APPENDIX A

MONITORING STATIONS

TABLE A-1

PROJECT INFORMATION									
Project Code	Project Name	River Name	River Mile	Number of Spill Bays	Location of Spill Bays	Number of Power Houses	Number of Generating Units	Hydraulic Capacity, kcfs	Generation Capacity, MW
ALF	Albeni Falls	Pend Oreille	86.9	10	Left Bank	1	3	33	49
BON	Bonneville	Columbia River	146	0	Mid-River	2	18	190	1196
CHJ	Chief Joseph	Columbia River	545	0	Right Bank	1	27	219	2482
DWR	Dworshak	North Fork, Clearwater River	1.9	2	Left Bank	1	3	10.5	460
GCL	Grand Coulee	Columbia River	596.6	11	Mid-River	3	24	280	6180
HGH	Hungry Horse	Flathead River, South Fork	5.9	0	Right Bank	1	4	8.9	285
IHR	Ice Harbor	Snake River	9.7	10	Right Bank	1	6	96	603
JDA	John Day	Columbia River	215.62	20	Right Bank	1	16	322	2160
LGS	Little Goose	Snake River	70.3	8	Mid-River	1	6	130	810
LIB	Libby	Kootenai River	221.9	2	Mid-River	1	5	24	525
LMN	Lower Monumental	Snake River	41.6	8	Left Bank	1	6	130	810
LWG	Lower Granite	Snake River	107.5	8	Mid-River	1	6	130	810
MCN	McNary	Columbia River	292	22	Right Bank	1	14	232	980
PRD	Priest Rapids	Columbia River	397.1	22	Right Bank	1	10	187	788
RIS	Rock Island	Columbia River	453	31	Mid-River	2	18	220	622
RRH	Rocky Reach	Columbia River	473	12	Left Bank	2	11	220	1212
TDA	The Dalles	Columbia River	191	23	Mid-River	1	22	375	1780
WAN	Wanapum	Columbia River	416	13	Right Bank	1	10	178	831
WEL	Wells	Columbia River	515	10	Mid-River	1	10	220	774

TABLE A-2

Station Name	Date Estab.	River Name	River Mile	Bank	Latitude	Longitude	Project	Location Description	Maintanence Responsibility	Maintenance Sequence	Calibration Responsibility	Owner
ALFI	2004	Pend Oreille River	87.1	Right Bank	48° 10' 40	116° 59' 52	Albani Falls Dam	Forebay	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Army Corps of Engineers, Seattle District
ALFW	2004	Pend Oreille River	85.6	Left Bank	48° 10' 48	117° 1' 48	Albani Falls Dam	Tailwater	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Army Corps of Engineers, Seattle District
ANQW	1998	Snake River	167	Left Bank	46° 05' 50	116° 58' 36	None	River	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
BON	1986	Columbia River	146	Right Bank	45° 38' 45	121° 56' 20	Bonneville Dam	Forebay	US Geological Survey, Portland Office	Bi-weekly	US Geological Survey, Portland Office	US Army Corps of Engineers, Portland District
CCIW	2003	Columbia River	146	Right Bank	45° 38' 45	121° 56' 40	Bonneville Dam	Tailwater	US Geological Survey, Portland Office	Bi-weekly	US Geological Survey, Portland Office	US Army Corps of Engineers, Portland District
CHJ	1984	Columbia River	545	Left Bank	47° 59' 40	119° 38' 37	Chief Joseph Dam	Forebay	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Army Corps of Engineers, Seattle District
CHQW	1997	Columbia River	544	Right Bank	48° 00' 17	117° 39' 25	Chief Joseph Dam	Tailwater	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Army Corps of Engineers, Seattle District
CIBW	1984	Columbia River	746	Left Bank	48° 58' 16	117° 38' 48	None	River	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Bureau of Reclamation
CWMW	1993	Columbia River	122	Right Bank	45° 34' 39	122° 22' 39	None	River	US Geological Survey, Portland Office	Bi-weekly	US Geological Survey, Portland Office	US Army Corps of Engineers, Portland District
DWQI	1994	North Fork, Clearwater River	40	Left Bank	46° 30' 11	116° 19' 18	Dworshak Dam	Tailwater	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
FDRW	1997	Columbia River	597	Mid-River	47° 57' 24	118° 58' 35	Grand Coulee Dam	Forebay	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Bureau of Reclamation
GCGW	1983	Columbia River	591	Left Bank	48° 02' 01	118° 58' 33	Grand Coulee Dam	Tailwater	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Bureau of Reclamation
HGHM	1998	Flathead River	3.5	Right Bank	48° 21' 23	114° 02' 16	Hungry Horse Dam	Tailwater	Columbia Basin Environmental	Bi-weekly	Columbia Basin Environmental	US Bureau of Reclamation
IDSW	1990	Snake River	6	Right Bank	43° 14' 32	118° 56' 20	Ice Harbor Dam	Tailwater	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District

TABLE A-2 (Continued)

Station Name	Date Est	River Name	River Mile	Bank	Latitude	Longitude	Project	Location Desciption	Maintanence Responsibility	Maintenance Sequence	Calibration Responsibility	Owner
IHR	1984	Snake River	10	Mid-River	46° 14' 58	118° 52' 42	Ice Harbor Dam	Forebay	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
JDY	1984	Columbia River	216	Mid-River	45° 42' 57	120° 41' 30	John Day Dam	Forebay	US Geological Survey, Portland Office	Bi-weekly	US Geological Survey, Portland Office	US Army Corps of Engineers, Portland District
LEWI	1996	Clearwater River	4	Right Bank	46° 26' 06	116° 57' 36	None	River	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
LGNW	1990	Snake River	107	Right Bank	46° 39' 58	117° 26' 18	Lower Granite Dam	Tailwater	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
LGS	1984	Snake River	70	Mid-River	46° 35' 05	118° 01' 32	Little Goose Dam	Forebay	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
LGSW	1990	Snake River	69	Right Bank	46° 34' 59	118° 02' 31	Little Goose Dam	Tailwater	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
LMN	1984	Snake River	42	Mid-River	46° 33' 47	118° 32' 14	Lower Monumental Dam	Forebay	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
LMNW	1990	Snake River	41	Left Bank	46° 33' 13	118° 32' 51	Lower Monumental Dam	Tailwater	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
LWG	1984	Snake River	108	Left Bank	46° 39' 33	117° 25' 30	Lower Granite Dam	Forebay	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
MCPW	1990	Columbia River	291	Right Bank	45° 56' 00	119° 19' 30	McNary Dam	Tailwater	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
MCQO	1986	Columbia River	292	Left Bank	45° 55' 58	119° 17' 43	McNary Dam	Forebay	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
MCQW	1985	Columbia River	292	Right Bank	45° 56' 25	119° 17' 47	McNary Dam	Forebay	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
PAQW	1998	Columbia River		Left Bank	46° 13' 32	119° 07' 25	McNary Dam	River	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District

TABLE A-2 (Continued)

Station Name	Date Estab.	River Name	River Mile	Bank	Latitude	Longitude	Project	Location Description	Maintanence Responsibility	Maintenance Sequence	Calibration Responsibility	Owner
PEKI	1996	Clearwater River	36	Left Bank	46° 32' 26	116° 23' 31	Dworshak Dam	River	US Geological Survey, Pasco Office	Bi-weekly	US Geological Survey, Pasco Office	US Army Corps of Engineers, Walla Walla District
PRD	1995	Columbia River	397	Mid-River	46° 38' 40	119° 54' 36	Priest Rapids Dam	Forebay	Grant County PUD	Bi-weekly	Grant County PUD	Grant County PUD
PRD	1995	Columbia River	397	Mid-River	46° 38' 40	119° 54' 36	Priest Rapids Dam	Forebay	Grant County PUD	Bi-weekly	Grant County PUD	Grant County PUD
PRXW	1995	Columbia River		Mid-River	46° 38' 31	119° 43' 57	Priest Rapids Dam	Tailwater	Grant County PUD	Bi-weekly	Grant County PUD	Grant County PUD
RIGW	1996	Columbia River	453	Left Bank	47° 19' 49	120° 04' 53	Rock Island Dam	Tailwater	Columbia Basin Environmental	Monthly	Columbia Basin Environmental	Chelan County PUD
RIS	1982	Columbia River	454	Right Bank	47° 20' 23	120° 05' 39	Rock Island Dam	Forebay	Columbia Basin Environmental	Monthly	Columbia Basin Environmental	Chelan County PUD
RRDW	1996	Columbia River	472	Mid-River	47° 28' 16	120° 19' 00	Rocky Reach Dam	Tailwater	Columbia Basin Environmental	Monthly	Columbia Basin Environmental	Chelan County PUD
RRH	1982	Columbia River	474	Right Bank	47° 32' 01	120° 17' 45	Rocky Reach Dam	Forebay	Columbia Basin Environmental	Monthly	Columbia Basin Environmental	Chelan County PUD
SKAW	1994	Columbia River	140	Right Bank	45° 36' 51	122° 02' 22	Bonneville Dam	Tailwater	US Geological Survey	Bi-weekly	US Geological Survey	US Army Corps of Engineers, Portland District
TDA	1984	Columbia River	192	Left Bank	45° 37' 12	121° 07' 12	The Dalles	Forebay	US Geological Survey	Bi-weekly	US Geological Survey	US Army Corps of Engineers, Portland District
TDDO	1996	Columbia River	190	Left Bank	45° 36' 27	121° 10' 20	The Dalles	Tailwater	US Geological Survey	Bi-weekly	US Geological Survey	US Army Corps of Engineers, Portland District
WAN	1995	Columbia River	416	Mid-River	46° 52' 29	119° 58' 17	Wanapum Dam	Forebay	Grant County PUD	Bi-weekly	Grant County PUD	Grant County PUD
WANW	1995	Columbia River	413	Mid-River	46° 50' 01	119° 56' 32	Wanapum Dam	Tailwater	Grant County PUD	Bi-weekly	Grant County PUD	Grant County PUD
WEL	1986	Columbia River	515		47° 56' 30	119° 51' 33	Wells Dam	Forebay	Columbia Basin Environmental	Monthly	Columbia Basin Environmental	Douglas County PUD
WELW	1988	Columbia River	512	Left Bank	47° 54' 28	119° 53' 27	Wells Dam	Tailwater	Columbia Basin Environmental	Monthly	Columbia Basin Environmental	Douglas County PUD
WRNO	1984	Columbia River	140	Left Bank	45° 36' 30	122° 02' 14	Bonneville Dam	Tailwater	US Geological Survey	Bi-weekly	US Geological Survey	US Army Corps of Engineers, Portland District

TABLE A-3

GENERATOR AND TURBINE DATA											
Powerplant	Units	Type	River, County, State	HP	RPM	Rated Head	Max. Head	Min. Head	KW Name plate rating	max sustaind rating	Rewind Capacity
Bonneville 1	0	Kaplan	Columbia Rr, Multnomah Co, OR	5000	257	50'	70'	32'	4000		
Bonneville 1	1	Kaplan	Columbia Rr, Multnomah Co, OR	66000	75	50'	69'	25.7'	43200	49680	59,400 KVA
Bonneville 1	2	Kaplan	Columbia Rr, Multnomah Co, OR	66000	75	50'	69'	25.7'	43200	49680	54200
Bonneville 1	3-6	Kaplan	Columbia Rr, Multnomah Co, OR	74000	75	60'	69'	25.7'	54000	62100	
Bonneville 1	7-9	Kaplan	Columbia Rr, Multnomah Co, OR	74000	75	60'	69'	25.7'	54000	62100	same
Bonneville 1	2-6, 10	Kaplan	Columbia Rr, Multnomah Co, OR	74000	75	60'	69'	25.7'	54000	62100	69,000 KVA
Bonneville 2	11-14	Kaplan	Columbia Rr, Multnomah Co, OR	105000	69.2	52'	70'	32.5'	66500	66500	
Bonneville 2	15-18	Kaplan	Columbia Rr, Multnomah Co, OR	105000	69.2	52'	70'	32.5'	66500	66500	
Bonneville 2	F1 & F2	Kaplan	Columbia Rr, Multnomah Co, OR	20700	156.5	59'	68'	32.5'	13110	13110	
Bonneville 4,6	4,6	Kaplan	Columbia Rr, Multnomah Co, OR	20700	156.6	59'	68'	32.5	13110	13110	
Chief Joseph	1-4, 15&16.	Francis	Columbia River, Douglas Co, WA	100000	100	165'	178.5'	148'	64000	67368	88270
Chief Joseph	5 - 14	Francis	Columbia River, Douglas Co, WA	100000	100	165'	178.5'	148'	64000	67368	88270
Chief Joseph	17-27	Francis	Columbia River, Douglas Co, WA	136000	112.5	163'	196'	130'	95000	100000	
Chief Joseph	SS 1 & 2	Francis	Columbia River, Douglas Co, WA	3500	514	171'	184'	148'	2400	3000	
Dworshak	1 & 2	Francis	Clearwater Rr, Clearwater Co, ID	142000	200	560'	625'	470'	90000	90000	
Dworshak	3	Francis	Clearwater Rr, Clearwater Co, ID	346000	128.6	560'	615.5'	460.5'	222000	222000	
Ice Harbor	1-3	Kaplan	Snake River, Walla Walla Co, WA	143000	90	89'	105'	78'	94737	94737	
Ice Harbor	4-6	Kaplan	Snake River, Walla Walla Co, WA	174000	85.7	89'	102'	72'	116800	116800	
John Day	1-16	Kaplan	Columbia River, Sherman Co, OR	212400	90	94'	110'	83.5'	135000	155250	
John Day	1-4 Rew'd	Kaplan	Columbia River, Sherman Co, OR	212400	90	94'	110'	83.5'	135000	155250	135000
John Day	6-11 Rew'd	Kaplan	Columbia River, Sherman Co, OR	212400	90	94'	110'	83.5'	135000	155250	135000
John Day	13 Rew'd	Kaplan	Columbia River, Sherman Co, OR	212400	90	94'	110'	83.5'	135000	155250	135000
John Day	15 Rew'd	Kaplan	Columbia River, Sherman Co, OR	212400	90	94'	110'	83.5'	135000	155250	135000

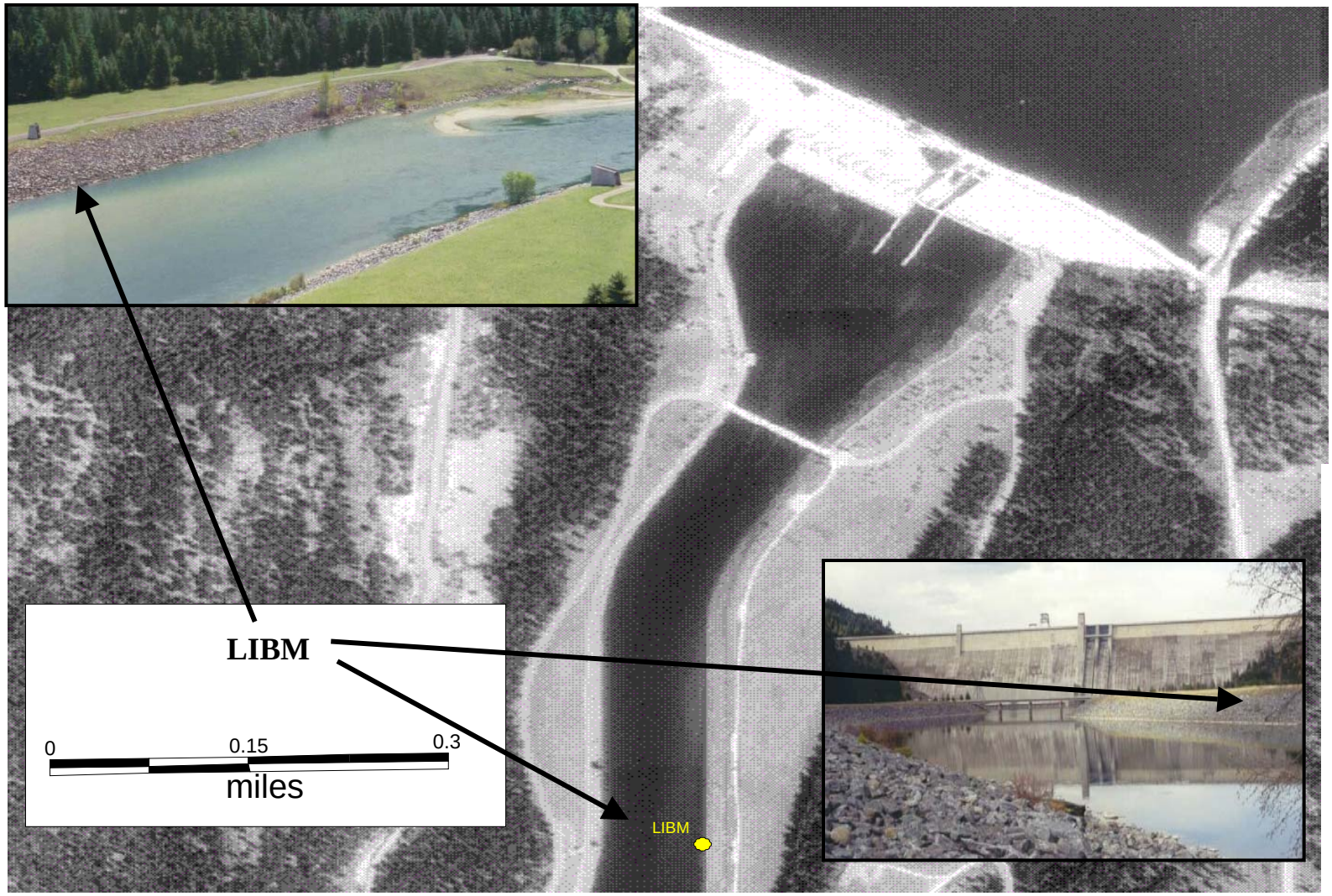
TABLE A-3 (Continued)

GENERATOR AND TURBINE DATA											
Powerplant	Units	Type	River, County, State	HP	RPM	Rated Head	Max. Head	Min. Head	KW Name plate rating	max sustaind rating	Rewind Capacity
Libby	1-4	Francis	Kootenai River, Lincoln Co, MT	165000	128.6	300'	341'	165'	105000	120000	105000
Libby	1-5	Francis	Kootenai River, Lincoln Co, MT	165000	128.6	300'	341'	165'	105000	120000	105000
Little Goose	1-3	Kaplan	Snake River, Columbia Co, WA	212400	90	93'	98'	90.5'	135000	155250	
Little Goose	4-6	Kaplan	Snake River, Columbia Co, WA	212400	90	93'	98'	90.5'	135000	155250	
Lower Granite	1-3	Kaplan	Snake River, Columbia Co, WA	212400	90	93'	105'	76'	135000	155250	
Lower Granite	4-6	Kaplan	Snake River, Columbia Co, WA	212400	90	93'	105'	76'	135000	155250	
Lower Monumental	1-3	Kaplan	Snake River, Walla Walla Co, WA	212400	90	94'	100'	87'	135000	155250	same
Lower Monumental	4-6	Kaplan	Snake River, Walla Walla Co, WA	212400	90	93'	103'	87'	135000	155250	
McNary	1-12	Kaplan	Columbia River, Umatilla Co, OR	111300	85.7	80'	92'	62'	70000	80500	
McNary	13 & 14	Kaplan	Columbia River, Umatilla Co, OR	111300	85.7	80'	92'	62'	70000	80500	73700
McNary	SS 1 & 2	Francis	Columbia River, Umatilla Co, OR	4500	277	80'	92'	62'	3000	3000	
The Dalles	2,4,7,9,11,14	Kaplan	Columbia River, Wasco Co, OR	123000	85.7	81'	90.5'	60'	78000	89000	94,420 KVA
The Dalles	8, 6	Kaplan	Columbia River, Wasco Co, OR	123000	85.7	81'	90.5'	60'	78000	89000	94,420 KVA
The Dalles	1,3,10	Kaplan	Columbia River, Wasco Co, OR	123000	85.7	81'	90.5'	60'	78000	89000	94,420KVA
The Dalles		Kaplan	Columbia River, Wasco Co, OR	123000	85.7	81'	90.5'	60'	78000	89000	
The Dalles	15-22	Kaplan	Columbia River, Wasco Co, OR	136000	80	73'	90'	58'	85975	99000	
The Dalles		Kaplan	Columbia River, Wasco Co, OR	18800	200	74'	88'	55'	13500	14000	
The Dalles	SS 1 & 2	Francis	Columbia River, Wasco Co, OR	4500	277	81'	90.5'	60'	3000	3000	
The Dalles	5 Rew'd	Kaplan	Columbia River, Wasco Co, OR	123800	85.7	81'	90.5'	60'	78000	89000	94,420 KVA
The Dalles	12 Rew'd	Kaplan	Columbia River, Wasco Co, OR	123800	85.7	81'	90.5'	60'	78000	89000	
The Dalles	13 Rew'd	Kaplan	Columbia River, Wasco Co, OR	123800	85.7	81'	90.5'	60'	78000	89000	

FIGURE A-1

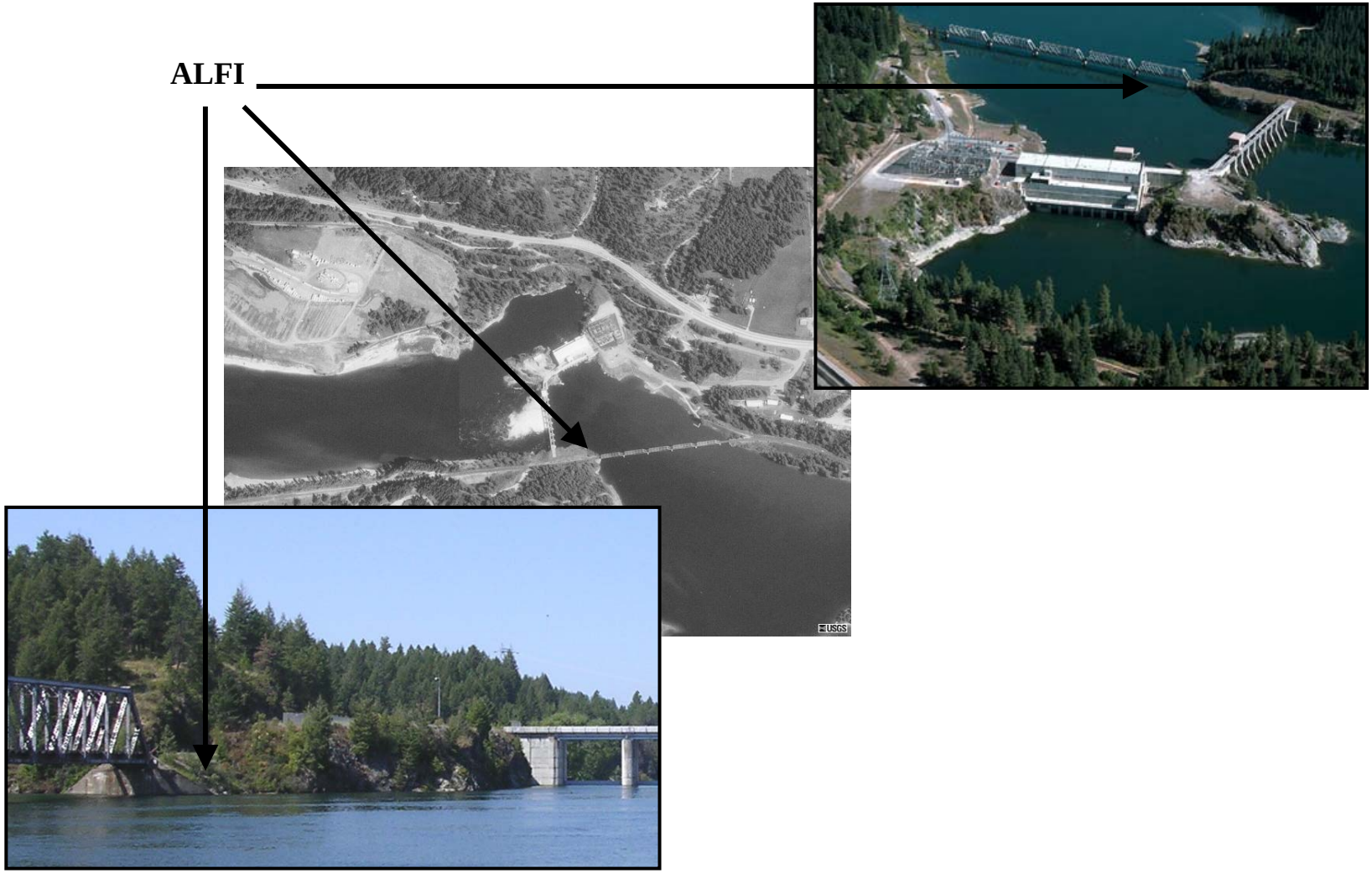
Gas Monitoring Stations
Spill Season Automated Station
Year-Round Automated Station (as recommended by Dissolved Gas Team)
CANADA
U.S.A.
N
SEATTLE
WASHINGTON
IDAHO
OREGON
ASTORIA
PORTLAND
RICHLAND
Columbia River
Kettle River
Kootenai River
Pend Oreille River & Lake
Spokane River
Chelan River & Lake
Wenatchee River
Cowlitz River
Willamette River
Snake
Clearwater R.
Flathead River & Lake
Boundary CIBW STN 2830 RM 745.0
RM 706.4
Hungry Horse Dam RM 5.2
HGHM STN 3000
LIBM STN 2900
Libby Dam RM 221.9
Chief Joseph Dam RM 545.1
CHQW STN 2613
CHJ STN 2512
WEL STN 2407
GCGW STN 2516
Grand Coulee Dam RM 596.6
RM 638.9
Wells Dam RM 515.6
WELW STN 2400
FDRW STN 1310
RRH STN 2307
Rocky Reach Dam RM 473.7
RRDW STN 2308
RIS STN 2204
Rock Island Dam RM 453.8
RIGW STN 2205
WAN STN 2100
Wanapum Dan RM 415.8
WANW STN 2104
PRD STN 2007
Priest Rapids Dam RM 397.1
PRXW STN 2004
PAQW STN 2002 RM 329.2
Ice Harbor Dam RM 9.7
Lower Monumental Dam RM 41.6
Little Goose Dam RM 70.3
Lower Granite Dam RM 107.5
LGNW STN 1202
LWG STN 1205
LGS STN 1118
LGSW STN 1114
LMN STN 1018
LMNW STN 1003
IHR STN 916
IDSW STN 908
LEWI STN 1277
Dworshak Dam RM 41.0
PEKI STN 1308
DWQI STN 1312
ANQW STN 1280 RM 167.2
Camas/Washougal CWMW (STN 255) RM 122.0
Bonneville Dam RM 146.1
BON STN 462
TDDO STN 522
JHAW STN 711
John Day Dam RM 215.6
JDA STN 3757
TDA STN 3700
The Dalles Dam RM 191.5
Warrendale WRNO STN 403 RM 140.0
MCPW STN 805
McNary (WA) MCQW STN 814
McNary (OR) MCOO STN 820
McNary Dam RM 292.0
Hells Canyon Dam RM 247
Oxbow Dam RM 273
Brownlee Dam RM 285
2004
Dissolved Gas
Monitoring Network
40 20 0 40 80
APPROXIMATE SCALE IN MILES

FIGURE A-2



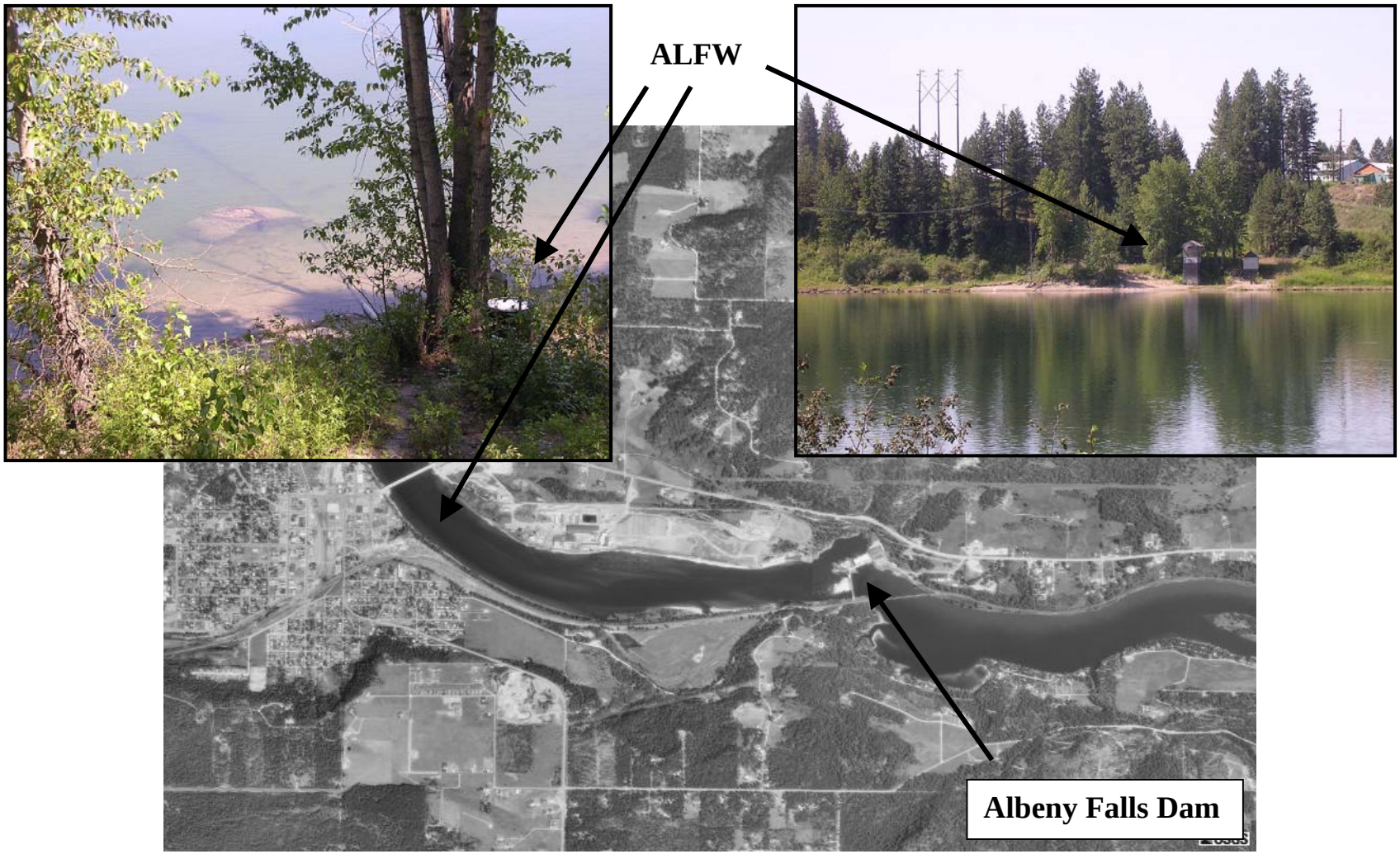
TDG Fixed Monitoring Station at Libby Dam Tailwater (LIBM).

FIGURE A-3



TDG Fixed Monitoring Station at Albeny Falls Dam Forebay (ALFI).

FIGURE A-4

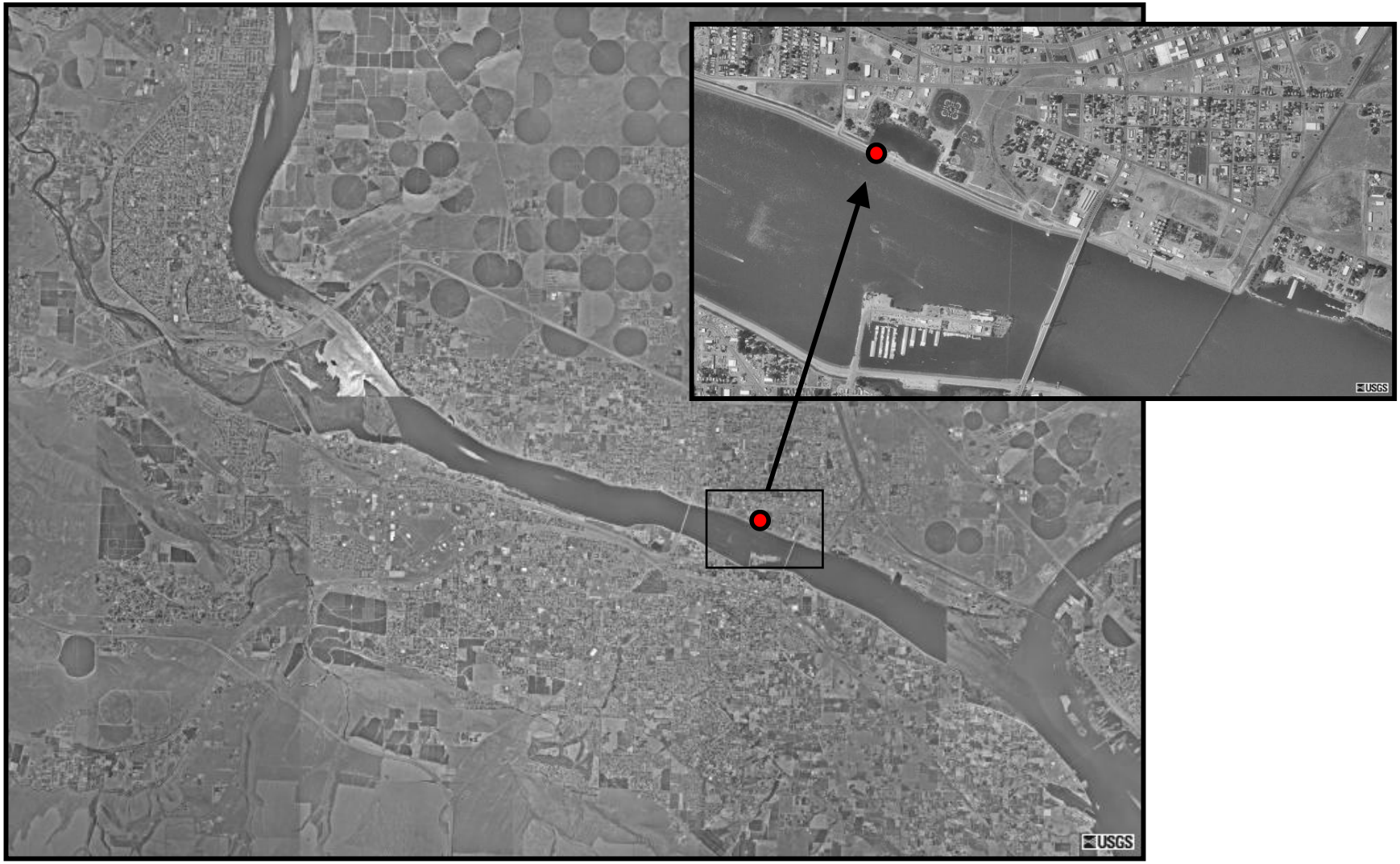


TDG Fixed Monitoring Station at Albeni Falls Tailwater (ALFW).

FIGURE A-5

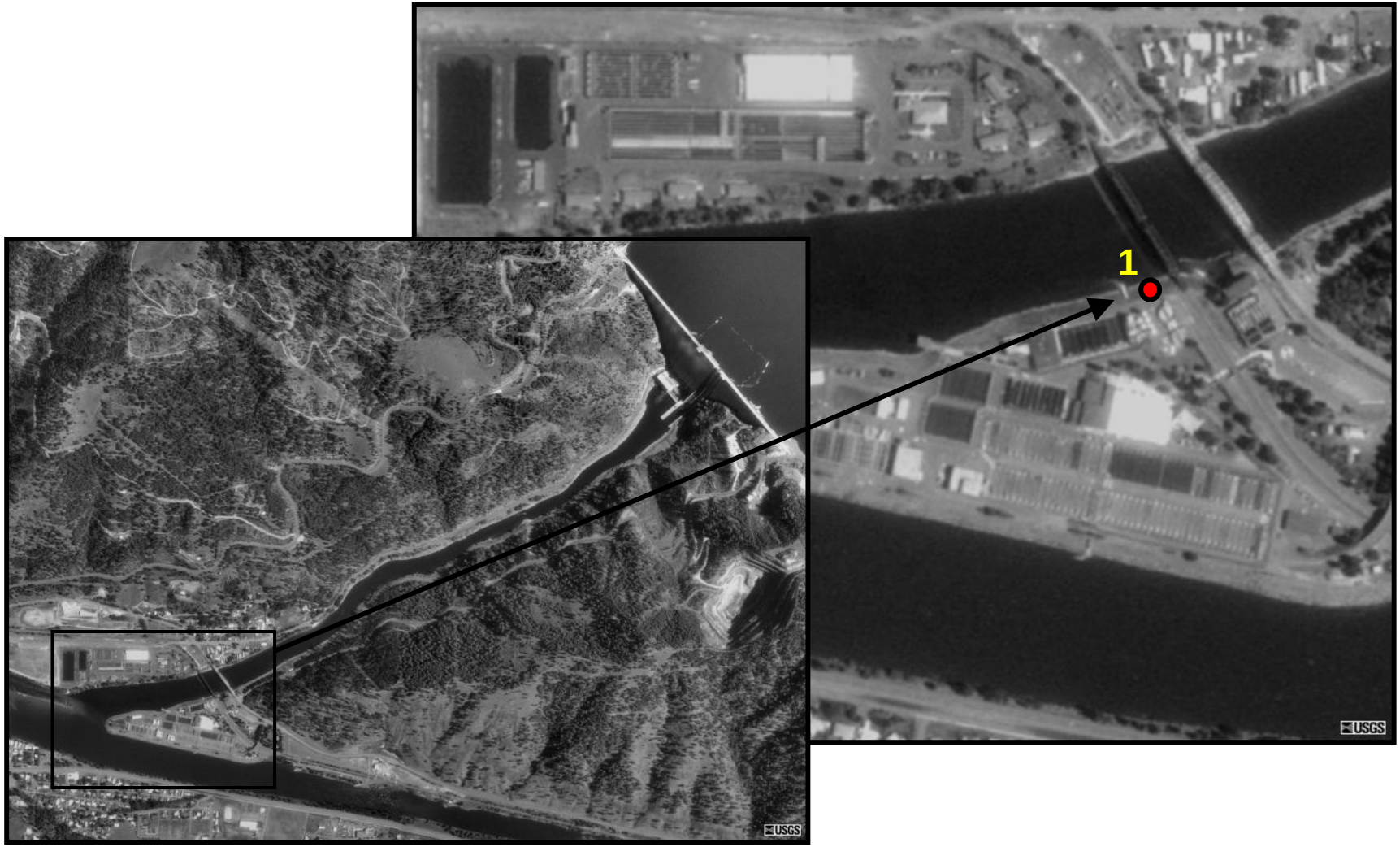
TDG Fixed Monitoring Stations at Chief Joseph Dam (1 = CHQW and 2 = CHJ).

FIGURE A-6



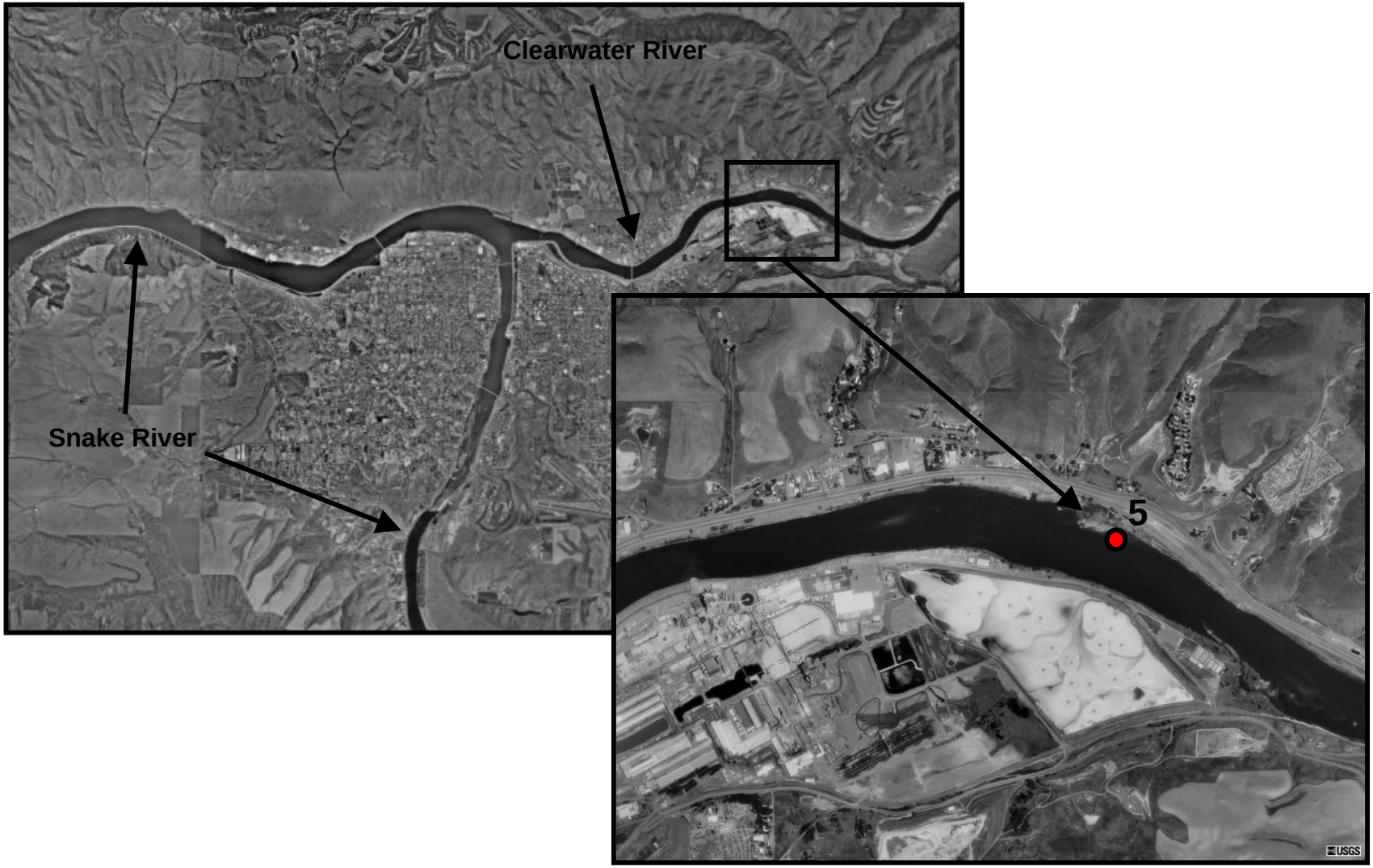
TDG Fixed Monitoring Station at Pasco (PAQW).

FIGURE A-7



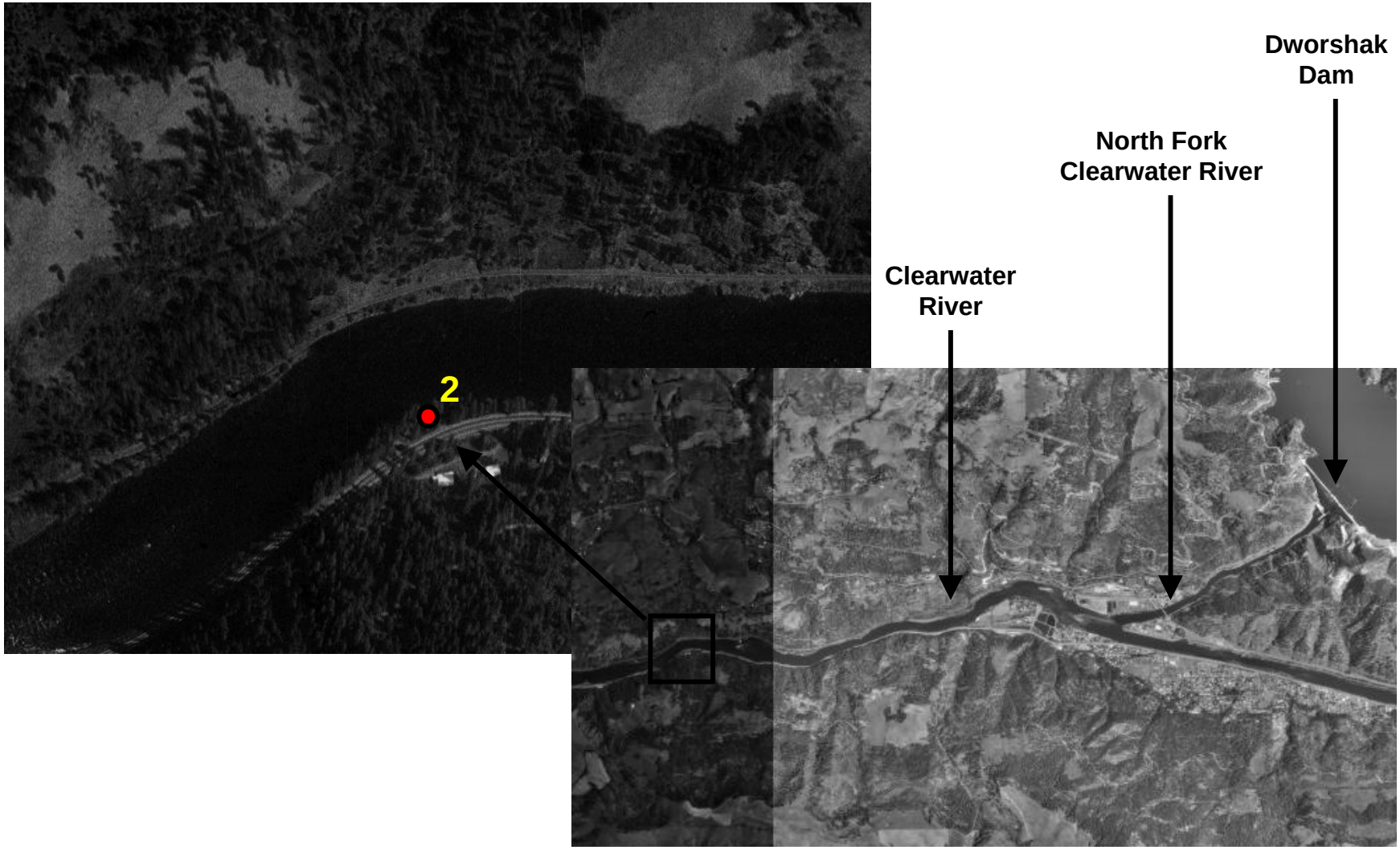
TDG Fixed Monitoring Stations at Dworshak Dam tailwater (DWQI).

FIGURE A-8



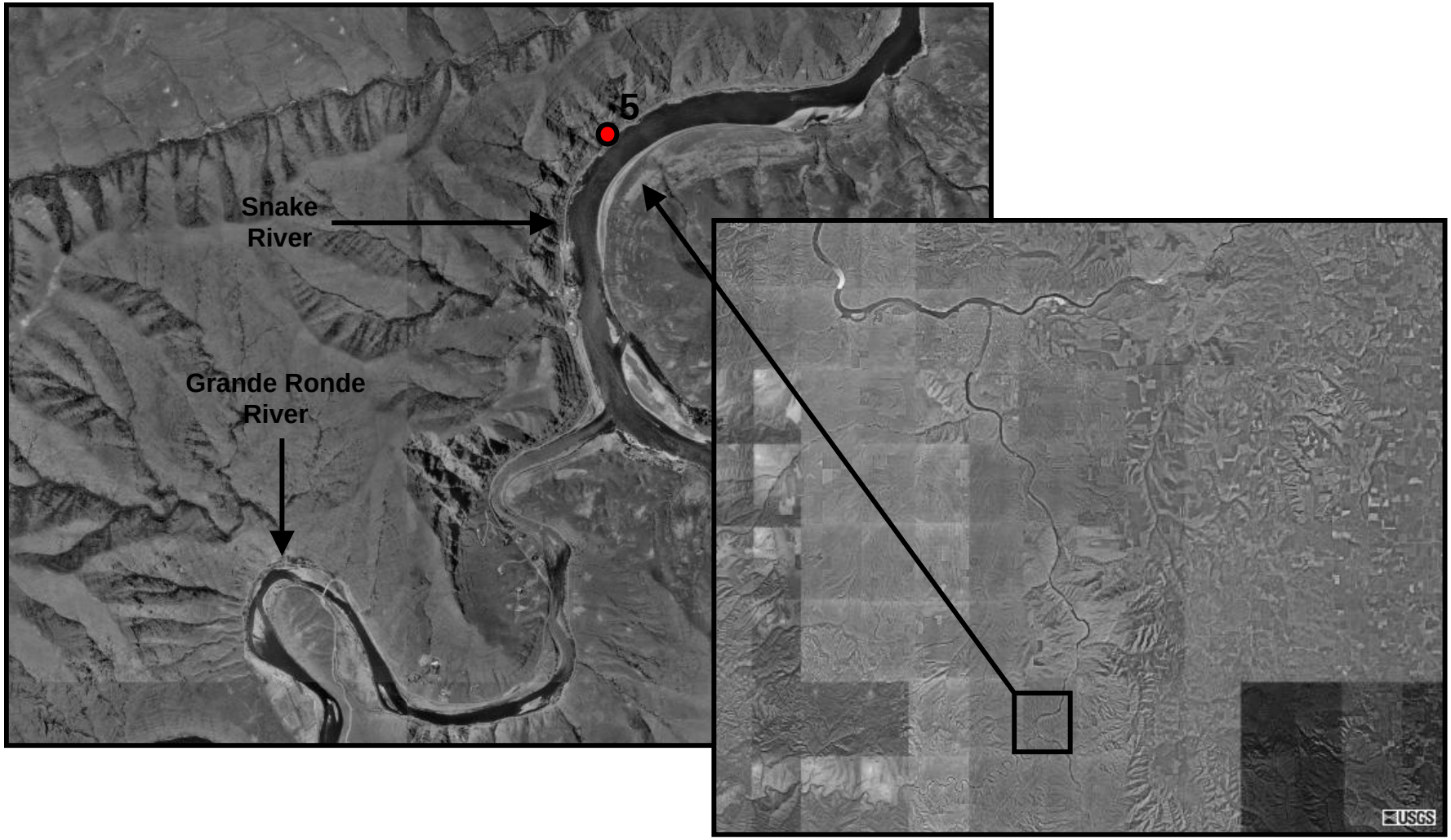
TDG Fixed Monitoring Station at Lewiston (LEWI).

FIGURE A-9



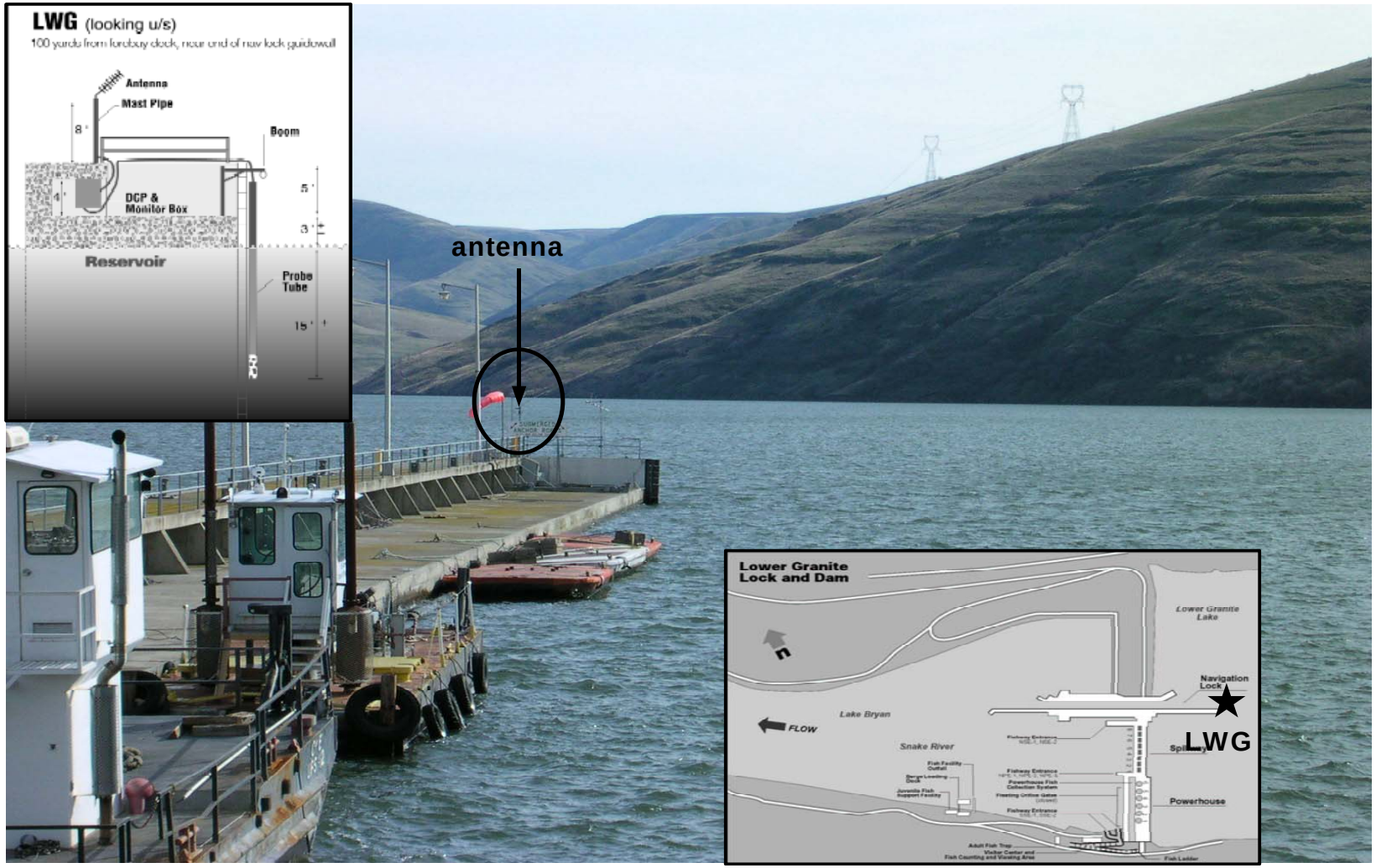
TDG Fixed Monitoring Station at Peck (PEKI).

FIGURE A-10



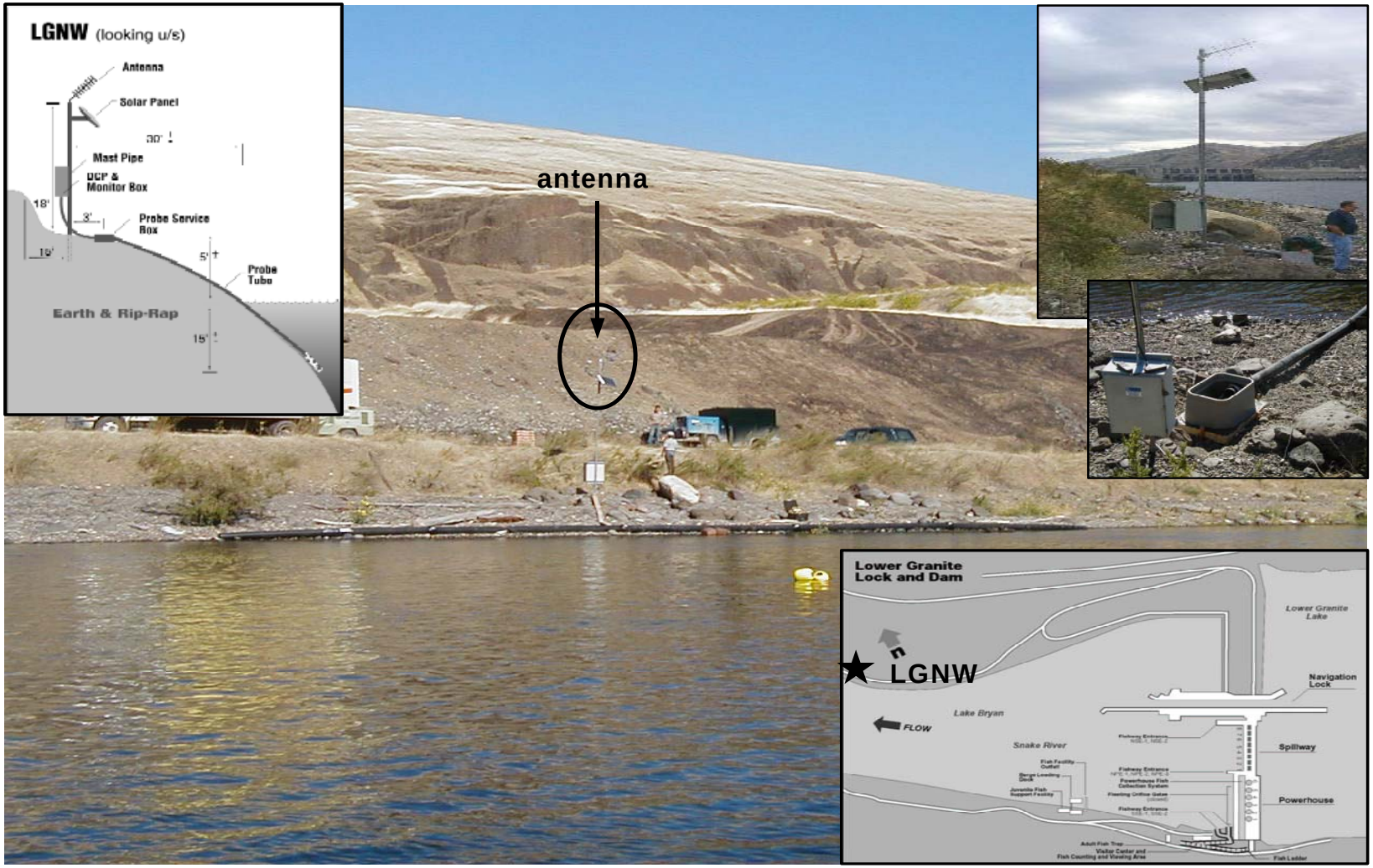
TDG Fixed Monitoring Station at Anatone (ANQW).

FIGURE A-11



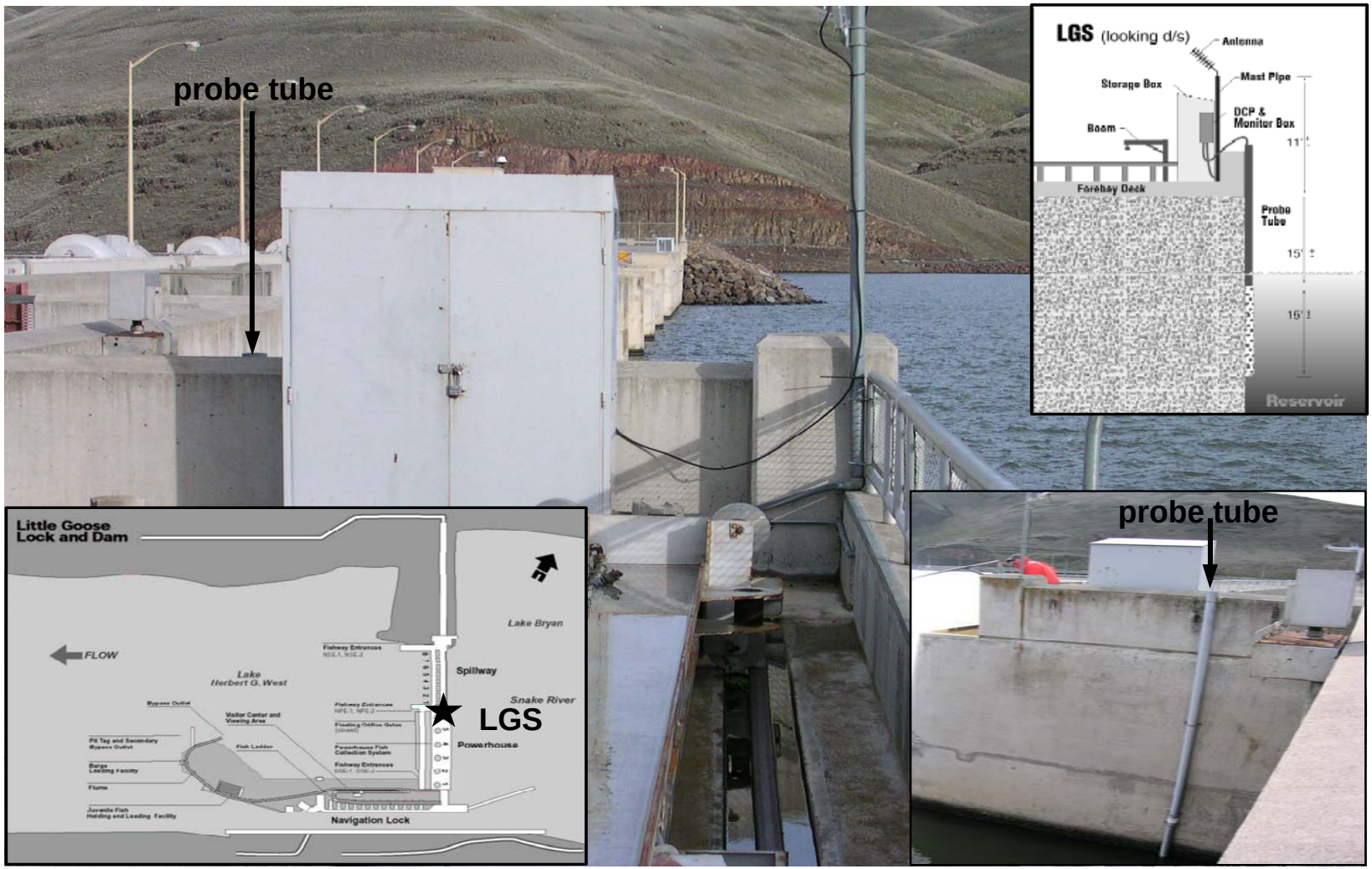
TDG Fixed Monitoring Station at Lower Granite Lock and Dam Forebay.

FIGURE A-12



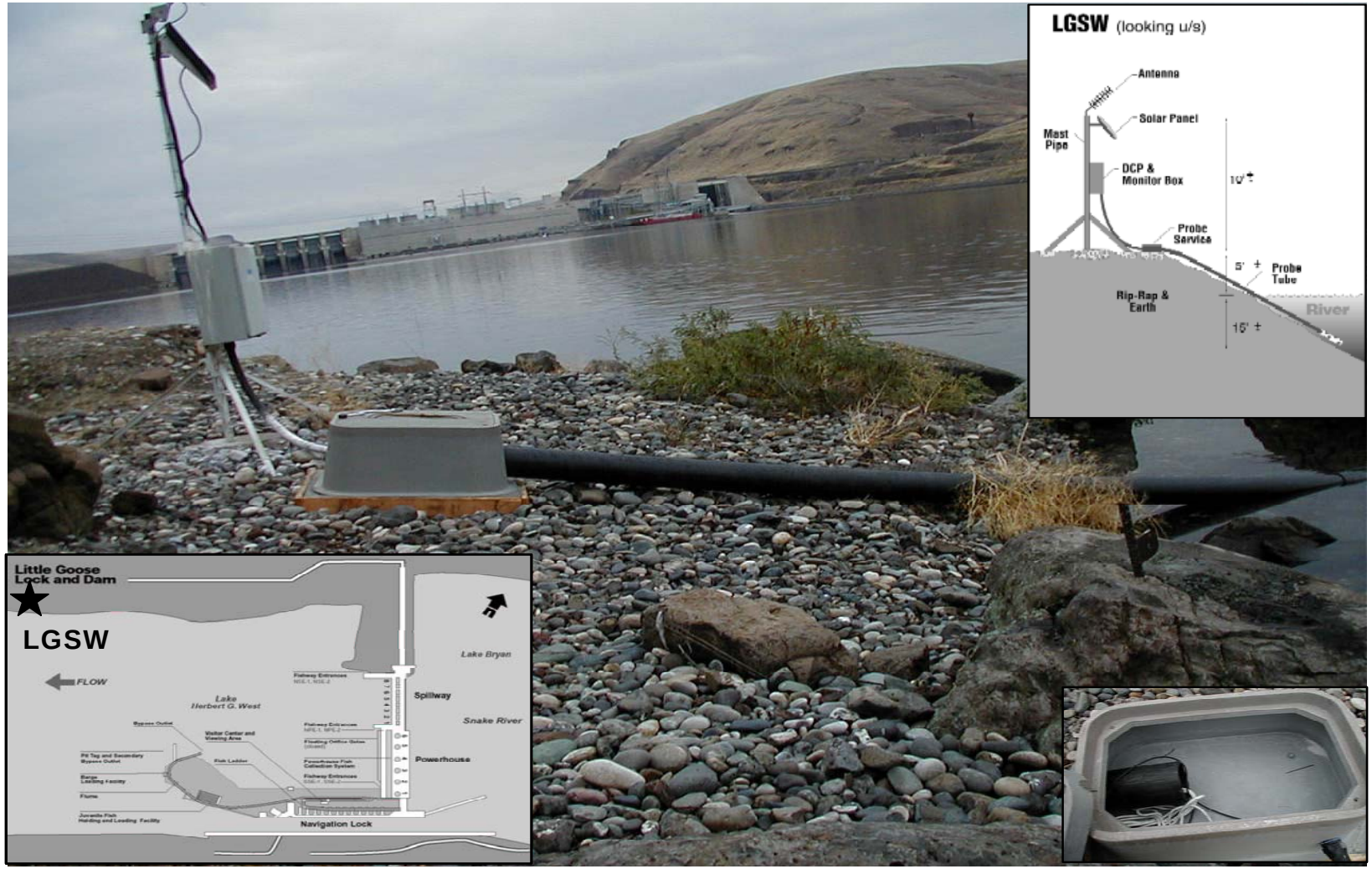
TDG Fixed Monitoring Station at Lower Granite Lock and Dam Tailwater.

FIGURE A-13



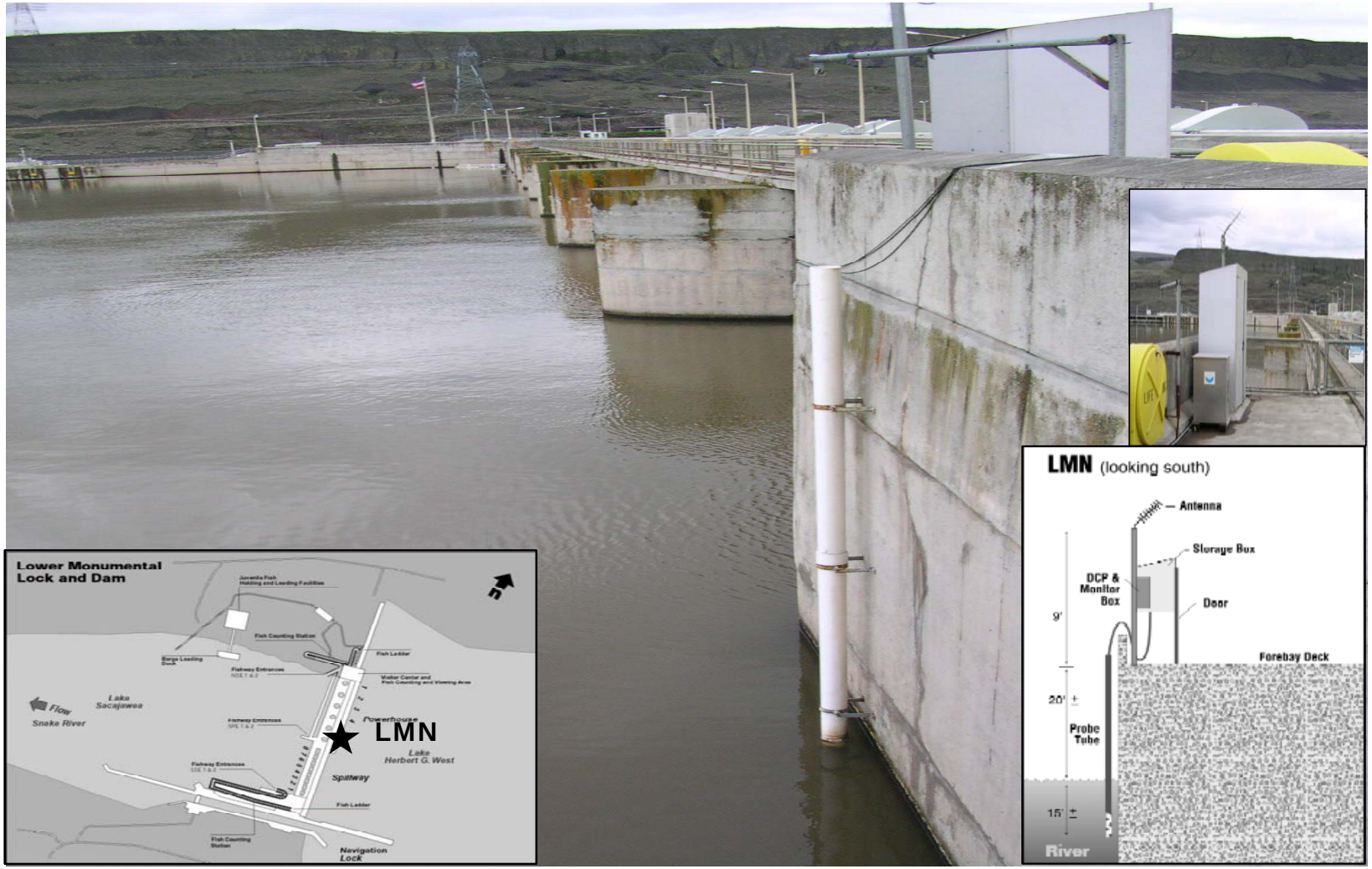
TDG Fixed Monitoring Station at Little Goose Lock and Dam Forebay.

FIGURE A-14



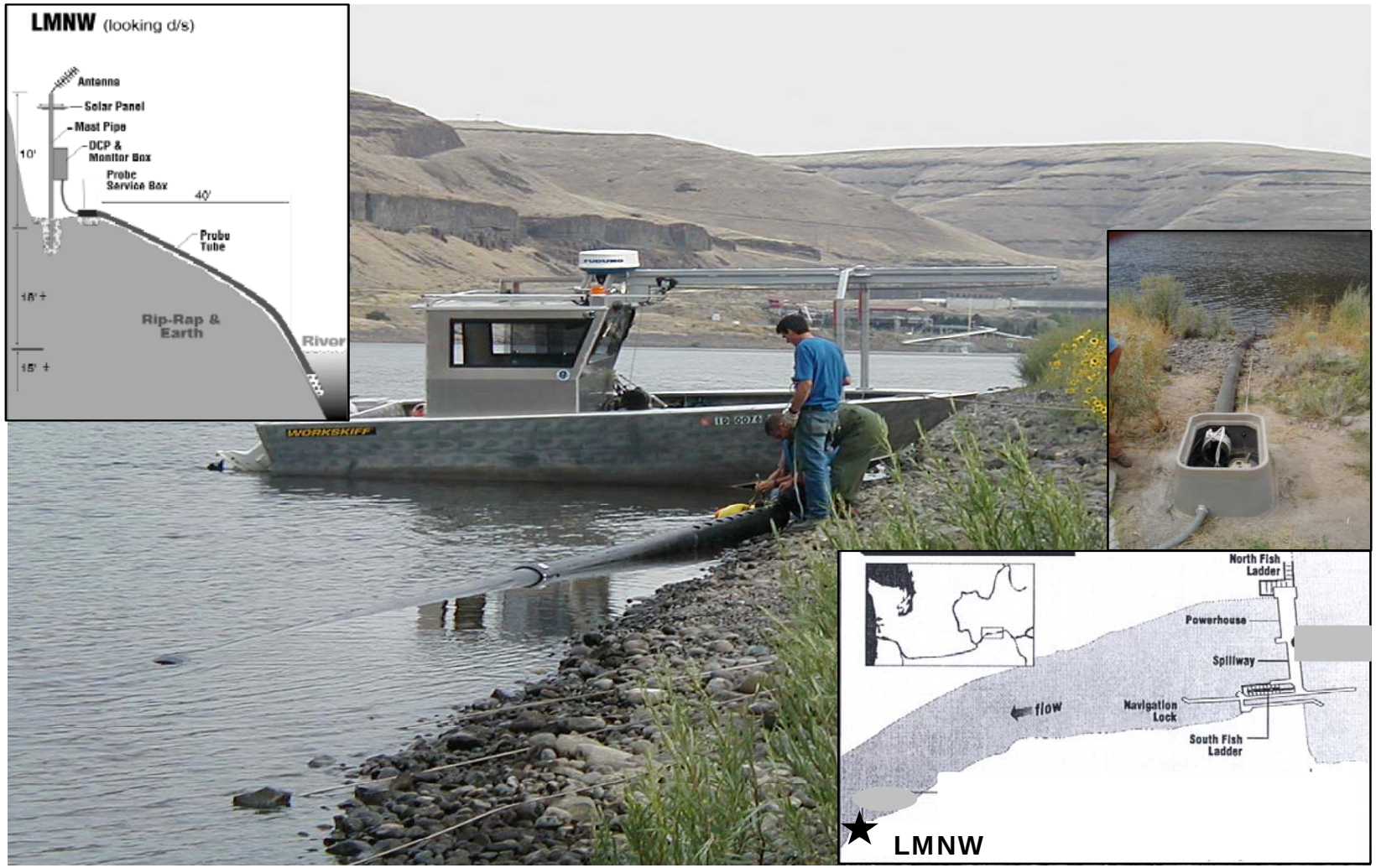
TDG Fixed Monitoring Station at Little Goose Lock and Dam Tailwater.

FIGURE A-15



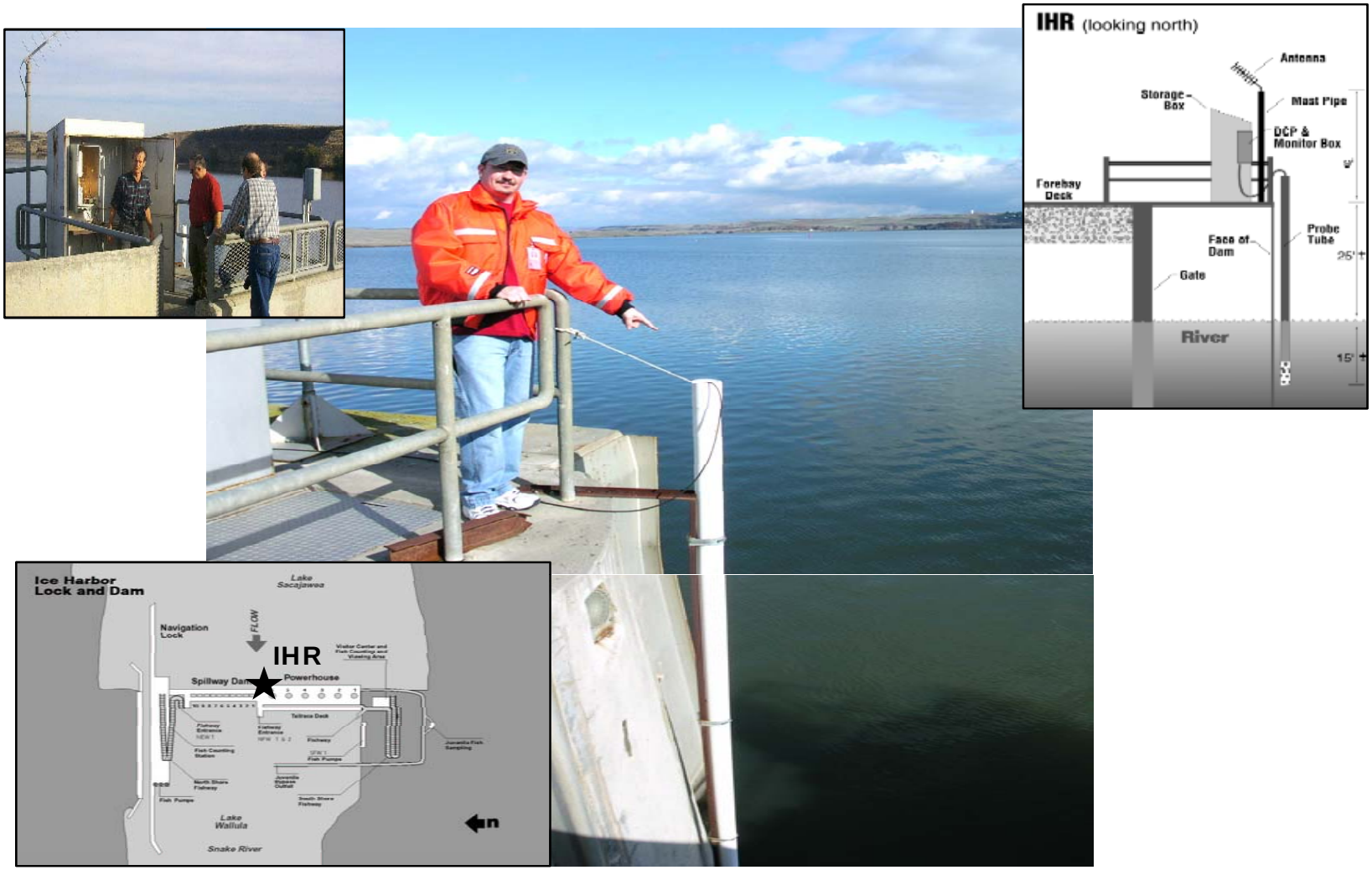
TDG Fixed Monitoring Station at Lower Monumental Lock and Dam Forebay (LMN).

FIGURE A-16



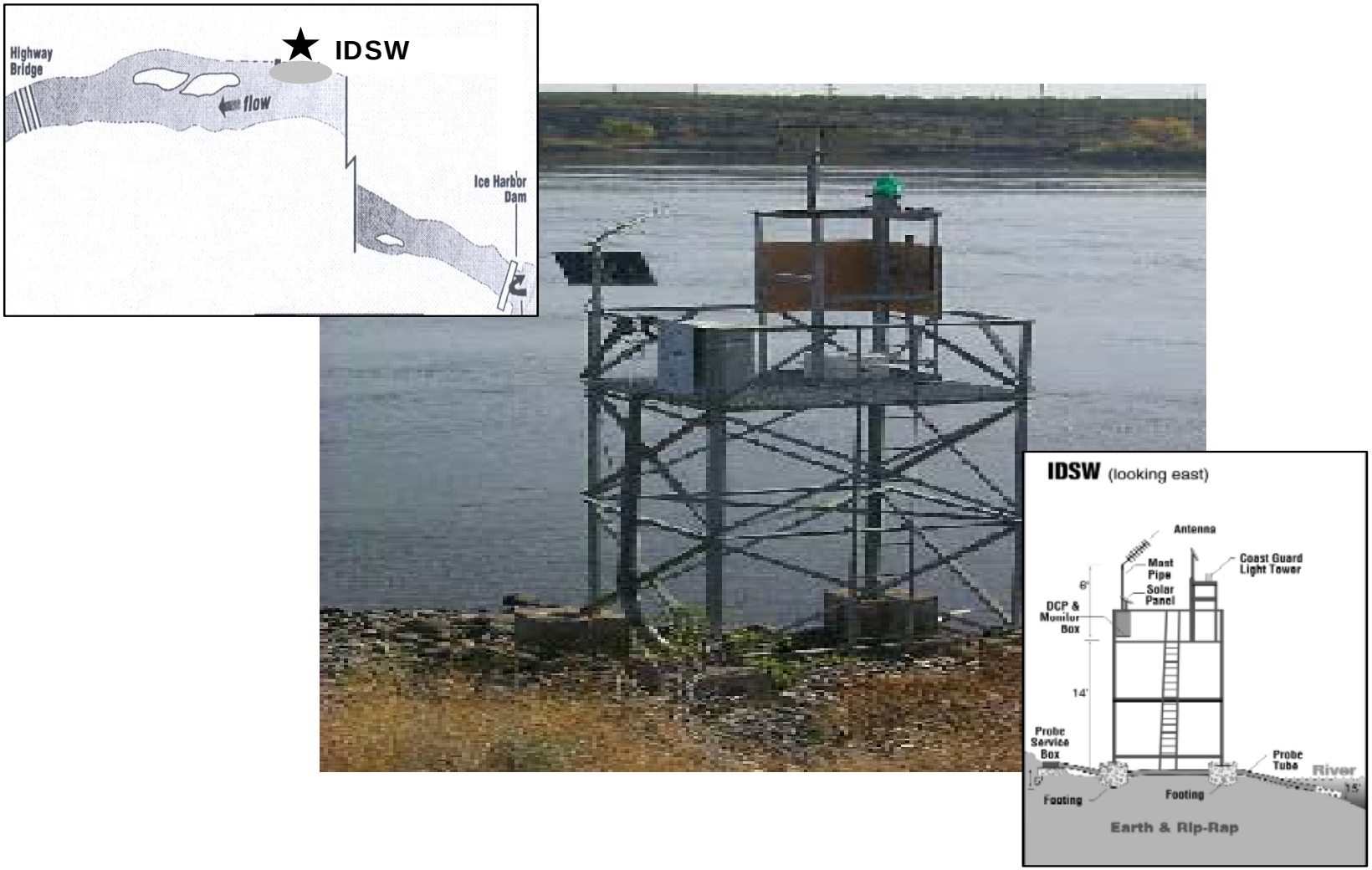
TDG Fixed Monitoring Station at Lower Monumental Lock and Dam Tailwater (LMNW).

FIGURE A-17



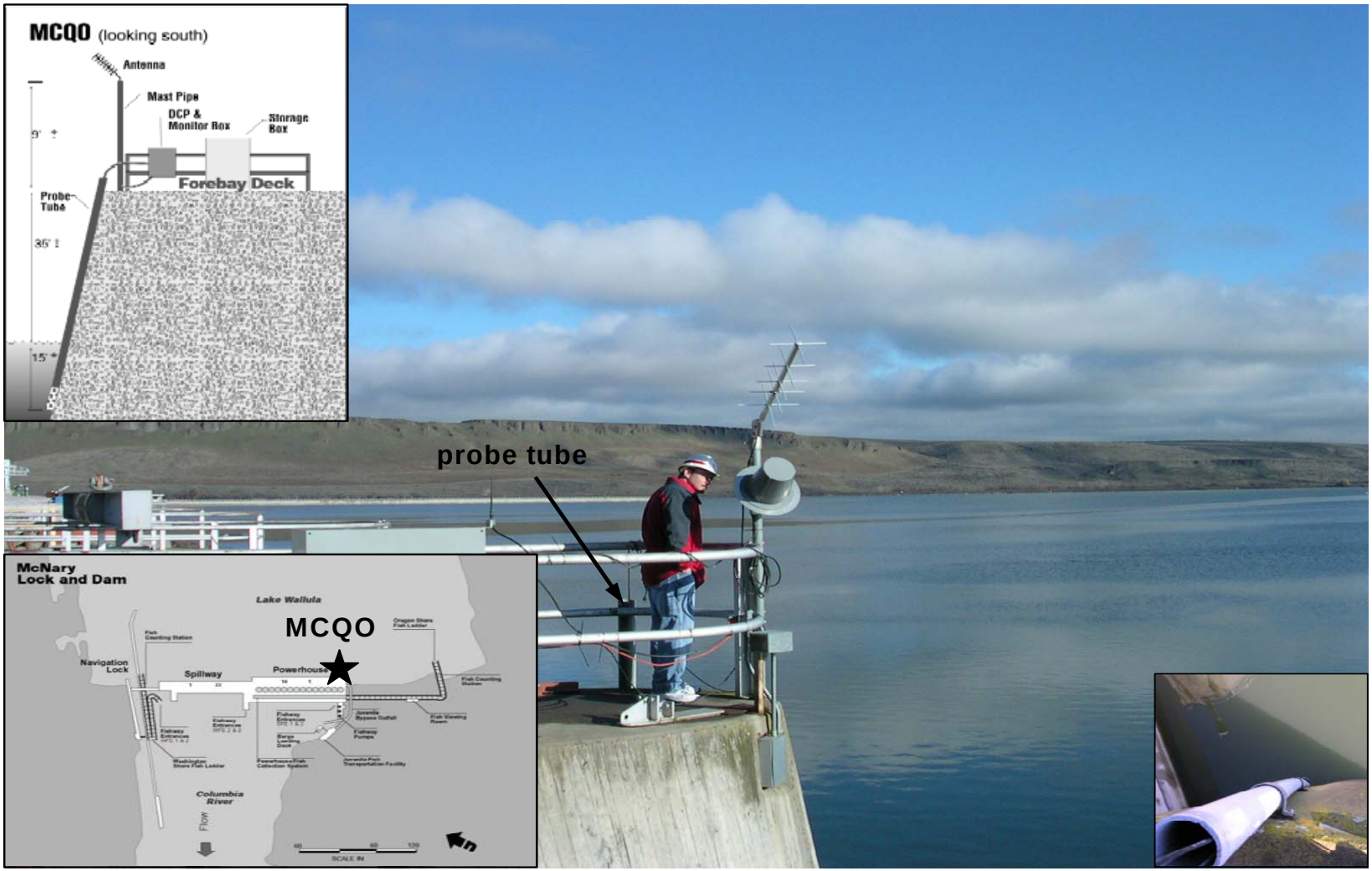
TDG Fixed Monitoring Station at Ice Harbor Lock and Dam Forebay (IHR).

FIGURE A-18



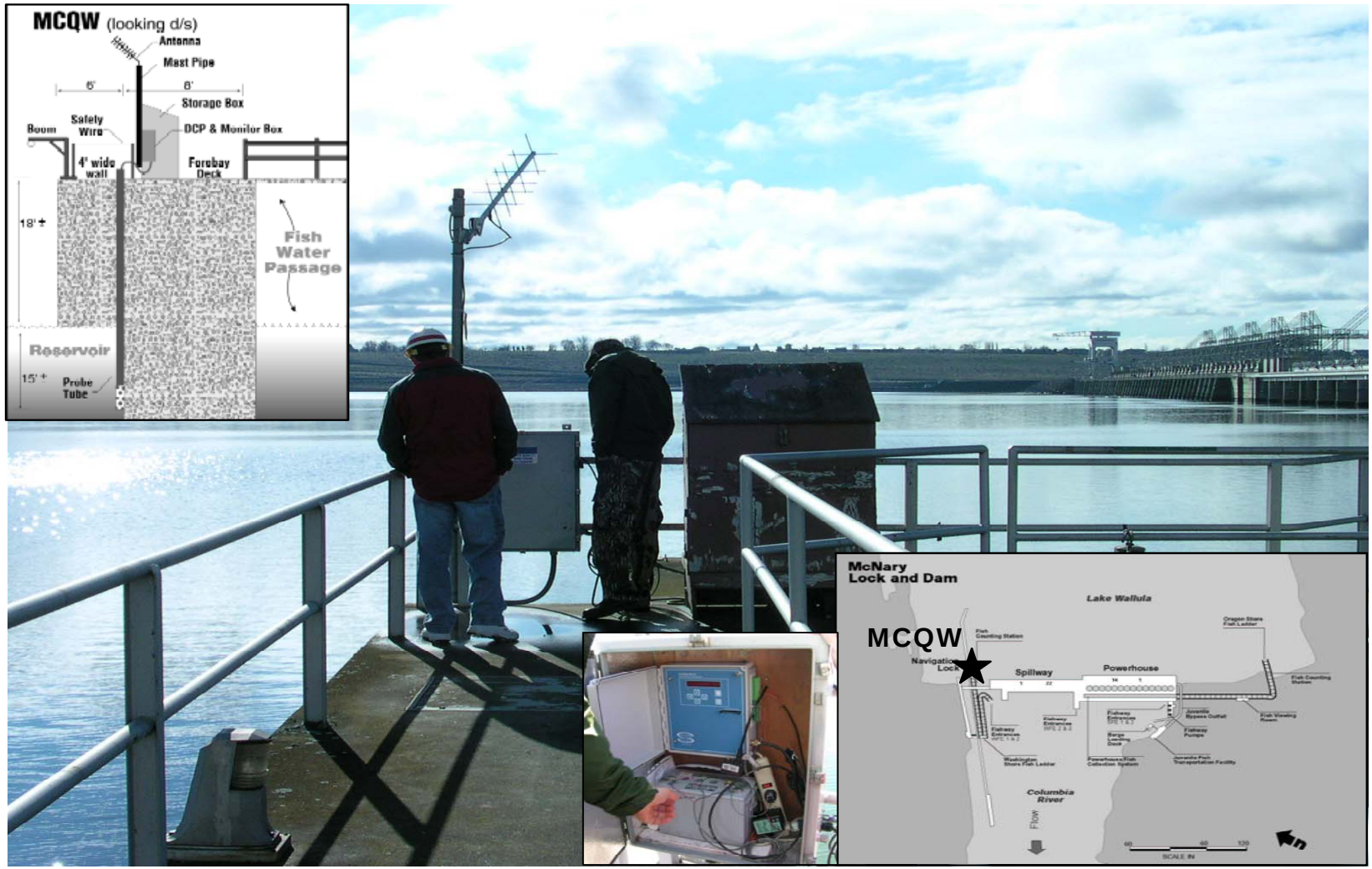
TDG Fixed Monitoring Station at Ice Harbor Lock and Dam Tailwater (IDSW).

FIGURE A-19



TDG Fixed Monitoring Station at McNary Lock and Dam Forebay on the Oregon Side (MCQO)).

FIGURE A-20



TDG Fixed Monitoring Station at McNary Lock and Dam Forebay on the Washington Side (MCQW).

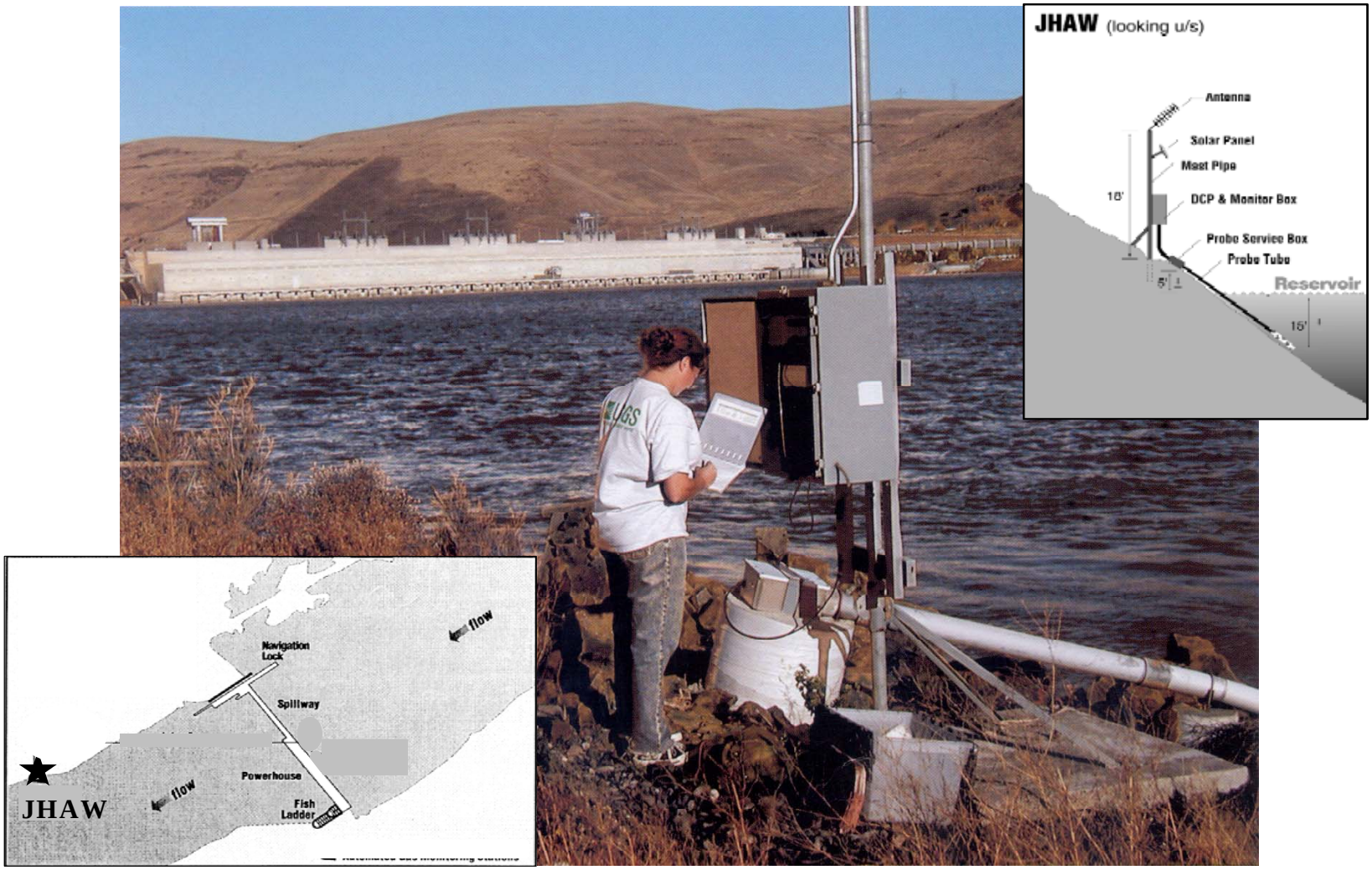
FIGURE A-21

TDG Fixed Monitoring Station at McNary Lock and Dam Tailwater (MCPW).

FIGURE A-22

TDG Fixed Monitoring Station at John Day Lock and Dam Forebay (JDY).

FIGURE A-23



TDG Fixed Monitoring Station at John Day Lock and Dam Tailwater (JHAW).

FIGURE A-24

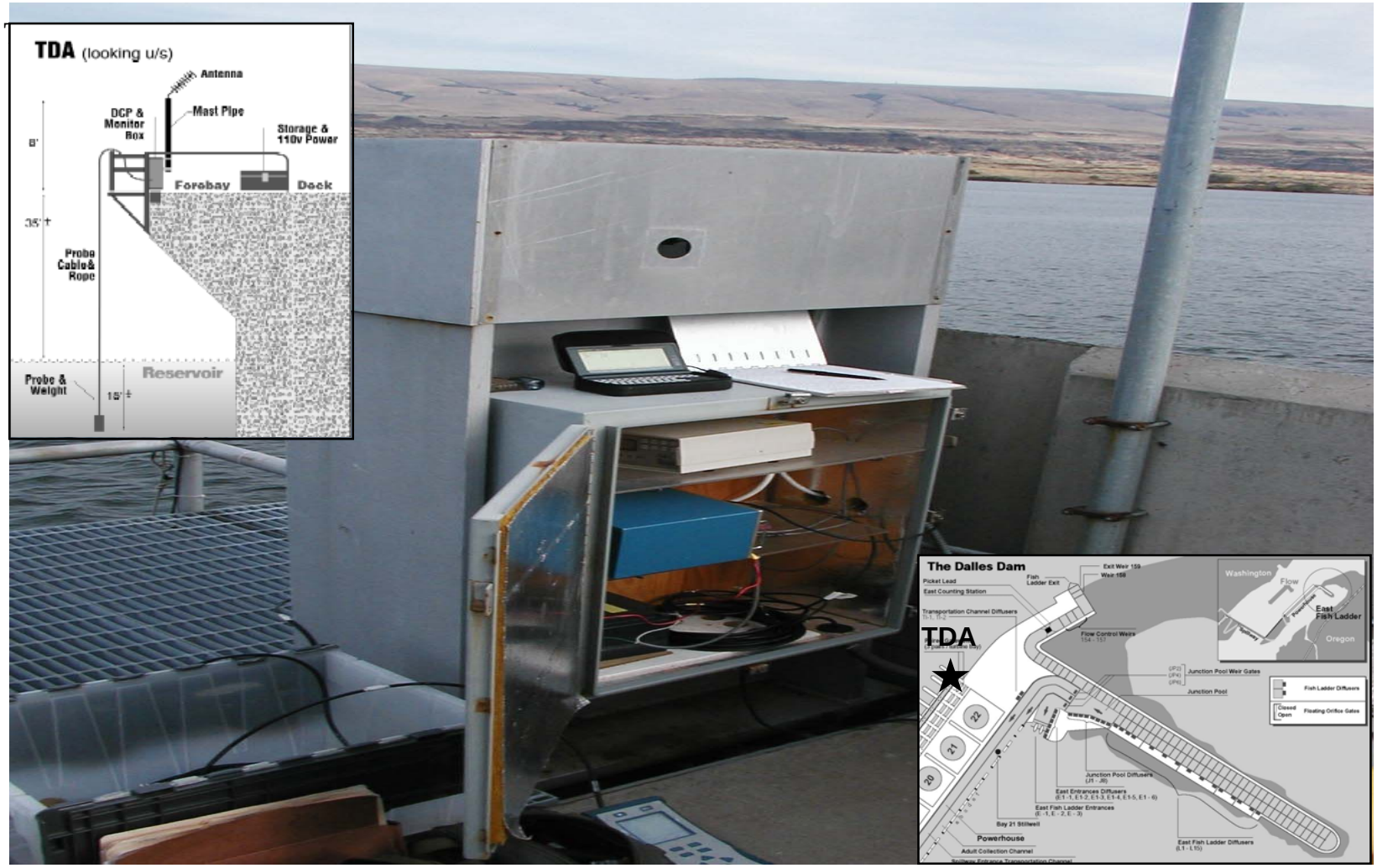
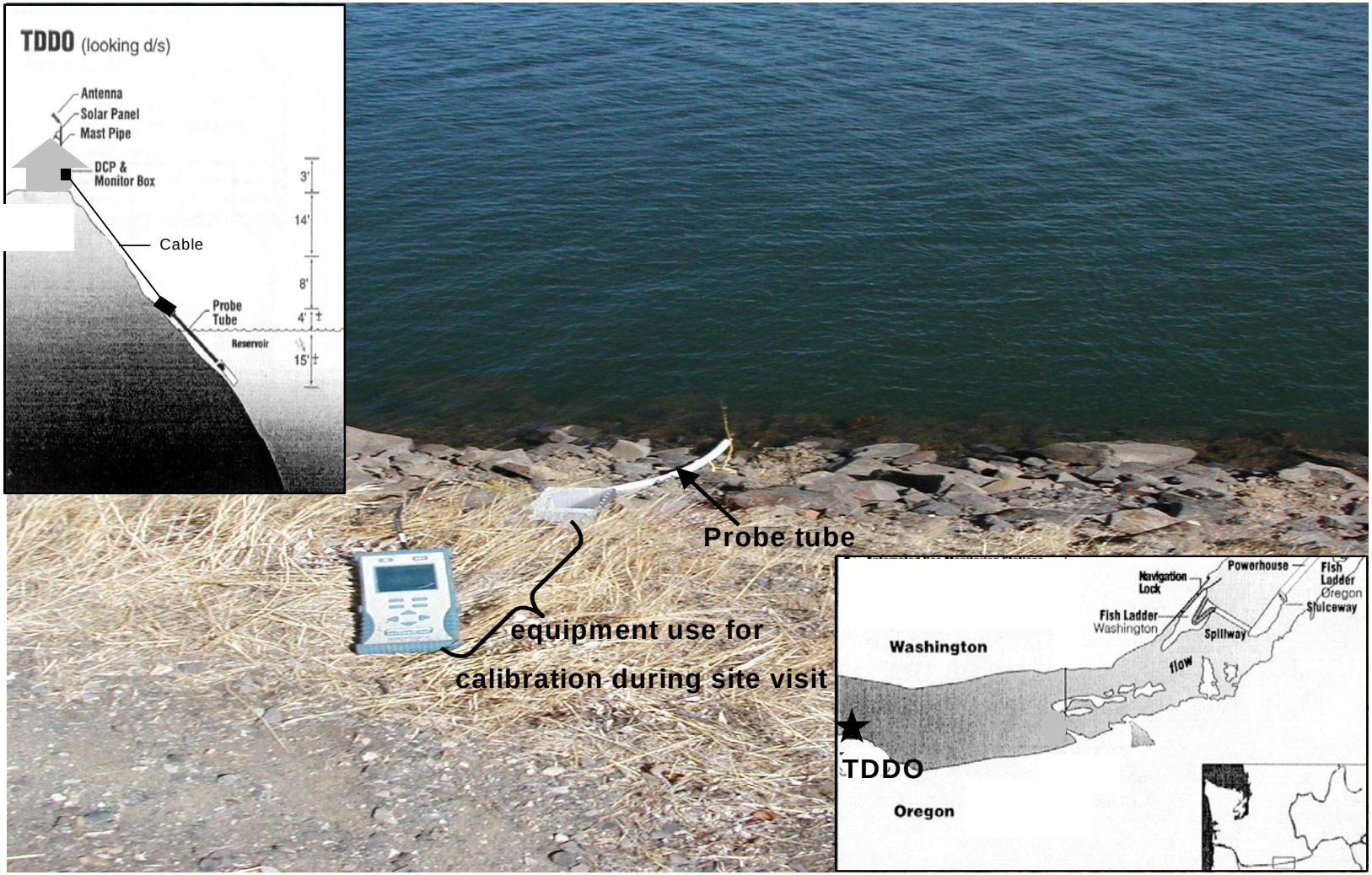
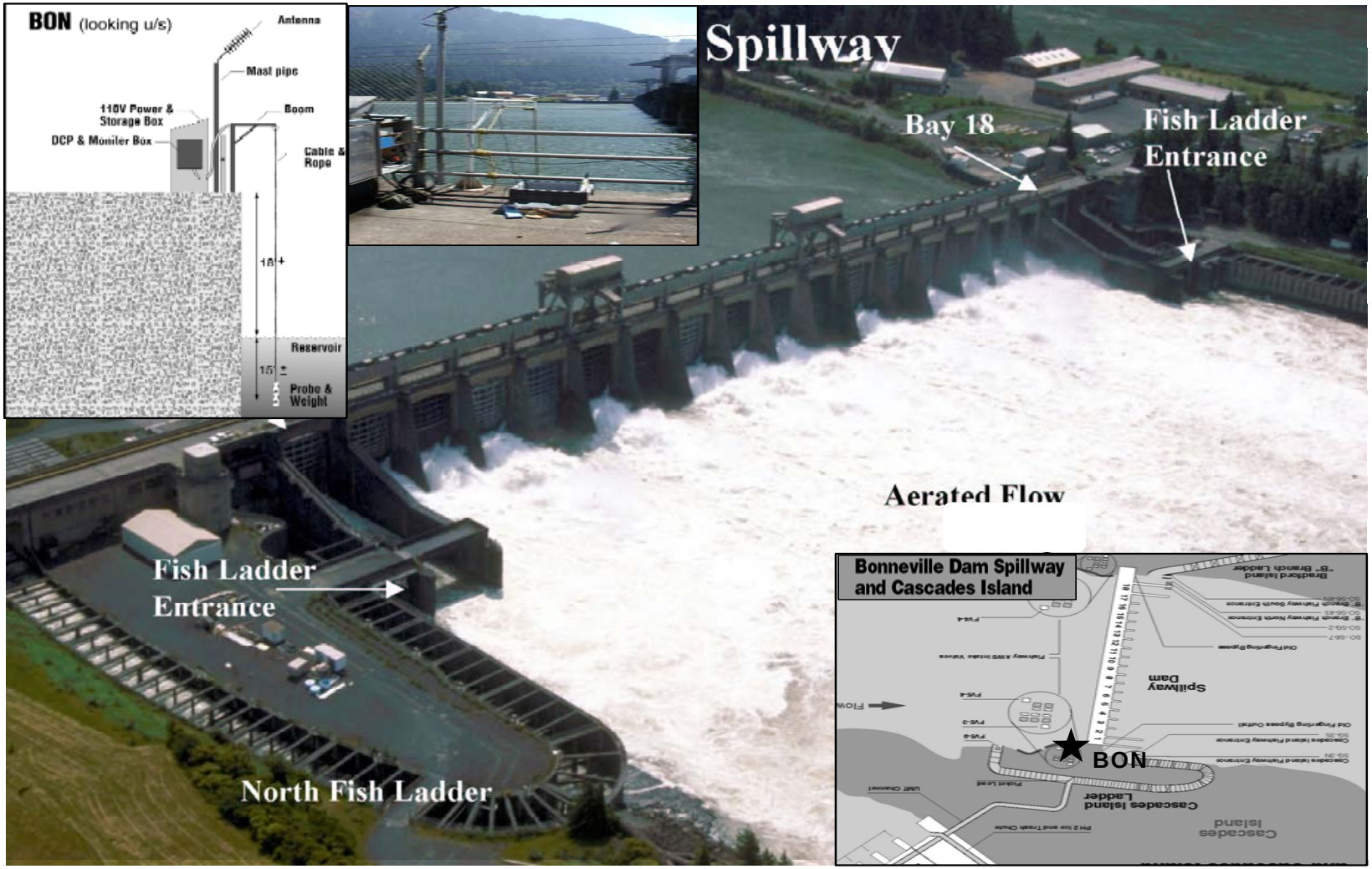

TDA (looking u/s)
Antenna
Mast Pipe
DCP & Monitor Box
Storage & 110v Power
8'
Forebay
Dock
35'±
Probe Cable& Rope
Reservoir
Probe & Weight
15'±
The Dalles Dam
TDA
Washington
Flow
East Fish Ladder
Oregon
Picket Lead
East Counting Station
Fish Ladder Exit
Exit Weir 159
Weir 158
Transportation Channel Diffusers
Flow Control Weirs
Junction Pool Weir Gates
Junction Pool
Fish Ladder Diffusers
Floating Orifice Gates
22
21
20
Junction Pool Diffusers
East Entrances Diffusers
East Fish Ladder Entrances
Bay 21 Stillwell
Powerhouse
Adult Collection Channel
East Fish Ladder Diffusers

FIGURE A-25



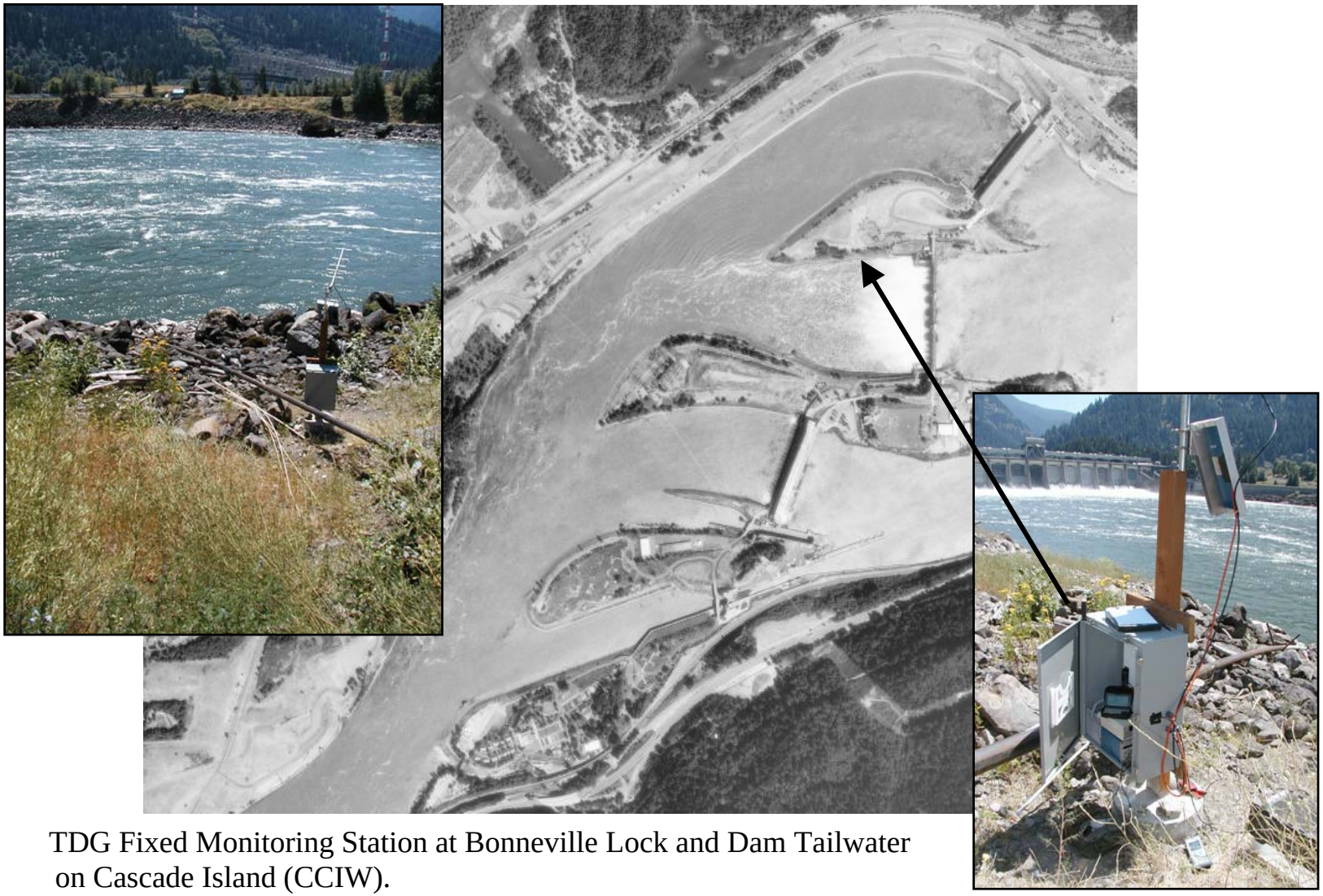
TDG Fixed Monitoring Station at The Dalles Lock and Dam Tailwater (TDDO).

FIGURE A-26



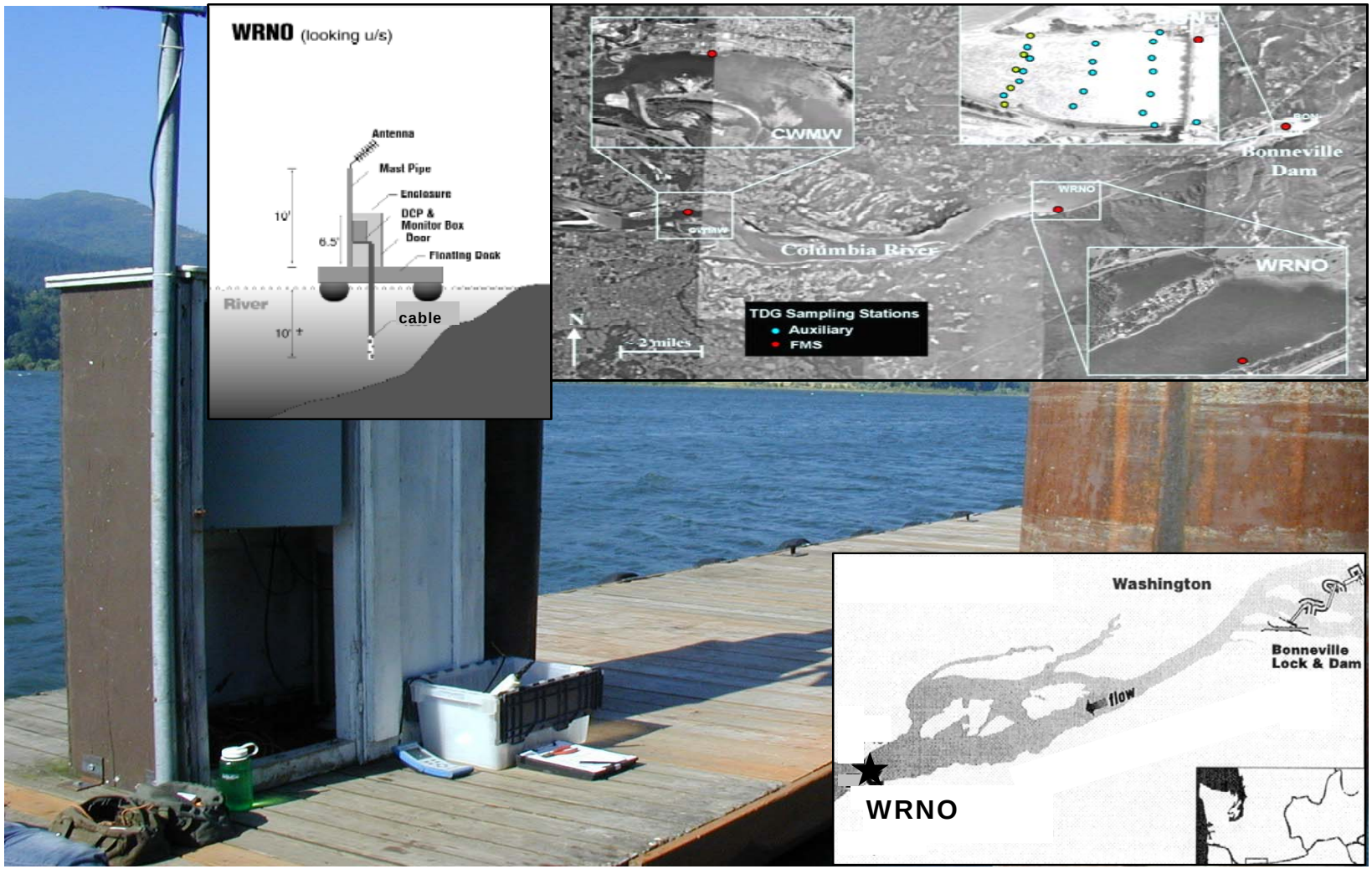
TDG Fixed Monitoring Station at Bonneville Lock and Dam Forebay (BON).

FIGURE A-27



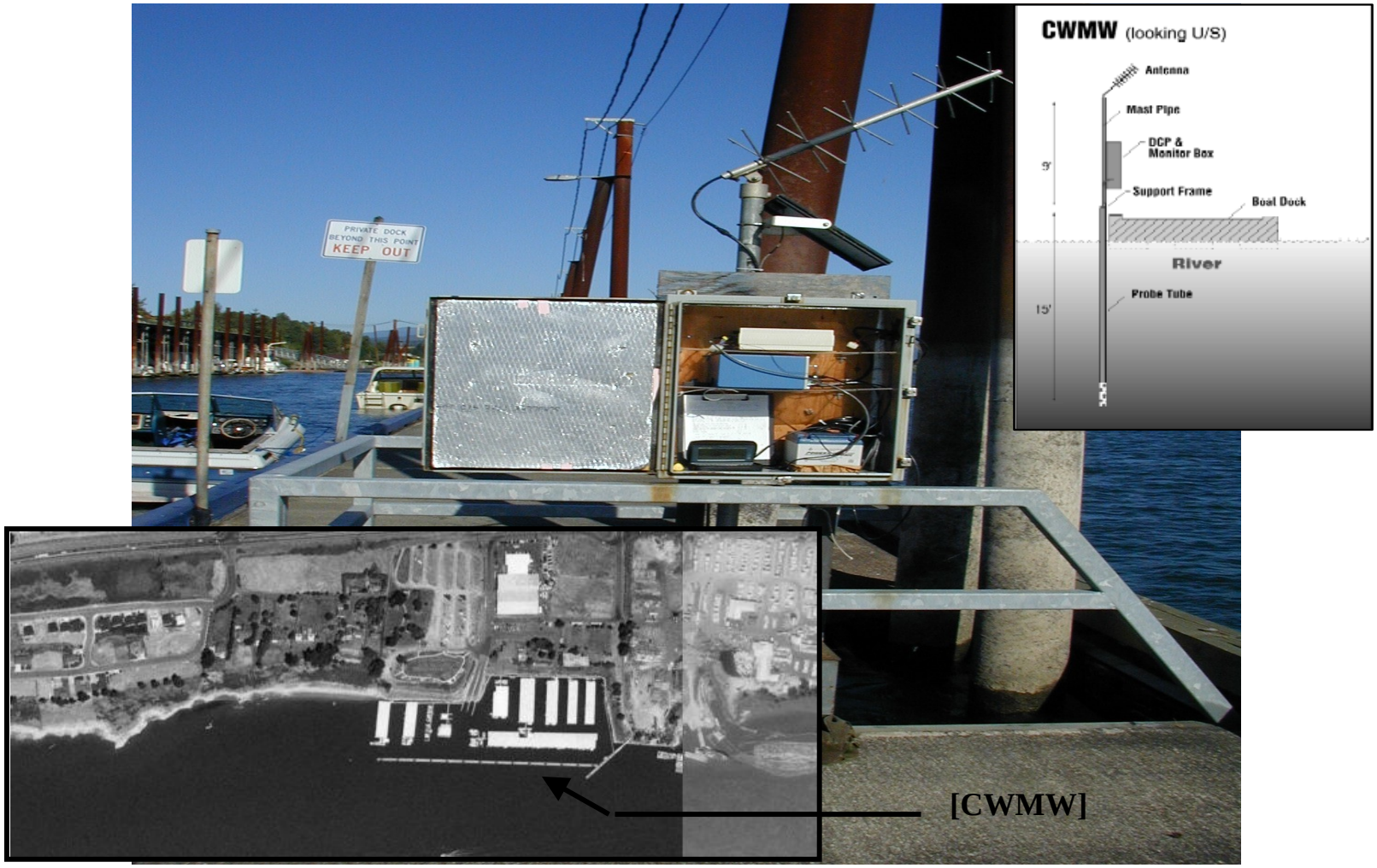
TDG Fixed Monitoring Station at Bonneville Lock and Dam Tailwater on Cascade Island (CCIW).

Figure A-28



TDG Fixed Monitoring Station at Warrendale.

Figure A-29



TDG Fixed Monitoring Station at Camas/Washougal.