6	124.0	0.02	0.02	0.09	0.09	3.9	9	9
LIW [2]	10/23/2012	12:27	3.5	11.5	86.7	0.02	0.02	0.10	0.10	13.3	8	8
LPS-C	10/23/2012	12:25	5.3	17.4	85.9	0.04	0.07	0.17	0.35	15.9	8	8
LPS-L	10/23/2012	12:30	4.9	16.1	107.2	0.06	0.07	0.29	0.35	15.4	9	8
LPS-R	10/23/2012	12:34	2.2	7.2	70.6	0.09	0.07	0.58	0.35	10.8	8	8

Table 5. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2012, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
MAL-C	10/23/2012	08:59	13.8	45.3	273.8	0.49	0.39	3.73	1.61	25.1	1	1
MAL-L	10/23/2012	09:02	17.8	58.4	202.1	0.37	0.39	0.58	1.61	25.1	1	1
MAL-R	10/23/2012	08:56	11.6	38.1	234.8	0.32	0.39	0.53	1.61	29.0	2	1
MDM-C	10/31/2012	11:11	5.2	17.1	42.2	0.36	0.29	0.70	0.71	5.3	1	7
MDM-L	10/31/2012	11:13	3.5	11.5	34.8	0.12	0.29	0.48	0.71	3.2	18	7
MDM-R	10/31/2012	11:09	5.1	16.7	47.7	0.39	0.29	0.94	0.71	5.7	2	7
MOK-C	11/02/2012	08:54	4.9	16.1	22.2	0.16	0.16	0.25	0.27	2.7	3	4
MOK-L	11/02/2012	09:04	3.7	12.1	94.7	0.03	0.16	0.12	0.27	6.0	8	4
MOK-R	11/02/2012	09:00	7.2	23.6	37.0	0.28	0.16	0.43	0.27	4.6	2	4
NMR-C	10/25/2012	11:08	9.2	30.2	27.4	0.08	0.06	0.76	0.44	3.4	16	10
NMR-L	10/25/2012	11:11	5.0	16.4	4.3	0.04	0.06	0.23	0.44	1.1	7	10
NMR-R	10/25/2012	11:05	6.5	21.3	1.6	0.08	0.06	0.32	0.44	0.4	7	10
OBI-C	10/31/2012	12:43	3.4	11.2	30.2	0.21	0.20	0.47	0.48	3.8	1	2
OBI-L	10/31/2012	12:48	11.8	38.7	72.5	0.17	0.20	0.32	0.48	9.0	2	2
OBI-R	10/31/2012	12:45	2.9	9.5	48.4	0.22	0.20	0.66	0.48	6.1	4	2
ORB-C	10/31/2012	12:22	6.3	20.7	128.9	0.12	0.16	0.42	0.46	22.6	1	3
ORB-L	10/31/2012	12:24	5.0	16.4	194.9	0.28	0.16	0.63	0.46	6.0	3	3
ORB-R	10/31/2012	12:20	6.0	19.7	58.7	0.08	0.16	0.33	0.46	5.5	5	3
ORQ-C	10/31/2012	13:58	5.3	17.4	26.5	0.23	0.23	0.43	0.44	3.3	2	3
ORQ-L	10/31/2012	14:00	8.0	26.2	144.9	0.13	0.23	0.25	0.44	18.1	5	3
ORQ-R	10/31/2012	13:56	6.0	19.7	119.9	0.33	0.23	0.64	0.44	15.2	1	3
OSJ-C	10/31/2012	14:10	4.8	15.7	95.7	0.02	0.04	0.11	0.18	11.9	9	10
OSJ-L	10/31/2012	14:12	5.2	17.1	68.4	0.05	0.04	0.29	0.18	8.5	12	10
OSJ-R	10/31/2012	14:08	5.5	18.0	75.8	0.03	0.04	0.15	0.18	9.4	10	10
PRI-C	10/24/2012	08:51	11.5	37.7	153.6	0.26	0.24	0.49	0.51	19.2	1	2
PRI-L	10/24/2012	08:48	4.2	13.8	61.0	0.17	0.24	0.32	0.51	7.7	3	2
PRI-R	10/24/2012	08:57	16.9	55.4	60.7	0.30	0.24	0.72	0.51	7.4	1	2
RYI-C	10/23/2012	11:35	15.6	51.2	18.5	0.02	0.12	0.16	0.32	2.3	8	5
RYI-L	10/23/2012	11:39	17.2	56.4	254.8	0.32	0.12	0.48	0.32	15.9	1	5
RYI-R	10/23/2012	11:31	13.0	42.7	32.1	0.03	0.12	0.33	0.32	4.0	6	5
SDC-C	10/25/2012	10:16	8.5	27.9	75.3	0.29	0.28	0.51	0.48	9.3	2	2
SDC-L	10/25/2012	10:20	8.1	26.6	200.2	0.13	0.28	0.30	0.48	24.9	4	2
SDC-R	10/25/2012	10:13	8.7	28.5	172.5	0.41	0.28	0.62	0.48	21.6	1	2
SDI-C	10/23/2012	08:25	6.3	20.7	295.1	0.27	0.29	0.39	0.42	36.6	1	1
SDI-L	10/23/2012	08:32	5.9	19.4	232.0	0.28	0.29	0.41	0.42	29.0	1	1
SDI-R	10/23/2012	08:29	10.9	35.8	306.8	0.32	0.29	0.46	0.42	19.4	1	1
SJG-C	10/24/2012	09:34	4.5	14.8	40.5	0.36	0.28	0.73	0.58	5.1	1	2

Table 5. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2012, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; PST, Pacific Standard Time; —, missing data]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
SJG-L	10/24/2012	09:32	3.4	11.2	174.0	0.47	0.28	0.86	0.58	21.9	1	2
SJG-R	10/24/2012	09:36	5.9	19.4	6.9	0.02	0.28	0.16	0.58	0.9	5	2
SJJ-C	10/23/2012	09:57	15.3	50.2	145.7	2.17	0.96	9.13	4.97	9.0	2	1
SJJ-L	10/23/2012	09:55	13.5	44.3	185.2	0.40	0.96	5.33	4.97	19.8	1	1
SJJ-R	10/23/2012	10:02	15.6	51.2	240.2	0.30	0.96	0.46	4.97	30.1	2	1
SMR-C	10/25/2012	10:41	3.3	10.8	113.7	0.50	0.32	0.83	0.96	14.2	2	2
SMR-L	10/25/2012	10:39	3.4	11.2	23.1	0.28	0.32	1.63	0.96	2.8	2	2
SMR-R	10/25/2012	10:43	2.5	8.2	156.0	0.18	0.32	0.41	0.96	19.3	3	2
SRH-C	10/25/2012	08:34	7.7	25.3	168.1	0.36	0.40	0.56	0.80	21.1	1	2
SRH-L	10/25/2012	08:30	8.7	28.5	62.5	0.15	0.40	0.36	0.80	7.9	3	2
SRH-R	10/25/2012	08:37	6.8	22.3	48.0	0.71	0.40	1.49	0.80	5.7	2	2
SRV-C	10/23/2012	11:15	8.1	26.6	123.5	0.26	0.30	0.48	0.50	15.6	2	2
SRV-L	10/23/2012	11:18	7.2	23.6	190.9	0.21	0.30	0.35	0.50	12.0	2	2
SRV-R	10/23/2012	11:12	13.2	43.3	72.6	0.41	0.30	0.67	0.50	8.9	1	2
SSS-C	10/25/2012	09:48	4.1	13.5	155.7	0.56	0.41	0.83	0.63	19.5	1	2
SSS-L	10/25/2012	09:45	3.8	12.5	223.4	0.58	0.41	0.85	0.63	27.7	1	2
SSS-R	10/25/2012	09:49	5.7	18.7	179.9	0.09	0.41	0.21	0.63	22.7	4	2
SUT-C	10/25/2012	08:57	4.9	16.1	143.4	0.72	0.32	1.08	0.84	17.9	1	3
SUT-L	10/25/2012	08:59	4.5	14.8	3.3	0.09	0.32	0.76	0.84	0.8	6	3
SUT-R	10/25/2012	08:55	5.4	17.7	137.8	0.16	0.32	0.67	0.84	17.1	2	3
TRN-C	10/24/2012	09:59	7.5	24.6	94.4	0.16	0.10	0.36	0.32	11.9	4	8
TRN-L	10/24/2012	09:58	4.2	13.8	72.8	0.03	0.10	0.17	0.32	9.3	11	8
TRN-R	10/24/2012	10:25	7.4	24.3	66.8	0.12	0.10	0.43	0.32	8.4	8	8
TSL-C	10/23/2012	10:36	8.0	26.2	276.1	0.44	0.43	0.68	0.67	34.3	1	1
TSL-L	10/23/2012	10:31	8.3	27.2	146.7	0.45	0.43	0.70	0.67	18.5	1	1
TSL-R	10/23/2012	10:39	—	—	94.2	0.42	0.43	0.64	0.67	11.8	1	1
UCS-C	10/23/2012	12:00	2.3	7.5	190.9	0.02	0.01	0.08	0.06	23.9	6	3
UCS-L	10/23/2012	11:56	2.2	7.2	150.4	0.01	0.01	0.06	0.06	18.6	2	3
UCS-R	10/23/2012	11:58	2.5	8.2	174.7	0.01	0.01	0.05	0.06	21.8	3	3
ULC-C	10/23/2012	12:13	5.1	16.7	77.3	0.04	0.26	0.29	0.53	9.6	8	8
ULC-L	10/23/2012	12:15	4.4	14.4	85.5	0.32	0.26	0.55	0.53	10.2	8	8
ULC-R	10/23/2012	12:11	4.2	13.8	50.3	0.41	0.26	0.75	0.53	6.3	8	8
VCU-C	10/31/2012	12:06	3.0	9.8	59.9	0.06	0.07	0.20	0.22	7.6	11	10
VCU-L	10/31/2012	12:09	3.8	12.5	104.0	0.08	0.07	0.23	0.22	4.8	8	10
VCU-R	10/31/2012	12:04	3.1	10.2	50.1	0.07	0.07	0.23	0.22	6.4	11	10

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Site is in open water and therefore does not have a channel location.

Table 6. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time; >, greater than]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
DSJ-C	01/29/2013	10:34	13.6	44.6	204.6	0.43	0.49	0.74	0.79	25.6	0	0
DSJ-L	01/29/2013	10:30	11.1	36.4	361.8	0.56	0.49	0.90	0.79	45.7	0	0
DSJ-R	01/29/2013	10:27	13.2	43.3	316.9	0.47	0.49	0.74	0.79	39.8	0	0
DWC-1 [2]	01/29/2013	12:41	3.8	12.5	74.9	0.09	0.07	0.34	0.28	9.3	12	7
DWC-2 [2]	01/29/2013	12:44	35.7	117.1	58.0	0.12	0.07	0.57	0.28	13.6	4	7
DWC-3 [2]	01/29/2013	12:48	17.9	58.7	20.0	0.01	0.07	0.05	0.28	7.5	7	7
DWC-4 [2]	01/29/2013	12:51	4.2	13.8	179.8	0.03	0.07	0.10	0.28	11.2	8	7
DWC-C	01/29/2013	12:34	36	118.1	74.9	0.18	0.07	0.44	0.28	9.4	4	7
DWC-L	01/29/2013	12:29	16.7	54.8	132.7	0.03	0.07	0.30	0.28	16.7	12	7
DWC-R	01/29/2013	12:37	35	114.8	167.5	0.03	0.07	0.13	0.28	21.0	6	7
FAL-C	01/29/2013	11:15	30.6	100.4	284.3	0.58	0.61	0.85	0.93	36.1	0	>1
FAL-L	01/29/2013	11:11	38.8	127.3	387.3	0.79	0.61	1.25	0.93	47.0	0	>1
FAL-R	01/29/2013	11:18	28.5	93.5	301.4	0.46	0.61	0.67	0.93	37.2	1	>1
FPT-C	01/31/2013	08:16	24.2	79.4	263.7	0.42	0.38	0.68	0.76	32.5	1	1
FPT-L	01/31/2013	08:19	23.1	75.8	86.7	0.40	0.38	1.11	0.76	10.4	1	1
FPT-R	01/31/2013	08:13	27.1	88.9	245.8	0.33	0.38	0.51	0.76	30.5	1	1
GES-C	01/31/2013	11:44	19.4	63.6	297.1	0.35	0.36	0.52	0.56	47.5	22	8
GES-L	01/31/2013	11:46	19.6	64.3	150.4	0.49	0.36	0.80	0.56	18.0	1	8
GES-R	01/31/2013	11:47	20	65.6	225.0	0.23	0.36	0.37	0.56	28.4	2	8
GSS-C	01/31/2013	11:31	29.3	96.1	69.3	0.46	0.20	2.65	1.06	15.3	1	3
GSS-L	01/31/2013	11:33	16.9	55.4	21.8	0.01	0.20	0.21	1.06	5.4	5	3
GSS-R	01/31/2013	11:35	25.2	82.7	177.6	0.14	0.20	0.32	1.06	22.3	3	3
HLT-C	01/30/2013	09:56	31.7	104.0	122.3	0.29	0.27	0.65	0.52	15.5	1	1
HLT-L	01/30/2013	09:58	18.6	61.0	116.6	0.36	0.27	0.55	0.52	14.4	1	1
HLT-R	01/30/2013	10:00	38.3	125.7	51.4	0.17	0.27	0.37	0.52	12.8	2	1
HOL-C	01/30/2013	11:38	8.5	27.9	89.4	0.14	0.23	0.39	0.64	11.2	8	6
HOL-L	01/30/2013	11:41	28.3	92.8	46.4	0.17	0.23	0.68	0.64	5.8	9	6
HOL-R	01/30/2013	11:36	24	78.7	97.5	0.38	0.23	0.83	0.64	11.7	1	6
HWB-C	01/31/2013	09:58	19.6	64.3	91.5	0.68	0.43	1.61	0.88	21.8	2	2
HWB-L	01/31/2013	10:00	19.5	64.0	330.5	0.47	0.43	0.79	0.88	41.1	1	2
HWB-R	01/31/2013	10:04	13.3	43.6	95.6	0.13	0.43	0.25	0.88	24.1	3	2
LIB-C	01/29/2013	13:03	14.8	48.6	5.7	0.01	0.06	0.15	0.40	1.4	13	20
LIB-L	01/29/2013	13:01	8.4	27.6	5.5	0.03	0.06	0.20	0.40	2.0	15	20
LIB-R	01/29/2013	13:06	18.8	61.7	11.5	0.14	0.06	0.86	0.40	2.9	33	20

Table 6. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
LPS-1 [2]	02/01/2013	10:30	7.6	24.9	77.3	0.02	0.04	0.13	0.23	9.8	12	11
LPS-2 [2]	02/01/2013	10:34	19.8	65.0	78.1	0.07	0.04	0.48	0.23	9.8	16	11
LPS-3 [2]	02/01/2013	10:39	26.8	87.9	163.8	0.05	0.04	0.25	0.23	20.4	9	11
LPS-4 [2]	02/01/2013	10:43	26	85.3	53.0	0.04	0.04	0.16	0.23	5.0	7	11
LPS-C	02/01/2013	10:37	26.8	87.9	112.3	0.04	0.04	0.22	0.23	14.2	10	11
LPS-L	02/01/2013	10:32	13.2	43.3	122.3	0.02	0.04	0.15	0.23	15.3	12	11
LPS-R	02/01/2013	10:41	26.4	86.6	69.3	0.03	0.04	0.18	0.23	7.6	12	11
MAL-C	01/29/2013	09:51	42.1	138.1	n/a	n/a	0.42	n/a	0.72	n/a	n/a	1
MAL-L	01/29/2013	09:56	53.9	176.8	182.7	0.40	0.42	0.79	0.72	22.1	1	1
MAL-R	01/29/2013	09:45	35.9	117.8	312.8	0.43	0.42	0.65	0.72	39.0	1	1
MDM-1 [2]	01/30/2013	10:18	17.4	57.1	28.2	0.13	0.22	0.34	0.50	7.1	5	3
MDM-2 [2]	01/30/2013	10:20	19.1	62.7	31.0	0.18	0.22	0.62	0.50	7.7	3	3
MDM-3 [2]	01/30/2013	10:22	24.7	81.0	29.8	0.22	0.22	0.45	0.50	7.4	2	3
MDM-4 [2]	01/30/2013	10:25	26.2	86.0	36.3	0.25	0.22	0.65	0.50	9.0	2	3
MDM-C	01/30/2013	10:15	18.1	59.4	95.3	0.22	0.22	0.41	0.50	11.8	2	3
MDM-L	01/30/2013	10:19	27.8	91.2	35.8	0.13	0.22	0.28	0.50	9.0	5	3
MDM-R	01/30/2013	10:17	17.9	58.7	82.5	0.40	0.22	0.77	0.50	20.6	1	3
MOK-1 [2]	01/30/2013	12:23	8.4	27.6	173.2	0.04	0.16	0.14	0.29	21.8	6	4
MOK-2 [2]	01/30/2013	12:28	13.4	44.0	13.4	0.12	0.16	0.23	0.29	3.3	5	4
MOK-3 [2]	01/30/2013	12:31	19.6	64.3	120.8	0.20	0.16	0.30	0.29	15.1	3	4
MOK-4 [2]	01/30/2013	12:35	28.8	94.5	106.9	0.30	0.16	0.54	0.29	13.4	2	4
MOK-C	01/30/2013	12:29	15.8	51.8	74.6	0.18	0.16	0.28	0.29	9.4	2	4
MOK-L	01/30/2013	12:26	8.5	27.9	199.5	0.05	0.16	0.14	0.29	24.7	6	4
MOK-R	01/30/2013	12:33	22.99	75.4	189.2	0.25	0.16	0.37	0.29	23.6	2	4
NMR-C	02/01/2013	09:22	19	62.3	4.8	0.08	0.06	0.26	0.22	1.9	4	4
NMR-L	02/01/2013	09:25	25.9	85.0	2.4	0.04	0.06	0.18	0.22	n/a	n/a	4
NMR-R	02/01/2013	09:18	18.5	60.7	n/a	n/a	0.06	n/a	0.22	n/a	n/a	4
NMR2-C [2]	02/01/2013	09:33	29.1	95.5	122.6	0.04	0.05	0.21	3.47	15.3	6	7
NMR2-L [2]	02/01/2013	09:30	30.1	98.8	13.2	0.12	0.05	10.18	3.47	3.8	4	7
NMR2-R [2]	02/01/2013	09:35	20.5	67.3	39.8	0.01	0.05	0.03	3.47	9.8	10	7
OBI-C	01/30/2013	11:22	13.4	44.0	72.9	0.22	0.20	0.42	0.37	9.0	2	2
OBI-L	01/30/2013	11:24	11.2	36.7	32.6	0.17	0.20	0.32	0.37	12.3	2	2
OBI-R	01/30/2013	11:19	39.2	128.6	0.6	n/a	0.20	n/a	0.37	n/a	n/a	2

Table 6. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
ORB-C	01/30/2013	11:01	20.5	67.3	249.0	0.47	0.26	0.77	0.63	31.1	1	2
ORB-L	01/30/2013	10:58	24.7	81.0	168.8	0.24	0.26	0.41	0.63	21.1	1	2
ORB-R	01/30/2013	11:03	16.9	55.4	110.8	0.06	0.26	0.71	0.63	12.6	4	2
ORQ-C	01/30/2013	11:53	19.1	62.7	15.9	0.54	0.31	1.82	0.96	3.7	17	7
ORQ-L	01/30/2013	11:55	19.3	63.3	68.6	0.20	0.31	0.49	0.96	17.1	1	7
ORQ-R	01/30/2013	11:51	28.3	92.8	62.2	0.19	0.31	0.56	0.96	7.7	3	7
OSJ-C	01/30/2013	12:05	14.5	47.6	94.2	0.05	0.04	0.22	0.16	11.9	7	9
OSJ-L	01/30/2013	12:09	12.3	40.4	99.6	0.03	0.04	0.12	0.16	12.6	10	9
OSJ-R	01/30/2013	12:04	10.2	33.5	93.8	0.03	0.04	0.14	0.16	11.6	11	9
PRI-C	01/30/2013	08:30	21.8	71.5	92.3	0.13	0.15	0.29	0.44	9.0	3	4
PRI-L	01/30/2013	08:36	44.4	145.7	90.7	0.18	0.15	0.41	0.44	11.2	3	4
PRI-R	01/30/2013	08:33	14.1	46.3	216.1	0.12	0.15	0.61	0.44	27.0	5	4
RYI-1 [2]	01/29/2013	13:36	45.9	150.6	33.1	0.21	0.08	0.36	0.20	8.0	3	7
RYI-2 [2]	01/29/2013	13:40	55	180.4	5.4	0.01	0.08	0.03	0.20	1.9	7	7
RYI-3 [2]	01/29/2013	13:44	44.1	144.7	15.5	0.03	0.08	0.21	0.20	5.8	10	7
RYI-4 [2]	01/29/2013	13:47	17.5	57.4	57.1	0.02	0.08	0.11	0.20	7.0	8	7
RYI-C	01/29/2013	12:16	52.7	172.9	5.2	0.02	0.08	0.16	0.20	1.9	10	7
RYI-L	01/29/2013	12:19	48.2	158.1	137.4	0.24	0.08	0.42	0.20	17.3	4	7
RYI-R	01/29/2013	12:12	41.5	136.2	68.7	0.01	0.08	0.13	0.20	8.5	6	7
SDC-C	01/31/2013	10:52	28.3	92.8	216.0	0.35	0.35	0.54	0.54	27.1	1	1
SDC-L	01/31/2013	10:54	27.4	89.9	315.6	0.33	0.35	0.50	0.54	39.9	1	1
SDC-R	01/31/2013	10:56	28.7	94.2	288.4	0.38	0.35	0.57	0.54	36.2	1	1
SDI-C	01/29/2013	09:17	27.5	90.2	240.5	0.25	0.23	0.38	0.34	31.2	2	2
SDI-L	01/29/2013	09:21	21.6	70.9	172.0	0.21	0.23	0.31	0.34	21.6	2	2
SDI-R	01/29/2013	09:14	33.1	108.6	n/a	n/a	0.23	n/a	0.34	n/a	n/a	2
SJG-C	01/30/2013	09:09	13.6	44.6	166.4	0.11	0.17	0.37	0.44	14.4	2	2
SJG-L	01/30/2013	09:11	11.1	36.4	155.9	0.24	0.17	0.50	0.44	19.6	1	2
SJG-R	01/30/2013	09:13	17.3	56.8	n/a	n/a	0.17	n/a	0.44	n/a	n/a	2
SJJ-C	01/29/2013	10:55	47.6	156.2	98.9	0.02	0.12	0.05	0.40	12.4	5	3
SJJ-L	01/29/2013	10:51	39.4	129.3	252.2	0.32	0.12	0.59	0.40	31.7	2	3
SJJ-R	01/29/2013	10:59	51.9	170.3	19.1	0.03	0.12	0.55	0.40	4.4	3	3
SMR-C	02/01/2013	09:49	11	36.1	247.5	0.43	0.36	0.86	0.66	30.9	2	4
SMR-L	02/01/2013	09:46	13.5	44.3	245.8	0.61	0.36	1.00	0.66	30.5	1	4

Table 6. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
SMR-R	02/01/2013	09:50	5.2	17.1	136.0	0.03	0.36	0.12	0.66	16.9	9	4
SRH-C	01/31/2013	08:44	26.3	86.3	289.6	0.40	0.44	0.61	0.70	35.9	1	1
SRH-L	01/31/2013	08:46	27.6	90.6	280.0	0.31	0.44	0.48	0.70	35.0	1	1
SRH-R	01/31/2013	08:49	24.4	80.1	297.7	0.61	0.44	1.02	0.70	36.4	1	1
SRV-C	01/29/2013	08:57	22.9	75.1	89.6	0.25	0.25	0.45	0.45	11.2	2	2
SRV-L	01/29/2013	09:00	21.3	69.9	n/a	n/a	0.25	n/a	0.45	n/a	n/a	2
SRV-R	01/29/2013	08:49	37.6	123.4	221.4	0.25	0.25	0.44	0.45	27.4	2	2
SSS-C	01/31/2013	10:27	14.5	47.6	275.0	0.62	0.55	0.96	0.83	34.4	1	1
SSS-L	01/31/2013	10:29	13.4	44.0	301.9	0.43	0.55	0.64	0.83	37.7	1	1
SSS-R	01/31/2013	10:25	14.8	48.6	241.5	0.61	0.55	0.91	0.83	30.0	1	1
SUT-C	01/31/2013	09:10	17.7	58.1	279.7	0.73	0.38	1.06	0.60	35.2	1	3
SUT-L	01/31/2013	09:15	17.8	58.4	17.0	0.01	0.38	0.03	0.60	6.3	8	3
SUT-R	01/31/2013	09:12	15.3	50.2	234.5	0.39	0.38	0.70	0.60	29.5	1	3
SUT2-C [2]	01/31/2013	09:23	21.8	71.5	254.5	0.79	0.49	1.26	0.98	31.3	1	1
SUT2-L [2]	01/31/2013	09:27	22.3	73.2	16.4	0.08	0.49	0.71	0.98	3.8	3	1
SUT2-R [2]	01/31/2013	09:29	19.9	65.3	276.8	0.61	0.49	0.97	0.98	33.1	1	1
TRN-C	01/30/2013	09:32	25.7	84.3	162.2	0.07	0.04	0.21	0.17	20.4	7	9
TRN-L	01/30/2013	09:37	14.7	48.2	105.6	0.04	0.04	0.18	0.17	13.3	9	9
TRN-R	01/30/2013	09:34	15.8	51.8	77.5	0.02	0.04	0.12	0.17	9.8	11	9
TSL-C	01/29/2013	11:33	25	82.0	310.1	0.48	0.47	0.81	0.79	38.5	1	2
TSL-L	01/29/2013	11:31	24.5	80.4	306.6	0.48	0.47	0.85	0.79	39.4	4	2
TSL-R	01/29/2013	11:36	23.6	77.4	301.2	0.46	0.47	0.71	0.79	38.0	1	2
UCS-C	01/29/2013	13:19	13.6	44.6	154.4	0.01	0.01	0.05	0.05	19.7	8	9
UCS-L	01/29/2013	13:22	10.8	35.4	153.2	0.01	0.01	0.05	0.05	19.3	9	9
UCS-R	01/29/2013	13:16	17.6	57.7	147.3	0.01	0.01	0.04	0.05	18.3	9	9
VCU-C	01/30/2013	10:43	9.3	30.5	53.9	0.03	0.15	0.16	0.40	6.6	12	6
VCU-L	01/30/2013	10:45	15	49.2	87.0	0.20	0.15	0.41	0.40	11.0	2	6
VCU-R	01/30/2013	10:40	12.8	42.0	196.7	0.21	0.15	0.62	0.40	24.4	3	6

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Supplemental sample location. See text for details.

Table 7. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2013, Sacramento–San Joaquin Delta, California.

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
DSJ-C	12/05/2013	14:11	13.8	45.3	254.5	0.37	0.38	0.63	0.64	31.6	0	1
DSJ-L	12/05/2013	14:14	14.0	45.9	245.4	0.27	0.38	0.49	0.64	30.9	1	1
DSJ-R	12/05/2013	14:12	16.1	52.8	238.8	0.49	0.38	0.80	0.64	28.1	0	1
DWC-C	12/05/2013	11:14	36.4	119.4	102.4	0.26	0.13	0.65	0.46	12.4	3	8
DWC-L	12/05/2013	11:18	5.4	17.7	113.9	0.09	0.13	0.49	0.46	14.0	12	8
DWC-R	12/05/2013	11:20	4.7	15.4	211.2	0.05	0.13	0.23	0.46	26.6	8	8
FAL-C	12/05/2013	14:42	26.7	87.6	223.3	0.84	0.60	1.62	1.19	25.5	0	1
FAL-L	12/05/2013	14:43	35.5	116.5	72.1	0.34	0.60	0.80	1.19	17.6	1	1
FAL-R	12/05/2013	14:44	16.5	54.1	218.0	0.63	0.60	1.17	1.19	26.3	0	1
FPT-C	12/06/2013	10:05	22.2	72.8	260.5	0.41	0.18	0.71	0.37	31.5	1	4
FPT-L	12/06/2013	10:07	20.4	66.9	241.0	0.05	0.18	0.16	0.37	30.1	6	4
FPT-R	12/06/2013	10:09	26.4	86.6	16.2	0.09	0.18	0.23	0.37	4.0	4	4
GES-C	12/06/2013	08:12	21.5	70.5	199.7	0.36	0.43	0.55	0.97	24.8	1	2
GES-L	12/06/2013	08:16	21.0	68.9	103.7	0.80	0.43	2.12	0.97	18.7	2	2
GES-R	12/06/2013	08:14	19.4	63.6	240.8	0.12	0.43	0.25	0.97	30.4	4	2
GSS-C	12/06/2013	08:22	28.0	91.9	89.7	0.43	0.21	0.88	0.73	10.9	3	4
GSS-L	12/06/2013	08:24	18.3	60.0	25.3	0.13	0.21	1.10	0.73	6.4	4	4
GSS-R	12/06/2013	08:26	15.5	50.9	65.8	0.07	0.21	0.22	0.73	8.3	5	4
HLT-C	12/03/2013	10:05	38.5	126.3	110.3	0.20	0.23	0.67	0.52	13.5	4	2
HLT-L	12/03/2013	10:09	15.5	50.9	95.9	0.18	0.23	0.28	0.52	24.0	1	2
HLT-R	12/03/2013	10:07	23.6	77.4	108.5	0.30	0.23	0.60	0.52	13.2	1	2
HOL-C	12/03/2013	13:17	13.5	44.3	50.6	0.03	0.22	0.16	0.61	6.4	14	13
HOL-L	12/03/2013	13:21	32.0	105.0	10.3	0.32	0.22	0.77	0.61	2.5	1	13
HOL-R	12/03/2013	13:19	21.8	71.5	42.9	0.30	0.22	0.91	0.61	5.3	23	13
HWB-C	12/05/2013	10:53	21.2	69.6	307.8	0.64	0.36	0.97	0.58	38.2	1	3
HWB-L	12/05/2013	10:57	16.5	54.1	0.4	n/a	0.36	n/a	0.58	n/a	n/a	3
HWB-R	12/05/2013	10:55	10.2	33.5	217.6	0.09	0.36	0.19	0.58	27.0	5	3
LIB-C	12/05/2013	11:39	15.5	50.9	26.5	0.01	0.02	0.15	2.40	6.6	11	14
LIB-L	12/05/2013	11:40	7.0	23.0	50.6	0.01	0.02	6.82	2.40	5.3	12	14
LIB-R	12/05/2013	11:43	8.5	27.9	31.0	0.02	0.02	0.22	2.40	3.8	19	14
LIN-C	12/05/2013	11:54	9.7	31.8	140.9	0.01	0.01	0.05	0.06	17.5	9	10
LIN-L	12/05/2013	11:58	15.7	51.5	154.4	0.01	0.01	0.10	0.06	19.2	10	10
LIN-R	12/05/2013	11:56	14.6	47.9	105.4	0.01	0.01	0.05	0.06	13.2	10	10
LIW	12/05/2013	11:33	5.6	18.4	141.7	0.01	0.01	0.06	0.06	17.9	8	8
LPS-C	12/03/2013	09:31	19.3	63.3	94.3	0.01	0.02	0.09	0.15	11.9	11	11
LPS-L	12/03/2013	09:37	11.3	37.1	69.5	0.02	0.02	0.14	0.15	8.7	12	11
LPS-R	12/03/2013	09:35	26.6	87.3	163.9	0.03	0.02	0.22	0.15	20.3	11	11

Table 7. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2013, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
MAL-C	12/05/2013	08:45	55.0	180.4	174.7	0.49	0.43	0.94	0.88	20.8	1	2
MAL-L	12/05/2013	08:56	54.9	180.1	47.1	0.31	0.43	0.77	0.88	11.2	4	2
MAL-R	12/05/2013	09:01	39.8	130.6	155.1	0.48	0.43	0.93	0.88	36.6	1	2
MDM-C	12/03/2013	11:48	17.7	58.1	183.0	0.33	0.32	0.66	0.72	22.7	1	3
MDM-L	12/03/2013	11:53	19.6	64.3	255.0	0.46	0.32	0.87	0.72	30.8	1	3
MDM-R	12/03/2013	11:56	23.4	76.8	159.6	0.16	0.32	0.63	0.72	19.6	6	3
MOK-C	12/03/2013	15:29	26.0	85.3	180.8	0.20	0.19	0.31	0.31	22.7	2	3
MOK-L	12/03/2013	15:32	13.4	44.0	154.3	0.04	0.19	0.16	0.31	19.7	6	3
MOK-R	12/03/2013	15:34	35.0	114.8	145.1	0.33	0.19	0.48	0.31	18.0	1	3
NMR-C	12/03/2013	08:35	27.0	88.6	153.5	0.13	0.08	1.09	0.52	17.8	6	6
NMR-L	12/03/2013	08:46	15.2	49.9	132.7	0.03	0.08	0.19	0.52	16.8	7	6
NMR-R	12/03/2013	08:40	21.2	69.6	12.5	0.07	0.08	0.30	0.52	3.1	4	6
OBI-C	12/03/2013	12:59	15.3	50.2	164.0	0.17	0.20	0.31	0.48	20.5	2	5
OBI-L	12/03/2013	13:02	32.0	105.0	28.7	0.18	0.20	0.41	0.48	3.6	4	5
OBI-R	12/03/2013	13:03	14.8	48.6	104.0	0.25	0.20	0.72	0.48	12.9	9	5
ORB-C	12/03/2013	12:40	21.7	71.2	62.4	0.31	0.23	0.57	0.48	15.4	1	2
ORB-L	12/03/2013	12:41	16.1	52.8	320.0	0.28	0.23	0.43	0.48	39.8	1	2
ORB-R	12/03/2013	12:43	20.5	67.3	70.1	0.10	0.23	0.44	0.48	8.4	4	2
ORQ-C	12/03/2013	13:35	19.7	64.6	217.2	0.13	0.20	0.34	0.56	26.9	5	4
ORQ-L	12/03/2013	13:38	35.0	114.8	166.8	0.17	0.20	0.58	0.56	20.7	6	4
ORQ-R	12/03/2013	13:36	18.6	61.0	131.8	0.29	0.20	0.77	0.56	16.3	2	4
OSJ-C	12/03/2013	14:59	21.0	68.9	95.9	0.02	0.04	0.13	0.18	11.9	8	8
OSJ-L	12/03/2013	15:01	17.3	56.8	183.2	0.05	0.04	0.27	0.18	22.9	7	8
OSJ-R	12/03/2013	15:03	18.1	59.4	105.9	0.03	0.04	0.15	0.18	13.2	10	8
PRI-C	12/03/2013	15:00	51.0	167.3	246.0	0.04	0.16	0.35	0.44	6.9	5	7
PRI-L	12/03/2013	15:14	8.6	28.2	76.9	0.04	0.16	0.16	0.44	8.2	9	7
PRI-R	12/03/2013	15:12	36.5	119.8	141.3	0.41	0.16	0.83	0.44	0.0	0	7
RYI-C	12/05/2013	10:29	42.5	139.4	30.8	0.01	0.10	0.05	3.16	3.9	9	6
RYI-L	12/05/2013	10:36	45.7	149.9	70.6	0.26	0.10	9.33	3.16	15.0	3	6
RYI-R	12/05/2013	10:33	9.6	31.5	216.5	0.04	0.10	0.12	3.16	27.0	6	6
SDC-C	12/06/2013	08:45	28.5	93.5	221.1	0.34	0.24	0.53	0.44	27.6	1	2
SDC-L	12/06/2013	08:48	21.0	68.9	22.5	0.08	0.24	0.26	0.44	5.6	4	2
SDC-R	12/06/2013	08:46	28.9	94.8	114.3	0.30	0.24	0.52	0.44	14.4	2	2
SDI-C	12/05/2013	09:29	19.0	62.3	204.4	0.24	0.26	0.34	0.39	25.6	2	2
SDI-L	12/05/2013	09:32	16.5	54.1	217.8	0.25	0.26	0.39	0.39	27.4	2	2
SDI-R	12/05/2013	09:37	30.4	99.7	197.9	0.30	0.26	0.43	0.39	24.5	1	2
SJG-C	12/03/2013	10:55	15.2	49.9	326.0	0.40	0.24	0.62	2.51	40.6	1	3

Table 7. Summary of final bed-material characteristics, sample date and time, and depth of samples collected during fall 2013, Sacramento–San Joaquin Delta, California.—Continued

[Loss on ignition (LOI) results were rounded to the nearest percent. D_{50}, median particle size; D_{90}, ninetieth percentile particle size; hh:mm, hour:minute; mm/dd/yyyy, month/day/year; n/a, amount of sample material was insufficient to evaluate the particle-size distribution and (or) test the sample using the LOI method; PST, Pacific Standard Time]

Sample-location identifier [1]	Sample date (mm/dd/yyyy)	Time, PST (hh:mm)	Depth (meters)	Depth (feet)	Sample mass (grams)	D_{50} (millimeters)	Site average D_{50} (millimeters)	D_{90} (millimeters)	Site average D_{90} (millimeters)	LOI subsample mass (grams)	LOI (percent)	Site average LOI (percent)
SJG-L	12/03/2013	10:56	10.6	34.8	59.7	0.26	0.24	0.55	2.51	14.9	2	3
SJG-R	12/03/2013	10:58	22.5	73.8	40.6	0.05	0.24	6.36	2.51	8.8	5	3
SJJ-C	12/05/2013	14:29	52.5	172.2	210.7	0.11	0.25	0.62	0.53	26.3	6	3
SJJ-L	12/05/2013	14:33	39.7	130.2	274.5	0.34	0.25	0.51	0.53	34.0	1	3
SJJ-R	12/05/2013	14:35	41.0	134.5	178.3	0.30	0.25	0.46	0.53	22.1	1	3
SMR-C	12/03/2013	08:56	10.3	33.8	28.0	0.18	0.53	0.59	2.36	3.5	5	5
SMR-L	12/03/2013	08:58	10.5	34.4	55.9	1.39	0.53	6.36	2.36	6.4	3	5
SMR-R	12/03/2013	09:00	7.1	23.3	79.5	0.03	0.53	0.11	2.36	10.0	9	5
SRH-C	12/06/2013	09:43	27.1	88.9	217.2	0.36	0.18	0.54	0.35	27.1	1	4
SRH-L	12/06/2013	09:47	24.5	80.4	50.5	0.05	0.18	0.19	0.35	12.6	6	4
SRH-R	12/06/2013	09:49	14.0	45.9	31.1	0.13	0.18	0.34	0.35	3.9	4	4
SRV-C	12/05/2013	10:09	22.5	73.8	101.6	0.24	0.29	0.54	0.53	12.7	3	2
SRV-L	12/05/2013	10:12	20.4	66.9	194.7	0.26	0.29	0.47	0.53	24.2	2	2
SRV-R	12/05/2013	10:15	38.1	125.0	165.6	0.36	0.29	0.59	0.53	20.6	2	2
SSS-C	12/06/2013	09:05	14.5	47.6	270.6	0.58	0.54	0.84	0.83	33.8	1	1
SSS-L	12/06/2013	09:07	13.2	43.3	262.2	0.68	0.54	1.08	0.83	31.0	1	1
SSS-R	12/06/2013	09:08	15.0	49.2	232.9	0.37	0.54	0.58	0.83	28.8	1	1
SUT-C	12/06/2013	09:22	18.2	59.7	208.0	0.75	0.64	1.32	4.29	23.9	1	5
SUT-L	12/06/2013	09:26	15.4	50.5	0.1	n/a	0.64	n/a	4.29	n/a	n/a	5
SUT-R	12/06/2013	09:24	19.1	62.7	125.8	0.52	0.64	7.26	4.29	10.0	8	5
TRN-C	12/03/2013	10:30	25.5	83.7	157.9	0.06	0.08	0.23	0.24	19.7	8	7
TRN-L	12/03/2013	10:34	14.5	47.6	131.2	0.15	0.08	0.31	0.24	16.5	4	7
TRN-R	12/03/2013	10:32	22.3	73.2	99.0	0.03	0.08	0.17	0.24	12.3	9	7
TSL-C	12/05/2013	09:49	27.2	89.2	99.0	0.45	0.43	0.71	0.73	12.2	2	2
TSL-L	12/05/2013	09:53	28.1	92.2	273.7	0.47	0.43	0.75	0.73	33.6	1	2
TSL-R	12/05/2013	09:51	28.3	92.8	111.3	0.36	0.43	0.73	0.73	13.6	2	2
UCS-C	12/05/2013	12:09	19.3	63.3	101.4	0.01	0.01	0.03	0.05	12.9	9	9
UCS-L	12/05/2013	12:15	13.9	45.6	135.9	0.01	0.01	0.07	0.05	17.0	10	9
UCS-R	12/05/2013	12:12	14.0	45.9	55.6	0.01	0.01	0.04	0.05	7.0	10	9
ULC-C	12/05/2013	12:27	5.8	19.0	292.7	0.62	0.37	1.41	0.88	32.2	2	3
ULC-L	12/05/2013	12:30	5.0	16.4	258.6	0.41	0.37	0.66	0.88	32.1	2	3
ULC-R	12/05/2013	12:28	5.5	18.0	214.4	0.06	0.37	0.57	0.88	26.0	6	3
VCU-C	12/03/2013	12:19	6.5	21.3	89.4	0.04	0.06	0.20	0.31	11.1	15	10
VCU-L	12/03/2013	12:23	14.2	46.6	278.0	0.09	0.06	0.56	0.31	34.6	5	10
VCU-R	12/03/2013	12:21	13.4	44.0	125.2	0.05	0.06	0.19	0.31	15.5	11	10

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

Table 8. Final bed-material cumulative particle-size distribution of samples collected during fall 2010, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, not available; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class											
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<5.6 mm
DSJ-C	0.00	0.01	0.01	0.01	0.01	0.02	0.44	0.98	1.00	1.00	1.00	1.00
DSJ-L	0.00	0.00	0.01	0.01	0.01	0.03	0.37	0.91	1.00	1.00	1.00	1.00
DSJ-R	0.01	0.01	0.02	0.02	0.03	0.05	0.28	0.90	1.00	1.00	1.00	1.00
DWC-C	0.06	0.10	0.14	0.20	0.28	0.38	0.72	0.96	1.00	1.00	1.00	1.00
DWC-L	0.11	0.19	0.28	0.39	0.54	0.76	0.96	0.99	1.00	1.00	1.00	1.00
DWC-R	0.33	0.54	0.71	0.83	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00
FAL-C	0.00	0.00	0.01	0.01	0.01	0.02	0.05	0.61	0.97	0.97	0.98	1.00
FAL-L	0.01	0.02	0.02	0.03	0.05	0.08	0.22	0.59	0.93	0.97	0.98	1.00
FAL-R	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.90	1.00	1.00	1.00	1.00
FPT-C	0.01	0.02	0.03	0.05	0.07	0.11	0.24	0.75	0.97	1.00	1.00	1.00
FPT-L	0.06	0.10	0.15	0.21	0.33	0.53	0.73	0.87	0.96	1.00	1.00	1.00
FPT-R	0.03	0.06	0.09	0.14	0.20	0.28	0.47	0.88	1.00	1.00	1.00	1.00
GES-C	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.92	1.00	1.00	1.00	1.00
GES-L	0.04	0.08	0.13	0.20	0.30	0.42	0.54	0.59	0.62	0.62	0.83	1.00
GES-R	0.05	0.09	0.14	0.21	0.33	0.43	0.77	0.99	1.00	1.00	1.00	1.00
GSS-C	0.03	0.06	0.09	0.16	0.30	0.45	0.54	0.87	1.00	1.00	1.00	1.00
GSS-L	0.06	0.11	0.17	0.28	0.47	0.72	0.91	0.98	1.00	1.00	1.00	1.00
GSS-R	0.04	0.07	0.11	0.18	0.31	0.55	0.82	0.98	1.00	1.00	1.00	1.00
HLT-C	0.02	0.03	0.05	0.07	0.12	0.21	0.54	0.89	0.98	1.00	1.00	1.00
HLT-L	0.09	0.17	0.27	0.39	0.55	0.75	0.92	0.96	0.99	1.00	1.00	1.00
HLT-R	0.03	0.05	0.09	0.15	0.25	0.50	0.96	1.00	1.00	1.00	1.00	1.00
HOL-C	0.03	0.05	0.08	0.11	0.16	0.31	0.66	0.79	0.90	1.00	1.00	1.00
HOL-L	0.01	0.01	0.02	0.02	0.04	0.06	0.36	0.93	0.98	0.98	1.00	1.00
HOL-R	0.01	0.01	0.02	0.02	0.03	0.05	0.53	0.98	1.00	1.00	1.00	1.00
HWB-C	0.01	0.01	0.01	0.02	0.02	0.03	0.08	0.44	0.97	1.00	1.00	1.00
HWB-L	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.39	0.98	1.00	1.00	1.00
HWB-R	0.01	0.02	0.03	0.04	0.06	0.08	0.22	0.64	0.99	1.00	1.00	1.00
LPS-C	0.17	0.31	0.46	0.62	0.78	0.89	0.97	1.00	1.00	1.00	1.00	1.00
LPS-L	0.14	0.25	0.38	0.53	0.69	0.84	0.95	0.98	1.00	1.00	1.00	1.00
LPS-R	0.03	0.05	0.08	0.12	0.18	0.29	0.51	0.75	0.93	1.00	1.00	1.00
MDM-C	0.08	0.15	0.27	0.44	0.64	0.74	0.85	0.97	1.00	1.00	1.00	1.00

Table 8. Final bed-material cumulative particle-size distribution of samples collected during fall 2010, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, not available; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class											
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<5.6 mm
MDM-L	0.03	0.04	0.07	0.11	0.18	0.31	0.52	0.71	0.88	1.00	1.00	1.00
MDM-R	0.02	0.04	0.06	0.09	0.13	0.18	0.36	0.86	1.00	1.00	1.00	1.00
MOK-C	0.09	0.16	0.25	0.37	0.53	0.79	0.97	0.99	1.00	1.00	1.00	1.00
MOK-L	0.09	0.17	0.29	0.45	0.64	0.83	0.97	0.99	1.00	1.00	1.00	1.00
MOK-R	0.01	0.01	0.02	0.03	0.04	0.08	0.62	0.97	1.00	1.00	1.00	1.00
OBI-C	0.01	0.01	0.01	0.02	0.03	0.07	0.32	0.80	0.99	1.00	1.00	1.00
OBI-L	0.02	0.04	0.06	0.09	0.13	0.24	0.68	0.91	0.97	1.00	1.00	1.00
OBI-R	0.02	0.03	0.04	0.05	0.08	0.20	0.64	0.90	1.00	1.00	1.00	1.00
ORB-C	0.05	0.09	0.14	0.22	0.30	0.34	0.47	0.91	1.00	1.00	1.00	1.00
ORB-L	0.04	0.06	0.10	0.14	0.19	0.24	0.37	0.82	0.99	1.00	1.00	1.00
ORB-R	0.01	0.02	0.03	0.04	0.05	0.08	0.15	0.37	0.89	1.00	1.00	1.00
ORQ-C	0.02	0.04	0.06	0.10	0.15	0.26	0.75	0.96	0.99	1.00	1.00	1.00
ORQ-L	0.02	0.03	0.05	0.08	0.11	0.16	0.37	0.75	0.99	1.00	1.00	1.00
ORQ-R	0.01	0.02	0.03	0.05	0.07	0.15	0.56	0.90	1.00	1.00	1.00	1.00
OSJ-C	0.05	0.08	0.13	0.19	0.28	0.39	0.68	0.95	1.00	1.00	1.00	1.00
OSJ-L	0.12	0.22	0.34	0.49	0.65	0.77	0.88	0.95	0.99	1.00	1.00	1.00
OSJ-R	0.05	0.09	0.13	0.19	0.25	0.29	0.37	0.86	1.00	1.00	1.00	1.00
PRI-C	0.02	0.03	0.04	0.05	0.07	0.10	0.35	0.83	0.99	1.00	1.00	1.00
PRI-L	0.01	0.02	0.03	0.04	0.06	0.12	0.50	0.86	0.99	1.00	1.00	1.00
PRI-R	0.03	0.06	0.09	0.14	0.20	0.28	0.60	0.95	1.00	1.00	1.00	1.00
RYI-C	0.22	0.41	0.61	0.78	0.90	0.94	0.99	1.00	1.00	1.00	1.00	1.00
RYI-L	0.00	0.01	0.01	0.01	0.01	0.02	0.11	0.81	1.00	1.00	1.00	1.00
RYI-R	0.25	0.43	0.61	0.75	0.86	0.92	0.98	1.00	1.00	1.00	1.00	1.00
SDC-C	0.01	0.02	0.03	0.05	0.07	0.11	0.31	0.88	1.00	1.00	1.00	1.00
SDC-L	0.03	0.05	0.08	0.12	0.19	0.25	0.37	0.89	1.00	1.00	1.00	1.00
SDC-R	0.00	0.00	0.00	0.00	0.01	0.01	0.07	0.73	1.00	1.00	1.00	1.00
SDI-C	0.01	0.01	0.02	0.03	0.03	0.06	0.56	0.97	1.00	1.00	1.00	1.00
SDI-L	0.01	0.02	0.03	0.04	0.06	0.09	0.63	0.98	1.00	1.00	1.00	1.00
SDI-R	0.03	0.06	0.10	0.15	0.22	0.32	0.67	1.00	1.00	1.00	1.00	1.00
SJG-C	0.03	0.06	0.09	0.14	0.21	0.31	0.50	0.85	0.99	1.00	1.00	1.00
SJG-L	0.03	0.05	0.08	0.14	0.23	0.35	0.49	0.69	0.92	1.00	1.00	1.00

Table 8. Final bed-material cumulative particle-size distribution of samples collected during fall 2010, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, not available; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class											
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<5.6 mm
SJG-R	0.03	0.06	0.10	0.17	0.29	0.44	0.63	0.86	1.00	1.00	1.00	1.00
SJJ-C	0.03	0.06	0.11	0.19	0.28	0.32	0.41	0.88	1.00	1.00	1.00	1.00
SJJ-L	0.00	0.00	0.01	0.01	0.02	0.03	0.15	0.81	1.00	1.00	1.00	1.00
SJJ-R [2]	n/a	n/a	n/a	n/a	0.02	0.02	0.11	0.96	1.00	1.00	1.00	1.00
SRH-C	0.00	0.00	0.00	0.00	0.01	0.01	0.10	0.78	1.00	1.00	1.00	1.00
SRH-L	0.04	0.08	0.13	0.20	0.35	0.57	0.77	0.84	0.87	0.87	0.98	1.00
SRH-R	0.01	0.01	0.02	0.03	0.04	0.06	0.08	0.23	0.89	1.00	1.00	1.00
SRV-C	0.01	0.01	0.02	0.03	0.04	0.05	0.26	0.90	1.00	1.00	1.00	1.00
SRV-L	0.03	0.06	0.08	0.11	0.15	0.23	0.85	0.99	1.00	1.00	1.00	1.00
SRV-R	0.00	0.01	0.01	0.01	0.02	0.03	0.16	0.64	0.93	0.96	0.97	1.00
SSS-C	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.46	0.99	0.99	1.00	1.00
SSS-L	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.19	0.89	1.00	1.00	1.00
SSS-R	0.00	0.00	0.00	0.00	0.01	0.01	0.06	0.68	1.00	1.00	1.00	1.00
SUT-C	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.12	0.82	1.00	1.00	1.00
SUT-L	0.01	0.02	0.04	0.06	0.09	0.12	0.14	0.17	0.43	0.92	0.93	1.00
SUT-R	0.04	0.07	0.10	0.15	0.22	0.31	0.47	0.80	1.00	1.00	1.00	1.00
TRN-C	0.05	0.10	0.15	0.22	0.32	0.53	0.80	0.88	0.95	1.00	1.00	1.00
TRN-L	0.01	0.02	0.03	0.04	0.08	0.36	0.80	0.94	1.00	1.00	1.00	1.00
TRN-R	0.07	0.12	0.19	0.28	0.40	0.54	0.81	0.95	1.00	1.00	1.00	1.00
TSL-C	0.00	0.00	0.00	0.01	0.01	0.01	0.08	0.58	0.98	1.00	1.00	1.00
TSL-L	0.00	0.00	0.00	0.01	0.01	0.02	0.08	0.61	0.99	1.00	1.00	1.00
TSL-R	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.35	0.97	1.00	1.00	1.00
UCS-C	0.19	0.36	0.57	0.79	0.95	0.97	0.99	1.00	1.00	1.00	1.00	1.00
UCS-L	0.11	0.20	0.33	0.51	0.70	0.85	0.95	0.98	1.00	1.00	1.00	1.00
UCS-R	0.21	0.37	0.58	0.78	0.91	0.97	1.00	1.00	1.00	1.00	1.00	1.00
VCU-C	0.09	0.16	0.26	0.40	0.59	0.76	0.91	0.97	1.00	1.00	1.00	1.00
VCU-L	0.06	0.11	0.19	0.30	0.44	0.55	0.81	0.93	1.00	1.00	1.00	1.00
VCU-R	0.03	0.05	0.08	0.12	0.19	0.37	0.83	0.97	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Sample not processed using analyzer; sieve data shown for greater than 0.063 millimeter size ranges.

Table 9. Final bed-material cumulative particle-size distribution of samples collected during summer 2011, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class															
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm	<32 mm
DSJ-C	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-L	0.01	0.01	0.01	0.01	0.01	0.01	0.19	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-R	0.01	0.01	0.01	0.02	0.02	0.08	0.52	0.88	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-C	0.02	0.04	0.06	0.08	0.12	0.23	0.54	0.83	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-L	0.14	0.25	0.37	0.49	0.63	0.79	0.92	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-R	0.17	0.30	0.43	0.58	0.74	0.89	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.44	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FAL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.29	0.55	0.65	0.77	0.92	0.93	0.95	1.00	1.00
FAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.68	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FPT-C	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.48	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00
FPT-L	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.46	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00
FPT-R	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.49	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00
GES-C	0.01	0.01	0.01	0.01	0.01	0.01	0.20	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GES-L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.11	0.62	0.98	1.00	1.00	1.00	1.00	1.00	1.00
GES-R	0.01	0.01	0.01	0.01	0.01	0.02	0.31	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-C	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-L	0.01	0.02	0.03	0.04	0.10	0.40	0.89	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-R	0.01	0.01	0.01	0.01	0.01	0.02	0.34	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-C	0.01	0.01	0.02	0.02	0.04	0.12	0.77	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-L	0.01	0.01	0.02	0.03	0.03	0.06	0.23	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-R	0.01	0.01	0.01	0.02	0.03	0.09	0.48	0.75	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-C	0.07	0.12	0.19	0.27	0.38	0.59	0.90	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-L	0.03	0.05	0.07	0.11	0.16	0.26	0.53	0.78	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-R	0.01	0.02	0.04	0.06	0.10	0.20	0.47	0.62	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HWB-C	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.37	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HWB-L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.27	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HWB-R	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.23	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-C	0.16	0.28	0.42	0.56	0.72	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-L	0.11	0.18	0.28	0.39	0.52	0.69	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-R	0.07	0.13	0.19	0.26	0.35	0.50	0.73	0.87	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 9. Final bed-material cumulative particle-size distribution of samples collected during summer 2011, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class															
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm	<32 mm
MDM-C	0.01	0.01	0.01	0.01	0.01	0.02	0.16	0.72	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-L	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.71	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-R	0.04	0.07	0.10	0.15	0.22	0.36	0.58	0.72	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-C	0.03	0.05	0.08	0.14	0.27	0.62	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-L	0.12	0.21	0.34	0.50	0.70	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-R	0.01	0.01	0.01	0.01	0.01	0.01	0.38	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-C	0.01	0.02	0.03	0.04	0.06	0.21	0.88	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-L	0.01	0.02	0.03	0.04	0.06	0.16	0.66	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-R	0.01	0.02	0.03	0.05	0.08	0.26	0.76	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-C	0.06	0.10	0.16	0.24	0.39	0.59	0.80	0.91	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-L	0.01	0.01	0.01	0.01	0.02	0.13	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-R	0.06	0.11	0.17	0.26	0.40	0.60	0.76	0.84	0.92	0.99	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-C	0.02	0.03	0.04	0.06	0.09	0.31	0.87	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-L	0.02	0.02	0.03	0.05	0.07	0.25	0.79	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-R	0.01	0.02	0.03	0.04	0.05	0.09	0.35	0.77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-C	0.07	0.12	0.19	0.28	0.46	0.75	0.93	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-L	0.05	0.10	0.16	0.23	0.32	0.44	0.62	0.74	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-R	0.10	0.18	0.28	0.41	0.59	0.82	0.95	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-C	0.01	0.02	0.03	0.04	0.06	0.10	0.25	0.57	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-L	0.01	0.01	0.02	0.02	0.03	0.11	0.57	0.88	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-R	0.04	0.06	0.10	0.14	0.21	0.33	0.60	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-C	0.16	0.28	0.42	0.55	0.65	0.75	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-L	0.13	0.23	0.34	0.46	0.57	0.67	0.88	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-R	0.07	0.11	0.19	0.36	0.58	0.76	0.92	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-C	0.00	0.00	0.00	0.01	0.01	0.01	0.19	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-L	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-R	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-C	0.01	0.01	0.01	0.01	0.02	0.04	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-L	0.01	0.01	0.01	0.01	0.02	0.05	0.53	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-R	0.09	0.16	0.27	0.41	0.58	0.74	0.89	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 9. Final bed-material cumulative particle-size distribution of samples collected during summer 2011, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class															
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm	<32 mm
SJG-C	0.01	0.01	0.01	0.01	0.02	0.03	0.15	0.68	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SJG-L	0.01	0.01	0.01	0.01	0.01	0.02	0.14	0.67	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-R	0.14	0.25	0.42	0.60	0.76	0.87	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJJ-C	0.01	0.01	0.01	0.01	0.01	0.02	0.06	0.47	0.58	0.58	0.64	0.69	0.73	0.79	1.00	1.00
SJJ-L	0.01	0.01	0.01	0.01	0.01	0.02	0.22	0.58	0.70	0.76	0.92	0.96	0.96	0.97	0.98	1.00
SJJ-R	0.02	0.03	0.05	0.07	0.10	0.14	0.25	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-C	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-L	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.39	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-R	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.78	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SRV-C	0.01	0.01	0.01	0.01	0.01	0.01	0.21	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-L	0.01	0.01	0.01	0.01	0.02	0.06	0.71	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-R	0.01	0.01	0.01	0.01	0.01	0.02	0.07	0.44	0.91	0.98	0.99	1.00	1.00	1.00	1.00	1.00
SSS-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SSS-L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.13	0.82	0.98	0.99	1.00	1.00	1.00	1.00	1.00
SSS-R	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-C	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.15	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-L	0.37	0.67	0.86	0.91	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-R	0.01	0.01	0.01	0.01	0.01	0.04	0.33	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-C	0.03	0.05	0.08	0.12	0.19	0.40	0.80	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-L	0.02	0.04	0.06	0.08	0.13	0.37	0.74	0.87	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-R	0.06	0.11	0.17	0.26	0.37	0.56	0.86	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.60	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.64	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-C	0.24	0.42	0.62	0.82	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-L	0.11	0.19	0.31	0.46	0.65	0.84	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-R	0.22	0.41	0.64	0.84	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-C	0.04	0.08	0.12	0.18	0.27	0.50	0.85	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-L	0.04	0.06	0.10	0.14	0.20	0.34	0.72	0.90	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-R	0.02	0.03	0.04	0.05	0.08	0.18	0.61	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

Table 10. Final bed-material cumulative particle-size distribution of samples collected during fall 2011 and winter 2012, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
DSJ-C	0.01	0.01	0.01	0.01	0.01	0.01	0.23	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-L	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.57	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-R	0.01	0.01	0.01	0.01	0.01	0.01	0.18	0.84	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DWC-C	0.05	0.08	0.12	0.16	0.22	0.46	0.84	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-L	0.16	0.28	0.40	0.50	0.60	0.72	0.82	0.91	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DWC-R	0.14	0.25	0.38	0.56	0.77	0.91	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.07	0.55	0.91	0.99	1.00	1.00	1.00	1.00
FAL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.65	1.00	1.00	1.00	1.00	1.00	1.00
FAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FPT-C	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.20	0.36	0.42	0.63	0.88	0.93	0.97	1.00
FPT-L	0.06	0.11	0.18	0.28	0.44	0.68	0.90	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FPT-R	0.01	0.02	0.03	0.06	0.10	0.17	0.29	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GES-C	0.01	0.01	0.01	0.02	0.03	0.05	0.29	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GES-L	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.36	0.80	1.00	1.00	1.00	1.00	1.00	1.00
GES-R	0.01	0.01	0.01	0.01	0.01	0.02	0.31	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-C	0.06	0.10	0.15	0.24	0.39	0.58	0.78	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-L	0.05	0.09	0.15	0.24	0.38	0.54	0.80	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-R	0.01	0.01	0.02	0.03	0.04	0.07	0.17	0.46	0.85	1.00	1.00	1.00	1.00	1.00	1.00
HLT-C	0.01	0.01	0.01	0.02	0.02	0.04	0.25	0.67	0.93	1.00	1.00	1.00	1.00	1.00	1.00
HLT-L	0.01	0.01	0.01	0.01	0.01	0.03	0.30	0.81	0.98	1.00	1.00	1.00	1.00	1.00	1.00
HLT-R	0.05	0.09	0.16	0.25	0.38	0.57	0.89	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-C	0.11	0.19	0.30	0.42	0.57	0.73	0.91	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.57	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-R	0.03	0.05	0.08	0.11	0.16	0.24	0.65	0.92	0.98	1.00	1.00	1.00	1.00	1.00	1.00
HWB-C	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.35	0.93	1.00	1.00	1.00	1.00	1.00	1.00
HWB-L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.22	0.89	1.00	1.00	1.00	1.00	1.00	1.00
HWB-R	0.06	0.10	0.16	0.23	0.33	0.50	0.73	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-C	0.13	0.24	0.36	0.48	0.62	0.78	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-L	0.16	0.28	0.41	0.53	0.64	0.76	0.91	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-R	0.07	0.12	0.20	0.33	0.55	0.77	0.90	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.13	0.72	0.99	1.00	1.00	1.00	1.00	1.00	1.00
MAL-L	0.02	0.04	0.06	0.10	0.14	0.17	0.28	0.54	0.68	0.70	0.80	0.90	0.93	1.00	1.00
MAL-R	0.01	0.01	0.01	0.02	0.02	0.03	0.09	0.54	0.96	1.00	1.00	1.00	1.00	1.00	1.00
MDM-C	0.01	0.01	0.02	0.02	0.03	0.04	0.15	0.66	0.96	1.00	1.00	1.00	1.00	1.00	1.00
MDM-L	0.06	0.12	0.20	0.32	0.45	0.55	0.70	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-R	0.05	0.08	0.13	0.19	0.29	0.54	0.90	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-C	0.04	0.07	0.11	0.16	0.23	0.44	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-L	0.07	0.13	0.20	0.31	0.49	0.80	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 10. Final bed-material cumulative particle-size distribution of samples collected during fall 2011 and winter 2012, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
MOK-R	0.01	0.01	0.01	0.01	0.01	0.03	0.23	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-C	0.17	0.33	0.50	0.64	0.74	0.82	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-L [2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
NMR-R [2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
OBI-C	0.02	0.04	0.06	0.09	0.13	0.30	0.77	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-L	0.02	0.04	0.05	0.08	0.12	0.27	0.70	0.92	0.99	1.00	1.00	1.00	1.00	1.00	1.00
OBI-R	0.03	0.05	0.08	0.12	0.18	0.40	0.81	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00
ORB-C	0.01	0.02	0.02	0.03	0.04	0.05	0.12	0.49	0.95	1.00	1.00	1.00	1.00	1.00	1.00
ORB-L	0.01	0.01	0.02	0.03	0.03	0.06	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-R	0.01	0.01	0.02	0.02	0.03	0.05	0.12	0.44	0.94	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-C	0.05	0.08	0.13	0.21	0.38	0.65	0.86	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-L	0.01	0.01	0.01	0.01	0.02	0.04	0.24	0.71	0.99	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-R	0.01	0.01	0.01	0.02	0.02	0.07	0.59	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-C	0.06	0.11	0.17	0.26	0.40	0.63	0.84	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-L	0.04	0.08	0.13	0.19	0.28	0.40	0.56	0.69	0.84	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-R	0.15	0.27	0.42	0.60	0.78	0.90	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-C	0.12	0.21	0.32	0.44	0.58	0.72	0.89	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-L	0.01	0.01	0.02	0.03	0.05	0.16	0.60	0.86	0.98	1.00	1.00	1.00	1.00	1.00	1.00
PRI-R	0.06	0.10	0.15	0.19	0.26	0.34	0.43	0.52	0.67	1.00	1.00	1.00	1.00	1.00	1.00
RYI-C	0.21	0.38	0.54	0.66	0.75	0.84	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-L	0.01	0.01	0.01	0.01	0.01	0.01	0.39	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-R	0.07	0.12	0.18	0.28	0.44	0.59	0.84	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00
SDC-C	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-L	0.01	0.02	0.04	0.06	0.09	0.13	0.26	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-R	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-C	0.01	0.01	0.01	0.01	0.02	0.07	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-L	0.01	0.01	0.01	0.01	0.01	0.05	0.65	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-R	0.01	0.01	0.01	0.01	0.01	0.01	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-C	0.02	0.03	0.04	0.07	0.13	0.21	0.36	0.81	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SJG-L	0.01	0.01	0.01	0.01	0.01	0.02	0.08	0.45	0.92	1.00	1.00	1.00	1.00	1.00	1.00
SJG-R	0.01	0.02	0.04	0.06	0.09	0.12	0.16	0.63	0.97	1.00	1.00	1.00	1.00	1.00	1.00
SJJ-C	0.01	0.01	0.01	0.02	0.02	0.03	0.08	0.67	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SJJ-L	0.01	0.01	0.01	0.01	0.02	0.03	0.22	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJJ-R	0.01	0.01	0.01	0.01	0.01	0.03	0.36	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SMR-C	0.01	0.01	0.01	0.01	0.01	0.02	0.08	0.40	0.91	1.00	1.00	1.00	1.00	1.00	1.00
SMR-L	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.18	0.77	1.00	1.00	1.00	1.00	1.00	1.00
SMR-R	0.04	0.06	0.11	0.17	0.27	0.43	0.63	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-C	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.48	0.95	1.00	1.00	1.00	1.00	1.00	1.00
SRH-L	0.01	0.01	0.01	0.01	0.01	0.01	0.19	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 10. Final bed-material cumulative particle-size distribution of samples collected during fall 2011 and winter 2012, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
SRH-R	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.11	0.83	1.00	1.00	1.00	1.00	1.00	1.00
SRV-C	0.01	0.01	0.01	0.01	0.01	0.04	0.50	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-L	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-R	0.01	0.01	0.01	0.01	0.01	0.02	0.27	0.83	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SSS-C	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SSS-L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.87	1.00	1.00	1.00	1.00	1.00	1.00
SSS-R	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.65	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-C	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.13	0.85	1.00	1.00	1.00	1.00	1.00	1.00
SUT-L	0.26	0.46	0.61	0.70	0.76	0.81	0.86	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SUT-R	0.06	0.11	0.17	0.25	0.36	0.57	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-C	0.07	0.13	0.20	0.28	0.37	0.52	0.78	0.91	0.99	1.00	1.00	1.00	1.00	1.00	1.00
TRN-L	0.07	0.12	0.18	0.26	0.35	0.57	0.86	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00
TRN-R	0.06	0.10	0.17	0.25	0.37	0.55	0.84	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00
TSL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.73	0.97	1.00	1.00	1.00	1.00	1.00	1.00
TSL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.45	0.92	1.00	1.00	1.00	1.00	1.00	1.00
TSL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.47	0.99	1.00	1.00	1.00	1.00	1.00	1.00
UCS-C	0.19	0.33	0.50	0.71	0.87	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-L	0.15	0.26	0.41	0.62	0.83	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-R	0.20	0.35	0.53	0.72	0.86	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-C	0.09	0.16	0.26	0.39	0.59	0.82	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-L	0.03	0.04	0.07	0.10	0.16	0.39	0.73	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00
VCU-R	0.10	0.18	0.30	0.46	0.67	0.84	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Amount of sample material was insufficient to evaluate particle-size distribution.

Table 11. Final bed-material cumulative particle-size distribution of samples collected during fall 2012, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class													
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm
DSJ-C	0.01	0.01	0.01	0.01	0.01	0.02	0.09	0.47	0.97	1.00	1.00	1.00	1.00	1.00
DSJ-L	0.01	0.01	0.01	0.01	0.02	0.05	0.29	0.68	0.97	1.00	1.00	1.00	1.00	1.00
DSJ-R	0.01	0.01	0.01	0.02	0.03	0.05	0.37	0.77	0.98	1.00	1.00	1.00	1.00	1.00
DWC-C	0.33	0.58	0.76	0.87	0.93	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-L	0.40	0.68	0.84	0.91	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-R	0.09	0.15	0.22	0.29	0.38	0.51	0.74	0.84	0.95	1.00	1.00	1.00	1.00	1.00
FAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.61	1.00	1.00	1.00	1.00	1.00	1.00
FAL-L	0.01	0.01	0.01	0.01	0.01	0.02	0.06	0.28	0.55	0.68	0.78	0.90	0.95	1.00
FAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.58	0.90	1.00	1.00	1.00	1.00	1.00
FPT-C	0.01	0.01	0.01	0.02	0.03	0.04	0.13	0.59	0.94	1.00	1.00	1.00	1.00	1.00
FPT-L	0.01	0.02	0.02	0.04	0.08	0.21	0.38	0.55	0.89	0.99	1.00	1.00	1.00	1.00
FPT-R	0.01	0.01	0.01	0.01	0.01	0.02	0.15	0.82	1.00	1.00	1.00	1.00	1.00	1.00
GES-C	0.01	0.01	0.01	0.01	0.01	0.02	0.11	0.81	1.00	1.00	1.00	1.00	1.00	1.00
GES-L	0.01	0.01	0.01	0.00	0.00	0.01	0.05	0.70	1.00	1.00	1.00	1.00	1.00	1.00
GES-R	0.01	0.01	0.01	0.01	0.01	0.02	0.42	0.96	1.00	1.00	1.00	1.00	1.00	1.00
GSS-C	0.04	0.06	0.10	0.16	0.29	0.59	0.91	0.98	1.00	1.00	1.00	1.00	1.00	1.00
GSS-L	0.06	0.10	0.16	0.25	0.39	0.66	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-R	0.05	0.08	0.13	0.21	0.34	0.56	0.83	0.96	1.00	1.00	1.00	1.00	1.00	1.00
HLT-C	0.01	0.01	0.01	0.01	0.01	0.02	0.11	0.68	0.99	1.00	1.00	1.00	1.00	1.00
HLT-L	0.09	0.16	0.25	0.37	0.54	0.78	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00
HLT-R	0.04	0.07	0.10	0.15	0.23	0.44	0.80	0.93	0.99	1.00	1.00	1.00	1.00	1.00
HOL-C	0.02	0.03	0.04	0.06	0.10	0.21	0.57	0.73	0.87	1.00	1.00	1.00	1.00	1.00
HOL-L	0.01	0.02	0.03	0.04	0.06	0.12	0.46	0.76	0.95	0.99	1.00	1.00	1.00	1.00
HOL-R	0.01	0.01	0.02	0.02	0.03	0.06	0.40	0.85	0.94	0.95	1.00	1.00	1.00	1.00
HWB-C	0.01	0.01	0.02	0.03	0.06	0.13	0.24	0.48	0.86	1.00	1.00	1.00	1.00	1.00
HWB-L	0.03	0.05	0.08	0.13	0.21	0.33	0.47	0.57	0.73	0.77	0.85	1.00	1.00	1.00
HWB-R	0.09	0.16	0.26	0.41	0.59	0.77	0.93	0.97	1.00	1.00	1.00	1.00	1.00	1.00
LIB-L	0.09	0.16	0.22	0.29	0.36	0.44	0.55	0.65	0.78	0.98	1.00	1.00	1.00	1.00
LIB-C	0.16	0.29	0.41	0.52	0.62	0.72	0.84	0.91	0.97	0.98	1.00	1.00	1.00	1.00
LIB-R	0.10	0.17	0.25	0.33	0.43	0.56	0.75	0.87	0.97	1.00	1.00	1.00	1.00	1.00
LIN-C	0.20	0.35	0.53	0.73	0.89	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIN-L	0.14	0.25	0.39	0.56	0.77	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIN-R	0.16	0.28	0.43	0.62	0.83	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIW [2]	0.16	0.29	0.43	0.60	0.80	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-C	0.12	0.22	0.33	0.45	0.59	0.80	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-L	0.10	0.18	0.28	0.38	0.50	0.66	0.87	0.95	1.00	1.00	1.00	1.00	1.00	1.00
LPS-R	0.06	0.10	0.16	0.25	0.40	0.58	0.77	0.88	0.96	1.00	1.00	1.00	1.00	1.00
MAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.51	0.71	0.73	1.00	1.00	1.00	1.00

Table 11. Final bed-material cumulative particle-size distribution of samples collected during fall 2012, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class													
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm
MAL-L	0.01	0.01	0.01	0.01	0.01	0.02	0.12	0.81	0.99	1.00	1.00	1.00	1.00	1.00
MAL-R	0.01	0.01	0.02	0.03	0.04	0.05	0.26	0.87	1.00	1.00	1.00	1.00	1.00	1.00
MDM-C	0.01	0.01	0.01	0.02	0.03	0.05	0.23	0.74	0.98	1.00	1.00	1.00	1.00	1.00
MDM-L	0.06	0.11	0.16	0.23	0.34	0.52	0.75	0.91	0.99	1.00	1.00	1.00	1.00	1.00
MDM-R	0.01	0.01	0.01	0.02	0.02	0.05	0.24	0.65	0.91	0.95	1.00	1.00	1.00	1.00
MOK-C	0.02	0.03	0.05	0.07	0.10	0.26	0.90	0.99	1.00	1.00	1.00	1.00	1.00	1.00
MOK-L	0.12	0.22	0.34	0.51	0.70	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-R	0.01	0.01	0.01	0.01	0.02	0.04	0.34	0.95	1.00	1.00	1.00	1.00	1.00	1.00
NMR-C	0.08	0.14	0.23	0.33	0.46	0.60	0.75	0.83	0.94	1.00	1.00	1.00	1.00	1.00
NMR-L	0.11	0.19	0.30	0.44	0.60	0.77	0.91	0.97	1.00	1.00	1.00	1.00	1.00	1.00
NMR-R	0.07	0.13	0.19	0.30	0.46	0.67	0.86	0.94	1.00	1.00	1.00	1.00	1.00	1.00
OBI-C	0.01	0.01	0.02	0.02	0.04	0.15	0.63	0.92	1.00	1.00	1.00	1.00	1.00	1.00
OBI-L	0.01	0.02	0.02	0.03	0.07	0.28	0.79	0.97	1.00	1.00	1.00	1.00	1.00	1.00
OBI-R	0.02	0.02	0.04	0.05	0.08	0.18	0.58	0.86	0.95	1.00	1.00	1.00	1.00	1.00
ORB-C	0.06	0.11	0.18	0.26	0.36	0.51	0.71	0.94	1.00	1.00	1.00	1.00	1.00	1.00
ORB-L	0.00	0.01	0.01	0.01	0.01	0.03	0.42	0.82	0.99	1.00	1.00	1.00	1.00	1.00
ORB-R	0.07	0.12	0.20	0.29	0.43	0.62	0.84	0.96	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-C	0.01	0.02	0.03	0.04	0.06	0.13	0.57	0.93	0.99	0.99	1.00	1.00	1.00	1.00
ORQ-L	0.04	0.08	0.11	0.16	0.24	0.50	0.90	0.97	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-R	0.01	0.02	0.04	0.05	0.07	0.12	0.35	0.77	0.99	1.00	1.00	1.00	1.00	1.00
OSJ-C	0.16	0.28	0.43	0.60	0.78	0.91	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-L	0.10	0.17	0.27	0.39	0.54	0.72	0.88	0.94	0.99	1.00	1.00	1.00	1.00	1.00
OSJ-R	0.12	0.21	0.32	0.47	0.67	0.86	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-C	0.01	0.01	0.01	0.01	0.01	0.04	0.45	0.91	1.00	1.00	1.00	1.00	1.00	1.00
PRI-L	0.02	0.03	0.04	0.06	0.10	0.30	0.80	0.96	1.00	1.00	1.00	1.00	1.00	1.00
PRI-R	0.01	0.01	0.01	0.02	0.05	0.13	0.40	0.76	0.96	0.98	0.99	0.99	1.00	1.00
RYI-C	0.18	0.32	0.48	0.63	0.76	0.86	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-L	0.01	0.01	0.01	0.01	0.01	0.01	0.20	0.92	1.00	1.00	1.00	1.00	1.00	1.00
RYI-R	0.10	0.18	0.32	0.53	0.70	0.77	0.87	0.95	1.00	1.00	1.00	1.00	1.00	1.00
SDC-C	0.01	0.02	0.04	0.06	0.09	0.14	0.37	0.89	1.00	1.00	1.00	1.00	1.00	1.00
SDC-L	0.04	0.07	0.11	0.17	0.28	0.47	0.82	0.98	1.00	1.00	1.00	1.00	1.00	1.00
SDC-R	0.01	0.01	0.01	0.02	0.02	0.04	0.10	0.72	1.00	1.00	1.00	1.00	1.00	1.00
SDI-C	0.01	0.01	0.01	0.01	0.01	0.01	0.39	0.98	1.00	1.00	1.00	1.00	1.00	1.00
SDI-L	0.01	0.01	0.01	0.01	0.01	0.01	0.36	0.97	1.00	1.00	1.00	1.00	1.00	1.00
SDI-R	0.01	0.01	0.01	0.01	0.01	0.01	0.19	0.94	1.00	1.00	1.00	1.00	1.00	1.00
SJG-C	0.01	0.01	0.02	0.04	0.08	0.15	0.29	0.72	0.97	1.00	1.00	1.00	1.00	1.00
SJG-L	0.01	0.01	0.02	0.03	0.08	0.14	0.20	0.54	0.95	1.00	1.00	1.00	1.00	1.00
SJG-R	0.19	0.34	0.49	0.62	0.75	0.87	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 11. Final bed-material cumulative particle-size distribution of samples collected during fall 2012, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class													
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm
SJJ-C	0.01	0.01	0.01	0.01	0.01	0.02	0.09	0.38	0.49	0.49	0.58	0.86	0.91	1.00
SJJ-L	0.01	0.01	0.01	0.01	0.01	0.01	0.13	0.65	0.84	0.85	0.89	0.94	0.97	1.00
SJJ-R	0.01	0.01	0.01	0.01	0.01	0.01	0.26	0.94	1.00	1.00	1.00	1.00	1.00	1.00
SMR-C	0.01	0.01	0.01	0.02	0.04	0.08	0.17	0.49	0.97	1.00	1.00	1.00	1.00	1.00
SMR-L	0.02	0.04	0.06	0.09	0.16	0.31	0.48	0.57	0.73	0.96	1.00	1.00	1.00	1.00
SMR-R	0.02	0.04	0.07	0.10	0.16	0.31	0.70	0.94	1.00	1.00	1.00	1.00	1.00	1.00
SRH-C	0.01	0.01	0.01	0.01	0.01	0.01	0.13	0.83	1.00	1.00	1.00	1.00	1.00	1.00
SRH-L	0.03	0.06	0.10	0.16	0.28	0.45	0.77	0.97	1.00	1.00	1.00	1.00	1.00	1.00
SRH-R	0.01	0.02	0.03	0.05	0.08	0.15	0.21	0.30	0.74	0.95	1.00	1.00	1.00	1.00
SRV-C	0.01	0.01	0.01	0.01	0.02	0.04	0.44	0.91	0.99	1.00	1.00	1.00	1.00	1.00
SRV-L	0.01	0.01	0.01	0.02	0.03	0.09	0.67	0.96	1.00	1.00	1.00	1.00	1.00	1.00
SRV-R	0.01	0.01	0.01	0.01	0.01	0.02	0.09	0.71	0.97	0.98	1.00	1.00	1.00	1.00
SSS-C	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.35	0.98	1.00	1.00	1.00	1.00	1.00
SSS-L	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.33	0.97	1.00	1.00	1.00	1.00	1.00
SSS-R	0.05	0.09	0.14	0.21	0.34	0.66	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SUT-C	0.01	0.01	0.01	0.02	0.03	0.05	0.07	0.16	0.85	1.00	1.00	1.00	1.00	1.00
SUT-L	0.06	0.10	0.15	0.24	0.39	0.60	0.77	0.83	0.94	1.00	1.00	1.00	1.00	1.00
SUT-R	0.03	0.05	0.08	0.13	0.25	0.44	0.59	0.77	0.99	1.00	1.00	1.00	1.00	1.00
TRN-C	0.04	0.06	0.10	0.14	0.20	0.38	0.80	0.94	1.00	1.00	1.00	1.00	1.00	1.00
TRN-L	0.13	0.24	0.37	0.52	0.69	0.84	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00
TRN-R	0.05	0.09	0.13	0.19	0.28	0.51	0.81	0.92	0.99	1.00	1.00	1.00	1.00	1.00
TSL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.64	1.00	1.00	1.00	1.00	1.00	1.00
TSL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.62	0.99	1.00	1.00	1.00	1.00	1.00
TSL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.70	1.00	1.00	1.00	1.00	1.00	1.00
UCS-C	0.17	0.31	0.49	0.70	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-L	0.19	0.33	0.52	0.74	0.90	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-R	0.21	0.38	0.60	0.81	0.92	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ULC-C	0.10	0.17	0.28	0.43	0.60	0.74	0.86	0.99	1.00	1.00	1.00	1.00	1.00	1.00
ULC-L	0.03	0.04	0.07	0.09	0.12	0.16	0.30	0.86	1.00	1.00	1.00	1.00	1.00	1.00
ULC-R	0.05	0.09	0.14	0.21	0.29	0.36	0.41	0.62	0.98	0.99	1.00	1.00	1.00	1.00
VCU-C	0.08	0.15	0.24	0.36	0.52	0.74	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00
VCU-L	0.07	0.12	0.19	0.28	0.43	0.67	0.92	0.99	1.00	1.00	1.00	1.00	1.00	1.00
VCU-R	0.07	0.13	0.20	0.31	0.47	0.71	0.92	0.98	1.00	1.00	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Site is in open water and therefore does not have a channel location.

Table 12. Final bed-material cumulative particle-size distribution of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
DSJ-C	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.63	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-L	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.38	0.95	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-R	0.01	0.01	0.01	0.01	0.01	0.01	0.10	0.56	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DWC-1 [2]	0.12	0.20	0.28	0.36	0.45	0.55	0.81	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DWC-2 [2]	0.08	0.14	0.21	0.28	0.37	0.50	0.71	0.88	0.94	0.94	0.99	1.00	1.00	1.00	1.00
DWC-3 [2]	0.34	0.58	0.75	0.85	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-4 [2]	0.13	0.23	0.37	0.55	0.78	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-C	0.06	0.11	0.16	0.21	0.28	0.39	0.66	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DWC-L	0.18	0.30	0.41	0.50	0.62	0.75	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-R	0.14	0.25	0.39	0.53	0.69	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.32	0.97	1.00	1.00	1.00	1.00	1.00	1.00
FAL-L	0.01	0.01	0.01	0.02	0.03	0.03	0.06	0.18	0.74	0.97	1.00	1.00	1.00	1.00	1.00
FAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.60	0.98	0.98	1.00	1.00	1.00	1.00	1.00
FPT-C	0.01	0.01	0.01	0.01	0.01	0.02	0.08	0.69	0.98	0.99	1.00	1.00	1.00	1.00	1.00
FPT-L	0.02	0.03	0.05	0.06	0.09	0.16	0.29	0.62	0.88	0.97	1.00	1.00	1.00	1.00	1.00
FPT-R	0.01	0.01	0.01	0.01	0.01	0.03	0.23	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GES-C	0.01	0.01	0.01	0.01	0.01	0.01	0.14	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GES-L	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.53	0.95	0.96	0.98	0.99	1.00	1.00	1.00
GES-R	0.01	0.01	0.01	0.01	0.02	0.05	0.59	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-C	0.02	0.03	0.04	0.06	0.07	0.10	0.22	0.53	0.74	0.88	0.95	0.97	0.97	1.00	1.00
GSS-L	0.21	0.39	0.54	0.64	0.71	0.78	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-R	0.03	0.05	0.08	0.12	0.20	0.44	0.81	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-C	0.01	0.01	0.01	0.02	0.02	0.06	0.40	0.79	0.99	1.00	1.00	1.00	1.00	1.00	1.00
HLT-L	0.01	0.02	0.02	0.03	0.04	0.06	0.16	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-R	0.02	0.03	0.05	0.07	0.10	0.26	0.80	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-C	0.05	0.08	0.13	0.19	0.28	0.46	0.83	0.91	0.97	1.00	1.00	1.00	1.00	1.00	1.00
HOL-L	0.04	0.07	0.11	0.16	0.24	0.38	0.69	0.86	0.94	1.00	1.00	1.00	1.00	1.00	1.00
HOL-R	0.01	0.01	0.02	0.02	0.03	0.05	0.25	0.67	0.93	0.95	0.98	0.99	0.99	1.00	1.00
HWB-C	0.01	0.01	0.01	0.02	0.03	0.05	0.15	0.36	0.72	0.95	0.98	0.99	0.99	1.00	1.00
HWB-L	0.01	0.01	0.01	0.01	0.03	0.07	0.20	0.55	0.98	1.00	1.00	1.00	1.00	1.00	1.00
HWB-R	0.03	0.05	0.08	0.12	0.20	0.47	0.90	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIB-C	0.20	0.36	0.52	0.66	0.78	0.88	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIB-L	0.14	0.25	0.38	0.51	0.69	0.83	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIB-R	0.06	0.12	0.18	0.25	0.35	0.47	0.66	0.80	0.92	1.00	1.00	1.00	1.00	1.00	1.00
LPS-1 [2]	0.14	0.25	0.40	0.57	0.75	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 12. Final bed-material cumulative particle-size distribution of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
LPS-2 [2]	0.10	0.18	0.27	0.37	0.48	0.64	0.81	0.91	0.99	1.00	1.00	1.00	1.00	1.00	1.00
LPS-3 [2]	0.11	0.19	0.29	0.40	0.53	0.70	0.90	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-4 [2]	0.07	0.13	0.24	0.41	0.68	0.86	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-C	0.10	0.18	0.30	0.44	0.62	0.78	0.92	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-L	0.17	0.30	0.45	0.60	0.74	0.87	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-R	0.10	0.19	0.32	0.49	0.68	0.83	0.95	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MAL-C [3]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MAL-L	0.01	0.01	0.01	0.01	0.01	0.02	0.15	0.67	0.95	0.97	0.98	0.99	1.00	1.00	1.00
MAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-1 [2]	0.04	0.08	0.12	0.16	0.25	0.46	0.83	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-2 [2]	0.03	0.06	0.09	0.13	0.19	0.34	0.62	0.84	0.98	1.00	1.00	1.00	1.00	1.00	1.00
MDM-3 [2]	0.02	0.03	0.05	0.07	0.11	0.20	0.61	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-4 [2]	0.01	0.03	0.04	0.06	0.10	0.23	0.49	0.81	0.98	0.99	1.00	1.00	1.00	1.00	1.00
MDM-C	0.01	0.02	0.03	0.04	0.06	0.14	0.61	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-L	0.05	0.08	0.13	0.18	0.26	0.47	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-R	0.01	0.02	0.03	0.04	0.06	0.11	0.22	0.67	0.97	1.00	1.00	1.00	1.00	1.00	1.00
MOK-1 [2]	0.10	0.18	0.29	0.42	0.61	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-2 [2]	0.04	0.07	0.11	0.16	0.23	0.51	0.92	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-3 [2]	0.01	0.02	0.02	0.03	0.06	0.15	0.76	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-4 [2]	0.01	0.02	0.04	0.05	0.07	0.10	0.30	0.88	0.98	1.00	1.00	1.00	1.00	1.00	1.00
MOK-C	0.01	0.01	0.02	0.03	0.04	0.16	0.83	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00
MOK-L	0.10	0.17	0.27	0.40	0.59	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-R	0.01	0.01	0.01	0.01	0.01	0.03	0.50	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-C	0.06	0.12	0.20	0.30	0.44	0.65	0.89	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-L	0.10	0.18	0.28	0.42	0.61	0.81	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-R [3]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
NMR2-C [2]	0.10	0.18	0.29	0.42	0.60	0.78	0.93	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR2-L [2]	0.12	0.23	0.30	0.36	0.43	0.51	0.62	0.72	0.77	0.77	0.82	0.83	0.83	1.00	1.00
NMR2-R [2]	0.31	0.56	0.78	0.90	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-C	0.02	0.04	0.07	0.11	0.17	0.27	0.59	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00
OBI-L	0.03	0.05	0.07	0.10	0.15	0.31	0.78	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-R [3]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ORB-C	0.02	0.04	0.05	0.06	0.06	0.07	0.11	0.55	0.98	1.00	1.00	1.00	1.00	1.00	1.00
ORB-L	0.01	0.02	0.03	0.04	0.05	0.07	0.57	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-R	0.11	0.21	0.32	0.43	0.51	0.60	0.76	0.87	0.91	0.92	0.97	0.99	1.00	1.00	1.00

Table 12. Final bed-material cumulative particle-size distribution of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
ORQ-C	0.02	0.03	0.04	0.06	0.09	0.15	0.31	0.48	0.67	0.94	0.98	1.00	1.00	1.00	1.00
ORQ-L	0.02	0.04	0.06	0.08	0.11	0.22	0.65	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-R	0.01	0.02	0.02	0.04	0.06	0.21	0.69	0.88	0.97	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-C	0.09	0.16	0.25	0.38	0.56	0.78	0.93	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-L	0.14	0.25	0.39	0.55	0.74	0.90	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-R	0.13	0.23	0.36	0.52	0.71	0.87	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-C	0.02	0.03	0.04	0.06	0.12	0.44	0.86	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-L	0.05	0.09	0.15	0.23	0.32	0.41	0.66	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-R	0.04	0.07	0.12	0.17	0.27	0.52	0.80	0.88	0.96	1.00	1.00	1.00	1.00	1.00	1.00
RYI-1 [2]	0.05	0.10	0.16	0.22	0.27	0.31	0.64	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-2 [2]	0.34	0.60	0.80	0.91	0.98	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
RYI-3 [2]	0.15	0.27	0.40	0.53	0.67	0.80	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-4 [2]	0.12	0.22	0.37	0.57	0.80	0.91	0.97	0.98	0.98	0.98	0.99	0.99	0.99	0.99	1.00
RYI-C	0.15	0.28	0.45	0.62	0.76	0.86	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-L	0.04	0.07	0.11	0.15	0.20	0.24	0.53	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00
RYI-R	0.21	0.38	0.57	0.73	0.83	0.90	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-C	0.01	0.01	0.01	0.01	0.01	0.02	0.18	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-L	0.01	0.01	0.01	0.01	0.01	0.01	0.20	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-R	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-C	0.01	0.01	0.01	0.01	0.02	0.03	0.48	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-L	0.01	0.01	0.01	0.01	0.02	0.06	0.70	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-R [3]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SJG-C	0.03	0.05	0.08	0.13	0.28	0.55	0.80	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-L	0.02	0.03	0.04	0.07	0.18	0.36	0.52	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-R [3]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SJJ-C	0.17	0.32	0.51	0.74	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJJ-L	0.00	0.00	0.00	0.00	0.00	0.01	0.25	0.85	0.98	1.00	1.00	1.00	1.00	1.00	1.00
SJJ-R	0.15	0.29	0.41	0.51	0.59	0.62	0.70	0.89	0.92	0.92	1.00	1.00	1.00	1.00	1.00
SMR-C	0.01	0.01	0.02	0.03	0.04	0.07	0.22	0.59	0.95	1.00	1.00	1.00	1.00	1.00	1.00
SMR-L	0.01	0.01	0.01	0.01	0.02	0.02	0.05	0.33	0.90	1.00	1.00	1.00	1.00	1.00	1.00
SMR-R	0.12	0.24	0.38	0.53	0.73	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-C	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-L	0.01	0.01	0.01	0.01	0.01	0.02	0.27	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-R	0.01	0.02	0.03	0.04	0.04	0.06	0.08	0.30	0.89	0.97	0.99	1.00	1.00	1.00	1.00
SRV-C	0.01	0.01	0.01	0.02	0.03	0.07	0.51	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 12. Final bed-material cumulative particle-size distribution of samples collected during winter 2013, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class														
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<4.75 mm	<8 mm	<9.5 mm	<11.2 mm	<19 mm
SRV-L [3]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SRV-R	0.01	0.02	0.04	0.05	0.06	0.10	0.49	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SSS-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.26	0.92	1.00	1.00	1.00	1.00	1.00	1.00
SSS-L	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.69	0.99	0.99	1.00	1.00	1.00	1.00	1.00
SSS-R	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.27	0.95	1.00	1.00	1.00	1.00	1.00	1.00
SUT-C	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.85	1.00	1.00	1.00	1.00	1.00	1.00
SUT-L	0.25	0.48	0.72	0.89	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-R	0.01	0.02	0.04	0.05	0.08	0.14	0.29	0.69	0.99	1.00	1.00	1.00	1.00	1.00	1.00
SUT2-C [2]	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.10	0.74	0.99	0.99	1.00	1.00	1.00	1.00
SUT2-L [2]	0.16	0.29	0.37	0.43	0.48	0.53	0.62	0.82	0.93	0.95	0.95	0.95	1.00	1.00	1.00
SUT2-R [2]	0.01	0.01	0.01	0.01	0.01	0.03	0.08	0.31	0.91	0.96	0.97	0.97	0.99	0.99	1.00
TRN-C	0.09	0.17	0.26	0.36	0.48	0.69	0.94	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-L	0.09	0.17	0.29	0.43	0.60	0.80	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-R	0.15	0.28	0.43	0.60	0.76	0.90	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.53	0.97	1.00	1.00	1.00	1.00	1.00	1.00
TSL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.54	0.95	1.00	1.00	1.00	1.00	1.00	1.00
TSL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.59	0.99	1.00	1.00	1.00	1.00	1.00	1.00
UCS-C	0.21	0.38	0.58	0.79	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-L	0.20	0.36	0.57	0.78	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-R	0.22	0.40	0.63	0.83	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-C	0.12	0.22	0.34	0.49	0.66	0.84	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-L	0.02	0.03	0.05	0.08	0.13	0.26	0.65	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-R	0.01	0.02	0.04	0.06	0.10	0.21	0.62	0.86	0.96	1.00	1.00	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Supplemental sample location. See text for details.

[3] Amount of sample material was insufficient to evaluate particle-size distribution.

Table 13. Final bed-material cumulative particle-size distribution of samples collected during fall 2013, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class																	
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<2.8 mm	<4 mm	<4.75 mm	<5.6 mm	<8 mm	<11.2 mm	<16 mm	<22.4 mm
DSJ-C	0.01	0.01	0.01	0.01	0.01	0.01	0.18	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-L	0.01	0.01	0.01	0.01	0.01	0.02	0.41	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DSJ-R	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.53	0.94	0.95	0.95	0.95	0.95	0.95	0.97	0.98	1.00	1.00
DWC-C	0.05	0.08	0.12	0.15	0.19	0.25	0.48	0.82	0.97	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
DWC-L	0.13	0.23	0.32	0.39	0.46	0.54	0.71	0.90	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DWC-R	0.11	0.20	0.30	0.41	0.56	0.72	0.92	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FAL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FAL-L	0.01	0.02	0.03	0.04	0.07	0.13	0.33	0.72	0.95	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
FAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.33	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FPT-C	0.01	0.01	0.02	0.03	0.05	0.06	0.13	0.70	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FPT-L	0.10	0.17	0.27	0.40	0.58	0.83	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FPT-R	0.07	0.13	0.20	0.29	0.40	0.60	0.94	0.98	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00
GES-C	0.01	0.01	0.02	0.03	0.04	0.06	0.16	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GES-L	0.01	0.01	0.02	0.03	0.04	0.09	0.18	0.29	0.62	0.89	0.94	0.98	0.99	1.00	1.00	1.00	1.00	1.00
GES-R	0.06	0.10	0.15	0.22	0.32	0.52	0.90	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-C	0.03	0.06	0.09	0.13	0.18	0.28	0.38	0.58	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-L	0.05	0.09	0.13	0.18	0.25	0.46	0.81	0.87	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GSS-R	0.08	0.15	0.23	0.34	0.49	0.71	0.93	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-C	0.03	0.05	0.08	0.11	0.17	0.31	0.60	0.82	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-L	0.02	0.03	0.04	0.06	0.09	0.20	0.82	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HLT-R	0.01	0.01	0.01	0.02	0.03	0.07	0.36	0.84	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-C	0.12	0.22	0.35	0.50	0.68	0.84	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-L	0.01	0.01	0.02	0.02	0.04	0.12	0.37	0.74	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HOL-R	0.01	0.02	0.03	0.05	0.08	0.16	0.40	0.73	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HWB-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.24	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HWB-L [2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
HWB-R	0.06	0.10	0.15	0.23	0.37	0.68	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIB-L	0.24	0.41	0.55	0.67	0.78	0.88	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIB-C	0.22	0.38	0.51	0.62	0.72	0.79	0.83	0.83	0.83	0.86	0.87	0.88	0.89	0.89	0.91	0.94	0.94	1.00
LIB-R	0.18	0.32	0.44	0.54	0.66	0.79	0.92	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIN-C	0.24	0.43	0.64	0.81	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIN-L	0.21	0.36	0.52	0.67	0.81	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIN-R	0.20	0.37	0.58	0.79	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LIW [3]	0.19	0.35	0.54	0.72	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-C	0.22	0.40	0.58	0.74	0.85	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-L	0.16	0.29	0.44	0.60	0.75	0.88	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LPS-R	0.10	0.19	0.31	0.47	0.67	0.82	0.92	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MAL-C	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.52	0.93	0.98	0.98	0.98	0.99	0.99	1.00	1.00	1.00	1.00

Table 13. Final bed-material cumulative particle-size distribution of samples collected during fall 2013, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class																	
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<2.8 mm	<4 mm	<4.75 mm	<5.6 mm	<8 mm	<11.2 mm	<16 mm	<22.4 mm
MAL-L	0.07	0.13	0.21	0.28	0.34	0.38	0.46	0.70	0.95	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MAL-R	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.53	0.93	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-C	0.01	0.01	0.01	0.01	0.01	0.03	0.28	0.78	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-L	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.56	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MDM-R	0.03	0.06	0.09	0.13	0.19	0.37	0.75	0.87	0.97	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-C	0.01	0.01	0.02	0.03	0.04	0.10	0.73	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-L	0.10	0.19	0.30	0.43	0.60	0.82	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MOK-R	0.01	0.01	0.01	0.01	0.01	0.03	0.18	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-C	0.06	0.11	0.18	0.26	0.37	0.49	0.61	0.70	0.89	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-L	0.12	0.21	0.35	0.51	0.69	0.82	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NMR-R	0.08	0.16	0.26	0.36	0.48	0.65	0.86	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-C	0.02	0.03	0.05	0.07	0.10	0.24	0.82	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-L	0.03	0.06	0.09	0.13	0.20	0.33	0.70	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OBI-R	0.03	0.05	0.07	0.10	0.14	0.22	0.49	0.78	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-C	0.02	0.04	0.06	0.08	0.10	0.14	0.34	0.86	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-L	0.01	0.01	0.01	0.01	0.01	0.02	0.37	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORB-R	0.08	0.15	0.25	0.35	0.44	0.55	0.77	0.91	0.97	0.98	0.98	0.99	0.99	1.00	1.00	1.00	1.00	1.00
ORQ-C	0.05	0.09	0.14	0.20	0.29	0.47	0.81	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-L	0.03	0.04	0.07	0.10	0.14	0.31	0.73	0.88	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ORQ-R	0.01	0.02	0.03	0.05	0.08	0.17	0.44	0.73	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-C	0.15	0.27	0.42	0.58	0.76	0.89	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-L	0.10	0.18	0.29	0.40	0.53	0.69	0.88	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OSJ-R	0.12	0.22	0.35	0.51	0.70	0.87	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-C	0.10	0.18	0.29	0.43	0.60	0.75	0.86	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-L	0.11	0.19	0.30	0.44	0.64	0.85	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PRI-R	0.01	0.01	0.01	0.01	0.02	0.04	0.19	0.62	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-C	0.21	0.39	0.61	0.81	0.93	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RYI-L	0.03	0.06	0.08	0.10	0.12	0.14	0.46	0.82	0.85	0.85	0.85	0.85	0.85	0.85	0.88	0.92	1.00	1.00
RYI-R	0.12	0.22	0.33	0.46	0.67	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-C	0.01	0.02	0.02	0.04	0.05	0.07	0.22	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-L	0.06	0.12	0.19	0.30	0.44	0.63	0.89	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDC-R	0.02	0.03	0.05	0.08	0.13	0.19	0.37	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-C	0.01	0.01	0.01	0.01	0.01	0.01	0.58	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-L	0.01	0.01	0.01	0.01	0.01	0.03	0.50	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SDI-R	0.01	0.01	0.01	0.01	0.01	0.01	0.27	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-C	0.01	0.01	0.01	0.01	0.01	0.02	0.09	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-L	0.01	0.02	0.02	0.04	0.10	0.25	0.47	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SJG-R	0.10	0.19	0.31	0.42	0.55	0.66	0.77	0.83	0.87	0.87	0.88	0.88	0.89	0.90	0.91	1.00	1.00	1.00
SJJ-C	0.12	0.21	0.32	0.42	0.48	0.50	0.56	0.83	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 13. Final bed-material cumulative particle-size distribution of samples collected during fall 2013, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; n/a, amount of sample material was insufficient to evaluate the particle-size distribution; <, less than]

Sample-location identifier [1]	Fraction of bed-material particles finer than mm size class																	
	<0.004 mm	<0.008 mm	<0.016 mm	<0.0313 mm	<0.0625 mm	<0.125 mm	<0.25 mm	<0.5 mm	<1 mm	<2 mm	<2.8 mm	<4 mm	<4.75 mm	<5.6 mm	<8 mm	<11.2 mm	<16 mm	<22.4 mm
SJJ-L	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.89	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00
SJJ-R	0.01	0.01	0.01	0.01	0.01	0.03	0.31	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SMR-C	0.04	0.08	0.13	0.19	0.27	0.39	0.61	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SMR-L	0.02	0.03	0.05	0.06	0.09	0.13	0.20	0.25	0.39	0.67	0.74	0.81	0.84	0.87	0.96	1.00	1.00	1.00
SMR-R	0.11	0.21	0.36	0.54	0.76	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-C	0.01	0.02	0.03	0.04	0.06	0.08	0.17	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-L	0.09	0.16	0.27	0.40	0.58	0.77	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRH-R	0.04	0.08	0.13	0.19	0.29	0.47	0.79	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-C	0.01	0.01	0.01	0.01	0.02	0.07	0.53	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-L	0.01	0.01	0.01	0.01	0.01	0.04	0.46	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SRV-R	0.01	0.01	0.01	0.01	0.01	0.02	0.19	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SSS-C	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.32	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SSS-L	0.01	0.01	0.02	0.03	0.05	0.08	0.12	0.23	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SSS-R	0.01	0.02	0.04	0.06	0.08	0.10	0.20	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-C	0.01	0.01	0.02	0.03	0.05	0.07	0.08	0.14	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SUT-L [2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SUT-R	0.05	0.09	0.15	0.21	0.28	0.35	0.43	0.49	0.62	0.79	0.83	0.86	0.87	0.88	0.91	0.96	1.00	1.00
TRN-C	0.10	0.18	0.28	0.39	0.51	0.67	0.92	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-L	0.04	0.08	0.13	0.18	0.26	0.41	0.82	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TRN-R	0.15	0.26	0.40	0.54	0.68	0.83	0.97	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-C	0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-L	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.56	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TSL-R	0.01	0.01	0.01	0.01	0.01	0.03	0.22	0.73	0.97	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00
UCS-C	0.03	0.05	0.08	0.11	0.14	0.15	0.16	0.34	0.86	0.96	0.97	0.98	0.98	0.98	0.98	1.00	1.00	1.00
UCS-L	0.02	0.04	0.07	0.09	0.11	0.12	0.16	0.71	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-R	0.08	0.16	0.26	0.38	0.50	0.55	0.64	0.88	0.96	0.98	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00
ULC-C	0.22	0.42	0.68	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ULC-L	0.19	0.35	0.54	0.74	0.88	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ULC-R	0.24	0.43	0.66	0.84	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-C	0.09	0.17	0.27	0.41	0.60	0.80	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-L	0.07	0.12	0.20	0.29	0.43	0.58	0.75	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-R	0.10	0.18	0.28	0.41	0.58	0.79	0.95	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Amount of sample material was insufficient to evaluate particle-size distribution.

[3] Site is in open water and therefore does not have a channel location.

Acknowledgments

The authors wish to acknowledge Dan Whealdon-Haught, Paul Buchanan, Kurt Weidich, Brooks Wiesser, and Amber Powell, all from U.S. Geological Survey (USGS) for their assistance with sample collection and Joan Lopez and Douglas Dean, from USGS, for their assistance with laboratory analysis.

References Cited

Achete, F.M., van der Wegen, M., Roelvink, D., and Jaffe, B., 2015, A 2-D process-based model for suspended sediment dynamics: a first step towards ecological modeling: Hydrology and Earth System Sciences Discussions, v. 12, p. 1507–1553.

Beckman Coulter Inc., 2009, LS 13–320 Laser diffraction particle size analyzer instrument manual: Brea, Calif., Beckman Coulter Inc., 246 p.

Bever A.J., and MacWilliams, M.L., 2013, Simulating sediment transport processes in San Pablo Bay using coupled hydrodynamic, wave, and sediment transport models: Marine Geology, v. 345, p. 235–253.

Davis, B.E., 2005, A guide to the proper selection and use of Federally approved sediment and water-quality samplers: Vicksburg, Miss.: U.S. Geological Survey Open File Report 2005–1087, 20 p.

Edwards, T.K., and Glysson, G.D., 1999, Field methods for measurement of fluvial sediment: U.S. Geological Survey Techniques of Water-Resources Investigations, book 3, chap. C2, 89 p.

Guy, H.P., 1969, Laboratory theory and methods for sediment analysis: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. C1, 59 p.

Heiri, O., Lotter, A.F., and Lemcke, G., 2001, Loss on ignition as a method for estimating organic and carbonate content in sediments: reproducibility and comparability of results: Journal of Paleolimnology, v. 25, p. 101–110.

Helsel, D.R., and Hirsch, R.M., 2002, Statistical methods in water resources: Techniques and Water Resources Investigations of the U.S. Geological Survey, chap. A3, book 4 Hydrologic analysis and interpretation, 510 p.

Looney, S.W., and Gulledge, T. R., 1985, Probability plotting positions and goodness of fit for the normal distribution: The Statistician, v. 34, p. 297–303.

Mount, J.F., 1995, California rivers and streams: the conflict between fluvial process and land use: Berkeley and Los Angeles, Calif., University of California Press Books, 359 p.

National Oceanic and Atmospheric Administration, 1985, Climates of the States—Narrative summaries, tables, and maps for each state, with overview of state climatologist programs (3d ed.): Detroit, Gale Research.

Potyondy, J., and Bunte, K., 2002, Sampling with the US SAH–97 hand-held particle-size analyzer: Vickburg, Miss., Federal Interagency Sedimentation Project, 6 p.

Subcommittee on Sedimentation, 1958, Report M, operation and maintenance of US BM–54 Bed-Material Sampler: Minneapolis, Minn., 17 p.

Thompson, J., 1969, Settlement geography of the Sacramento–San Joaquin Delta, California: Stanford, Calif., Stanford University, Ph.D. dissertation, 551 p.

U.S. Geological Survey National Water Information System, variously dated, accessed July 25, 2013, at http://waterdata.usgs.gov/ca/nwis/rt.

Wilcoxon, F. 1945, Individual comparisons by ranking methods: Biometrics, v. 1, p. 80–83.

Appendix 1

Table 1-1. Bed-material cumulative particle-size distribution of samples collected in fall 2010, analyzed using sieving method, Sacramento–San Joaquin Delta, California.

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than; —, missing data]

Sample-location identifier [1]	Total sample weight (grams)	Bed-material particles finer than mm size class, in percent							
		<0.063 mm	<0.125 mm	<0.250 mm	<0.50 mm	<1 mm	<2 mm	<4.75 mm	<5.6 mm
DSJ-C	246.75	0.00	0.01	0.69	0.99	1.00	1.00	1.00	1.00
DSJ-L	207.97	0.02	0.04	0.58	0.98	1.00	1.00	1.00	1.00
DSJ-R	297.71	0.01	0.01	0.12	0.97	1.00	1.00	1.00	1.00
DWC-C	5.34	0.14	0.26	0.71	0.97	0.99	1.00	1.00	1.00
DWC-L	172.41	0.48	0.61	0.95	0.99	1.00	1.00	1.00	1.00
DWC-R	51.17	0.91	0.95	0.98	0.99	0.99	1.00	1.00	1.00
FAL-C	323.61	0.00	0.00	0.00	0.18	0.94	0.97	0.99	1.00
FAL-L	309.19	0.01	0.01	0.07	0.28	0.81	0.97	1.00	1.00
FAL-R	275.26	0.00	0.00	0.08	0.96	0.99	1.00	1.00	1.00
FPR-R	319.78	0.06	0.08	0.15	0.36	1.00	1.00	1.00	1.00
FPT-C	161.55	0.02	0.03	0.07	0.33	0.96	1.00	1.00	1.00
FPT-L	11.54	0.15	0.28	0.42	0.66	0.89	1.00	1.00	1.00
GES-C	171.37	0.00	0.01	0.06	1.00	1.00	1.00	1.00	1.00
GES-L	33.96	0.20	0.29	0.41	0.52	0.56	0.62	0.80	1.00
GES-R	196.25	0.20	0.22	0.63	0.99	1.00	1.00	1.00	1.00
GSS-C	218.22	0.14	0.19	0.22	0.98	1.00	1.00	1.00	1.00
GSS-L	48.28	0.43	0.64	0.87	0.98	1.00	1.00	1.00	1.00
GSS-R	94.85	0.21	0.43	0.79	0.99	1.00	1.00	1.00	1.00
HLT-C	81.28	0.08	0.13	0.53	0.86	0.99	1.00	1.00	1.00
HLT-L	118.31	0.70	0.83	0.96	0.99	0.99	1.00	1.00	1.00
HLT-R	215.27	0.11	0.15	0.60	0.99	1.00	1.00	1.00	1.00
HOL-C	36.49	0.34	0.56	0.97	0.99	1.00	1.00	1.00	1.00
HOL-L	107.03	0.01	0.02	0.37	0.95	0.98	0.98	0.99	1.00
HOL-R	237.43	0.01	0.02	0.28	0.99	1.00	1.00	1.00	1.00
HWB-C	355.87	0.00	0.01	0.01	0.08	0.99	1.00	1.00	1.00
HWB-L	291.93	0.00	0.00	0.01	0.08	0.99	1.00	1.00	1.00
HWB-R	353.70	0.01	0.02	0.06	0.32	0.99	1.00	1.00	1.00
LPS-C	136.09	0.88	0.97	1.00	1.00	1.00	1.00	1.00	1.00
LPS-L	117.98	0.91	0.98	0.99	1.00	1.00	1.00	1.00	1.00
LPS-R	46.80	0.44	0.49	0.64	0.94	0.98	1.00	1.00	1.00
MDM-C	92.61	0.43	0.49	0.62	0.86	0.98	1.00	1.00	1.00
MDM-L	14.87	0.80	0.89	0.95	0.98	0.99	1.00	1.00	1.00
MDM-R	172.50	0.05	0.05	0.13	0.39	0.99	1.00	1.00	1.00
MOK-C	28.93	0.51	0.88	0.99	1.00	1.00	1.00	1.00	1.00
MOK-L	140.65	0.57	0.84	0.98	0.99	1.00	1.00	1.00	1.00
MOK-R	142.55	0.02	0.03	0.94	1.00	1.00	1.00	1.00	1.00
OBI-C	93.81	0.04	0.09	0.40	0.93	1.00	1.00	1.00	1.00
OBI-L	62.50	0.14	0.24	0.92	0.99	1.00	1.00	1.00	1.00
OBI-R	171.73	0.05	0.16	0.78	0.98	1.00	1.00	1.00	1.00
ORB-C	267.07	0.29	0.30	0.35	0.59	1.00	1.00	1.00	1.00
ORB-L	73.28	0.15	0.22	0.39	0.91	0.98	1.00	1.00	1.00
ORB-R	173.79	0.02	0.05	0.09	0.18	0.85	1.00	1.00	1.00
ORQ-C	93.68	0.09	0.16	0.88	0.95	0.96	1.00	1.00	1.00
ORQ-L	106.49	0.07	0.11	0.26	0.51	0.99	1.00	1.00	1.00
ORQ-R	103.65	0.05	0.11	0.61	0.94	0.99	1.00	1.00	1.00
OSJ-C	265.62	0.26	0.29	0.45	0.98	1.00	1.00	1.00	1.00
OSJ-L	139.53	0.96	0.98	0.98	0.99	1.00	1.00	1.00	1.00

Table 1-1. Bed-material cumulative particle-size distribution of samples collected in fall 2010, analyzed using sieving method, Sacramento–San Joaquin Delta, California.—Continued

[All results were rounded to the nearest hundredth. mm, millimeter; <, less than; —, missing data]

Sample-location identifier [1]	Total sample weight (grams)	Bed-material particles finer than mm size class, in percent							
		<0.063 mm	<0.125 mm	<0.250 mm	<0.50 mm	<1 mm	<2 mm	<4.75 mm	<5.6 mm
OSJ-R [2]	—	—	—	—	—	—	—	—	—
PRI-C	256.75	0.04	0.06	0.27	0.84	0.97	1.00	1.00	1.00
PRI-L	231.24	0.04	0.06	0.27	0.50	0.98	1.00	1.00	1.00
PRI-R	166.98	0.16	0.20	0.34	0.98	1.00	1.00	1.00	1.00
RYI-C	15.32	0.95	0.96	0.98	1.00	1.00	1.00	1.00	1.00
RYI-L	292.31	0.00	0.00	0.03	0.81	1.00	1.00	1.00	1.00
RYI-R	42.07	0.97	0.98	0.99	1.00	1.00	1.00	1.00	1.00
SDC-C	92.70	0.07	0.10	0.25	0.98	1.00	1.00	1.00	1.00
SDC-L	230.77	0.17	0.19	0.23	0.97	1.00	1.00	1.00	1.00
SDC-R	171.67	0.01	0.01	0.03	0.94	1.00	1.00	1.00	1.00
SDI-C	321.23	0.02	0.03	0.32	1.00	1.00	1.00	1.00	1.00
SDI-L	223.85	0.03	0.04	0.76	1.00	1.00	1.00	1.00	1.00
SDI-R	247.89	0.22	0.32	0.91	1.00	1.00	1.00	1.00	1.00
SJG-C	205.29	0.19	0.33	0.56	0.91	0.98	1.00	1.00	1.00
SJG-L	247.92	0.20	0.29	0.37	0.45	0.92	1.00	1.00	1.00
SJG-R	5.51	0.33	0.47	0.68	0.96	1.00	1.00	1.00	1.00
SJJ-C	14.39	0.25	0.26	0.45	0.95	0.99	1.00	1.00	1.00
SJJ-L	285.59	0.01	0.01	0.11	0.96	0.99	1.00	1.00	1.00
SJJ-R	270.73	0.02	0.02	0.11	0.96	1.00	1.00	1.00	1.00
SRH-C	188.15	0.00	0.01	0.05	0.77	1.00	1.00	1.00	1.00
SRH-L	11.91	0.40	0.65	0.81	0.86	0.87	0.87	0.90	1.00
SRH-R	247.39	0.04	0.07	0.07	0.10	0.94	1.00	1.00	1.00
SRV-C	337.08	0.03	0.03	0.21	0.98	1.00	1.00	1.00	1.00
SRV-L	157.61	0.09	0.11	0.98	1.00	1.00	1.00	1.00	1.00
SRV-R	177.75	0.02	0.02	0.14	0.82	0.93	0.96	0.99	1.00
SSS-C	201.30	0.00	0.01	0.02	0.41	0.99	0.99	1.00	1.00
SSS-L	272.34	0.00	0.00	0.00	0.05	0.93	1.00	1.00	1.00
SSS-R	304.60	0.00	0.01	0.03	0.45	1.00	1.00	1.00	1.00
SUT-C	233.13	0.02	0.03	0.03	0.04	0.78	1.00	1.00	1.00
SUT-L	163.46	0.08	0.10	0.11	0.14	0.48	0.92	0.99	1.00
SUT-R	301.24	0.24	0.35	0.53	0.82	1.00	1.00	1.00	1.00
TRN-C	166.95	0.36	0.45	0.93	0.97	0.98	1.00	1.00	1.00
TRN-L	67.54	0.19	0.45	0.91	0.98	0.99	1.00	1.00	1.00
TRN-R	114.82	0.36	0.46	0.87	0.97	0.99	1.00	1.00	1.00
TSL-C	330.12	0.00	0.00	0.02	0.18	1.00	1.00	1.00	1.00
TSL-L	269.50	0.00	0.01	0.08	0.89	0.99	1.00	1.00	1.00
TSL-R	277.74	0.00	0.00	0.01	0.12	1.00	1.00	1.00	1.00
UCS-C	178.40	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-L	143.02	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
UCS-R	136.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
VCU-C	79.00	0.90	0.98	0.99	1.00	1.00	1.00	1.00	1.00
VCU-L	227.10	0.38	0.42	0.61	0.92	0.99	1.00	1.00	1.00
VCU-R	78.58	0.27	0.48	0.94	0.99	1.00	1.00	1.00	1.00

[1] Sample-location identifier refers to the site's California Data Exchange Center code, where applicable, and location in channel (L, left; C, center; R, right).

[2] Original sieve-measurement lab data lost.

Prepared by the Sacramento Publishing Service Center.

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