Hydraulic Analysis Report
Lock and Dam No. 3

Coal River Watershed Project Plan and Environmental Assessment
Kanawha County, West Virginia
January 2026

GFT Project No.: 084562



Prepared for:
Capitol Conservation District and
Natural Resources Conservation Service (NRCS)

GFT

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PURPOSE OF THE STUDY

This hydraulic analysis assesses the change in water surface elevation of the Coal River for proposed conditions in which the existing dam structure is removed and in which the existing structure is improved.

PREVIOUS STUDIES

The Federal Emergency Management Agency (FEMA) has published a Flood Insurance Study (FIS) for the Kanawha County, WV (54039V001B) with an effective date of August 1, 2023. The hydrological and hydraulic analyses for the FIS were completed in June 1983 by USACE for FEMA, under Inter-Agency Agreement No. IAA-H-9-79, Project Order No. 42. The study for Coal River was limited from its confluence with the Kanawha River to a point approximately 1.1 miles upstream of the State Route 214. Within this reach, base flood elevations were computed, and a regulatory floodway was established (Zone AE with floodway). Although countywide revision was made for FEMA on February 6, 2008, by AMEC Earth and Environmental, Inc. under Contract No. FS-2001-EMP-2001-RP-2411, reaches in Coal River were not revised by detailed methods [1].

HYDROLOGIC ANALYSIS

Flood Discharges

FEMA documents flood discharges along the Coal River within the FIS. Flood discharges were based on regional discharge-drainage area relationships established using 50 gaging stations in the Kanawha River basin as shown in Figure 1. According to the FIS, peak discharges for the Coal River at its confluence with the Kanawha River were 38500, 56500, 66500, and 88000 cfs for 10, 2, 1 and 0.2 percent Annual Exceedance Probability (AEP) respectively with the drainage area of 899 square miles [1].

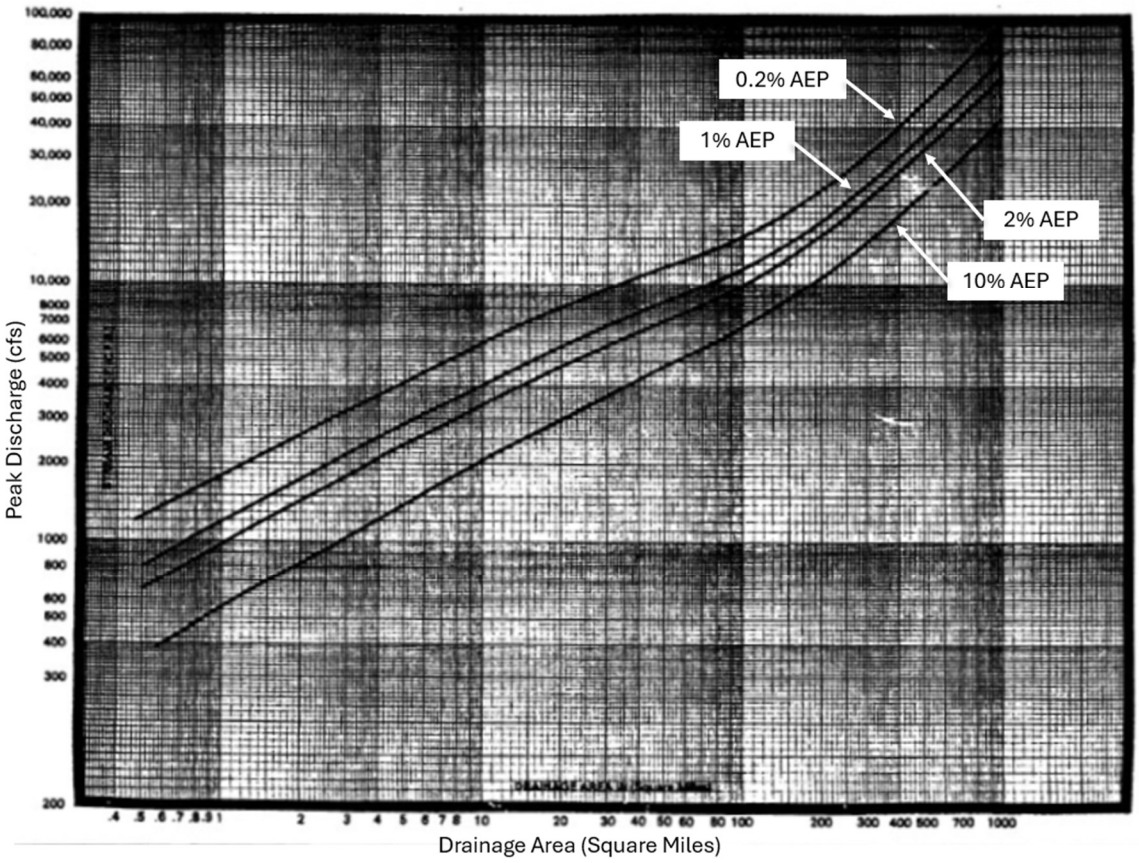


Figure 1: Discharge vs Drainage Area Curves for Coal River Basin (Annotated from FEMA FIS)

Discharges at upstream locations (various FEMA lettered cross-sections) along the Coal River were reported in a precountywide FIS report originally prepared by USACE for FEMA and are presented in Table 1. Lock and Dam No. 3 is located between FEMA lettered cross-sections AP and AQ, approximately 59920 feet upstream from the confluence with the Kanawha River.

Table 1: Flood Discharge for Various Percent AEP

Lettered XS	Distance Upstream of Confluence with Kanawha River (ft)	Peak Discharge (cfs)			
		10% AEP	2% AEP	1% AEP	0.2% AEP
BM	93,300	36,300	53,000	62,000	82,000
AY	70,960	36,300	53,000	62,000	82,000
AO	57,760	37,500	54,500	64,000	86,000
AC	37,930	37,500	54,500	64,000	86,000
V	26,500	38,500	56,500	66,500	88,000

The United States Geological Survey maintains a streamflow gage along the Coal River at Tornado, WV (Gage 03200500), approximately 1000 feet upstream from Lock and Dam No. 3, near the bridge at Smith Creek Road [2]. The watershed drainage area at the gage location is 858 sq.mi. This gage has recorded daily and peak discharges since 1908. Figure 2 plots the annual exceedance probability of the peak discharges recorded at this gage [3]. The estimates of peak discharge at various exceedance probabilities computed based on the streamflow records are slightly less than the FEMA-reported discharges indicating that the FEMA discharges are conservatively high.

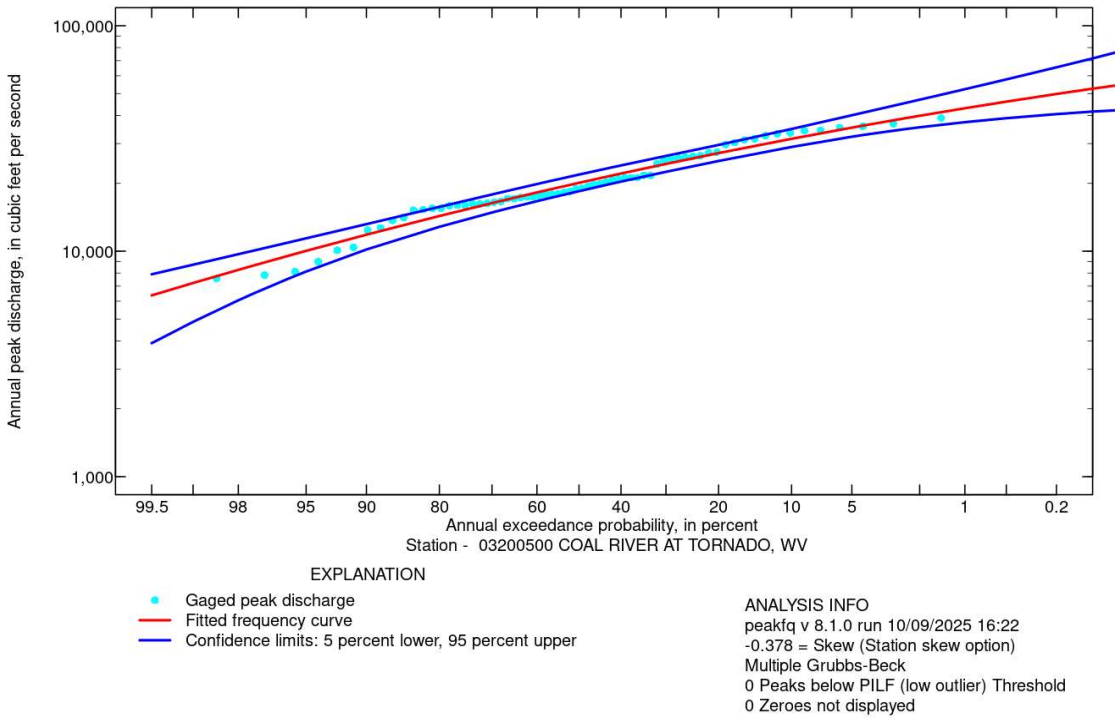


Figure 2: Annual Peak Discharge Exceedance Probability Plot

Non-Flood Discharges

Figure 3 plots the percentage exceedance relationship based on daily mean data at USGS station 03200500 [2]. Table 2 summarizes the discharge statistics. The average flow (i.e., 50% exceedance flow) in the Coal River at Tornado, WV is approximately 700 cfs based on historical data from USGS station 03200500.

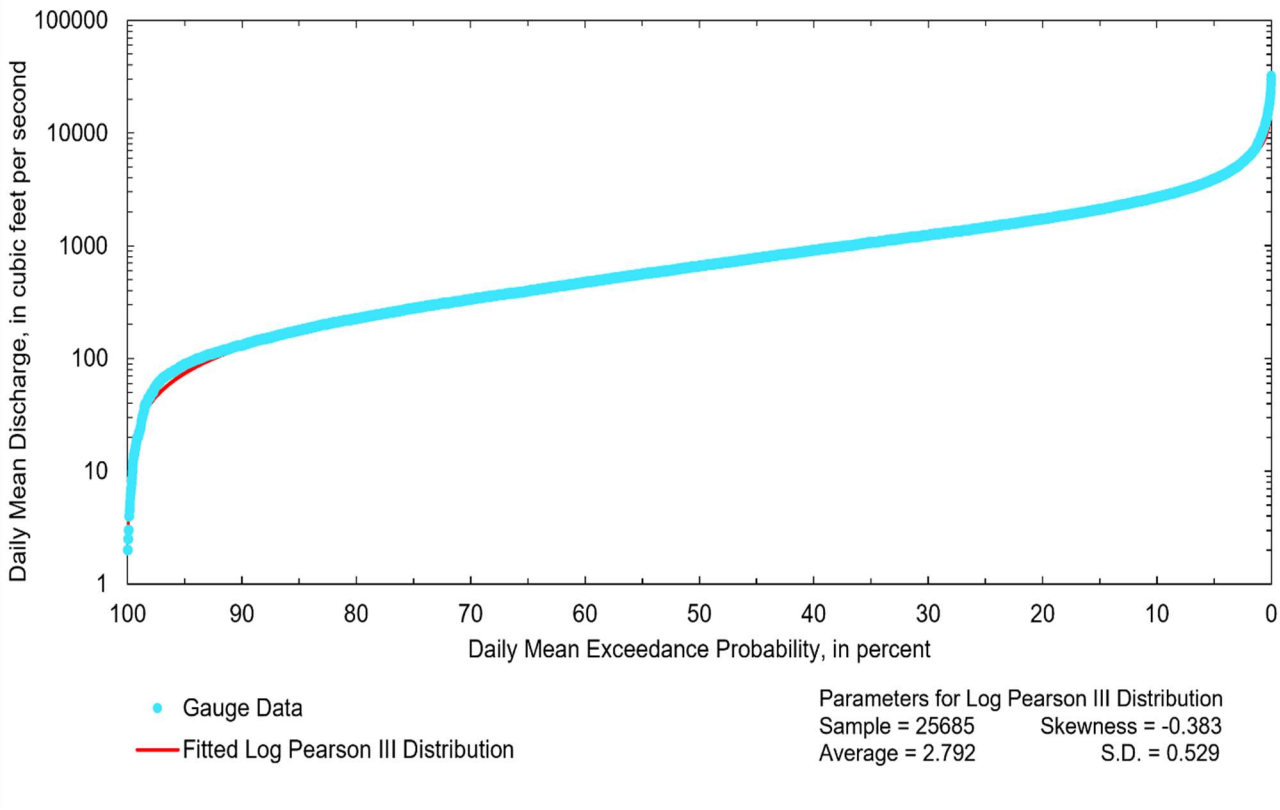


Figure 3: Daily Mean Discharge Exceedance Probability Plot

Table 2: Percent Exceedance of Daily Mean Discharges

Percent Exceedance	Daily Mean Discharge (cfs)
20 %	2000
25 %	1500
50 %	700
75 %	300
80 %	250
90 %	150

HYDRAULIC ANALYSIS

GFT requested the original HEC-2 model for the Coal River from FEMA. The data for the effective model was only available in scans from microfiche. The request letter, response and microfiche scans are provided in Appendix A. These scans were digitized in HEC-2 format and imported into HEC-RAS 6.6 to create the duplicate effective model. The extents for these models were approximately six miles upstream and downstream of Lock and Dam

No. 3. The purpose of developing the duplicate effective model was to make best use of the available historical data and to enable comparison and ensure consistency with published flood studies of the Coal River. The duplicate effective model was then improved by supplementing the historical geometry data with available current data to represent existing conditions. These existing conditions models were then used to evaluate potential hydraulic impacts to changes to Lock and Dam No. 3.

Modeling Approach

Effective Model

A summary of the floodplain and floodway data for the FEMA lettered cross sections within the modeled reach is provided in Table 3. This information is available in FIS report number 54039V001B [1].

Table 3: Summary of FEMA Lettered Cross Sections

Lettered XS	Distance* (ft)	Floodway	Base Flood WSE (Ft, NAVD88)		
		Mean Velocity (fps)	Regulatory	Without Floodway	With Floodway
BM	93300	8.2	623.5	623.5	624.5
BL	92140	7	623.2	623.2	624.2
BK	91070	6.2	623	623	624
BJ	89090	5.4	622.5	622.5	623.5
BI	87520	6.1	621.7	621.7	622.7
BH	86030	4	621.4	621.4	622.4
BG	84360	5.3	620.9	620.9	621.9
BF	82890	5.8	620.4	620.4	621.4
BE	81170	6.1	620	620	621
BD	79400	6.1	619.4	619.4	620.4
BC	77790	5	619	619	620
BB	75950	6.5	618.3	618.3	619.3
BA	74370	6.5	617.9	617.9	618.9
AZ	72830	3.6	617.7	617.7	618.7
AY	70960	7.1	616.8	616.8	617.8
AX	69500	6.2	616.4	616.4	617.4
AW	67420	6.9	615.1	615.1	616.1
AV	66040	6.2	614.9	614.9	615.9
AU	64200	6.5	614.3	614.3	615.2
AT	62780	5.9	613.9	613.9	614.8
AS	61120	6.1	613.3	613.3	614.3
AR	60670	5.7	613.3	613.3	614.3

Lettered XS	Distance* (ft)	Floodway	Base Flood WSE (Ft, NAVD88)		
		Mean Velocity (fps)	Regulatory	Without Floodway	With Floodway
AQ**	59970	4	613.3	613.3	614.1
AP**	59050	4.3	612.8	612.8	613.7
AO	57760	7.2	612	612	613
AN	55620	7.8	610.9	610.9	611.8
AM	54130	5	610.6	610.6	611.5
AL	52570	3.5	610.4	610.4	611.3
AK	51200	6.9	609.6	609.6	610.5
AJ	49810	6.3	609.3	609.3	610.2
AI	47930	8.4	608.1	608.1	608.9
AH	45700	7.5	607	607	607.9
AG	44390	7.5	606.4	606.4	607.2
AF	42700	8.3	605	605	605.8
AE	41300	8.2	604.3	604.3	605.1
AD	39590	7.3	603.6	603.6	604.4
AC	37930	7.8	602.9	602.9	603.8
AB	36130	7.4	602.1	602.1	602.9
AA	34550	7.9	601.2	601.2	602
Z	33020	8	600.2	600.2	600.9
Y	31250	8.4	599.1	599.1	600
X	29750	6.9	598.5	598.5	599.3
W	27600	6.5	597.8	597.8	598.6
V	26500	6.5	597.4	597.4	598.2

** Distance is measured from the confluence of Kanawha River*

*** Lock and Dam No. 3 is located between FEMA Cross Sections AP and AQ.*

Duplicate Effective Model

For the duplicate effective hydraulic model, cross-sections were created at the same locations as in the effective FEMA model using RAS Mapper within HEC-RAS 6.6 [4]. The geometry (station-elevation) data for these cross-sections were imported from the HEC-2 model. The horizontal projection/datum established for this analysis was the West Virginia State Plane Coordinate System, South Zone, North American Datum of 1983 (NAD83). The vertical datum established for the analysis was the North American Vertical Datum of 1988 (NAVD88). The cross-section elevations from HEC-2 were referenced to the NGVD29 vertical datum and were therefore adjusted by lowering the elevation by 0.66 ft (Vertical Datums Transformation, NOAA) to transpose the data into the NAVD88 vertical datum. Both the horizontal and the vertical units were expressed in U.S. Survey Feet. Manning's roughness coefficient was taken from the HEC-2 model which is presented in Table 4. The hydraulic simulation was

conducted using a subcritical flow regime. Froude numbers within the modeled reach confirm that the flow does not approach a supercritical state.

The water surface elevations at the FEMA lettered cross-section V for Coal River (downstream extent of model) were used as the downstream boundary condition for the simulation. The Base Flood Elevations (BFEs) at the cross-sections under the duplicate effective model were within the variance of one foot as compared to the BFE presented in the FEMA FIS (Table 4). This indicates that the model can be considered a representative of the effective FEMA model. The differences between the FEMA FIS water surface elevations and the HEC-RAS modeled water surface elevations are attributed to the differences in numerical modeling computations between the HEC-2 and the HEC-RAS software [5].

Table 4: Manning's n Values and BFE for the Lettered Cross Sections

Lettered XS	Manning's n			Base Flood Elevation (NAVD88, ft)		
	Left Overbank	Main Channel	Right Overbank	From FEMA FIS	From HECRAS 6.6[1]	Difference (FEMA-HECRAS6.6)
BM	0.12	0.04	0.12	623.5	624.1	-0.6
BL	0.12	0.04	0.12	623.2	623.77	-0.57
BK	0.12	0.04	0.12	623	623.54	-0.54
BJ	0.12	0.04	0.12	622.5	623.09	-0.59
BI	0.12	0.04	0.09	621.7	622.39	-0.69
BH	0.12	0.04	0.12	621.4	621.93	-0.53
BG	0.09	0.04	0.12	620.9	621.49	-0.59
BF	0.09	0.04	0.12	620.4	620.94	-0.54
BE	0.12	0.04	0.12	620	620.6	-0.6
BD	0.12	0.04	0.12	619.4	620.09	-0.69
BC	0.12	0.04	0.12	619	619.19	-0.19
BB	0.12	0.04	0.12	618.3	618.66	-0.36
BA	0.12	0.04	0.12	617.9	618.23	-0.33
AZ	0.12	0.04	0.12	617.7	618.07	-0.37
AY	0.1	0.04	0.1	616.8	617.16	-0.36
AX	0.1	0.04	0.1	616.4	616.83	-0.43
AW	0.085	0.04	0.09	615.1	615.74	-0.64
AV	0.11	0.04	0.09	614.9	615.48	-0.58
AU	0.11	0.04	0.09	614.3	614.96	-0.66
AT	0.085	0.04	0.085	613.9	614.7	-0.8
AS	0.085	0.04	0.085	613.3	614.03	-0.73
AR	0.085	0.04	0.085	613.3	613.07	0.23

Lettered XS	Manning's n			Base Flood Elevation (NAVD88, ft)		
	Left Overbank	Main Channel	Right Overbank	From FEMA FIS	From HECRAS 6.6[1]	Difference (FEMA-HECRAS6.6)
AQ	0.085	0.04	0.085	613.3	613.32	-0.02
AP	0.085	0.04	0.085	612.8	612.89	-0.09
AO	0.085	0.04	0.085	612	612.07	-0.07
AN	0.085	0.04	0.1	610.9	610.89	0.01
AM	0.085	0.04	0.1	610.6	610.62	-0.02
AL	0.085	0.04	0.1	610.4	610.34	0.06
AK	0.085	0.04	0.1	609.6	609.7	-0.1
AJ	0.085	0.04	0.1	609.3	609.33	-0.03
AI	0.11	0.04	0.11	608.1	608.11	-0.01
AH	0.11	0.04	0.11	607	607.07	-0.07
AG	0.11	0.04	0.11	606.4	606.54	-0.14
AF	0.11	0.04	0.11	605	605.04	-0.04
AE	0.09	0.04	0.11	604.3	604.36	-0.06
AD	0.09	0.04	0.11	603.6	603.54	0.06
AC	0.09	0.04	0.11	602.9	602.76	0.14
AB	0.08	0.04	0.08	602.1	602.04	0.06
AA	0.08	0.04	0.08	601.2	601.27	-0.07
Z	0.08	0.04	0.08	600.2	600.38	-0.18
Y	0.08	0.04	0.08	599.1	598.94	0.16
X	0.08	0.04	0.08	598.5	598.57	-0.07
W	0.08	0.04	0.08	597.8	597.87	-0.07
V	0.08	0.04	0.08	597.4	597.4	0

[1]Duplicate Effective Model

Pre-Project Condition Model/Corrected Effective Model

The duplicate effective model was updated with best-available terrain information. The terrain dataset was developed from both site-collected survey data and from an elevation grid derived through Light Detection and Ranging (LiDAR) techniques. Detailed site survey (both topographic and bathymetric) was performed by GFT in August 2025 to accurately map the existing riverbed upstream and downstream of Lock and Dam No. 3. The site survey extended approximately 1000 feet upstream of Lock and Dam No. 3 to the Smith Creek Road bridge and approximately 1600 feet downstream of Lock and Dam No. 3 to the point where the Coal River bends to the right. The LiDAR-derived DEM of one meter resolution was obtained from the West Virginia FEMA R3 Lidar Project (USGS Contract #G16PC00020) available on the West Virginia GIS Technical Center Geospatial Data Clearinghouse operated by West Virginia University. The LiDAR was flown in 2018-20 and supports vertical accuracies of 5.1 cm in non-vegetated terrain and 13.8 cm in vegetated areas [6].

In the immediate vicinity of Lock and Dam No. 3, additional cross sections were also provided at close intervals to represent the localized site conditions in this area. The cross-section representing the dam was removed, and the dam was modelled as an in-line structure. The crest level was provided at an elevation of 580 ft (NAVD88) and the openings on the dam body were provided close to the existing condition. The Manning's n values for the lettered cross sections were taken from the duplicate effective model and those values for additional cross sections were assumed to be same as the values for the bounding lettered cross sections. This corrected effective model was considered as the existing or pre-project condition model. The variation in BFEs between duplicate effective model and corrected effective model is presented in Table 5.

Table 5: Variation in BFE for Corrected Effective Model

Modeled XS	Corresponding Lettered XS	Base Flood Elevation (NAVD88, ft)		
		Corrected Effective Model	Duplicate Effective Model	Difference (CEM-DEM)
67345	BM	624.26	624.1	0.16
66163	BL	623.97	623.77	0.2
65093	BK	623.72	623.54	0.18
63115	BJ	623.32	623.09	0.23
61540	BI	622.61	622.39	0.22
60064	BH	622.34	621.93	0.41
58383	BG	621.06	621.49	-0.43
56884	BF	620.49	620.94	-0.45
55176	BE	619.8	620.6	-0.8
53410	BD	619.35	620.09	-0.74
51916	BC	619.26	619.19	0.07
49973	BB	618.32	618.66	-0.34
48402	BA	617.73	618.23	-0.5
46835	AZ	617.67	618.07	-0.4
44954	AY	616.38	617.16	-0.78
43497	AX	616.09	616.83	-0.74
41423	AW	615.32	615.74	-0.42
40041	AV	614.99	615.48	-0.49
38212	AU	614.54	614.96	-0.42
36814	AT	614.27	614.7	-0.43
35150	AS	613.64	614.03	-0.39
34932 (Bridge)				
34703	AR	613.53	613.07	0.46

Modeled XS	Corresponding Lettered XS	Base Flood Elevation (NAVD88, ft)		
		Corrected Effective Model	Duplicate Effective Model	Difference (CEM-DEM)
34572		613.76		
34378		613.86		
34154		613.85		
34006	AQ	613.79	613.32	0.47
33953 (Dam)		613.76		
33879		613.73		
33793		613.7		
33686		613.7		
33574		613.64		
33454		613.63		
33320		613.76		
33097	AP	613.15	612.89	0.26
32936		613.23		
32638		613.03		
31795	AO	612.03	612.07	-0.04
29614	AN	610.17	610.89	-0.72
28097	AM	610.1	610.62	-0.52
26514	AL	610.01	610.34	-0.33
25135	AK	608.94	609.7	-0.76
23775	AJ	608.81	609.33	-0.52
21935	AI	607.31	608.11	-0.8
19696	AH	606.25	607.07	-0.82
18407	AG	605.76	606.54	-0.78
16725	AF	604.2	605.04	-0.84
15278	AE	603.59	604.36	-0.77
13567	AD	602.96	603.54	-0.58
11928	AC	602.13	602.76	-0.63
10164	AB	601.37	602.04	-0.67
8554	AA	600.61	601.27	-0.66
7034	Z	599.81	600.38	-0.57
5269	Y	598.78	598.94	-0.16

Modeled XS	Corresponding Lettered XS	Base Flood Elevation (NAVD88, ft)		
		Corrected Effective Model	Duplicate Effective Model	Difference (CEM-DEM)
3771	X	598.44	598.57	-0.13
1581	W	597.92	597.87	0.05
496	V	597.4	597.4	0

Following confirmation that the pre-project model appropriately represented water surface profiles within the reach, additional flow profiles were added to the model to allow for water surface profile comparison over a range of events, including commonly observed discharges. Non-flood discharges of 2000, 1500, 700, 300, 250, and 150 cfs were added to the model. They represent the daily mean flow exceedance probability of 20%, 25%, 50%, 75%, 80%, and 90% respectively (Table 2) based on daily mean data at USGS station 03200500. These discharges were assumed to be constant throughout the entire modeled reach, and no flow change locations were modeled for these discharges. The downstream boundary condition for these flow profiles was assumed to be normal depth with an energy grade slope of 0.0006 feet/foot. The normal depth downstream boundary is considered to be reasonable because in normal events, the Kanawha River has little influence over the Coal River, and the downstream boundary of the model is sufficiently far from the area of interest such that the boundary condition assumption is not influential. Additionally, a discharge of 190 cfs (the approximate discharge occurring at the time of the GFT bathymetric survey) was simulated. The water surface elevation results for the simulated discharge of 190 cfs closely matched with the measured elevation of 579.3 ft. upstream of the dam on August 21, 2025 (Figure 4).

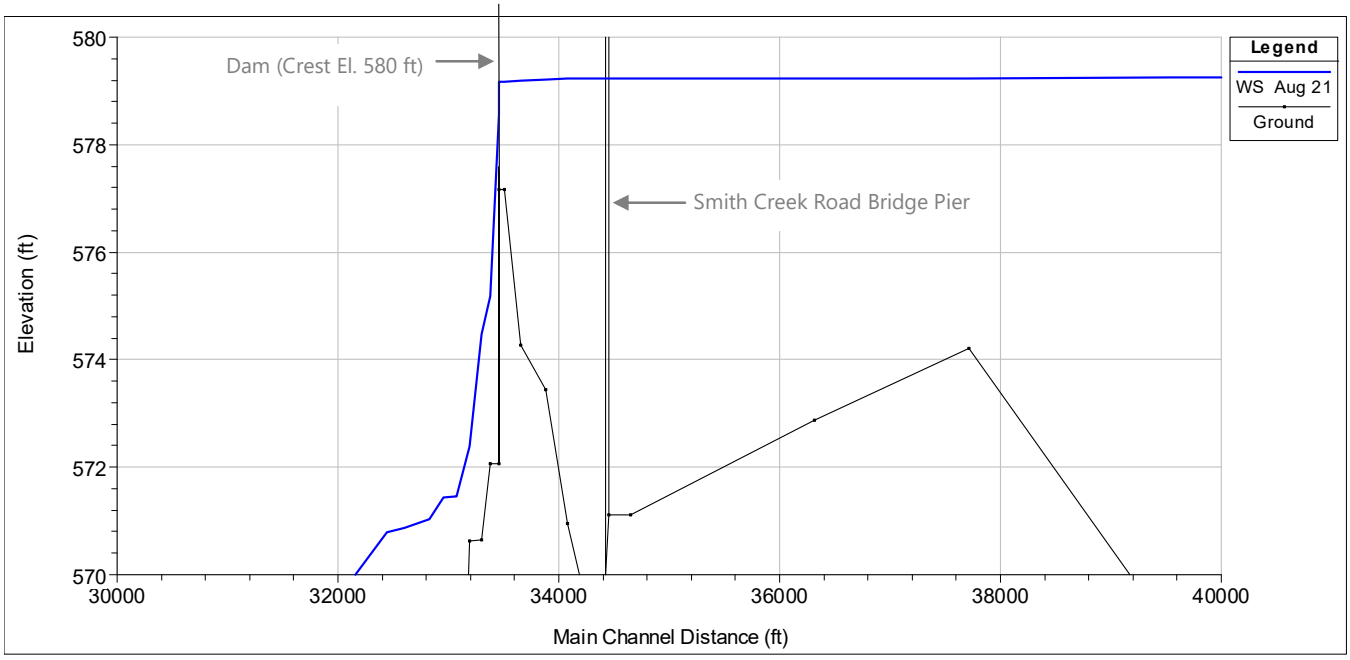


Figure 4: Modeled Water Surface Elevation Around the Dam at the Discharge of 190 cfs

Post-Project Conditions Model - Dam Removal Option

The post-project dam removal condition represents the Coal River with the dam structure at Lock and Dam No. 3 removed. The pre-project model geometry was modified to represent the post-project condition by removing the in-line structure. In the model, the in-line structure is a vertical weir that extends approximately 2.5 feet above the

natural surveyed channel bottom. Roughness and boundary conditions were maintained. For the modeled flood discharges with 10% and lower AEP (Table 1), the proposed conditions result in no change to the modeled water surface profiles within the model reach. Figure 5 shows the water surface profiles for the flood discharges in the immediate vicinity of the dam for the Pre-Project and Post-Project Dam Removal Conditions.

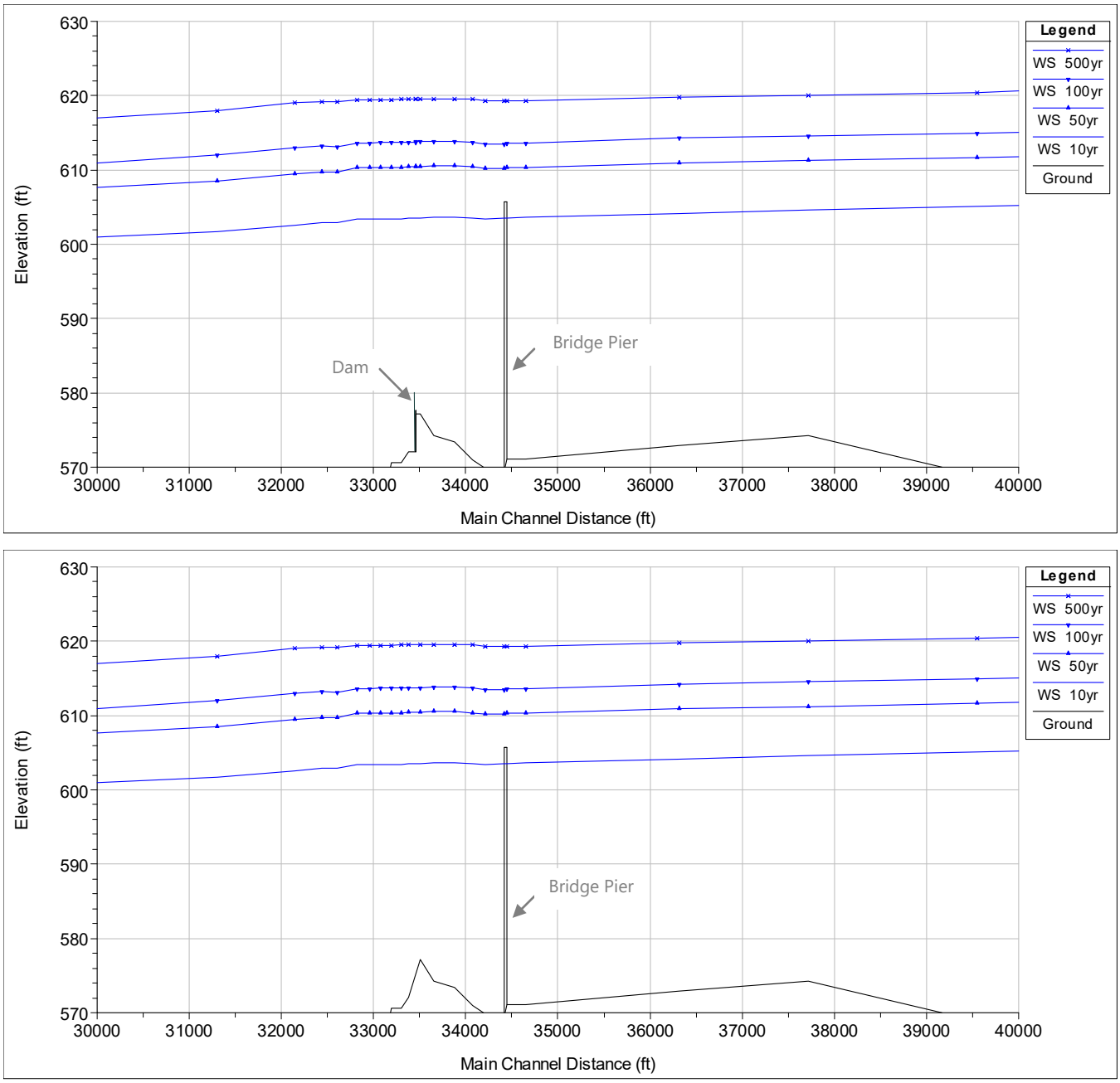


Figure 5: Water Surface Profiles at Flood Discharges for the Pre-Project (Top) and the Post-Project Dam Removal Conditions (Bottom)

A comparison of the water surface elevations for the daily mean discharge of 700 cfs is presented in Table 6. For this discharge, the removal of the dam results in water surface elevations that are approximately 1.05 feet lower at the Smith Creek Road bridge. This difference is dissipated to a decrease of 0.07 feet at the upstream limit of the

model (approximately 6 miles upstream of the dam). Figure 6 plots the average annual discharge water surface profiles for pre-project and post-project dam removal conditions.

Table 6: WSE Comparison for Proposed Dam Removal for Average Flow Discharge of 700 cfs (50% exceedance flow)

Modeled XS	Lettered XS	Water Surface Elevation with Dam (NAVD88, ft)	Water Surface Elevation Without Dam (NAVD88, ft)	Difference
67345	BM	583.86	583.79	0.07
66163	BL	583.54	583.45	0.09
65093	BK	583.37	583.27	0.1
63115	BJ	583.11	582.97	0.14
61540	BI	582.85	582.68	0.17
60064	BH	582.34	582.07	0.27
58383	BG	581.87	581.47	0.4
56884	BF	581.63	581.13	0.5
55176	BE	581.42	580.82	0.6
53410	BD	581.28	580.62	0.66
51916	BC	581.18	580.47	0.71
49973	BB	581.08	580.3	0.78
48402	BA	580.99	580.17	0.82
46835	AZ	580.9	580.01	0.89
44954	AY	580.85	579.94	0.91
43497	AX	580.82	579.9	0.92
41423	AW	580.78	579.83	0.95
40041	AV	580.75	579.79	0.96
38212	AU	580.7	579.71	0.99
36814	AT	580.66	579.64	1.02
35150	AS	580.63	579.59	1.04
34932 (Bridge)				
34703	AR	580.62	579.57	1.05
34572		580.62	579.56	1.06
34378		580.58	579.48	1.1
34154		580.5	579.2	1.3
34006	AQ	580.47	578.77	1.7
33953 (Dam)				

Modeled XS	Lettered XS	Water Surface Elevation with Dam (NAVD88, ft)	Water Surface Elevation Without Dam (NAVD88, ft)	Difference
33879		578.39	578.39	0
33793		577.67	577.67	0
33686		573.14	573.14	0
33574		573.2	573.2	0
33454		573.16	573.16	0
33320		572.95	572.95	0
33097	AP	572.83	572.83	0
32936		572.75	572.75	0
32638		572.34	572.34	0
31795	AO	571.78	571.78	0
29614	AN	571.07	571.07	0
28097	AM	570.72	570.72	0
26514	AL	570.44	570.44	0
25135	AK	570.17	570.17	0
23775	AJ	569.98	569.98	0
21935	AI	569.72	569.72	0
19696	AH	569.15	569.15	0
18407	AG	568.84	568.84	0
16725	AF	568.46	568.46	0
15278	AE	568.11	568.11	0
13567	AD	567.78	567.78	0
11928	AC	567.41	567.41	0
10164	AB	567.06	567.06	0
8554	AA	566.75	566.75	0
7034	Z	566.36	566.36	0
5269	Y	565.65	565.65	0
3771	X	565.14	565.14	0
1581	W	564.59	564.59	0
496	V	564.15	564.15	0

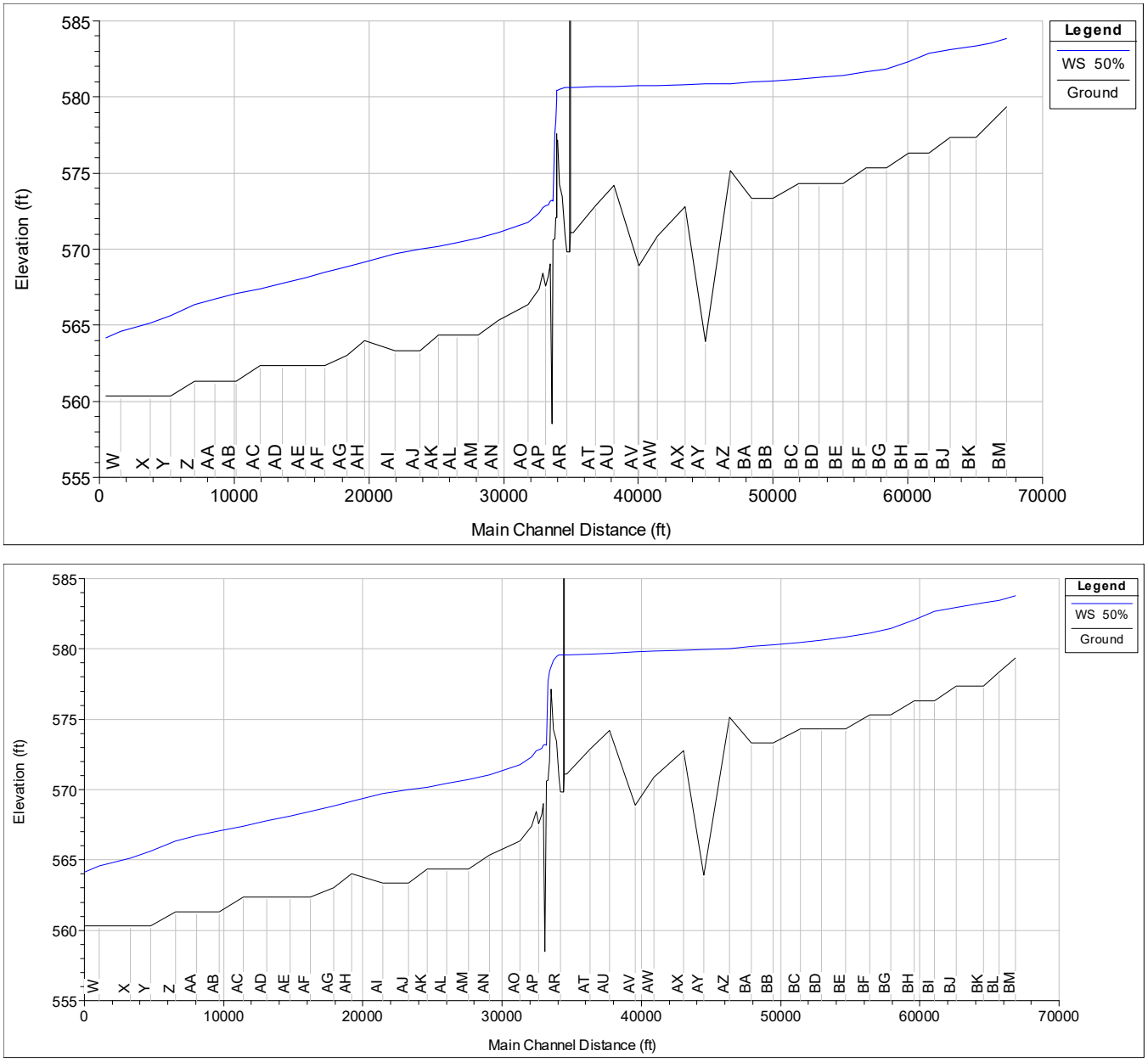


Figure 6: Water Surface Profiles at 50% Exceedance Discharge for the Pre-Project (Top) and the Post-Project Dam Removal Conditions (Bottom)

Post-Project Conditions Model - Dam Improvement Option

The post-project condition with improvement to the dam structure at Lock and Dam No. 3 includes repair of existing dam such that the crest elevation is at uniform elevation of 580 ft, and without any gaps or openings in the structure. The pre-project model geometry was modified to represent this post-project dam improvement condition by removing the openings in the existing in-line structure. For the modeled flood discharges with 10% and lower AEP (Table 1), the proposed condition resulted in no change to the modeled water surface profiles within the model reach. Altering the dam structure at Lock and Dam No. 3 does not increase flood risk within the reach.

For events with discharges equal to and lower than 2000 cfs, the proposed condition increased water surface elevation upstream of the dam location and resulted in no change in water surface elevation downstream of the dam. A comparison of the water surface elevations for the daily mean discharge of 700 cfs is presented in Table 7. For this discharge, the improved dam condition results in water surface elevations that are approximately 0.46 feet higher just upstream of the dam. This difference is dissipated to an increase of approximately 0.04 feet at the upstream limit of the model.

Table 7: WSE Comparison for Proposed Dam Improvement for Average Flow Discharge of 700 cfs (50% exceedance flow)

Modeled XS	Lettered XS	Water Surface Elevation with Existing Dam (NAVD88, ft)	Water Surface Elevation with Improved Dam (NAVD88, ft)	Difference
67345	BM	583.86	583.9	0.04
66163	BL	583.54	583.6	0.06
65093	BK	583.37	583.44	0.07
63115	BJ	583.11	583.19	0.08
61540	BI	582.85	582.96	0.11
60064	BH	582.34	582.48	0.14
58383	BG	581.87	582.08	0.21
56884	BF	581.63	581.88	0.25
55176	BE	581.42	581.7	0.28
53410	BD	581.28	581.58	0.3
51916	BC	581.18	581.5	0.32
49973	BB	581.08	581.41	0.33
48402	BA	580.99	581.34	0.35
46835	AZ	580.9	581.27	0.37
44954	AY	580.85	581.23	0.38
43497	AX	580.82	581.21	0.39
41423	AW	580.78	581.16	0.38
40041	AV	580.75	581.14	0.39
38212	AU	580.7	581.1	0.4
36814	AT	580.66	581.07	0.41
35150	AS	580.63	581.05	0.42
34932 (Bridge)				
34703	AR	580.62	581.04	0.42
34572		580.62	581.03	0.41
34378		580.58	581.01	0.43

Modeled XS	Lettered XS	Water Surface Elevation with Existing Dam (NAVD88, ft)	Water Surface Elevation with Improved Dam (NAVD88, ft)	Difference
34154		580.5	580.95	0.45
34006	AQ	580.47	580.93	0.46
33953 (Dam)				
33879		578.39	578.39	0
33793		577.67	577.67	0
33686		573.14	573.14	0
33574		573.2	573.2	0
33454		573.16	573.16	0
33320		572.95	572.95	0
33097	AP	572.83	572.83	0
32936		572.75	572.75	0
32638		572.34	572.34	0
31795	AO	571.78	571.78	0
29614	AN	571.07	571.07	0
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26514	AL	570.44	570.44	0
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15278	AE	568.11	568.11	0
13567	AD	567.78	567.78	0
11928	AC	567.41	567.41	0
10164	AB	567.06	567.06	0
8554	AA	566.75	566.75	0
7034	Z	566.36	566.36	0
5269	Y	565.65	565.65	0
3771	X	565.14	565.14	0
1581	W	564.59	564.59	0
496	V	564.15	564.15	0

Limitations

The hydraulic analysis in this study did not account for local modifications to the Coal River in the vicinity of the project site due to natural changes in the river as a result of the dam removal or due to constructed changes that may be included as part of the dam removal project. Such changes are expected to have only localized impacts on lower discharges and can be investigated as part of design efforts.

SUMMARY

Hydraulic analysis shows that removal of the dam will lower the water surface elevation upstream of the dam during the low flow scenarios such as daily mean discharge with probability of exceedance greater than 20%. For the 50% exceedance flow (700 cfs), the influence was seen up to six miles upstream of the dam, ranging from approximately a 1.05 ft drop at the Smith Creek Road bridge (approximately 1,000 feet upstream of the dam) to 0.07 ft at the upstream limit of the hydraulic model (approximately 6 miles upstream of the dam). For the higher discharges such as annual peak or base flood discharges, water surface elevation was not altered due to the dam removal. Improving the dam structure to remove the existing gaps in the structure and to have a constant weir elevation of 580 ft results in no impacts to flood discharges. For the 50% exceedance flow, water surface elevation upstream of the dam would increase by approximately 0.5 feet. Water surface elevations downstream of the dam remain unchanged regardless of whether the dam is removed or altered.

REFERENCES

1. Federal Emergency Management Agency (FEMA), 2023, Flood Insurance Study (FIS) for Kanawha County, West Virginia and Incorporated Areas - FIS Numbers 54039CV001B through 54039CV003B (Eff. Aug 1, 2023).

2. U.S. Geological Survey (USGS), 2016, National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed October 9, 2025, at URL https://waterdata.usgs.gov/nwis/uv?site_no=03200500&legacy=1.

3. Siefken, S.A., Crouch, S., Rucker, S., Wavra, H. N., Faunce, K. E., Boles, C., 2024, peakfq: Peak Flow Frequency: U.S. Geological Survey Software Release, R package, DOI: https://doi.org/10.5066/P14NQH6T

4. United States Army Corps of Engineers (USACE), 2024, Hydrologic Engineering Center - River Analysis Software (HEC-RAS) Version 6.6.

5. United States Army Corps of Engineers (USACE), 2024, HEC-RAS Hydraulic Reference Manual, Version 6.6.

6. U.S. Geological Survey (USGS), 2021, West Virginia FEMA R3 Lidar Project, USGS Contract Number 616PC00020.

Appendix A:

Data Request and Response

GFT

Federal Emergency Management Agency
Washington, D.C. 20472

Flood Insurance Study (FIS) Data Requests

The Federal Emergency Management Agency (FEMA) has identified seven categories into which requests for Flood Insurance Study (FIS) backup (i.e., technical and administrative support) are separated. These categories and their associated fees are below:

Requests for Flood Insurance Backup Data	Fee
1. Portable Document Format (PDF) or Diskettes of hydrologic and hydraulic backup data for current or historical FISs	An initial, non-refundable $300, plus a $93 per-case surcharge fee to recover the cost of library maintenance and archiving. For larger requests that require more than 4 hours of research, additional hours will be charged at $40 per hour.
2. PDF or Mylar copies of topographic mapping developed during FIS process	An initial, non-refundable $300, plus a $93 per-case surcharge fee to recover the cost of library maintenance and archiving. For larger requests that require more than 4 hours of research, additional hours will be charged at $40 per hour.
3. PDF of survey notes developed during FIS process	An initial, non-refundable $300, plus a $93 per-case surcharge fee to recover the cost of library maintenance and archiving. For larger requests that require more than 4 hours of research, additional hours will be charged at $40 per hour.
4. PDF of individual Letters of Map Change (LOMCs)	$40 for first letter; $10 for each additional letter in the same request. Requesters will be notified about availability of the data and the fees associated with the requested data.
5. PDF of preliminary map panels	$35 for first panel; $2 for each additional panel in the same request. Requesters will be notified about availability of the data and the fees associated with the requested data.
6. DVDs of Digital Line Graph files, FIRM files or Digital LOMR attachment files	$150 per county or Digital LOMR attachment shape file. Requesters will be notified about availability of the data and the fees associated with the requested data.
7. Computer diskettes and user manuals for FEMA computer programs	$25 per copy. Requesters will be notified about availability of the data and the fees associated with the requested data.

As shown in the table above, for Categories 1-3, an initial non-refundable fee of $300 is required to initiate the request and required before the requested data will be provided. This non-refundable fee is required, even if no data is available after research. If the data requested are available and the request is not canceled, the final fee is calculated as a sum of the standard per-product charge plus a per-case surcharge of $93, to help recover library maintenance and archiving costs. The total costs of processing requests in Categories 1-3 will vary based on the complexity of the research involved in retrieving the data and the volume and medium of the data to be reproduced and distributed. The initial flat fee will be applied against the total costs to process the request, and FEMA will invoice the requester for the balance plus the per-case surcharge before the data are provided. No data will be provided to a requester until all required fees have been paid.

For Categories 4- 7, there is no initial fee to initiate a request for data. Requesters will be notified about the availability of, and the fees associated with, the requested data.

Payment must be received before services and data are rendered. Fee payments for non-exempt requests must be made in advance of services being rendered. These payments shall be made in the form of a check, money order, or by credit card payment. Checks and money orders must be made payable, in U.S. funds, to the National Flood Insurance Program.

FEMA will deposit all fees collected to the National Flood Insurance Fund, which is the source of funding for providing these services.

Requestors must submit the user fees listed above with requests for FIS technical and administrative support data. We will charge all entities except the following for requests for FIS technical and administrative support data:

- Private architectural-engineering firms under contract to FEMA to perform or evaluate studies and restudies
- Federal agencies involved in performing studies and restudies for FEMA (i.e., U.S. Army Corps of Engineers, U.S. Geological Survey, Natural Resources Conservation Service, Tennessee Valley Authority)
- Communities that have supplied the Digital Line Graph base or other digital community GIS data to FEMA and request the Digital Line Graph data or FIRM files (Category 6)
- Communities that request data during the statutory 90-day appeal period for an initial or revised FIS for that community
- Mapped participating communities that request data at any time other than during the statutory 90-day appeal period, provided the data are for use by the community and not a third-party user
- State NFIP Coordinators, provided that the data that they request are for use by the State NFIP Coordinators and not for use by a third-party user

A full detailing of all flood map-related fees is available on the following webpage:
https://www.fema.gov/forms-documents-and-software/flood-map-related-fees

Initiating a Request

To initiate your request, please complete pages 4 and 5 of this form.

The average request takes 2 to 3 weeks to fill.

You will be contacted after we have determined whether the requested data are available and the final fee is assessed.

Payments can be made by Checks, Money Order or Credit Card. Checks or money orders should be made payable to:

NATIONAL FLOOD INSURANCE PROGRAM

If paying by credit card, please complete the Payment Information Form and mail it or or e-mail it with your request.

Data will be released upon receipt of final payment.

Please include your check, if applicable, with your written request and mail to:

FEMA Engineering Library 3601 Eisenhower Ave. Suite 500
Alexandria, Virginia 22304-6426
E-mail: FEMA-EngineeringLibrary@fema.dhs.gov

Please note that effective FIRMs, FHBMs, FIS reports, FIRM and National Flood Hazard Layer geodatabases (NFHL), and Letters of Map Change (LOMC) with determination dates after July 1997 are available from the MSC: http://msc.fema.gov (phone: 877- FEMA-MAP).

Federal Emergency Management Agency
Washington, D.C. 20472

Flood Insurance Study (FIS) Data Request

Please provide the following information as applicable for the area where you require data:

- Complete community name (including county and state):

  Kanawha County, WV

- Community identification number, if known:

  540070

- Name(s) of flooding source(s) and specific location(s) for which data are needed (Attach FIRM panel showing subject area if available):

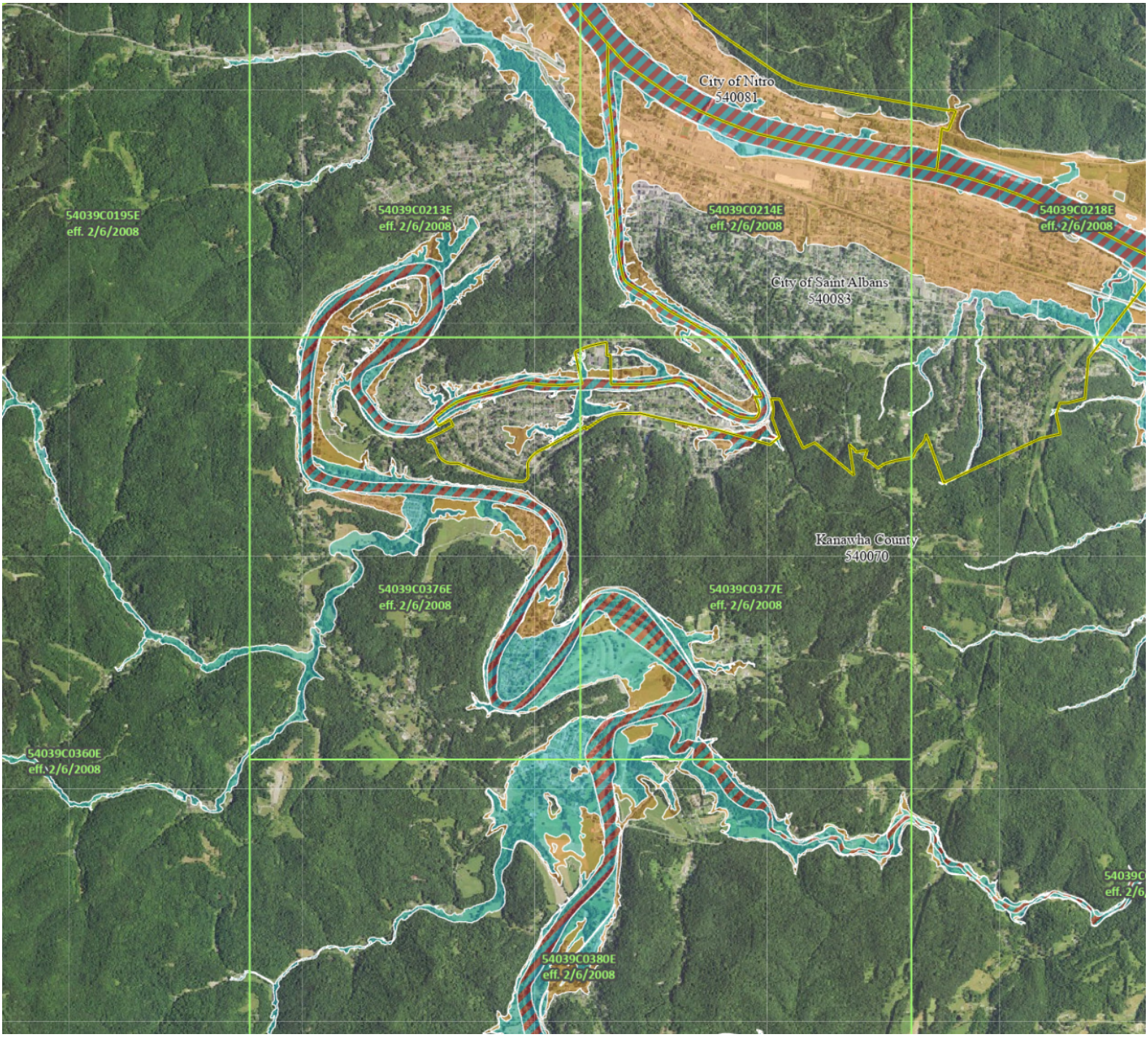
  Coal River from XS AV to XS A (at confluence with Kanawha River)

- Specific data needed (see list of available categories on page 1):

  Hydrologic and hydraulic backup data (hydraulic model)

- Effective date of FIRM for which data are requested (enclose an annotated copy of FIRM/FBFM, if available, identifying area of interest):

  August 1, 2023. Note that the region of interest cannot be identified on a singl


City of Nitro
540081
54039C0195E
eff. 2/6/2008
54039C0213E
eff. 2/6/2008
54039C0214E
eff. 2/6/2008
54039C0218E
eff. 2/6/2008
City of Saint Albans
540083
Kanawha County
540070
54039C0376E
eff. 2/6/2008
54039C0377E
eff. 2/6/2008
54039C0360E
eff. 2/6/2008
54039C0380E
eff. 2/6/2008

Outlook

E2503234

From Adams, John (CTR) <john.adams@associates.fema.dhs.gov>
Date Mon 7/21/2025 2:11 PM
To Amanda Hess <ahess@gftinc.com>
Cc FEMA-EngineeringLibrary <fema-engineeringlibrary@fema.dhs.gov>

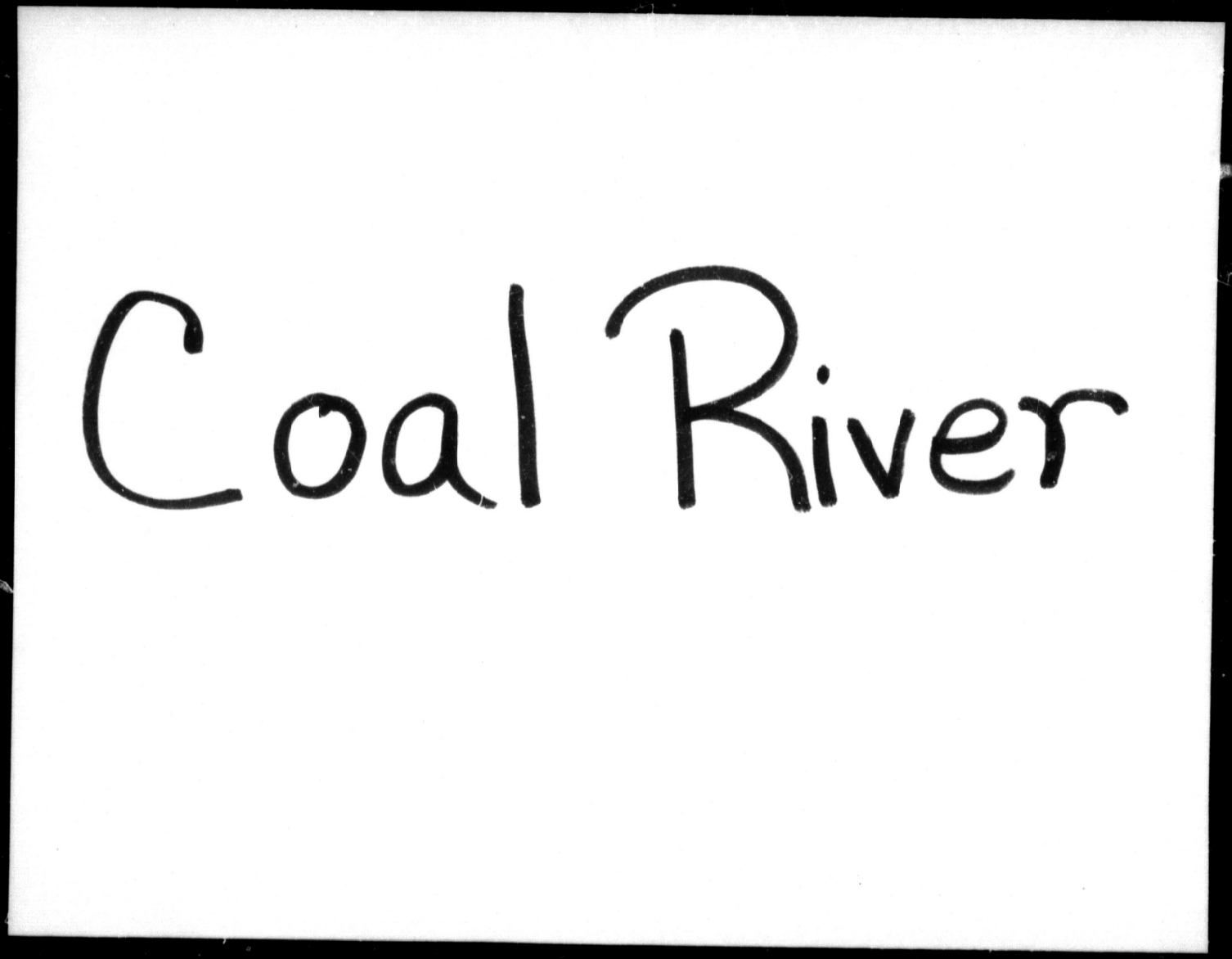
2 attachments (248 KB)
Engineering Library Factsheet.pdf; E2503234 Research Results.pdf;

[EXTERNAL EMAIL]: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Amanda,
The available data for your request:
Coal River Hec-2 pdf scan from microfiche for x sects A-BQ. Some areas of the scans may be difficult to read and some data lines may be cut off.
Hydrology and maps were not found.
A file has been uploaded to the Floodmaps File eXchange (FFX) site for you. To download, follow the instructions below.
You have **7 days** to download the file before it's deleted from the server.
NOTE: **.ZZZ files must have their extensions changed to .ZIP**, and .z must be changed to .7z before opening. Filenames with the character # will have it removed before opening.
To access your file, enter this location in your browser:
https://floodmaps.fema.gov/ffx/files/E2503234.zzz

We have completed our research to fill your FEMA data request.
To obtain a receipt for this case, you can contact the Fee Admin directly at fema-mappingfees@fema.dhs.gov.

-The FEMA Engineering Library Team


Coal River

THIS RUN EXECUTED 12 OCT 83 8:42:37

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1 COAL RIVER  -  KANAWHA COUNTY, WEST VIRGINIA
T2 FLOOD INSURNCE STUDY FOR HUNTINGTON DISTRICT
T3 CODED BY RFR -            10 YEAR FLOOD

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       0.         2.         0.         0.  0.000000       0.00       0.0        0.    572.800      0.000

J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLOC      IBW        CHNIM      ITRACE

     1.000      0.000     -1.000      0.000      0.000      0.750      0.000      0.000      0.000      0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

   100.000      0.000    201.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NC       0.040      0.080      0.040      0.100      0.300      0.000      0.000      0.000      0.000      0.000
QT       5.000  58500.000  66500.000  66500.000  88000.000  66500.000      0.000      0.000      0.000      0.000
X1       1.000     98.000   2312.000   2622.000      0.000      0.000      0.000      0.000      0.000      0.000
GR     598.000      0.000    598.000     20.000    597.000     44.000    597.000     90.000    596.000    120.000
GR     596.000    190.000    595.000    260.000    596.000    500.000    596.000    650.000    596.000    850.000
GR     596.000    986.000    595.000   1106.000    593.000   1130.000    593.000   1215.000    598.000   1248.000
GR     593.000   1248.000    593.000   1350.000    593.000   1600.000    593.000   2160.000    593.000   2195.000
GR     602.000   2195.000    602.000   2245.000    592.000   2245.000    592.000   2274.000    585.000   2281.000
GR     577.000   2342.000    572.000   2301.000    570.000   2312.000    558.000   2332.000    549.000   2342.000
GR     553.000   2412.000    553.000   2522.000    545.000   2542.000    549.000   2552.000    549.000   2572.000
GR     556.000   2612.000    570.000   2622.000    570.000   2627.000    573.000   2654.000    575.000   2696.000
GR     577.000   2907.000    579.000   2903.000    580.000   2931.000    585.000   2965.000    590.000   2993.000
GR     593.000   3054.000    593.000   3145.000    593.000   3146.000    593.000   3226.000    600.000   3226.000
GR     600.000   3434.000    593.000   3434.000    594.000   3537.000    594.000   3638.000    601.000   3638.000
GR     601.000   3671.000    593.000   3671.000    593.000   3714.000      0.000      0.000      0.000      0.000

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GR     588.000   3396.000    588.000   3420.000    580.000   3441.000    572.000   3468.000    570.000   3488.000
GR     570.000   3490.000    568.000   3530.000    549.000   3590.000    553.000   3610.000    553.000   3720.000
GR     545.000   3740.000    549.000   3750.000    549.000   3770.000    556.000   3820.000    570.000   3870.000
GR     579.000   3873.000    574.000   3891.000    581.000   3913.000    581.000   3993.000    584.000   4055.000
GR     591.000   4093.000    593.000   4128.000    601.000   4128.000    601.000   4181.000    593.000   4181.000
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GR	597.000	6038.000	597.000	6078.000	605.000	6078.000	605.000	6145.000	597.000	6145.000
GR	597.000	6215.000	593.000	6247.000	599.000	6287.000	599.000	6300.000	599.000	6650.000
GR	594.000	6546.000	600.000	6946.000	600.000	7065.000	599.000	7065.000	599.000	7280.000
GR	600.000	7283.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	0.000	90.000	3456.000	3830.000	116.160	116.160	116.160	0.000	0.000	0.000
GR	604.000	2084.000	598.000	2084.000	598.000	2107.000	605.000	2107.000	605.000	2131.000
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GR	591.000	2621.000	604.000	2621.000	606.000	2621.000	606.000	2683.000	592.000	2683.000
GR	594.000	2738.000	594.000	2756.000	594.000	2793.000	601.000	2793.000	601.000	2835.000
GR	591.000	2939.000	591.000	2982.000	597.000	2982.000	597.000	3046.000	591.000	3046.000
GR	591.000	3184.000	596.000	3189.000	596.000	3232.000	591.000	3232.000	591.000	3347.000
GR	580.000	3380.000	573.000	3408.000	570.000	3450.000	558.000	3490.000	550.000	3545.000
GR	553.000	3545.000	546.000	3555.000	596.000	3556.000	553.000	3570.000	553.000	3680.000
GR	546.000	3696.000	596.000	3696.000	596.000	3705.000	546.000	3706.000	549.000	3710.000
GR	547.000	3780.000	570.000	3780.000	570.000	3830.000	570.000	3833.000	576.000	3852.000
GR	592.000	3983.000	593.000	3985.000	587.000	3992.000	591.000	4067.000	597.000	4067.000
GR	547.000	4139.000	593.000	4139.000	593.000	4161.000	593.000	4184.000	593.000	4232.000
GR	600.000	4232.000	600.000	4236.000	593.000	4256.000	593.000	4312.000	593.000	4387.000
GR	594.000	4407.000	602.000	4407.000	602.000	4462.000	593.000	4462.000	593.000	4506.000
GR	593.000	4507.000	595.000	4776.000	594.000	4978.000	594.000	4988.000	594.000	5050.000
GR	594.000	5698.000	594.000	5732.000	595.000	5803.000	597.000	5846.000	597.000	5885.000
GR	601.000	5880.000	601.000	5951.000	597.000	5951.000	596.000	5993.000	596.000	6007.000
GR	599.000	6051.000	599.000	6088.000	599.000	6100.000	599.000	6500.000	599.000	6750.000
X1	0.000	75.000	3342.000	3742.000	264.000	264.000	264.000	0.000	0.000	0.000
GR	600.000	0.000	600.000	22.000	599.000	32.000	599.000	630.000	599.000	1303.000
GR	594.000	1340.000	597.000	1353.000	597.000	1575.000	596.000	1684.000	597.000	1829.000
GR	597.000	1977.000	597.000	1988.000	597.000	2177.000	605.000	2177.000	605.000	2211.000
GR	593.000	2211.000	594.000	2230.000	594.000	2519.000	595.000	2519.000	595.000	2532.000
GR	594.000	2532.000	594.000	2640.000	594.000	2657.000	593.000	2667.000	592.000	2670.000
GR	592.000	2748.000	597.000	2768.000	597.000	2934.000	592.000	2934.000	592.000	3136.000
GR	593.000	3136.000	593.000	3155.000	592.000	3155.000	590.000	3254.000	586.000	3258.000
GR	580.000	3258.000	578.000	3292.000	573.000	3332.000	570.000	3360.000	570.000	3362.000
GR	556.000	3402.000	550.000	3467.000	596.000	3458.000	596.000	3467.000	596.000	3468.000
GR	554.000	3482.000	553.000	3532.000	546.000	3607.000	596.000	3608.000	596.000	3617.000
GR	547.000	3618.000	549.000	3622.000	549.000	3642.000	556.000	3692.000	570.000	3742.000
GR	576.000	3806.000	584.000	3807.000	588.000	3841.000	589.000	3926.000	589.000	3941.000
GR	584.000	3947.000	590.000	3955.000	593.000	4180.000	593.000	4393.000	593.000	4421.000
GR	593.000	4422.000	594.000	4467.000	596.000	4546.000	596.000	4613.000	607.000	4613.000
GR	607.000	4653.000	596.000	4657.000	596.000	4676.000	597.000	4683.000	607.000	4683.000
X1	0.000	91.000	3332.000	3642.000	121.440	121.440	121.440	0.000	0.000	0.000
GR	60.000	1795.000	601.000	1838.000	598.000	1808.000	598.000	1927.000	596.000	1995.000
GR	594.000	2146.000	591.000	2180.000	592.000	2207.000	592.000	2226.000	591.000	2239.000
GR	591.000	2698.000	591.000	2610.000	591.000	2693.000	599.000	2693.000	600.000	2719.000
GR	591.000	2711.000	591.000	2900.000	591.000	3086.000	589.000	3215.000	582.000	3224.000
GR	582.000	3234.000	574.000	3243.000	570.000	3329.000	570.000	3332.000	558.000	3362.000
GR	541.000	3422.000	546.000	3442.000	553.000	3552.000	545.000	3572.000	549.000	3582.000
GR	589.000	3602.000	596.000	3652.000	570.000	3682.000	574.000	3706.000	578.000	3724.000
GR	584.000	3753.000	593.000	3788.000	591.000	3812.000	591.000	3859.000	591.000	3910.000
GR	592.000	4028.000	593.000	4166.000	593.000	4167.000	593.000	4370.000	594.000	4376.000

GR	595.000	4461.000	605.000	4461.000	605.000	4514.000	597.000	4514.000	597.000	4562.000
GR	603.000	4562.000	603.000	4609.000	598.000	4610.000	598.000	4633.000	604.000	4633.000
GR	604.000	4665.000	597.000	4665.000	597.000	4736.000	595.000	4743.000	595.000	4756.000
GR	596.000	4791.000	605.000	4793.000	605.000	4845.000	597.000	4835.000	597.000	4976.000
GR	597.000	4983.000	597.000	5078.000	597.000	5140.000	597.000	5214.000	597.000	5215.000
GR	597.000	5269.000	600.000	5269.000	600.000	5269.000	597.000	5309.000	597.000	5352.000
GR	601.000	5352.000	601.000	5417.000	597.000	5417.000	596.000	5455.000	596.000	5473.000
GR	593.000	5517.000	593.000	5559.000	599.000	5556.000	599.000	5600.000	599.000	6213.000
GR	603.000	6213.000	600.000	6336.000	600.000	6336.000	599.000	6336.000	599.000	6548.000
	600.000	6547.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3.100	81.000	2082.000	2332.000	290.400	290.400	290.400	0.000	0.000	0.000
GR	620.000	0.000	601.000	56.000	607.000	76.000	607.000	101.000	607.000	110.000
GR	602.000	180.000	598.000	196.000	598.000	600.000	598.000	1080.000	598.000	1161.000
GR	597.000	1186.000	597.000	1212.000	593.000	1267.000	609.000	1267.000	609.000	1373.000
GR	592.000	1373.000	592.000	1500.000	592.000	1859.000	591.000	1931.000	586.000	1958.000
GR	590.000	1987.000	578.000	2011.000	578.000	2025.000	575.000	2054.000	572.000	2072.000
GR	570.000	2082.000	552.000	2112.000	552.000	2152.000	545.000	2162.000	551.000	2172.000
GR	551.000	2202.000	550.000	2212.000	550.000	2232.000	543.000	2252.000	543.000	2282.000
GR	553.000	2307.000	570.000	2332.000	570.000	2337.000	577.000	2362.000	583.000	2387.000
GR	590.000	2402.000	591.000	2424.000	591.000	2452.000	591.000	2476.000	608.000	2477.000
GR	604.000	2713.000	592.000	2713.000	592.000	2915.000	592.000	2934.000	593.000	2949.000
GR	594.000	3013.000	594.000	3152.000	613.000	3152.000	613.000	3259.000	596.000	3259.000
GR	596.000	3302.000	596.000	3322.000	598.000	3343.000	599.000	3376.000	616.000	3376.000
GR	615.000	3482.000	598.000	3482.000	598.000	3665.000	598.000	3677.000	598.000	3678.000
GR	598.000	3681.000	604.000	3681.000	604.000	3744.000	598.000	3744.000	598.000	3850.000
GR	598.000	3971.000	598.000	4042.000	601.000	4042.000	601.000	4068.000	598.000	4068.000
GR	598.000	4524.000	604.000	4524.000	604.000	4675.000	598.000	4675.000	598.000	4810.000
GR	600.000	4822.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3.300	66.000	2271.000	2521.000	105.600	105.600	105.600	0.000	0.000	0.000
GR	620.000	0.000	601.000	38.000	606.000	74.000	607.000	120.000	607.000	145.000
GR	596.000	190.000	598.000	191.000	598.000	650.000	598.000	1255.000	598.000	1382.000
GR	590.000	1402.000	592.000	1487.000	592.000	1631.000	592.000	1632.000	592.000	1850.000
GR	592.000	1656.000	590.000	1804.000	585.000	1944.000	582.000	1974.000	575.000	1995.000
GR	575.000	2011.000	574.000	2039.000	570.000	2069.000	570.000	2271.000	552.000	2301.000
GR	552.000	2341.000	596.000	2342.000	596.000	2351.000	555.000	2352.000	551.000	2361.000
GR	551.000	2381.000	550.000	2401.000	550.000	2421.000	546.000	2441.000	544.000	2471.000
GR	570.000	2496.000	596.000	2487.000	596.000	2496.000	553.000	2497.000	570.000	2521.000
GR	603.000	2700.000	603.000	2700.000	594.000	2882.000	594.000	2903.000	595.000	2962.000
GR	590.000	3096.000	607.000	3096.000	607.000	3247.000	595.000	3247.000	597.000	3274.000
GR	597.000	3293.000	597.000	3293.000	597.000	3667.000	598.000	3693.000	598.000	3727.000
GR	598.000	3830.000	598.000	3892.000	600.000	3892.000	600.000	3918.000	598.000	3918.000
GR	594.000	4351.000	598.000	4374.000	600.000	4374.000	600.000	4527.000	598.000	4527.000
GR	598.000	4610.000	598.000	4630.000	600.000	4674.000	0.000	0.000	0.000	0.000
X1	3.400	80.000	1823.000	2083.000	205.920	205.920	205.920	0.000	0.000	0.000
GR	620.000	0.000	606.000	17.000	606.000	40.000	600.000	88.000	597.000	100.000
GR	597.000	100.000	597.000	1054.000	607.000	1054.000	607.000	1054.000	607.000	1089.000
GR	597.000	1083.000	596.000	1144.000	604.000	1144.000	604.000	1168.000	594.000	1168.000
GR	592.000	1220.000	592.000	1440.000	592.000	1636.000	590.000	1633.000	587.000	1716.000
GR	581.000	1755.000	577.000	1761.000	577.000	1782.000	575.000	1802.000	570.000	1823.000
GR	552.000	1853.000	552.000	1893.000	596.000	1894.000	596.000	1903.000	555.000	1904.000
GR	551.000	1913.000	551.000	1943.000	550.000	1953.000	550.000	1973.000	544.000	1993.000

GR	544.000	2023.000	550.000	2038.000	596.000	2039.000	596.000	2048.000	553.000	2049.000
GR	570.000	2083.000	570.000	2091.000	574.000	2107.000	590.000	2122.000	592.000	2139.000
GR	595.000	2161.000	600.000	2161.000	600.000	2190.000	594.000	2190.000	594.000	2500.000
GR	594.000	2674.000	604.000	2674.000	604.000	2735.000	595.000	2735.000	595.000	2757.000
GR	602.000	2757.000	602.000	2887.000	596.000	2887.000	596.000	3014.000	596.000	3035.000
GR	598.000	3043.000	598.000	3065.000	604.000	3065.000	604.000	3304.000	597.000	3304.000
GR	597.000	3319.000	597.000	3330.000	597.000	3339.000	597.000	3339.000	597.000	3340.000
GR	597.000	3411.000	600.000	3411.000	600.000	3440.000	597.000	3440.000	597.000	3800.000
GR	597.000	3902.000	602.000	3902.000	602.000	4045.000	597.000	4045.000	597.000	4190.000
X1	3.500	46.000	1741.000	1991.000	116.160	116.160	116.160	0.000	0.000	0.000
GR	620.000	0.000	606.000	21.000	606.000	50.000	601.000	120.000	595.000	140.000
GR	595.000	950.000	595.000	1061.000	598.000	1061.000	598.000	1089.000	595.000	1089.000
GR	595.000	1300.000	595.000	1489.000	593.000	1544.000	591.000	1589.000	590.000	1610.000
GR	596.000	1610.000	596.000	1640.000	586.000	1640.000	583.000	1677.000	577.000	1689.000
GR	577.000	1702.000	573.000	1711.000	570.000	1740.000	570.000	1741.000	552.000	1771.000
GR	552.000	1811.000	545.000	1821.000	551.000	1831.000	551.000	1861.000	550.000	1871.000
GR	550.000	1891.000	544.000	1911.000	544.000	1961.000	553.000	1966.000	570.000	1991.000
GR	570.000	1996.000	574.000	2011.000	579.000	2022.000	591.000	2035.000	593.000	2049.000
GR	593.000	2057.000	601.000	2087.000	601.000	2092.000	594.000	2092.000	594.000	2350.000
GR	594.000	2740.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4.000	4.000	1810.000	1765.000	205.920	205.920	205.920	0.000	0.000	0.000
GR	600.000	0.000	595.000	87.000	592.000	175.000	592.000	365.000	593.000	410.000
GR	594.000	488.000	604.000	489.000	604.000	510.000	594.000	511.000	594.000	540.000
GR	602.000	541.000	602.000	570.000	595.000	571.000	595.000	620.000	603.000	621.000
GR	603.000	650.000	595.000	651.000	595.000	689.000	618.000	670.000	618.000	710.000
GR	613.000	760.000	595.000	761.000	595.000	795.000	614.000	796.000	614.000	900.000
GR	590.000	901.000	590.000	1000.000	592.000	1095.000	590.000	1180.000	590.000	1240.000
GR	590.000	1270.000	590.000	1315.000	590.000	1360.000	593.000	1395.000	592.000	1445.000
GR	574.000	1480.000	574.000	1500.000	570.000	1510.000	551.000	1530.000	555.000	1740.000
GR	570.000	1765.000	571.000	1780.000	581.000	1795.000	581.000	1810.000	581.000	2100.000
GR	581.000	2400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	.100	38.000	442.000	895.000	792.000	792.000	792.000	0.000	0.000	0.000
GR	623.000	0.000	603.000	40.000	603.000	70.000	602.000	90.000	600.000	120.000
GR	600.000	190.000	594.000	230.000	593.000	260.000	593.000	295.000	591.000	340.000
GR	592.000	400.000	593.000	450.000	593.000	490.000	592.000	525.000	590.000	570.000
GR	590.000	600.000	586.000	612.000	573.000	640.000	563.000	660.000	551.000	680.000
GR	551.000	882.000	563.000	895.000	573.000	920.000	580.000	940.000	590.000	970.000
GR	593.000	1020.000	593.000	1050.000	593.000	1095.000	594.000	1165.000	595.000	1285.000
GR	596.000	1330.000	597.000	1380.000	597.000	1500.000	598.000	1450.000	600.000	1630.000
GR	600.000	1670.000	620.000	1850.000	628.000	2000.000	0.000	0.000	0.000	0.000
X1	4.000	43.000	570.000	795.000	105.600	105.600	105.600	0.000	0.000	0.000
GR	618.000	0.000	600.000	20.000	600.000	55.000	600.000	100.000	597.000	125.000
GR	594.000	140.000	594.000	200.000	593.000	235.000	591.000	270.000	590.000	300.000
GR	590.000	435.000	586.000	370.000	581.000	410.000	579.000	455.000	579.000	520.000
GR	575.000	545.000	563.000	570.000	551.000	590.000	551.000	610.000	590.000	611.000
GR	590.000	621.000	551.000	622.000	551.000	750.000	590.000	751.000	590.000	760.000
GR	551.000	761.000	551.000	780.000	563.000	795.000	575.000	835.000	591.000	870.000
GR	593.000	910.000	593.000	1030.000	594.000	1070.000	592.000	1135.000	597.000	1180.000
GR	597.000	1240.000	598.000	1290.000	598.000	1315.000	600.000	1400.000	616.000	1580.000
GR	622.000	1700.000	626.000	1750.000	625.000	1820.000	0.000	0.000	0.000	0.000

X1	5.400	41.000	400.000	632.000	253.440	253.440	253.440	0.000	0.000	0.000
GR	610.000	0.000	604.000	35.000	597.000	58.000	594.000	92.000	593.000	118.000
GR	593.000	132.000	592.000	160.000	592.000	188.000	592.000	295.000	581.000	360.000
GR	575.000	381.000	563.000	400.000	551.000	410.000	551.000	430.000	590.000	431.000
GR	590.000	450.000	551.000	451.000	551.000	570.000	590.000	571.000	590.000	590.000
GR	551.000	591.000	551.000	610.000	563.000	632.000	573.000	652.000	584.000	690.000
GR	586.000	712.000	593.000	740.000	593.000	825.000	595.000	888.000	597.000	952.000
GR	598.000	1025.000	593.000	1090.000	600.000	1120.000	600.000	1145.000	601.000	1195.000
GR	601.000	1240.000	604.000	1340.000	612.000	1400.000	617.000	1415.000	620.000	1512.000
GR	624.000	1575.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	5.600	32.000	350.000	585.000	121.440	121.440	121.440	0.000	0.000	0.000
GR	615.000	0.000	601.000	32.000	597.000	50.000	597.000	65.000	592.000	125.000
GR	590.000	170.000	588.000	230.000	589.000	220.000	590.000	278.000	588.000	310.000
GR	578.000	322.000	570.000	340.000	563.000	350.000	551.000	380.000	551.000	560.000
GR	563.000	585.000	575.000	605.000	581.000	635.000	593.000	682.000	593.000	742.000
GR	594.000	842.000	598.000	930.000	598.000	980.000	598.000	1060.000	599.000	1110.000
GR	601.000	1151.000	602.000	1208.000	606.000	1270.000	614.000	1355.000	619.000	1375.000
GR	623.000	1430.000	625.000	1500.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	6.000	30.000	225.000	475.000	828.960	828.960	828.960	0.000	0.000	0.000
GR	627.000	0.000	615.000	30.000	611.000	50.000	599.000	62.000	599.000	90.000
GR	594.000	100.000	594.000	11 .000	589.000	120.000	582.000	175.000	572.000	205.000
GR	563.000	225.000	551.000	245.000	551.000	450.000	563.000	475.000	581.000	495.000
GR	595.000	525.000	593.000	550.000	594.000	608.000	595.000	642.000	597.000	682.000
GR	598.000	721.000	593.000	750.000	602.000	800.000	600.000	840.000	600.000	858.000
GR	601.000	885.000	601.000	1050.000	604.000	1115.000	612.000	1180.000	620.000	1235.000
X1	7.000	32.000	180.000	363.000	887.040	887.040	887.040	0.000	0.000	0.000
GR	615.000	0.000	587.000	20.000	580.000	80.000	580.000	100.000	579.000	150.000
GR	563.000	180.000	552.000	210.000	552.000	340.000	563.000	353.000	575.000	388.000
GR	584.000	408.000	592.000	432.000	593.000	490.000	593.000	710.000	595.000	750.000
GR	597.000	810.000	597.000	808.000	600.000	908.000	601.000	952.000	603.000	1030.000
GR	607.000	1092.000	615.000	1138.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	8.000	24.000	280.000	520.000	1341.120	1341.120	1341.120	0.000	0.000	0.000
GR	615.000	0.000	606.000	28.000	600.000	40.000	600.000	52.000	594.000	70.000
GR	589.000	125.000	589.000	175.000	589.000	222.000	577.000	248.000	563.000	280.000
GR	551.000	300.000	551.000	490.000	563.000	520.000	574.000	550.000	576.000	570.000
GR	582.000	590.000	584.000	635.000	595.000	665.000	595.000	725.000	599.000	792.000
GR	601.000	822.000	606.000	870.000	610.000	900.000	613.000	920.000	0.000	0.000
X1	9.000	27.000	435.0	662.000	1071.840	1071.840	1071.840	0.000	0.000	0.000
GR	613.000	0.000	603.000	45.000	597.000	78.000	597.000	92.000	597.000	280.000
GR	596.000	358.000	592.000	400.000	578.000	412.000	563.000	435.000	551.000	455.000
GR	554.000	540.000	563.000	662.000	575.000	680.000	577.000	705.000	582.000	730.000
GR	588.000	792.000	593.000	850.000	596.000	870.000	600.000	882.000	600.000	892.000
GR	604.000	908.000	609.000	925.000	613.000	935.000	0.000	0.000	0.000	0.000

X1	10.000	21.000	638.000	848.000	1346.400	1346.400	1346.400	0.000	0.000	0.000
GR	613.000	0.000	604.000	28.000	604.000	58.000	604.000	62.000	605.000	112.000
GR	605.000	300.000	607.000	412.000	606.000	492.000	597.000	570.000	575.000	622.000
GR	563.000	638.000	550.000	670.000	550.000	820.000	563.000	848.000	572.000	858.000
GR	577.000	890.000	584.000	915.000	585.000	950.000	598.000	988.000	598.000	1008.000
GR	615.000	1050.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11.000	22.000	550.000	770.000	1071.840	1071.840	1071.840	0.000	0.000	0.000
GR	604.000	0.000	604.000	155.000	604.000	295.000	603.000	340.000	603.000	375.000
GR	602.000	408.000	602.000	432.000	598.000	488.000	584.000	518.000	563.000	550.000
GR	548.000	530.000	548.000	730.000	563.000	770.000	576.000	792.000	580.000	820.000
GR	593.000	848.000	583.000	872.000	596.000	900.000	602.000	958.000	602.000	972.000
GR	603.000	985.000	616.000	1000.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12.000	24.000	1372.000	1570.000	1103.520	1103.520	1103.520	0.000	0.000	0.000
GR	614.000	0.000	610.000	40.000	608.000	95.000	607.000	160.000	607.000	180.000
GR	603.000	208.000	601.000	520.000	601.000	590.000	600.000	630.000	600.000	710.000
GR	593.000	740.000	597.000	828.000	595.000	1000.000	594.000	1078.000	593.000	1142.000
GR	591.000	1248.000	590.000	1325.000	563.000	1372.000	536.000	1450.000	536.000	1530.000
GR	563.000	1570.000	577.000	1585.000	596.000	1642.000	596.000	1668.000	603.000	1685.000
GR	604.000	1740.000	604.000	1762.000	623.000	1790.000	0.000	0.000	0.000	0.000
X1	13.000	29.000	370.000	642.000	945.120	945.120	945.120	0.000	0.000	0.000
GR	601.000	0.000	600.000	38.000	598.000	58.000	598.000	72.000	595.000	111.000
GR	590.000	142.000	591.000	172.000	588.000	228.000	586.000	282.000	581.000	325.000
GR	563.000	372.000	542.000	430.000	542.000	570.000	563.000	642.000	591.000	698.000
GR	594.000	740.000	598.000	780.000	598.000	1000.000	598.000	1200.000	598.000	1570.000
GR	600.000	1515.000	602.000	1672.000	605.000	1730.000	605.000	1800.000	606.000	1840.000
GR	608.000	1882.000	612.000	1938.000	614.000	1995.000	614.000	2030.000	0.000	0.000
X1	14.000	24.000	240.000	440.000	1177.440	1177.440	1177.440	0.000	0.000	0.000
GR	613.000	0.000	607.000	40.000	594.000	70.000	593.000	100.000	593.000	135.000
GR	591.000	140.000	570.000	213.000	563.000	240.000	548.000	280.000	548.000	400.000
GR	563.000	440.000	571.000	470.000	582.000	510.000	597.000	540.000	600.000	600.000
GR	601.000	830.000	601.000	900.000	601.000	1200.000	601.000	1500.000	604.000	1610.000
GR	606.000	1710.000	606.000	1790.000	607.000	1810.000	613.000	1840.000	0.000	0.000
X1	15.000	27.000	720.000	925.000	1246.080	1246.080	1246.080	0.000	0.000	0.000
GR	613.000	0.000	605.000	35.000	597.000	115.000	597.000	290.000	596.000	332.000
GR	583.000	372.000	563.000	562.000	586.000	605.000	580.000	645.000	574.000	710.000
GR	563.000	720.000	563.000	750.000	552.000	890.000	563.000	925.000	575.000	935.000
GR	594.000	970.000	603.000	1010.000	603.000	1300.000	603.000	1465.000	604.000	1530.000
GR	604.000	1610.000	608.000	1670.000	609.000	1692.000	609.000	1770.000	612.000	1810.000
GR	613.000	1885.000	613.000	1910.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	16.000	28.000	1055.000	1270.000	1420.880	1420.880	1420.880	0.000	0.000	0.000
GR	613.000	0.000	610.000	32.000	607.000	55.000	607.000	72.000	604.000	106.000
GR	603.000	175.000	601.000	388.000	601.000	732.000	597.000	752.000	596.000	862.000
GR	594.000	955.000	592.000	1018.000	577.000	1041.000	563.000	1055.000	556.000	1075.000
GR	556.000	1256.000	563.000	1270.000	575.000	1282.000	577.000	1318.000	580.000	1345.000
GR	602.000	1385.000	602.000	1412.000	605.000	1455.000	605.000	1900.000	605.000	2095.000
GR	608.000	2105.000	608.000	2160.000	613.000	2180.000	0.000	0.000	0.000	0.000

NC	0.090	0.090	0.040	0.100	0.310	0.000	0.000	0.000	0.000	0.000
QT	55.000	38500.000	56500.000	66500.000	88000.000	56500.000	0.000	0.000	0.000	0.000
X1	162.900	25.000	855.000	1155.000	140.000	140.000	140.000	0.000	0.000	0.000
X4	2.000	956.000	993.000	556.000	1066.000	0.000	0.000	0.000	0.000	0.000
GR	610.000	0.000	609.000	5.000	609.000	24.000	601.000	95.000	605.000	186.000
GR	606.000	220.000	616.000	221.000	616.000	484.000	606.000	485.000	605.000	534.000
GR	605.000	550.000	604.000	331.000	601.000	610.000	598.000	795.000	595.000	855.000
GR	569.000	920.000	569.000	1138.000	582.000	1155.000	583.000	1210.000	592.000	1235.000
GR	606.000	1398.000	606.000	1448.000	608.000	1961.000	610.000	1984.000	610.000	2003.000
X1	179.000	35.000	85.000	440.000	1610.000	1610.000	1610.000	0.000	0.000	0.000
X4	2.000	957.000	965.000	557.000	320.000	0.000	0.000	0.000	0.000	0.000
GR	610.000	0.000	597.000	42.000	597.000	59.000	590.000	85.000	578.000	180.000
GR	569.000	210.000	569.000	376.000	577.000	400.000	578.000	415.000	585.000	440.000
GR	606.000	483.000	606.000	504.000	618.000	505.000	618.000	530.000	609.000	531.000
GR	607.000	624.000	607.000	651.000	605.000	678.000	609.000	737.000	619.000	738.000
GR	619.000	774.000	609.000	775.000	607.000	830.000	611.000	943.000	621.000	944.000
GR	621.000	943.000	612.000	980.000	610.000	1025.000	610.000	1051.000	610.000	1089.000
GR	620.000	1090.000	620.000	1119.000	609.000	1120.000	607.000	1190.000	608.000	1190.000
X1	187.800	21.000	270.000	528.000	1860.000	1860.000	1860.000	0.000	0.000	0.000
X4	2.000	958.000	960.000	558.000	430.000	0.000	0.000	0.000	0.000	0.000
GR	610.000	0.000	608.000	24.000	611.000	90.000	610.000	119.000	619.000	120.000
GR	619.000	180.000	607.000	181.000	603.000	219.000	582.000	259.000	582.000	270.000
GR	569.000	290.000	569.000	499.000	582.000	528.000	591.000	605.000	600.000	634.000
GR	614.000	635.000	614.000	677.000	606.000	678.000	606.000	710.000	606.000	726.000
GR	610.000	731.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	212.800	11.000	209.000	413.000	1520.000	1520.000	1520.000	0.000	0.000	0.000
X4	2.000	958.000	285.000	559.000	340.000	0.000	0.000	0.000	0.000	0.000
GR	610.000	0.000	608.000	34.000	608.000	53.000	604.000	150.000	580.000	190.000
GR	598.000	209.000	576.000	230.000	570.000	395.000	583.000	419.000	583.000	454.000
GR	610.000	516.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	224.100	12.000	377.000	510.000	1900.000	1600.000	1530.000	0.000	0.000	0.000
X4	2.000	959.000	368.000	559.000	431.000	0.000	0.000	0.000	0.000	0.000
GR	610.000	0.000	606.000	155.000	606.000	216.000	586.000	256.000	586.000	277.000
GR	570.000	309.000	572.000	435.000	583.000	510.000	583.000	540.000	592.000	578.000
GR	593.000	20.000	610.000	652.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	251.400	26.000	80.000	410.000	1800.000	2550.000	2330.000	0.000	0.000	0.000
X4	2.000	960.000	235.000	560.000	299.000	0.000	0.000	0.000	0.000	0.000
GR	610.000	0.000	605.000	31.000	603.000	51.000	583.000	80.000	576.000	145.000
GR	571.000	155.000	571.000	334.000	585.000	410.000	586.000	525.000	583.000	670.000
GR	583.000	705.000	593.000	725.000	594.000	754.000	611.000	819.000	624.000	820.000
GR	624.000	859.000	611.000	855.000	615.000	1000.000	611.000	1097.000	620.000	1098.000
GR	620.000	1121.000	610.000	1122.000	610.000	1195.000	612.000	1220.000	612.000	1239.000
GR	611.000	1284.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

GR	602.000	4478.000	602.000	4512.000	595.000	4512.000	595.000	4569.000	595.000	4570.000	
GR	595.000	4683.000	602.000	4683.000	602.000	4816.000	595.000	4816.000	595.000	5000.000	

X2	263.000	18.000	113.000	471.000	1450.000	1200.000	1360.000	0.000	0.000	0.000	
X4	3.000	561.000	264.000	561.000	342.000	0.000	0.000	0.000	0.000	0.000	
GR	61.000	0.000	541.000	71.000	590.000	94.000	590.000	113.000	573.000	185.000	
GR	573.000	421.000	581.000	449.000	585.000	471.000	606.000	520.000	606.000	537.000	
GR	60.000	61.000	610.000	700.000	611.000	920.000	619.000	921.000	619.000	957.000	
GR	611.000	955.000	611.000	1150.000	612.000	1319.000	0.000	0.000	0.000	0.000	
X1	276.000	1.000	75.000	421.000	1100.000	900.000	1100.000	0.000	0.000	0.000	
X4	2.000	561.000	220.000	561.000	303.000	0.000	0.000	0.000	0.000	0.000	W
GR	61.000	0.000	591.000	56.000	591.000	75.000	582.000	110.000	573.000	137.000	
GR	573.000	384.000	588.000	421.000	590.000	475.000	607.000	501.000	610.000	530.000	
GR	610.000	704.000	610.000	796.000	611.000	890.000	610.000	1040.000	612.000	1148.000	
X1	297.000	1.000	128.000	449.000	2400.000	1700.000	2150.000	0.000	0.000	0.000	
X4	2.000	561.000	248.000	561.000	318.000	0.000	0.000	0.000	0.000	0.000	
GR	61.000	0.000	60.000	15.000	605.000	36.000	597.000	65.000	596.000	97.000	X
GR	60.000	41.000	600.000	127.000	587.000	128.000	573.000	170.000	573.000	392.000	
GR	597.000	430.000	584.000	442.000	610.000	495.000	612.000	745.000	610.000	851.000	
X1	312.000	20.000	134.000	450.000	1500.000	1500.000	1500.000	0.000	0.000	0.000	
X4	3.000	561.000	255.000	561.000	310.000	0.000	0.000	0.000	0.000	0.000	
GR	61.000	0.000	603.000	36.000	602.000	56.000	600.000	94.000	609.000	95.000	Y
GR	604.000	132.000	590.000	138.000	582.000	180.000	574.000	200.000	574.000	365.000	
GR	582.000	380.000	594.000	430.000	603.000	455.000	603.000	469.000	614.000	470.000	
GR	614.000	505.000	60.000	606.000	607.000	580.000	611.000	722.000	611.000	1027.000	
X1	330.000	10.000	122.000	330.000	1770.000	1770.000	1770.000	0.000	0.000	0.000	
X4	3.000	563.000	300.000	562.000	267.000	0.000	0.000	0.000	0.000	0.000	Z
GR	61.000	0.000	58.000	99.000	587.000	122.000	574.000	131.000	574.000	325.000	
GR	585.000	390.000	591.000	434.000	610.000	468.000	612.000	703.000	615.000	802.000	
X1	348.000	25.000	111.000	415.000	1530.000	1530.000	1530.000	0.000	0.000	0.000	
X4	2.000	562.000	259.000	562.000	320.000	0.000	0.000	0.000	0.000	0.000	
GR	61.000	0.000	564.000	15.000	607.000	34.000	589.000	137.000	587.000	161.000	
GR	574.000	148.000	574.000	340.000	588.000	415.000	591.000	435.000	607.000	463.000	AA
GR	615.000	464.000	61.000	530.000	607.000	531.000	606.000	549.000	606.000	563.000	
GR	610.000	565.000	611.000	711.000	621.000	712.000	621.000	770.000	612.000	771.000	
GR	614.000	734.000	614.000	975.000	615.000	1102.000	615.000	1130.000	606.000	1295.000	
GR	61.000	1324.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	341.000	24.000	234.000	521.000	1700.000	1300.000	1580.000	0.000	0.000	0.000	
X4	2.000	561.000	331.000	562.000	394.000	0.000	0.000	0.000	0.000	0.000	
GR	61.000	0.000	613.000	18.000	632.000	19.000	632.000	34.000	605.000	55.000	
GR	604.000	22.000	604.000	135.000	603.000	170.000	620.000	171.000	620.000	211.000	AB
GR	597.000	124.000	594.000	234.000	574.000	267.000	574.000	456.000	582.000	470.000	
GR	597.000	501.000	590.000	542.000	610.000	943.000	610.000	542.000	600.000	583.000	
GR	600.000	86.000	602.000	615.000	602.000	628.000	603.000	658.000	600.000	850.000	
GR	604.000	141.000	607.000	1042.000	615.000	1232.000	0.000	0.000	0.000	0.000	

NC	0.090	0.110	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
QT	0.000	37500.000	54500.000	64000.000	86000.000	64000.000	0.000	0.000	0.000	0.000	AC
X1	374.300	14.000	585.000	850.000	1800.000	1800.000	1800.000	0.000	0.000	0.000	
X4	2.000	563.000	678.000	563.000	736.000	0.000	0.000	0.000	0.000	0.000	
GR	615.000	0.000	609.000	65.000	610.000	100.000	608.000	280.000	608.000	500.000	
GR	605.000	507.000	588.000	564.000	589.000	585.000	575.000	619.000	575.000	795.000	
GR	605.000	550.000	604.000	863.000	606.000	992.000	615.000	1085.000	0.000	0.000	
X1	395.000	14.000	580.000	810.000	1660.000	1660.000	1660.000	0.000	0.000	0.000	
X4	2.000	563.000	665.000	563.000	729.000	0.000	0.000	0.000	0.000	0.000	AD
GR	61 .000	0.000	614.000	113.000	614.000	176.000	614.000	253.000	614.000	309.000	
GR	613.000	5 .000	608.000	520.000	595.000	541.000	520.000	580.000	575.000	501.000	
GR	57 .000	7 .000	594.000	810.000	594.000	881.000	615.000	939.000	0.000	0.000	
X1	415.000	26.000	883.000	1091.000	1710.000	1710.000	1710.000	0.000	0.000	0.000	
X4	3.000	563.000	984.000	563.000	1017.000	0.000	0.000	0.000	0.000	0.000	AE
GR	625.000	0.000	614.000	563.000	615.000	630.000	614.000	710.000	614.000	730.000	
GR	61 .000	7 .000	62 .000	760.000	626.000	792.000	614.000	793.000	615.000	818.000	
GR	596.000	544.000	593.000	883.000	576.000	911.000	576.000	1070.000	591.000	1091.000	
GR	597.000	1146.000	612.000	1229.000	612.000	1240.000	613.000	1266.000	620.000	1289.000	
NC	0.110	0.110	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	427.000	21.000	718.000	905.000	1250.000	1650.000	1400.000	0.000	0.000	0.000	
X4	3.000	563.000	779.000	563.000	812.000	0.000	0.000	0.000	0.000	0.000	AF
GR	620.000	0.000	61 .000	215.000	615.000	240.000	616.000	281.000	615.000	352.000	
GR	612.000	494. 00	598.000	63 .000	590.000	680.000	588.000	719.000	577.000	746.000	
GR	627.000	87 .000	587.000	905.000	590.000	933.000	612.000	997.000	612.000	1011.000	
GR	610.000	1035.000	61 .000	1049.000	619.000	1056.000	619.000	1075.000	619.000	1087.000	
GR	62 .000	12 .000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	443.400	11.000	13 .000	409.000	1500.000	1800.000	1690.000	0.000	0.000	0.000	
X4	2.000	563.000	220.000	563.000	275.000	0.000	0.000	0.000	0.000	0.000	AG
GR	600.000	0.000	595.000	81.000	599.000	135.000	576.000	165.000	576.000	330.000	
GR	614.000	409.000	614.000	421.000	613.000	441.000	616.000	489.000	615.000	1069.000	
GR	620.000	1043.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	457.000	15.000	81.000	389.000	1310.000	1310.000	1310.000	0.000	0.000	0.000	
X4	2.000	563.000	219.000	563.000	262.000	0.000	0.000	0.000	0.000	0.000	AH
GR	620.000	0.000	607.000	99.000	605.000	81.000	576.000	165.000	576.000	311.000	
GR	611.000	44.000	611.000	555.000	611.000	550.000	612.000	590.000	621.000	591.000	
GR	621.000	22.000	612.000	623.000	612.000	669.000	0.000	0.000	0.000	0.000	
X1	474.350	15.000	45.000	346.000	2350.000	1750.000	2230.000	0.000	0.000	0.000	
X4	2.000	563.000	126.000	563.000	183.000	0.000	0.000	0.000	0.000	0.000	AI
GR	620.000	0.000	591.000	47.000	590.000	65.000	576.000	90.000	576.000	229.000	
GR	588.000	250.000	595.000	246.000	604.000	315.000	605.000	355.000	615.000	356.000	
GR	619.000	58 .000	60 .000	390.000	607.000	427.000	607.000	441.000	615.000	595.000	

NC	0.080	0.100	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	498.100	28.000	641.000	941.000	2000.000	1700.000	1880.000	0.000	0.000	0.000	
X4	2.000	564.000	765.000	564.000	819.000	0.000	0.000	0.000	0.000	0.000	
GP	620.000	0.000	605.000	54.000	605.000	80.000	605.000	110.000	605.000	222.000	AJ
GR	601.000	259.000	606.000	346.000	612.000	383.000	612.000	483.000	611.000	591.000	
GR	610.000	603.000	606.000	641.000	576.000	711.000	576.000	873.000	588.000	898.000	
GR	592.000	941.000	605.000	1049.000	616.000	1050.000	616.000	1084.000	607.000	1085.000	
GR	610.000	1120.000	610.000	1138.000	612.000	1210.000	613.000	1340.000	612.000	1420.000	
X1	510.000	29.000	1650.000	1915.000	1200.000	1390.000	1390.000	0.000	0.000	0.000	
X4	2.000	572.000	1735.000	565.000	1776.000	0.000	0.000	0.000	0.000	0.000	
GR	620.000	0.000	604.000	45.000	604.000	124.000	605.000	176.000	610.000	208.000	
GR	610.000	210.000	624.000	219.000	628.000	260.000	610.000	261.000	610.000	301.000	AK
GR	611.000	321.000	610.000	466.000	613.000	620.000	612.000	825.000	602.000	960.000	
GR	601.000	1001.000	12.000	1090.000	611.000	1187.000	615.000	1294.000	618.000	1445.000	
GR	611.000	1565.000	608.000	1615.000	598.000	1650.000	576.000	1679.000	576.000	1825.000	
GR	593.000	1840.000	595.000	1915.000	595.000	1931.000	615.000	1970.000	0.000	0.000	
X1	527.700	30.000	1730.000	1930.000	950.000	1550.000	1370.000	0.000	0.000	0.000	
X4	2.000	565.000	1787.000	565.000	1848.000	0.000	0.000	0.000	0.000	0.000	
GR	620.000	0.000	60 .000	135.000	606.000	136.000	611.000	168.000	609.000	240.000	AL
GR	611.000	241.000	610.000	364.000	610.000	1016.000	613.000	1275.000	594.000	1353.000	
GR	595.000	1410.000	595.000	1500.000	598.000	1620.000	598.000	1646.000	595.000	1668.000	
GR	597.000	1690.000	598.000	1730.000	576.000	1746.000	576.000	1900.000	600.000	1960.000	
GR	600.000	1982.000	584.000	2030.000	598.000	2050.000	600.000	2225.000	600.000	2240.000	
GR	601.000	2307.000	614.000	2338.000	614.000	2354.000	613.000	2375.000	620.000	2409.000	
X1	541.300	22.000	1474.000	1750.000	1300.000	1650.000	1560.000	0.000	0.000	0.000	
X4	2.000	566.000	1583.000	566.000	1630.000	0.000	0.000	0.000	0.000	0.000	
GR	620.000	0.000	1 .000	44.000	613.000	186.000	612.000	277.000	609.000	428.000	
GR	612.000	348.000	.000	1040.000	601.000	1129.000	602.000	1330.000	598.000	1439.000	AM
GR	598.000	1474.000	577.000	1534.000	577.000	1678.000	605.000	1750.000	606.000	1837.000	
GR	614.000	1968.000	614.000	1975.000	612.000	1891.000	608.000	1920.000	610.000	2092.000	
GR	612.000	2172.000	620.000	2185.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	556.000	15.000	1737.000	1972.000	1490.000	1490.000	1490.000	0.000	0.000	0.000	
X4	2.000	56 .000	1843.000	566.000	1885.000	0.000	0.000	0.000	0.000	0.000	
GR	620.000	0.000	61 .000	68.000	616.000	325.000	613.000	690.000	613.000	919.000	AN
GR	612.000	339.000	610.000	1554.000	611.000	1689.000	595.000	1737.000	596.000	1761.000	
GR	577.000	1794.000	577.000	1928.000	597.000	1972.000	598.000	1984.000	616.000	2026.000	
GR	614.000	2034.000	614.000	2042.000	620.000	2067.000	0.000	0.000	0.000	0.000	
NC	0.140	0.080	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
QT	.000	57000.000	54000.000	64000.000	86000.000	64000.000	0.000	0.000	0.000	0.000	
X1	577.000	15.000	1334.000	437.000	1000.000	2140.000	2140.000	0.000	0.000	0.000	
X4	2.000	567.000	257.000	567.000	296.000	0.000	0.000	0.000	0.000	0.000	AO
GR	620.000	0.000	617.000	26.000	617.000	46.000	611.000	139.000	577.000	217.000	
GR	577.000	33.000	548.000	404.000	600.000	437.000	615.000	497.000	616.000	834.000	

X1	590.000	51.000	1461.000	1770.000	1400.000	1000.000	1290.000	0.000	0.000	0.000	
X4	2.000	567.000	1554.000	567.000	1600.000	0.000	0.000	0.000	0.000	0.000	
GP	620.000	0.000	613.000	40.000	611.000	135.000	612.000	270.000	609.000	295.000	
GP	612.000	353.000	611.000	415.000	611.000	590.000	611.000	620.000	612.000	721.000	
GR	614.000	880.000	614.000	920.000	611.000	999.000	611.000	1156.000	610.000	1211.000	AP
GR	610.000	1231.000	611.000	1294.000	609.000	1384.000	594.000	1420.000	593.000	1461.000	
GR	577.000	1584.000	577.000	1645.000	583.000	1670.000	596.000	1770.000	594.000	1855.000	
GP	609.000	1814.000	609.000	1973.000	614.000	2155.000	614.000	2229.000	619.000	2650.000	
GP	625.000	2703.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	594.000	54.000	2340.000	2720.000	850.000	850.000	850.000	0.000	0.000	0.000	
X4	2.000	568.000	2465.000	568.000	2568.000	0.000	0.000	0.000	0.000	0.000	
GP	621.000	0.000	613.000	73.000	609.000	150.000	611.000	211.000	610.000	286.000	
GP	608.000	310.000	608.000	318.000	600.000	395.000	600.000	577.000	600.000	794.000	
GR	600.000	848.000	600.000	870.000	600.000	950.000	600.000	1030.000	602.000	1244.000	
GR	608.000	1374.000	608.000	1460.000	607.000	1550.000	608.000	1618.000	608.000	1695.000	
GP	604.000	1780.000	604.000	1915.000	604.000	1941.000	600.000	1984.000	594.000	2029.000	D/S of DAM
GP	591.000	2123.000	596.000	2180.000	588.000	2230.000	596.000	2259.000	598.000	2295.000	
GR	598.000	2314.000	598.000	2340.000	583.000	2363.000	583.000	2670.000	589.000	2691.000	
GR	598.000	2726.000	600.000	2759.000	615.000	2800.000	615.000	2815.000	618.000	2830.000	
GR	618.000	2870.000	618.000	3017.000	610.000	3149.000	614.000	3267.000	613.000	3408.000	
GR	614.000	3520.000	610.000	3590.000	606.000	3619.000	614.000	3670.000	624.000	3695.000	
GR	624.000	3709.000	613.000	3744.000	617.000	3780.000	625.000	3852.000	0.000	0.000	
X1	591.010	54.000	2340.000	2720.000	1.000	1.000	1.000	0.000	0.000	0.000	
X4	2.000	568.000	2368.000	568.000	2669.000	0.000	0.000	0.000	0.000	0.000	
GP	621.000	0.000	613.000	73.000	609.000	150.000	611.000	211.000	610.000	286.000	
GP	608.000	310.000	608.000	318.000	600.000	395.000	600.000	577.000	600.000	794.000	
GR	600.000	848.000	600.000	870.000	600.000	950.000	600.000	1030.000	602.000	1244.000	
GR	608.000	1374.000	608.000	1460.000	607.000	1550.000	608.000	1618.000	608.000	1695.000	
GP	604.000	1780.000	604.000	1915.000	604.000	1941.000	600.000	1984.000	594.000	2029.000	DAM
GP	591.000	2123.000	596.000	2180.000	588.000	2230.000	596.000	2259.000	598.000	2295.000	
GR	598.000	2314.000	598.000	2340.000	583.000	2363.000	583.000	2670.000	589.000	2691.000	
GR	598.000	2726.000	600.000	2759.000	615.000	2800.000	615.000	2815.000	618.000	2830.000	
GR	618.000	2870.000	618.000	3017.000	610.000	3149.000	614.000	3267.000	613.000	3408.000	
GR	614.000	3520.000	610.000	3590.000	606.000	3619.000	614.000	3670.000	624.000	3695.000	
GR	624.000	3709.000	613.000	3744.000	617.000	3780.000	625.000	3852.000	0.000	0.000	
X1	590.000	0.000	1.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000	
X1	594.000	54.000	2340.000	2720.000	68.000	68.000	68.000	0.000	0.000	0.000	
X4	2.000	568.000	2368.000	568.000	2568.000	0.000	0.000	0.000	0.000	0.000	
GP	620.000	0.000	613.000	73.000	609.000	150.000	611.000	211.000	610.000	286.000	
GR	608.000	310.000	608.000	318.000	600.000	395.000	600.000	577.000	600.000	794.000	
GR	600.000	848.000	600.000	870.000	600.000	950.000	600.000	1030.000	602.000	1244.000	
GR	608.000	1374.000	608.000	1460.000	607.000	1550.000	608.000	1618.000	608.000	1695.000	
GP	604.000	1780.000	604.000	1915.000	604.000	1941.000	600.000	1984.000	594.000	2029.000	AQ
GR	591.000	2123.000	596.000	2180.000	588.000	2230.000	596.000	2259.000	598.000	2295.000	
GR	598.000	2314.000	598.000	2340.000	583.000	2363.000	583.000	2670.000	589.000	2691.000	
GR	598.000	2726.000	600.000	2759.000	615.000	2800.000	615.000	2815.000	618.000	2830.000	
GR	618.000	2870.000	618.000	3017.000	610.000	3149.000	614.000	3267.000	613.000	3408.000	
GR	614.000	3520.000	610.000	3590.000	606.000	3619.000	614.000	3670.000	624.000	3695.000	
GR	624.000	3709.000	613.000	3744.000	617.000	3780.000	625.000	3852.000	0.000	0.000	

X1	606.700	23.000	1648.000	2128.000	700.000	700.000	700.000	0.000	0.000	0.000	
X4	3.000	569.000	1845.000	569.000	1901.000	0.000	0.000	0.000	0.000	0.000	
GR	620.300	0.000	618.000	140.000	615.000	360.000	613.000	442.000	615.000	509.000	
GR	61[illegible]	[illegible]	610.000	590.000	601.000	658.000	614.000	771.000	620.000	1275.000	AR
GR	614.000	1642.000	611.000	1668.000	612.000	1678.000	612.000	1638.000	606.000	1721.000	
GR	594.000	1760.000	583.000	1788.000	583.000	1958.000	613.000	2128.000	613.000	2138.000	
GR	615.000	2140.000	638.000	2215.000	640.000	2255.000	0.000	0.000	0.000	0.000	
X1	604.300	34.000	1640.000	2040.000	100.000	160.000	160.000	0.000	0.000	0.000	
X4	2.000	569.000	1749.000	569.000	1854.000	0.000	0.000	0.000	0.0 0	0.000	
GR	620.300	0.000	623.000	41.000	622.000	78.000	619.000	103.000	619.000	185.000	
GR	618.000	185.000	614.000	340.000	614.000	392.000	610.000	470.000	614.000	520.000	
GR	613.000	594.000	660.000	512.000	614.000	710.000	613.000	740.000	619.000	1440.000	D/S of
GR	614.000	1460.000	58.000	1578.000	616.000	1620.000	616.000	1640.000	596.000	1680.000	BRIDGE
GR	580.000	1710.000	583.000	1745.000	583.000	1908.000	607.000	2010.000	609.000	2040.000	
GR	625.000	2082.000	625.000	2037.000	620.000	2100.000	639.000	2170.000	637.000	2255.000	
GR	621.000	2300.000	625.000	2320.000	621.000	2338.000	625.000	2355.000	0.000	0.000	
GR	1.000	1.000	2.000	0.000	154.000	8.000	8888.000	2.000	570.00	570.000	
X1	604.400	27.000	1648.000	1810.000	160.000	0.000	160.000	0.000	0.000	0.000	
X2	0.000	0.000	1.000	605.700	609.000	0.000	0.000	0.000	0.000	0.000	
X4	3.000	571.000	1617.000	571.000	1673.000	0.000	0.000	0.000	0.000	0.000	
BT	-18.000	0.000	625.000	0.000	88.000	622.000	0.000	130.000	621.000	0.000	
BT	0.000	462.000	609.000	0.000	460.000	609.000	0.000	480.000	609.000	0.000	
BT	0.000	528.000	610.000	0.000	581.000	610.000	0.000	592.000	613.000	0.000	
BT	0.000	718.000	611.000	0.000	765.000	614.000	0.000	1189.000	618.000	0.000	U/S of
BT	0.000	1390.000	614.000	0.000	1640.000	615.000	0.000	1815.000	618.000	0.000	BRIDGE
BT	0.000	1997.000	621.000	0.000	2120.000	624.000	0.000	2210.000	625.000	0.000	
GR	625.000	0.000	624.000	43.000	622.000	75.000	623.000	92.000	620.000	183.000	
GR	61[illegible]	325.000	614.000	440.000	611.000	500.000	611.000	510.000	609.000	580.000	
GR	615.000	590.000	613.000	868.000	618.000	1300.000	617.000	1420.000	617.000	1440.000	
GR	610.000	1488.000	583.000	1550.000	583.000	1730.000	605.000	1810.000	609.000	1890.000	
GR	620.000	1938.000	630.000	1950.000	615.000	1980.000	621.000	2000.000	624.000	2028.000	
GR	621.000	2047.000	625.000	2055.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	611.000	24.000	1620.000	1755.000	130.000	130.000	130.000	0.000	0.000	0.000	
X4	3.000	71.000	1476.000	571.000	1534.000	0.000	0.000	0.000	0.000	0.000	
GR	62[illegible]	0.000	625.000	52.000	623.000	70.000	625.000	80.000	624.000	130.000	
GR	623.000	90.000	624.000	175.000	620.000	202.000	623.000	275.000	619.000	370.000	AS
GR	611.000	388.000	609.000	415.000	616.000	530.000	618.000	1009.000	616.000	1244.000	
GR	617.000	1276.000	617.000	1290.000	613.000	1320.000	583.000	1418.000	583.000	1592.000	
GR	606.000	1630.000	614.000	1755.000	614.000	1770.000	620.000	1785.000	624.000	1810.000	
GR	621.000	1838.000	625.000	1852.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	604.800	24.000	210.000	530.000	1660.000	1660.000	1660.000	0.000	0.000	0.000	
X4	3.000	571.000	391.000	571.000	411.000	0.000	0.000	0.000	0.000	0.000	
GR	63[illegible]	0.000	610.000	130.000	612.000	185.000	600.000	210.000	597.000	225.000	
GR	597.000	240.000	582.000	290.000	582.000	472.000	595.000	495.000	605.000	550.000	AT
GR	609.000	590.000	609.000	630.000	612.000	680.000	620.000	681.000	620.000	703.000	
GR	612.000	710.000	610.000	808.000	612.000	965.000	612.000	975.000	611.000	1002.000	
GR	619.000	1036.000	619.000	1045.000	619.000	1065.000	616.000	1078.000	623.000	1100.000	
GR	621.000	1115.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

NC	0.110	0.090	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	642.000	22.000	155.000	430.000	1420.000	1420.000	1420.000	0.000	0.000	0.000	
X4	2.000	572.000	268.000	572.000	328.000	0.000	0.000	0.000	0.000	0.000	
GR	625.000	0.000	610.000	45.000	605.000	90.000	600.000	112.000	598.000	127.000	AU
GR	595.000	155.000	595.000	170.000	583.000	208.000	583.000	388.000	598.000	405.000	
GR	601.000	430.000	619.000	462.000	619.000	500.000	618.000	570.000	617.000	580.000	
GR	614.000	600.000	619.000	825.000	614.000	905.000	614.000	978.000	614.000	1070.000	
GR	614.000	1135.000	617.000	1178.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	660.400	25.000	190.000	454.000	1840.000	1840.000	1840.000	0.000	0.000	0.000	
X4	2.000	572.000	288.000	572.000	339.000	0.000	0.000	0.000	0.000	0.000	
GR	625.000	0.000	599.000	105.000	600.000	150.000	599.000	161.000	599.000	176.000	
GR	599.000	190.000	583.000	221.000	583.000	398.000	599.000	435.000	601.000	454.000	AV
GR	615.000	479.000	615.000	539.000	613.000	735.000	616.000	760.000	617.000	796.000	
GR	615.000	822.000	621.000	840.000	622.000	851.000	621.000	860.000	618.000	881.000	
GR	621.000	979.000	630.000	980.000	630.000	1000.000	622.000	1001.000	625.000	1071.000	
NC	0.085	0.090	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	674.200	23.000	755.000	950.000	1500.000	1200.000	1380.000	0.000	0.000	0.000	
X4	2.000	572.000	816.000	572.000	863.000	0.000	0.000	0.000	0.000	0.000	
GR	625.000	0.000	613.000	50.000	617.000	86.000	610.000	216.000	611.000	230.000	
GR	612.000	408.000	612.000	569.000	620.000	570.000	620.000	610.000	611.000	611.000	AW
GR	605.000	580.000	604.000	719.000	600.000	730.000	600.000	746.000	596.000	755.000	
GR	583.000	770.000	583.000	909.000	595.000	929.000	599.000	950.000	620.000	998.000	
GR	623.000	1017.000	622.000	1030.000	625.000	1049.000	0.000	0.000	0.000	0.000	
NC	0.100	0.100	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	696.000	21.000	100.000	400.000	2080.000	2080.000	2080.000	0.000	0.000	0.000	
X4	2.000	573.000	202.000	573.000	263.000	0.000	0.000	0.000	0.000	0.000	
GR	625.000	0.000	610.000	75.000	598.000	100.000	598.000	115.000	597.000	125.000	AX
GR	582.000	140.000	583.000	325.000	603.000	360.000	606.000	400.000	619.000	450.000	
GR	619.000	471.000	618.000	485.000	620.000	498.000	617.000	516.000	620.000	535.000	
GR	615.000	736.000	608.000	784.000	612.000	830.000	612.000	840.000	616.000	885.000	
GR	625.000	930.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
QT	0.000	32000.000	32000.000	32000.000	32000.000	32000.000	0.000	0.000	0.000	0.00	
X1	709.600	21.000	98.000	368.000	1460.000	1460.000	1460.000	0.000	0.000	0.00	
X4	2.000	573.000	220.000	573.000	266.000	0.000	0.000	0.000	0.000	0.00	
GR	625.000	0.000	610.000	50.000	605.000	98.000	600.000	124.000	600.000	140.00	AY
GR	583.000	175.000	583.000	311.000	598.000	341.000	600.000	368.000	615.000	410.000	
GR	618.000	414.000	619.000	474.000	618.000	709.000	620.000	905.000	620.000	923.000	
GR	620.000	935.000	622.000	950.000	620.000	965.000	620.000	1001.000	621.00	1055.000	
GR	625.000	1078.000	0.000	0.000	0.000	0.000	0.000	0.000	00	0.000	
NC	0.120	0.120	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	726.300	20.000	445.000	731.000	2000.000	1300.000	1870.000	0.000	0.000	0.000	
X4	2.000	573.000	559.000	573.000	619.000	0.000	0.000	0.000	0.000	0.000	
GR	625.000	0.000	600.000	55.000	600.000	170.000	600.000	190.000	600.000	225.000	AZ
GR	600.000	295.000	600.000	296.000	604.000	390.000	604.000	445.000	601.000	470.000	
GR	583.000	498.000	583.000	580.000	599.000	730.000	601.000	731.000	605.000	759.000	
GR	615.000	801.000	615.000	810.000	621.000	841.000	620.000	855.000	625.000	883.000	

X1	745.700	19.000	755.000	1030.000	1540.000	1540.000	1540.000	0.000	0.000	0.000	
X4	2.000	574.000	859.000	574.000	914.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	623.000	45.000	623.000	138.000	618.000	247.000	621.000	392.000	BA
GR	619.000	529.000	620.000	589.000	623.000	719.000	604.000	755.000	603.000	771.000	
GR	563.000	825.000	583.000	968.000	601.000	1001.000	605.000	1030.000	619.000	1079.000	
GR	620.000	1039.000	620.000	1099.000	620.000	1112.000	625.000	1128.000	0.000	0.000	
X1	754.600	21.000	884.000	706.000	1580.000	1580.000	1580.000	0.000	0.000	0.000	
X4	2.000	576.000	557.000	574.000	615.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	614.000	72.000	617.000	104.000	615.000	125.000	619.000	201.000	BB
GR	620.000	345.000	620.000	385.000	615.000	406.000	610.000	444.000	604.000	456.000	
GR	603.000	484.000	583.000	500.000	583.000	672.000	605.000	706.000	603.000	735.000	
GR	615.000	758.000	615.000	770.000	619.000	789.000	617.000	800.000	622.000	819.000	
GR	620.000	859.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	777.900	17.000	525.000	761.000	1800.000	1900.000	1840.000	0.000	0.000	0.000	
X4	2.000	575.000	617.000	575.000	675.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	623.000	80.000	622.000	340.000	622.000	425.000	622.000	496.000	BC
GR	620.000	407.000	598.000	525.000	594.000	551.000	584.000	560.000	584.000	732.000	
GR	604.000	761.000	605.000	775.000	606.000	981.000	611.000	1030.000	621.000	1085.000	
GR	615.000	1107.000	625.000	1153.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	794.000	15.000	140.000	405.000	1610.000	1610.000	1610.000	0.000	0.000	0.000	
X4	2.000	575.000	218.000	575.000	277.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	623.000	17.000	614.000	35.000	605.000	79.000	603.000	140.000	BD
GR	584.000	140.000	584.000	335.000	614.000	405.000	618.000	511.000	617.000	605.000	
GR	618.000	624.000	617.000	640.000	618.000	682.000	621.000	761.000	625.000	785.000	
X1	811.700	14.000	260.000	570.000	1770.000	1770.000	1770.000	0.000	0.000	0.000	
X4	2.000	575.000	350.000	575.000	403.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	624.000	15.000	624.000	30.000	621.000	55.000	615.000	205.000	BE
GR	603.000	214.000	604.000	260.000	584.000	298.000	584.000	455.000	620.000	570.000	
GR	615.000	580.000	618.000	600.000	618.000	618.000	625.000	665.000	0.000	0.000	
NC	0.000	7.100	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	828.400	25.000	283.000	505.000	1720.000	1720.000	1720.000	0.000	0.000	0.000	
X4	2.000	576.000	372.000	576.000	429.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	623.000	5.000	625.000	20.000	617.000	72.000	617.000	135.000	BF
GR	625.000	145.000	624.000	248.000	610.000	245.000	605.000	258.000	604.000	283.000	
GR	604.000	340.000	584.000	305.000	584.000	322.000	584.000	482.000	603.000	505.000	
GR	603.000	542.000	604.000	588.000	618.000	648.000	619.000	659.000	617.000	765.000	
GR	615.000	795.000	622.000	820.000	620.000	830.000	621.000	840.000	621.000	855.000	
GR	625.000	900.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	843.600	19.000	220.000	870.000	1470.000	1470.000	1470.000	0.000	0.000	0.000	
X4	2.000	576.000	300.000	576.000	750.000	0.000	0.000	0.000	0.000	0.000	
GR	623.000	0.000	613.000	1 0.000	619.000	250.000	639.000	251.000	626.000	300.000	BG
GR	614.000	301.000	620.000	440.000	610.000	502.000	608.000	555.000	605.000	585.000	
GR	603.000	620.000	584.000	650.000	584.000	800.000	623.000	870.000	621.000	882.000	
GR	625.000	900.000	624.000	908.000	625.000	915.000	0.000	0.000	0.000	0.000	

MC	0.120	0.120	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	868.300	22.000	141.000	350.000	1450.000	1670.000	1670.000	0.000	0.000	0.000	
X4	2.000	77.000	218.000	577.000	272.000	0.000	0.000	0.000	0.000	0.000	
GR	621.000	0.000	626.000	9.000	618.000	27.000	627.000	28.000	627.000	95.000	BH
GR	617.000	96.000	615.000	110.000	601.000	141.000	585.000	164.000	585.000	326.000	
GR	604.000	150.000	604.000	400.000	609.000	434.000	608.000	530.000	605.000	608.000	
GR	601.000	792.000	607.000	855.000	621.000	870.000	624.000	877.000	624.000	890.000	
GR	631.000	10.000	636.000	915.000	0.000	0.000	0.000	0.000	0.000	0.000	
MC	0.120	0.120	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	873.200	23.000	60.000	500.000	1490.000	1490.000	1490.000	0.000	0.000	0.000	
X4	2.000	77.000	167.000	577.000	191.000	0.000	0.000	0.000	0.000	0.000	
GR	632.000	0.000	637.000	23.000	620.000	41.000	620.000	46.000	620.000	60.000	BI
GR	597.000	100.000	596.000	235.000	605.000	279.000	606.000	300.000	614.000	345.000	
GR	611.000	77.000	618.000	435.000	617.000	735.000	619.000	1010.000	619.000	1021.000	
GR	634.000	103.000	634.000	1042.000	624.000	1056.000	623.000	1060.000	619.000	1071.000	
GR	653.000	11.000	33.000	1220.000	0.000	0.000	0.000	0.000	0.000	0.000	
MC	0.120	0.120	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	895.400	18.000	348.000	515.000	1570.000	1570.000	1570.000	0.000	0.000	0.000	
X4	2.000	77.000	194.000	578.000	448.000	0.000	0.000	0.000	0.000	0.000	BJ
GR	630.000	0.000	634.000	40.000	613.000	40.000	612.000	130.000	613.000	202.000	
GR	610.000	97.000	10.000	230.000	601.000	325.000	586.000	341.000	586.000	502.000	
GR	604.000	0.000	614.000	615.000	615.000	637.000	617.000	689.000	616.000	704.000	
GR	631.000	21.000	37.000	730.000	625.000	740.000	0.000	0.000	0.000	0.000	
X1	912.700	14.000	320.000	521.000	1980.000	1980.000	1980.000	0.000	0.000	0.000	
X4	2.000	77.000	441.000	578.000	423.000	0.000	0.000	0.000	0.000	0.000	
GR	630.000	0.000	637.000	45.000	622.000	132.000	623.000	179.000	616.000	304.000	BK
GR	610.000	100.000	601.000	585.000	587.000	396.000	587.000	541.000	595.000	560.000	
GR	611.000	21.000	21.000	621.000	625.000	640.000	625.000	653.000	625.000	660.000	
GR	631.000	14.000	36.000	840.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	901.400	14.000	81.000	545.000	1070.000	1070.000	1070.000	0.000	0.000	0.000	
X4	2.000	77.000	197.000	579.000	233.000	0.000	0.000	0.000	0.000	0.000	
GR	630.000	0.000	622.000	52.000	608.000	72.000	608.000	81.000	605.000	105.000	BL
GR	587.000	140.000	587.000	230.000	620.000	395.000	620.000	560.000	624.000	417.000	
GR	621.000	29.000	627.000	435.000	625.000	449.000	625.000	460.000	625.000	473.000	
GR	631.000	14.000	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	933.000	14.000	90.000	276.000	1160.000	1160.000	1160.000	0.000	0.000	0.000	
X4	2.000	77.000	90.000	580.000	134.000	0.000	0.000	0.000	0.000	0.000	
GR	630.000	0.000	647.000	45.000	587.000	179.000	600.000	197.000	620.000	276.000	BM
GR	621.000	17.000	24.000	540.000	626.000	597.000	627.000	620.000	627.000	644.000	
GR	631.000	14.000	35.000	677.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	934.200	14.000	91.000	255.000	150.000	150.000	150.000	0.000	0.000	0.000	
X4	2.000	77.000	90.000	580.000	128.000	0.000	0.000	0.000	0.000	0.000	
GR	630.000	0.000	647.000	45.000	587.000	169.000	600.000	195.000	601.000	235.000	
GR	617.000	17.000	614.000	595.000	621.000	577.000	622.000	615.000	623.000	635.000	
GR	626.000	14.000	626.000	655.000	626.000	671.000	625.000	638.000	629.000	700.000	
GR	629.000	28.000	630.000	730.000	0.000	0.000	0.000	0.000	0.000	0.000	

SH	1.050	1.200	2.800	0.000	145.000	6.000	8810.000	2.000	581.000	581.000
X1	930.700	15.000	110.000	589.000	220.000	220.000	220.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	623.300	626.000	0.000	0.000	0.000	0.000	0.000
X4	2.000	582.000	107.000	582.000	249.000	0.000	0.000	0.000	0.000	0.000
MT	-12.000	0.000	630.000	0.000	138.000	627.000	0.000	271.000	62[illegible].000	0.000
ST	0.000	425.000	626.000	0.000	530.000	627.000	0.000	769.000	628.000	0.000
BT	0.000	795.000	626.000	0.000	835.000	626.000	0.000	854.000	626.000	0.000
HT	0.000	865.000	629.000	0.000	880.000	629.000	0.000	895.000	630.000	0.000
GP	630.000	0.000	825.000	10.000	625.000	30.000	621.000	110.000	587.000	146.000
GR	587.000	300.000	603.000	324.000	605.000	549.000	618.000	389.000	620.000	398.000
GR	622.000	550.000	624.000	630.000	626.000	777.000	628.000	810.000	630.000	830.000
X1	957.700	28.000	250.000	980.000	100.000	100.000	100.000	0.000	0.000	0.000
X4	2.000	582.000	322.000	582.000	374.000	0.000	0.000	0.000	0.000	0.000
SR	630.000	0.000	803.000	50.000	610.000	123.000	611.000	135.000	611.000	153.000
GP	610.000	175.000	810.000	196.000	604.000	240.000	587.000	269.000	587.000	427.000
GR	603.000	434.000	60[illegible].000	480.000	617.000	509.000	620.000	540.000	620.000	617.000
GR	630.000	614.000	632.000	705.000	621.000	706.000	623.000	752.000	635.000	763.000
GR	635.000	791.000	827.000	782.000	622.000	805.000	626.000	390.000	627.000	900.000
GW	627.000	827.000	626.000	941.000	630.000	951.000	0.000	0.000	0.000	0.000
X1	940.100	18.000	638.000	936.000	1040.000	104[illegible].000	1040.000	0.000	0.000	0.000
X4	2.000	582.000	402.000	582.000	808.000	0.000	0.000	0.000	0.000	0.000
GP	630.000	0.000	822.000	44.000	610.000	211.000	610.000	371.000	615.000	400.000
GR	620.000	494.000	602.000	603.000	615.000	620.000	615.000	638.000	606.000	650.000
GR	587.000	703.000	587.000	860.000	602.000	889.000	605.000	936.000	615.000	960.000
GR	620.000	1003.000	625.000	1020.000	626.000	1033.000	0.000	0.000	0.000	0.000
X1	940.000	28.000	850.000	1143.000	1690.000	1690.000	1690.000	0.000	0.000	0.000
X4	2.000	582.000	522.000	582.000	1020.000	0.000	0.000	0.000	0.000	0.000
GR	630.000	0.000	820.000	70.000	619.000	279.000	617.000	355.000	618.000	380.000
GR	617.000	390.000	617.000	441.000	621.000	462.000	626.000	430.000	637.000	631.000
GR	637.000	691.000	628.000	698.000	628.000	725.000	648.000	726.000	648.000	802.000
GR	624.000	903.000	627.000	820.000	627.000	836.000	602.000	875.000	601.000	902.000
GR	587.000	941.000	587.000	1071.000	.000	1035.000	610.000	1143.000	626.000	1170.000
GR	627.000	1150.000	627.000	1137.000	630.000	1206.000	0.000	0.000	0.000	0.000
X1	934.300	18.000	442.000	583.000	1360.000	1360.000	1360.000	0.000	0.000	0.000
X4	2.000	582.000	482.000	582.000	596.000	0.000	0.000	0.000	0.000	0.000
SR	630.000	0.000	827.000	113.000	627.000	126.000	625.000	276.000	625.000	311.000
GR	627.000	320.000	62[illegible].000	330.000	626.000	330.000	626.000	409.000	603.000	439.000
GR	601.000	472.000	587.000	488.000	587.000	650.000	605.000	693.000	616.000	830.000
GW	0.000	941.000	627.000	863.000	625.000	882.000	630.000	918.000	0.000	0.000
X1	934.900	28.000	34[illegible].000	734.000	1630.000	1630.000	1630.000	0.000	0.000	0.000
X4	2.000	582.000	442.000	582.000	823.000	584.000	627.000	584.000	658.000	0.000
SR	630.000	0.000	82[illegible].000	93[illegible].000	624.000	97.000	620.000	209.000	615.000	223.000
GP	614.000	203.000	621.000	243.000	621.000	530.000	610.000	356.000	610.000	375.000
GR	603.000	330.000	596.000	438.000	587.000	460.000	587.000	555.000	600.000	574.000
GR	587.000	736.000	587.000	8[illegible].000	603.000	725.000	611.000	784.000	[illegible].000	821.000
GR	627.000	835.000	625.000	846.000	626.000	835.000	627.000	888.000	[illegible].00	906.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible].000	0.000

THIS RUN EXECUTED 12 OCT 83 8:43:38

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  21,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1 COAL RIVER  -  KANAWHA COUNTY, WEST VIRGINIA
T2 FLOOD INSURNCE STUDY FOR HUNTINGTON DISTRICT
T3 CODED BY REB -            50 YEAR FLOOD

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        5.        0.        0.  0.000000      0.00      0.0       0.   575.800     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE
    2.000     0.000    -1.000     0.000     0.000     0.900     0.000     0.000     0.000     0.000
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THIS RUN EXECUTED 12 OCT 83 8:44:16

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  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1 COAL RIVER  -  KANAWHA COUNTY, WEST VIRGINIA
T2 FLOOD INSURNCE STUDY FOR HUNTINGTON DISTRICT
T3 CODED BY RFB -            100 YEAR FLOOD

J1   ICHECK     INQ        NINV       IDIR       STRT      METRIC    HVINS     Q          WSEL      FQ

        0.         4.         0.         0.  0.000  0       0.00      0.0        0.   579.00     0.000

J2   NPROF      IPLOT      PRFVS      XSECV      XSECH      FN        ALLOC     IBW        CHNIM      ITRACE

       3.000      0.000     -1.000      0.000      0.000     0.000     0.000     0.000      0.000      0.000
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THIS RUN EXECUTED 12 OCT 83 8:44:34

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  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1 COAL RIVER - KANAWHA COUNTY, WEST VIRGINIA
T2 FLOOD INSURNCE STUDY FOR HUNTINGTON DISTRICT
T3 CODED BY REB -            500 YEAR FLOOD

J1   ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        5.        0.        0.  0.000000      0.00      0.0       0.    583.900     0.000

J2   NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE
     15.000     0.000    -1.000     0.000     0.000     1.263     0.000     0.000     0.000     0.000
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THIS RUN EXECUTED 12 OCT 83 8:44:56

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  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

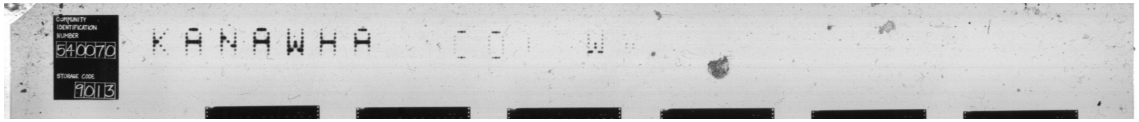
BY RPR - 10 Y

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
1.000	0.00	0.00	0.00	545.00	38500.00	572.80	0.00	573.42	3.30	6.34	6137.66	21201.80
1.000	0.00	0.00	0.00	545.00	56500.00	575.80	0.00	576.79	6.29	8.02	7301.62	22523.63
1.000	0.00	0.00	0.00	545.00	66500.00	579.80	0.00	580.73	5.14	7.86	9563.87	27295.30
1.000	0.00	0.00	0.00	545.00	88000.00	583.90	0.00	585.01	9.70	8.71	12262.55	28252.05
2.100	691.68	0.00	0.00	545.00	38500.00	573.17	0.00	573.64	2.52	5.51	7073.64	23798.06
2.100	691.68	0.00	0.00	545.00	56500.00	576.47	0.00	577.19	4.63	6.82	8511.25	26244.48
2.100	691.68	0.00	0.00	545.00	66500.00	580.41	0.00	581.11	4.43	6.74	10317.96	31577.90
2.100	691.68	0.00	0.00	545.00	88000.00	584.76	0.00	585.61	7.22	7.53	12838.10	32743.07
2.200	116.1	0.00	0.00	546.00	38500.00	573.12	0.00	573.72	4.76	6.21	6285.87	17655.01
2.200	116.1	0.00	0.00	546.00	56500.00	576.42	0.00	577.32	8.51	7.61	7672.91	19366.51
2.200	116.1	0.00	0.00	546.00	66500.00	580.38	0.00	581.22	8.23	7.43	9462.31	23180.97
2.200	116.1	0.00	0.00	546.00	88000.00	584.76	0.00	585.77	13.61	8.10	11746.24	23857.77
2.400	264.00	0.00	0.00	546.00	38500.00	573.26	0.00	573.84	4.65	6.16	6309.48	17856.12
2.400	264.00	0.00	0.00	546.00	56500.00	576.66	0.00	577.54	8.24	7.54	7715.82	19677.93
2.400	264.00	0.00	0.00	546.00	66500.00	580.61	0.00	581.44	8.03	7.38	9525.15	23462.97
2.400	264.00	0.00	0.00	546.00	88000.00	585.14	0.00	586.12	13.16	8.11	11775.81	24260.32
2.500	121.44	0.00	0.00	545.00	38500.00	573.39	0.00	573.89	2.63	5.69	6840.22	23733.19
2.500	121.44	0.00	0.00	545.00	56500.00	576.86	0.00	577.62	4.67	7.04	8265.73	26154.30
2.500	121.44	0.00	0.00	545.00	66500.00	580.77	0.00	581.52	4.58	7.01	10032.44	31077.78
2.500	121.44	0.00	0.00	545.00	88000.00	585.33	0.00	586.25	7.41	7.81	12395.41	32634.19
3.100	290.40	0.00	0.00	543.00	38500.00	573.29	0.00	574.06	3.63	7.05	5519.72	20214.91
3.100	290.40	0.00	0.00	543.00	56500.00	576.70	0.00	577.92	6.87	8.91	6549.56	21549.63
3.100	290.40	0.00	0.00	543.00	66500.00	580.59	0.00	581.82	7.06	8.98	7955.69	25035.33
3.100	290.40	0.00	0.00	543.00	88000.00	585.18	0.00	586.70	11.76	10.07	9846.01	25661.47
3.200	105.60	0.00	0.00	544.00	38500.00	573.25	0.00	574.15	6.59	7.72	5582.92	15002.42
3.200	105.60	0.00	0.00	544.00	56500.00	576.78	0.00	578.02	11.71	9.25	7405.94	16512.75
3.200	105.60	0.00	0.00	544.00	66500.00	580.89	0.00	581.94	11.08	8.74	9729.26	19975.55
3.200	105.60	0.00	0.00	544.00	88000.00	585.81	0.00	586.89	16.99	9.14	12752.38	21346.74

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
3.400	205.92	0.00	0.00	544.00	38500.00	573.38	0.00	574.29	6.48	7.67	5080.10	15123.44
3.400	205.92	0.00	0.00	544.00	56500.00	576.91	0.00	578.32	12.44	9.57	6103.23	16021.97
3.400	205.92	0.00	0.00	544.00	66500.00	580.90	0.00	582.28	13.09	9.53	7437.62	18379.78
3.400	205.92	0.00	0.00	544.00	88000.00	585.81	0.00	587.46	22.21	10.51	9195.64	18673.06
3.500	116.16	0.00	0.00	544.00	38500.00	573.63	0.00	574.36	3.42	6.89	5668.63	20828.54
3.500	116.16	0.00	0.00	544.00	56500.00	577.30	0.00	578.35	6.30	8.63	6794.97	22506.19
3.500	116.16	0.00	0.00	544.00	66500.00	581.25	0.00	582.41	6.52	8.73	8127.01	26035.42
3.500	116.16	0.00	0.00	544.00	88000.00	586.22	0.00	587.65	10.71	9.76	9902.28	26891.32
4.000	205.92	0.00	0.00	551.00	38500.00	573.55	0.00	574.52	5.36	7.93	4877.82	16623.62
4.000	205.92	0.00	0.00	551.00	56500.00	577.24	0.00	578.69	9.13	9.71	5963.84	13695.28
4.000	205.92	0.00	0.00	551.00	66500.00	581.22	0.00	582.65	8.89	9.75	7343.52	22297.67
4.000	205.92	0.00	0.00	551.00	88000.00	585.48	0.00	587.89	11.92	9.92	12284.13	25490.64
4.100	782.00	0.00	0.00	551.00	38500.00	574.10	0.00	574.90	3.81	7.16	5496.99	19723.17
4.100	782.00	0.00	0.00	551.00	56500.00	578.15	0.00	579.33	6.49	8.76	6693.05	22183.36
4.100	782.00	0.00	0.00	551.00	66500.00	582.08	0.00	583.28	6.56	8.85	7934.05	25769.98
4.100	782.00	0.00	0.00	551.00	88000.00	587.33	0.00	588.79	10.54	9.81	9717.22	27105.62
4.200	105.60	0.00	0.00	551.00	38500.00	573.94	0.00	575.05	8.12	8.50	4775.81	13515.01
4.200	105.60	0.00	0.00	551.00	56500.00	577.94	0.00	579.56	14.84	10.35	5888.12	14665.55
4.200	105.60	0.00	0.00	551.00	66500.00	581.94	0.00	583.48	15.70	10.26	7386.91	16781.77
4.200	105.60	0.00	0.00	551.00	88000.00	587.36	0.00	589.01	24.56	10.84	9858.66	17755.75
4.400	255.44	0.00	0.00	551.00	38500.00	574.06	0.00	575.31	9.37	9.01	4437.29	12579.09
4.400	255.44	0.00	0.00	551.00	56500.00	578.20	0.00	580.02	17.10	10.98	5459.01	13662.17
4.400	255.44	0.00	0.00	551.00	66500.00	582.13	0.00	584.00	18.65	11.03	6553.49	15397.19
4.400	255.44	0.00	0.00	551.00	88000.00	587.75	0.00	589.82	30.52	11.91	8343.04	15927.87
4.500	121.44	0.00	0.00	551.00	38500.00	574.59	0.00	575.42	3.61	7.33	5430.60	20269.10
4.500	121.44	0.00	0.00	551.00	56500.00	578.99	0.00	580.20	6.03	8.90	6702.70	23010.42
4.500	121.44	0.00	0.00	551.00	66500.00	582.94	0.00	584.18	6.32	9.04	7950.23	26462.43
4.500	121.44	0.00	0.00	551.00	88000.00	588.60	0.00	590.08	9.80	9.94	9883.10	28104.55
4.600	828.96	0.00	0.00	551.00	38500.00	575.01	0.00	575.70	2.86	6.66	5977.87	22756.26
4.600	828.96	0.00	0.00	551.00	56500.00	579.67	0.00	580.66	4.73	8.07	7383.26	25985.68
4.600	828.96	0.00	0.00	551.00	66500.00	583.63	0.00	584.67	5.04	8.24	8662.11	29623.46
4.600	828.96	0.00	0.00	551.00	88000.00	589.60	0.00	590.82	7.75	9.03	10870.74	31614.91
7.000	887.04	0.00	0.00	552.00	38500.00	574.85	0.00	576.30	6.81	9.76	4167.04	14756.90
7.000	887.04	0.00	0.00	552.00	56500.00	579.55	0.00	581.58	10.58	11.50	5300.11	17370.97
7.000	887.04	0.00	0.00	552.00	66500.00	583.59	0.00	585.58	10.64	11.57	6645.50	20388.15
7.000	887.04	0.00	0.00	552.00	88000.00	589.90	0.00	592.01	14.60	12.13	9099.89	23027.28
8.000	1341.12	0.00	0.00	551.00	38500.00	576.22	0.00	577.02	3.64	7.25	5658.02	20191.49
8.000	1341.12	0.00	0.00	551.00	56500.00	581.59	0.00	582.64	5.20	8.38	7434.84	24779.67
8.000	1341.12	0.00	0.00	551.00	66500.00	585.60	0.00	586.66	5.38	8.48	8971.71	28665.45
8.000	1341.12	0.00	0.00	551.00	88000.00	592.32	0.00	593.46	7.38	8.90	12209.41	32384.73

SECND	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
9.000	1071.84	0.00	0.00	551.00	38500.00	576.59	0.00	577.40	3.36	7.26	5539.03	20999.79
9.000	1071.84	0.00	0.00	551.00	56500.00	582.10	0.00	583.20	4.97	8.48	7225.91	25355.08
9.000	1071.84	0.00	0.00	551.00	66500.00	586.13	0.00	587.25	5.28	8.64	8615.69	28935.69
9.000	1071.84	0.00	0.00	551.00	88000.00	593.05	0.00	594.28	7.41	9.16	11449.90	32319.59
10.000	1346.40	0.00	0.00	550.00	38500.00	577.02	0.00	577.82	2.97	7.21	5594.46	22341.89
10.000	1346.40	0.00	0.00	550.00	56500.00	582.74	0.00	583.83	4.52	8.50	7250.70	26570.89
10.000	1346.40	0.00	0.00	550.00	66500.00	586.80	0.00	587.94	4.94	8.72	8618.25	29934.13
10.000	1346.40	0.00	0.00	550.00	88000.00	594.00	0.00	595.26	7.03	9.29	11354.88	33184.67
11.000	1071.84	0.00	0.00	548.00	38500.00	577.41	0.00	578.13	2.62	6.83	5910.66	23794.20
11.000	1071.84	0.00	0.00	548.00	56500.00	583.32	0.00	584.30	3.94	8.02	7650.07	28476.28
11.000	1071.84	0.00	0.00	548.00	66500.00	587.43	0.00	588.45	4.32	8.25	8949.45	32003.17
11.000	1071.84	0.00	0.00	548.00	88000.00	594.83	0.00	595.98	6.19	8.84	11530.85	35366.86
12.000	1103.52	0.00	0.00	536.00	38500.00	577.85	0.00	578.35	1.[illegible]	5.71	7003.73	33503.89
12.000	1103.52	0.00	0.00	536.00	56500.00	583.89	0.00	584.65	[illegible]	7.05	8547.73	37009.39
12.000	1103.52	0.00	0.00	536.00	66500.00	588.00	0.00	588.84	2.31	7.47	9697.44	39694.75
12.000	1103.52	0.00	0.00	536.00	88000.00	595.56	0.00	596.57	4.44	8.23	12988.27	41756.61
13.000	945.12	0.00	0.00	542.00	38500.00	578.14	0.00	578.47	0.96	4.65	8711.92	39332.19
13.000	945.12	0.00	0.00	542.00	56500.00	584.38	0.00	584.85	1.56	5.59	10955.32	45284.53
13.000	945.12	0.00	0.00	542.00	66500.00	588.57	0.00	589.09	1.80	5.84	12739.71	49618.29
13.000	945.12	0.00	0.00	542.00	88000.00	596.35	0.00	596.93	2.65	6.28	17113.69	54047.03
14.000	1177.44	0.00	0.00	548.00	38500.00	578.04	0.00	578.76	2.49	6.92	6062.20	24382.23
14.000	1177.44	0.00	0.00	548.00	56500.00	584.31	0.00	585.27	3.69	8.07	7948.22	29400.11
14.000	1177.44	0.00	0.00	548.00	66500.00	588.54	0.00	589.54	4.07	8.30	9308.73	32960.31
14.000	1177.44	0.00	0.00	548.00	88000.00	596.43	0.00	597.53	5.70	8.[illegible]	12456.95	36853.86
15.000	1246.08	0.00	0.00	552.00	38500.00	578.29	0.00	579.17	3.36	7.58	5327.92	21006.31
15.000	1246.08	0.00	0.00	552.00	56500.00	584.71	0.00	585.83	4.61	8.64	7297.63	26306.64
15.000	1246.08	0.00	0.00	552.00	66500.00	588.99	0.00	590.14	4.89	8.77	8796.57	30078.38
15.000	1246.08	0.00	0.00	552.00	88000.00	597.10	0.00	598.29	6.28	8.99	12905.00	35128.24
16.000	1420.80	0.00	0.00	556.00	38500.00	578.76	0.00	579.73	4.25	7.99	5107.47	18666.44
16.000	1420.80	0.00	0.00	556.00	56500.00	585.38	0.00	586.54	5.25	8.81	7191.57	24649.74
16.000	1420.80	0.00	0.00	556.00	66500.00	589.71	0.00	590.87	5.39	8.87	8638.06	28076.97
16.000	1420.80	0.00	0.00	556.00	88000.00	598.05	0.00	599.21	6.68	9.03	12343.94	34048.85
162.400	140.00	0.00	0.00	556.00	38500.00	578.59	0.00	579.92	8.76	9.26	4157.36	13007.19
162.400	140.00	0.00	0.00	556.00	56500.00	585.32	0.00	586.70	9.18	9.47	6110.46	18643.53
162.400	140.00	0.00	0.00	556.00	66500.00	589.72	0.00	591.00	8.59	9.14	7646.25	22692.86
162.400	140.00	0.00	0.00	556.00	88000.00	598.15	0.00	599.32	9.16	8.80	11125.45	29075.29
179.000	1810.00	0.00	0.00	557.00	38500.00	580.06	0.00	581.84	14.45	10.72	3590.32	10126.60
179.000	1810.00	0.00	0.00	557.00	56500.00	586.93	0.00	588.54	13.70	9.99	5656.70	15263.38
179.000	1810.00	0.00	0.00	557.00	66500.00	591.28	0.00	592.62	11.66	9.31	7182.09	19472.93
179.000	1810.00	0.00	0.00	557.00	88000.00	599.72	0.00	600.87	10.11	8.62	10576.89	27679.77


COMPANY IDENTIFICATION NUMBER
5400770
STORAGE CODE
9013
KANAWHA

Appendix B:

Hydraulic Model Results

GFT

B1:

Corrected Effective Model Results for Flood Discharges

GFT

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	67345 BM	10yr	36300.00	579.33	614.47		615.37	0.000422	8.00	6079.04	262.03	0.24
SixMileUsDs	67345 BM	50yr	53000.00	579.33	621.17		622.44	0.000480	9.62	8563.59	558.83	0.27
SixMileUsDs	67345 BM	100yr	62000.00	579.33	624.26		625.61	0.000478	10.07	10405.69	625.18	0.27
SixMileUsDs	67345 BM	500yr	82000.00	579.33	629.79		631.34	0.000493	11.08	14236.02	720.78	0.28
SixMileUsDs	66163 BL	10yr	36300.00	578.33	614.23		614.88	0.000289	6.67	7063.74	299.10	0.20
SixMileUsDs	66163 BL	50yr	53000.00	578.33	620.94		621.87	0.000330	8.01	9295.40	401.20	0.22
SixMileUsDs	66163 BL	100yr	62000.00	578.33	623.97		625.05	0.000351	8.67	10655.41	500.07	0.23
SixMileUsDs	66163 BL	500yr	82000.00	578.33	629.40		630.77	0.000390	9.88	13565.46	566.83	0.25
SixMileUsDs	65093 BK	10yr	36300.00	577.33	614.01		614.57	0.000246	6.17	7563.64	321.83	0.18
SixMileUsDs	65093 BK	50yr	53000.00	577.33	620.71		621.51	0.000281	7.41	10063.11	442.01	0.20
SixMileUsDs	65093 BK	100yr	62000.00	577.33	623.72		624.66	0.000301	8.05	11836.08	656.21	0.21
SixMileUsDs	65093 BK	500yr	82000.00	577.33	629.19		630.31	0.000326	9.04	15577.92	704.34	0.23
SixMileUsDs	63115 BJ	10yr	36300.00	577.33	613.53		614.08	0.000244	6.08	8332.49	622.12	0.18
SixMileUsDs	63115 BJ	50yr	53000.00	577.33	620.29		620.95	0.000248	6.90	13137.85	762.86	0.19
SixMileUsDs	63115 BJ	100yr	62000.00	577.33	623.32		624.05	0.000255	7.34	15750.93	959.75	0.19
SixMileUsDs	63115 BJ	500yr	82000.00	577.33	628.83		629.65	0.000260	8.02	21181.40	1005.92	0.20
SixMileUsDs	61540 BI	10yr	36300.00	576.33	612.66		613.55	0.000415	7.84	6328.89	357.07	0.24
SixMileUsDs	61540 BI	50yr	53000.00	576.33	619.42		620.42	0.000401	8.70	11858.28	1065.01	0.24
SixMileUsDs	61540 BI	100yr	62000.00	576.33	622.61		623.55	0.000367	8.75	15388.74	1154.96	0.23
SixMileUsDs	61540 BI	500yr	82000.00	576.33	628.36		629.19	0.000316	8.81	22211.09	1214.59	0.22
SixMileUsDs	60064 BH	10yr	36300.00	576.33	612.14		612.39	0.001202	4.57	11008.03	738.14	0.14
SixMileUsDs	60064 BH	50yr	53000.00	576.33	619.11		619.33	0.000909	4.51	16705.96	870.26	0.13
SixMileUsDs	60064 BH	100yr	62000.00	576.33	622.34		622.56	0.000816	4.50	19578.23	910.97	0.12
SixMileUsDs	60064 BH	500yr	82000.00	576.33	628.10		628.32	0.000760	4.72	25101.96	984.55	0.12
SixMileUsDs	58383 BG	10yr	36300.00	575.33	610.71		611.39	0.000330	6.92	7859.18	652.29	0.21
SixMileUsDs	58383 BG	50yr	53000.00	575.33	617.76		618.48	0.000297	7.46	13237.86	834.10	0.21
SixMileUsDs	58383 BG	100yr	62000.00	575.33	621.06		621.76	0.000278	7.61	16135.87	937.59	0.20
SixMileUsDs	58383 BG	500yr	82000.00	575.33	626.87		627.57	0.000261	8.01	21857.96	1001.12	0.20
SixMileUsDs	56884 BF	10yr	36300.00	575.33	610.31		610.90	0.000291	6.36	6762.78	292.92	0.20
SixMileUsDs	56884 BF	50yr	53000.00	575.33	617.21		618.01	0.000310	7.47	10167.78	778.88	0.21
SixMileUsDs	56884 BF	100yr	62000.00	575.33	620.49		621.32	0.000299	7.74	12858.83	843.28	0.21
SixMileUsDs	56884 BF	500yr	82000.00	575.33	626.24		627.14	0.000295	8.37	17959.59	924.47	0.21
SixMileUsDs	55176 BE	10yr	36300.00	574.33	609.74		610.38	0.000315	6.52	6816.31	326.10	0.20
SixMileUsDs	55176 BE	50yr	53000.00	574.33	616.57		617.45	0.000343	7.73	9580.07	565.71	0.22

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	55176 BE	100yr	62000.00	574.33	619.80		620.76	0.000344	8.16	11538.56	622.58	0.22
SixMileUsDs	55176 BE	500yr	82000.00	574.33	625.42		626.56	0.000361	9.09	15144.62	665.76	0.23
SixMileUsDs	53410 BD	10yr	36300.00	574.33	609.26		609.84	0.000276	6.26	7447.57	388.64	0.19
SixMileUsDs	53410 BD	50yr	53000.00	574.33	616.10		616.86	0.000289	7.27	11249.33	704.59	0.20
SixMileUsDs	53410 BD	100yr	62000.00	574.33	619.35		620.16	0.000286	7.63	13606.21	768.51	0.21
SixMileUsDs	53410 BD	500yr	82000.00	574.33	624.99		625.92	0.000295	8.41	18103.97	819.23	0.21
SixMileUsDs	51916 BC	10yr	36300.00	574.33	609.12		609.46	0.000166	4.83	10690.27	602.08	0.15
SixMileUsDs	51916 BC	50yr	53000.00	574.33	616.01		616.43	0.000170	5.55	15056.06	679.97	0.16
SixMileUsDs	51916 BC	100yr	62000.00	574.33	619.26		619.73	0.000171	5.88	17515.02	1049.38	0.16
SixMileUsDs	51916 BC	500yr	82000.00	574.33	624.93		625.47	0.000177	6.49	23828.73	1161.51	0.17
SixMileUsDs	49973 BB	10yr	36300.00	573.33	608.42		609.01	0.000284	6.34	7303.10	351.13	0.20
SixMileUsDs	49973 BB	50yr	53000.00	573.33	615.13		615.96	0.000310	7.51	10194.35	638.91	0.21
SixMileUsDs	49973 BB	100yr	62000.00	573.33	618.32		619.24	0.000317	8.01	12638.84	830.44	0.22
SixMileUsDs	49973 BB	500yr	82000.00	573.33	623.93		624.97	0.000323	8.77	17480.41	892.12	0.22
SixMileUsDs	48402 BA	10yr	36300.00	573.33	607.93		608.55	0.000300	6.45	6860.43	307.97	0.20
SixMileUsDs	48402 BA	50yr	53000.00	573.33	614.59		615.45	0.000328	7.66	9022.56	357.38	0.22
SixMileUsDs	48402 BA	100yr	62000.00	573.33	617.73		618.72	0.000340	8.21	10674.31	870.83	0.22
SixMileUsDs	48402 BA	500yr	82000.00	573.33	623.25		624.42	0.000359	9.17	16430.30	1153.90	0.23
SixMileUsDs	46835 AZ	10yr	36300.00	575.16	607.66		608.07	0.000238	5.52	11492.52	738.97	0.17
SixMileUsDs	46835 AZ	50yr	53000.00	575.16	614.45		614.91	0.000223	6.08	16699.79	789.78	0.17
SixMileUsDs	46835 AZ	100yr	62000.00	575.16	617.67		618.15	0.000217	6.33	19252.11	799.15	0.17
SixMileUsDs	46835 AZ	500yr	82000.00	575.16	623.23		623.80	0.000226	7.03	23891.46	850.86	0.18
SixMileUsDs	44954 AY	10yr	36300.00	563.94	606.72		607.47	0.000385	7.17	6297.19	301.18	0.22
SixMileUsDs	44954 AY	50yr	53000.00	563.94	613.28		614.29	0.000425	8.46	8492.70	353.60	0.23
SixMileUsDs	44954 AY	100yr	62000.00	563.94	616.38		617.52	0.000439	9.03	9641.30	377.91	0.24
SixMileUsDs	44954 AY	500yr	82000.00	563.94	621.69		623.11	0.000489	10.29	14117.33	1045.71	0.26
SixMileUsDs	43497 AX	10yr	36300.00	572.78	606.36		606.93	0.000295	6.16	7200.15	389.26	0.19
SixMileUsDs	43497 AX	50yr	53000.00	572.78	612.95		613.68	0.000310	7.17	10596.40	670.42	0.20
SixMileUsDs	43497 AX	100yr	62000.00	572.78	616.09		616.88	0.000308	7.53	12883.39	809.70	0.21
SixMileUsDs	43497 AX	500yr	82000.00	572.78	621.49		622.39	0.000316	8.28	17543.01	885.40	0.21
SixMileUsDs	41423 AW	10yr	36300.00	570.87	605.38		606.17	0.000428	7.38	6225.96	340.46	0.23
SixMileUsDs	41423 AW	50yr	53000.00	570.87	612.04		612.93	0.000406	8.15	11076.95	869.09	0.23
SixMileUsDs	41423 AW	100yr	62000.00	570.87	615.32		616.18	0.000372	8.23	14028.70	951.61	0.22
SixMileUsDs	41423 AW	500yr	82000.00	570.87	620.85		621.68	0.000341	8.56	19540.23	1030.88	0.22

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	40041 AV	10yr	36300.00	568.91	605.11		605.62	0.000274	5.97	7887.25	413.94	0.19
SixMileUsDs	40041 AV	50yr	53000.00	568.91	611.72		612.40	0.000292	7.00	11164.93	729.86	0.20
SixMileUsDs	40041 AV	100yr	62000.00	568.91	614.99		615.69	0.000280	7.25	13749.93	859.17	0.20
SixMileUsDs	40041 AV	500yr	82000.00	568.91	620.46		621.24	0.000282	7.90	18940.67	1030.67	0.20
SixMileUsDs	38212 AU	10yr	36300.00	574.21	604.58		605.10	0.000298	5.93	8096.94	548.34	0.19
SixMileUsDs	38212 AU	50yr	53000.00	574.21	611.24		611.85	0.000284	6.64	12457.73	807.31	0.20
SixMileUsDs	38212 AU	100yr	62000.00	574.21	614.54		615.16	0.000268	6.83	15608.91	1124.88	0.19
SixMileUsDs	38212 AU	500yr	82000.00	574.21	620.07		620.71	0.000253	7.24	23642.05	1557.13	0.19
SixMileUsDs	36814 AT	10yr	36300.00	572.87	604.19		604.68	0.000286	5.86	8080.58	618.42	0.19
SixMileUsDs	36814 AT	50yr	53000.00	572.87	610.91		611.45	0.000256	6.36	13570.70	996.25	0.19
SixMileUsDs	36814 AT	100yr	62000.00	572.87	614.27		614.78	0.000228	6.37	16946.92	1011.38	0.18
SixMileUsDs	36814 AT	500yr	82000.00	572.87	619.83		620.35	0.000214	6.74	22894.08	1108.43	0.18
SixMileUsDs	35150 AS	10yr	36300.00	571.12	603.66	584.23	604.20	0.000296	5.97	6918.10	323.54	0.19
SixMileUsDs	35150 AS	50yr	53000.00	571.12	610.30	587.12	610.99	0.000297	6.85	10574.09	713.80	0.20
SixMileUsDs	35150 AS	100yr	62000.00	571.12	613.64	588.54	614.34	0.000284	7.10	13696.21	1288.39	0.20
SixMileUsDs	35150 AS	500yr	82000.00	571.12	619.30	591.50	619.96	0.000249	7.26	23324.84	2043.28	0.19
SixMileUsDs	34932 Bridge		Bridge									
SixMileUsDs	34703 AR	10yr	36300.00	569.84	603.44		604.01	0.000314	6.20	7248.35	504.90	0.20
SixMileUsDs	34703 AR	50yr	53000.00	569.84	610.20		610.85	0.000292	6.85	12401.34	1190.74	0.20
SixMileUsDs	34703 AR	100yr	62000.00	569.84	613.53		614.13	0.000259	6.84	17739.39	1931.22	0.19
SixMileUsDs	34703 AR	500yr	82000.00	569.84	619.35		619.81	0.000197	6.53	31540.58	2609.52	0.17
SixMileUsDs	34572	10yr	36300.00	570.95	603.49		603.89	0.001147	5.39	8178.06	693.80	0.18
SixMileUsDs	34572	50yr	53000.00	570.95	610.39		610.68	0.000753	5.06	16368.67	1644.33	0.15
SixMileUsDs	34572	100yr	62000.00	570.95	613.76		613.97	0.000547	4.58	22392.65	1901.53	0.13
SixMileUsDs	34572	500yr	82000.00	570.95	619.54		619.68	0.000349	4.02	34650.96	2235.99	0.11
SixMileUsDs	34378	10yr	36300.00	573.44	603.67		603.71	0.000167	2.04	27106.76	2357.78	0.07
SixMileUsDs	34378	50yr	53000.00	573.44	610.54		610.56	0.000094	1.78	45701.62	2887.83	0.05
SixMileUsDs	34378	100yr	62000.00	573.44	613.86		613.88	0.000075	1.69	55582.06	3083.79	0.05
SixMileUsDs	34378	500yr	82000.00	573.44	619.60		619.62	0.000058	1.63	73720.21	3211.69	0.04
SixMileUsDs	34154	10yr	36300.00	574.28	603.66		603.68	0.000093	1.49	35264.07	2513.51	0.05
SixMileUsDs	34154	50yr	53000.00	574.28	610.53		610.54	0.000060	1.39	53874.85	2855.13	0.04
SixMileUsDs	34154	100yr	62000.00	574.28	613.85		613.87	0.000049	1.35	63535.00	3011.46	0.04
SixMileUsDs	34154	500yr	82000.00	574.28	619.59		619.61	0.000041	1.35	82203.75	3589.53	0.04

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	34006 AQ	10yr	36300.00	577.16	603.54	585.40	603.65	0.000120	3.20	21734.08	2026.65	0.11
SixMileUsDs	34006 AQ	50yr	53000.00	577.16	610.45	587.36	610.53	0.000076	2.98	38553.50	2837.02	0.09
SixMileUsDs	34006 AQ	100yr	62000.00	577.16	613.79	588.85	613.85	0.000061	2.86	49386.26	3510.54	0.08
SixMileUsDs	34006 AQ	500yr	82000.00	577.16	619.55	591.59	619.60	0.000046	2.72	70634.71	3816.02	0.07
SixMileUsDs	33953 Dam		Inl Struct									
SixMileUsDs	33879	10yr	36300.00	572.06	603.49		603.62	0.000412	3.12	14410.94	1302.69	0.11
SixMileUsDs	33879	50yr	53000.00	572.06	610.40		610.49	0.000248	2.82	29709.60	2814.63	0.09
SixMileUsDs	33879	100yr	62000.00	572.06	613.76		613.83	0.000181	2.57	40377.40	3565.01	0.07
SixMileUsDs	33879	500yr	82000.00	572.06	619.53		619.57	0.000107	2.18	61697.96	3812.92	0.06
SixMileUsDs	33793	10yr	36300.00	570.64	603.43		603.58	0.000469	3.32	13493.89	1164.96	0.11
SixMileUsDs	33793	50yr	53000.00	570.64	610.37		610.47	0.000284	3.01	27445.86	2953.45	0.09
SixMileUsDs	33793	100yr	62000.00	570.64	613.73		613.81	0.000208	2.75	38564.46	3695.04	0.08
SixMileUsDs	33793	500yr	82000.00	570.64	619.52		619.56	0.000115	2.26	60595.35	3899.53	0.06
SixMileUsDs	33686	10yr	36300.00	570.63	603.44		603.53	0.000237	2.57	15959.39	1031.53	0.08
SixMileUsDs	33686	50yr	53000.00	570.63	610.35		610.44	0.000201	2.72	26873.63	2233.71	0.08
SixMileUsDs	33686	100yr	62000.00	570.63	613.70		613.79	0.000173	2.68	36450.01	3229.50	0.07
SixMileUsDs	33686	500yr	82000.00	570.63	619.49		619.55	0.000113	2.37	57142.63	3732.58	0.06
SixMileUsDs	33574	10yr	36300.00	558.50	603.44		603.50	0.000115	1.97	20569.43	919.40	0.06
SixMileUsDs	33574	50yr	53000.00	558.50	610.35		610.41	0.000113	2.21	30374.98	1971.98	0.06
SixMileUsDs	33574	100yr	62000.00	558.50	613.70		613.77	0.000112	2.32	38582.00	2897.43	0.06
SixMileUsDs	33574	500yr	82000.00	558.50	619.48		619.54	0.000090	2.25	57466.21	3415.65	0.06
SixMileUsDs	33454	10yr	36300.00	569.01	603.39		603.48	0.000213	2.52	16771.96	827.43	0.08
SixMileUsDs	33454	50yr	53000.00	569.01	610.30		610.39	0.000199	2.78	25095.47	1788.38	0.08
SixMileUsDs	33454	100yr	62000.00	569.01	613.64		613.75	0.000195	2.91	32928.47	2838.31	0.08
SixMileUsDs	33454	500yr	82000.00	569.01	619.45		619.52	0.000135	2.64	49784.12	2980.18	0.07
SixMileUsDs	33320	10yr	36300.00	568.22	603.35		603.45	0.000258	2.83	17504.91	1181.88	0.09
SixMileUsDs	33320	50yr	53000.00	568.22	610.27		610.36	0.000210	2.91	26590.25	1834.06	0.08
SixMileUsDs	33320	100yr	62000.00	568.22	613.63		613.72	0.000194	2.95	35216.02	2967.72	0.08
SixMileUsDs	33320	500yr	82000.00	568.22	619.44		619.50	0.000134	2.66	54733.05	3679.97	0.07
SixMileUsDs	33097 AP	10yr	36300.00	567.57	602.93		603.36	0.000231	5.86	10724.53	670.25	0.18
SixMileUsDs	33097 AP	50yr	53000.00	567.57	609.72		610.27	0.000243	6.80	17091.65	1933.37	0.19
SixMileUsDs	33097 AP	100yr	62000.00	567.57	613.15		613.63	0.000210	6.66	24880.73	2589.88	0.18
SixMileUsDs	33097 AP	500yr	82000.00	567.57	619.15		619.45	0.000139	5.91	40587.63	2632.52	0.15

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	32936	10yr	36300.00	568.44	602.92		603.27	0.000863	5.28	8690.25	460.17	0.16
SixMileUsDs	32936	50yr	53000.00	568.44	609.74		610.16	0.000878	6.02	14631.96	1764.36	0.17
SixMileUsDs	32936	100yr	62000.00	568.44	613.23		613.52	0.000630	5.39	21752.00	2194.96	0.14
SixMileUsDs	32936	500yr	82000.00	568.44	619.22		619.37	0.000339	4.31	35087.72	2231.21	0.11
SixMileUsDs	32638	10yr	36300.00	567.38	602.58		603.00	0.000952	5.54	7843.39	389.30	0.17
SixMileUsDs	32638	50yr	53000.00	567.38	609.45		609.90	0.000894	6.09	14203.63	1485.37	0.17
SixMileUsDs	32638	100yr	62000.00	567.38	613.03		613.33	0.000634	5.43	20027.81	1710.72	0.14
SixMileUsDs	32638	500yr	82000.00	567.38	619.07		619.26	0.000386	4.62	30857.23	1799.80	0.12
SixMileUsDs	31795 AO	10yr	37500.00	566.33	601.68		602.47	0.000394	7.54	7418.10	521.09	0.23
SixMileUsDs	31795 AO	50yr	54500.00	566.33	608.52		609.40	0.000369	8.28	11868.49	777.59	0.23
SixMileUsDs	31795 AO	100yr	64000.00	566.33	612.03		612.89	0.000342	8.44	14821.09	905.52	0.23
SixMileUsDs	31795 AO	500yr	86000.00	566.33	617.96		618.88	0.000338	9.12	22469.57	1490.41	0.23
SixMileUsDs	29614 AN	10yr	37500.00	565.33	600.45		601.48	0.000504	8.51	5659.88	256.74	0.26
SixMileUsDs	29614 AN	50yr	54500.00	565.33	607.00		608.37	0.000546	9.99	7409.65	277.60	0.28
SixMileUsDs	29614 AN	100yr	64000.00	565.33	610.17		611.85	0.000593	10.97	9362.55	951.64	0.30
SixMileUsDs	29614 AN	500yr	86000.00	565.33	616.45		617.93	0.000507	11.11	19089.92	2046.97	0.28
SixMileUsDs	28097 AM	10yr	37500.00	564.33	600.04		600.76	0.000345	7.04	7410.00	641.57	0.22
SixMileUsDs	28097 AM	50yr	54500.00	564.33	606.79		607.57	0.000322	7.70	12253.94	968.02	0.22
SixMileUsDs	28097 AM	100yr	64000.00	564.33	610.10		610.95	0.000323	8.14	16794.58	1815.84	0.22
SixMileUsDs	28097 AM	500yr	86000.00	564.33	616.57		617.16	0.000232	7.58	30349.59	2169.80	0.19
SixMileUsDs	26514 AL	10yr	37500.00	564.33	599.68		600.21	0.000279	6.35	10907.94	991.14	0.19
SixMileUsDs	26514 AL	50yr	54500.00	564.33	606.60		607.06	0.000220	6.41	17995.47	1111.63	0.18
SixMileUsDs	26514 AL	100yr	64000.00	564.33	610.01		610.43	0.000196	6.38	23709.41	2182.86	0.17
SixMileUsDs	26514 AL	500yr	86000.00	564.33	616.43		616.79	0.000162	6.37	38752.96	2403.45	0.16
SixMileUsDs	25135 AK	10yr	37500.00	564.33	598.81		599.69	0.000451	7.93	6597.58	347.75	0.25
SixMileUsDs	25135 AK	50yr	54500.00	564.33	605.53		606.58	0.000443	8.92	10063.97	727.13	0.25
SixMileUsDs	25135 AK	100yr	64000.00	564.33	608.94		609.99	0.000416	9.14	13721.05	1593.57	0.25
SixMileUsDs	25135 AK	500yr	86000.00	564.33	615.60		616.44	0.000322	8.87	26153.50	2052.65	0.22
SixMileUsDs	23775 AJ	10yr	37500.00	563.33	598.58		599.13	0.000266	6.16	8481.82	547.80	0.19
SixMileUsDs	23775 AJ	50yr	54500.00	563.33	605.35		606.00	0.000264	6.96	13878.45	1484.00	0.20
SixMileUsDs	23775 AJ	100yr	64000.00	563.33	608.81		609.44	0.000243	7.05	20894.84	2248.36	0.19
SixMileUsDs	23775 AJ	500yr	86000.00	563.33	615.59		616.00	0.000165	6.41	36433.56	2318.70	0.16
SixMileUsDs	21935 AI	10yr	37500.00	563.33	597.44		598.42	0.000510	8.27	6198.42	293.18	0.26

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	21935 AI	50yr	54500.00	563.33	603.95		605.26	0.000546	9.69	9236.42	885.98	0.28
SixMileUsDs	21935 AI	100yr	64000.00	563.33	607.31		608.72	0.000539	10.18	14781.00	2629.88	0.28
SixMileUsDs	21935 AI	500yr	86000.00	563.33	614.93		615.59	0.000281	8.24	35434.12	2748.08	0.21
SixMileUsDs	19696 AH	10yr	37500.00	564.00	596.35		597.28	0.000502	7.89	5856.40	278.84	0.26
SixMileUsDs	19696 AH	50yr	54500.00	564.00	602.82		604.04	0.000522	9.17	8582.15	835.40	0.27
SixMileUsDs	19696 AH	100yr	64000.00	564.00	606.25		607.52	0.000499	9.52	12360.47	1366.93	0.27
SixMileUsDs	19696 AH	500yr	86000.00	564.00	613.91		614.86	0.000350	8.98	24131.96	1704.95	0.23
SixMileUsDs	18407 AG	10yr	37500.00	563.00	595.86		596.65	0.000414	7.34	6637.35	332.48	0.23
SixMileUsDs	18407 AG	50yr	54500.00	563.00	602.34		603.37	0.000431	8.51	9083.08	444.99	0.25
SixMileUsDs	18407 AG	100yr	64000.00	563.00	605.76		606.88	0.000425	8.97	11023.73	658.76	0.25
SixMileUsDs	18407 AG	500yr	86000.00	563.00	613.18		614.37	0.000384	9.54	17773.02	1092.05	0.24
SixMileUsDs	16725 AF	10yr	37500.00	562.33	594.58		595.75	0.000645	8.90	5417.40	282.37	0.29
SixMileUsDs	16725 AF	50yr	54500.00	562.33	600.88		602.42	0.000675	10.37	7341.71	339.15	0.31
SixMileUsDs	16725 AF	100yr	64000.00	562.33	604.20		605.93	0.000679	11.04	8605.83	434.03	0.31
SixMileUsDs	16725 AF	500yr	86000.00	562.33	611.57		613.48	0.000624	11.88	13773.27	1098.88	0.31
SixMileUsDs	15278 AE	10yr	37500.00	562.33	593.80		594.83	0.000571	8.31	5597.60	341.43	0.27
SixMileUsDs	15278 AE	50yr	54500.00	562.33	600.16		601.45	0.000570	9.49	8032.53	488.16	0.28
SixMileUsDs	15278 AE	100yr	64000.00	562.33	603.59		604.94	0.000543	9.84	10016.09	660.76	0.28
SixMileUsDs	15278 AE	500yr	86000.00	562.33	611.20		612.54	0.000460	10.22	16279.89	1153.70	0.26
SixMileUsDs	13567 AD	10yr	37500.00	562.33	593.13		593.90	0.000439	7.15	6305.78	341.33	0.24
SixMileUsDs	13567 AD	50yr	54500.00	562.33	599.52		600.50	0.000441	8.22	8560.38	363.74	0.25
SixMileUsDs	13567 AD	100yr	64000.00	562.33	602.96		604.03	0.000432	8.66	10005.00	475.96	0.25
SixMileUsDs	13567 AD	500yr	86000.00	562.33	610.58		611.77	0.000391	9.31	15345.45	959.40	0.24
SixMileUsDs	11928 AC	10yr	37500.00	562.33	592.34		593.14	0.000490	7.25	5893.37	300.16	0.25
SixMileUsDs	11928 AC	50yr	54500.00	562.33	598.70		599.74	0.000490	8.35	7895.25	329.44	0.25
SixMileUsDs	11928 AC	100yr	64000.00	562.33	602.13		603.28	0.000482	8.84	9323.58	483.25	0.26
SixMileUsDs	11928 AC	500yr	86000.00	562.33	609.93		611.11	0.000406	9.22	15852.19	1102.37	0.24
SixMileUsDs	10164 AB	10yr	37500.00	561.33	591.51		592.28	0.000472	7.22	6099.87	325.27	0.24
SixMileUsDs	10164 AB	50yr	54500.00	561.33	597.91		598.88	0.000459	8.21	8448.51	412.69	0.25
SixMileUsDs	10164 AB	100yr	64000.00	561.33	601.37		602.43	0.000447	8.65	10527.03	824.11	0.25
SixMileUsDs	10164 AB	500yr	86000.00	561.33	609.50		610.39	0.000323	8.39	18530.97	1106.72	0.22
SixMileUsDs	8554 AA	10yr	37500.00	561.33	590.63		591.46	0.000542	7.56	5860.67	328.12	0.26
SixMileUsDs	8554 AA	50yr	54500.00	561.33	597.08		598.10	0.000510	8.49	8136.02	377.96	0.26
SixMileUsDs	8554 AA	100yr	64000.00	561.33	600.61		601.69	0.000478	8.80	9506.25	396.80	0.26

HEC-RAS Plan: Existing_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	8554 AA	500yr	86000.00	561.33	608.58		609.77	0.000420	9.42	13670.46	758.11	0.25
SixMileUsDs	7034 Z	10yr	37500.00	561.33	589.66		590.58	0.000612	7.85	5630.40	343.51	0.28
SixMileUsDs	7034 Z	50yr	54500.00	561.33	596.21		597.29	0.000549	8.67	8017.37	386.12	0.27
SixMileUsDs	7034 Z	100yr	64000.00	561.33	599.81		600.94	0.000506	8.94	9448.73	409.40	0.27
SixMileUsDs	7034 Z	500yr	86000.00	561.33	607.89		609.12	0.000432	9.48	13066.80	563.60	0.25
SixMileUsDs	5269 Y	10yr	37500.00	560.33	588.44		589.42	0.000700	8.05	5173.06	283.34	0.29
SixMileUsDs	5269 Y	50yr	54500.00	560.33	595.07		596.25	0.000618	8.92	7295.39	366.23	0.29
SixMileUsDs	5269 Y	100yr	64000.00	560.33	598.78		599.99	0.000556	9.14	8701.83	390.15	0.28
SixMileUsDs	5269 Y	500yr	86000.00	560.33	607.05		608.33	0.000455	9.55	13040.91	823.35	0.26
SixMileUsDs	3771 X	10yr	37500.00	560.33	587.88		588.50	0.000435	6.38	6421.06	351.92	0.23
SixMileUsDs	3771 X	50yr	54500.00	560.33	594.66		595.40	0.000383	7.07	8923.42	413.73	0.23
SixMileUsDs	3771 X	100yr	64000.00	560.33	598.44		599.21	0.000346	7.26	10509.20	424.40	0.22
SixMileUsDs	3771 X	500yr	86000.00	560.33	606.82		607.67	0.000287	7.65	14388.16	536.23	0.21
SixMileUsDs	1581 W	10yr	37500.00	560.33	587.11		587.60	0.000352	5.72	7376.62	440.53	0.21
SixMileUsDs	1581 W	50yr	54500.00	560.33	594.06		594.62	0.000293	6.20	10490.03	455.93	0.20
SixMileUsDs	1581 W	100yr	64000.00	560.33	597.92		598.50	0.000263	6.36	12262.21	463.50	0.19
SixMileUsDs	1581 W	500yr	86000.00	560.33	606.41		607.06	0.000222	6.77	16656.35	729.68	0.18
SixMileUsDs	496 V	10yr	38500.00	560.33	586.50	572.48	587.15	0.000475	6.58	6713.74	408.47	0.24
SixMileUsDs	496 V	50yr	56500.00	560.33	593.50	575.12	594.23	0.000393	7.13	9706.16	444.00	0.23
SixMileUsDs	496 V	100yr	66500.00	560.33	597.40	576.50	598.15	0.000349	7.28	11473.96	460.32	0.22
SixMileUsDs	496 V	500yr	88000.00	560.33	606.00	579.22	606.78	0.000275	7.50	16227.46	673.46	0.20

B2:

Corrected Effective Model Results for Non-Flood Discharges

GFT

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	67345 BM	20%	2000.00	579.33	587.15		587.24	0.000349	2.47	857.18	139.78	0.17
SixMileUsDs	67345 BM	25%	1500.00	579.33	586.06		586.13	0.000359	2.22	706.05	136.91	0.17
SixMileUsDs	67345 BM	50%	700.00	579.33	583.86		583.91	0.000419	1.73	412.04	128.51	0.16
SixMileUsDs	67345 BM	75%	300.00	579.33	582.14		582.17	0.000611	1.45	206.21	103.16	0.18
SixMileUsDs	67345 BM	80%	250.00	579.33	581.82		581.86	0.000671	1.43	175.05	96.57	0.19
SixMileUsDs	67345 BM	Aug 21	190.00	579.33	581.42		581.45	0.000768	1.38	137.35	87.94	0.20
SixMileUsDs	67345 BM	90%	150.00	579.33	581.12		581.15	0.000849	1.34	112.28	81.71	0.20
SixMileUsDs	66163 BL	20%	2000.00	578.33	586.88		586.93	0.000192	1.89	1080.16	158.53	0.13
SixMileUsDs	66163 BL	25%	1500.00	578.33	585.78		585.82	0.000190	1.68	906.65	157.81	0.12
SixMileUsDs	66163 BL	50%	700.00	578.33	583.54		583.57	0.000200	1.26	557.99	151.85	0.11
SixMileUsDs	66163 BL	75%	300.00	578.33	581.70		581.72	0.000253	1.03	292.11	127.33	0.12
SixMileUsDs	66163 BL	80%	250.00	578.33	581.35		581.37	0.000274	1.00	248.84	118.85	0.12
SixMileUsDs	66163 BL	Aug 21	190.00	578.33	580.87		580.89	0.000312	0.98	194.73	107.30	0.13
SixMileUsDs	66163 BL	90%	150.00	578.33	580.51		580.52	0.000356	0.96	157.02	98.46	0.13
SixMileUsDs	65093 BK	20%	2000.00	577.33	586.70		586.75	0.000148	1.69	1207.16	175.60	0.11
SixMileUsDs	65093 BK	25%	1500.00	577.33	585.61		585.64	0.000143	1.49	1017.20	171.57	0.11
SixMileUsDs	65093 BK	50%	700.00	577.33	583.37		583.39	0.000136	1.09	643.32	162.52	0.10
SixMileUsDs	65093 BK	75%	300.00	577.33	581.52		581.53	0.000132	0.83	361.74	132.92	0.09
SixMileUsDs	65093 BK	80%	250.00	577.33	581.16		581.17	0.000133	0.79	315.48	124.95	0.09
SixMileUsDs	65093 BK	Aug 21	190.00	577.33	580.67		580.68	0.000135	0.74	256.75	114.03	0.09
SixMileUsDs	65093 BK	90%	150.00	577.33	580.29		580.30	0.000137	0.70	215.21	105.64	0.09
SixMileUsDs	63115 BJ	20%	2000.00	577.33	586.41		586.45	0.000150	1.68	1199.94	169.82	0.11
SixMileUsDs	63115 BJ	25%	1500.00	577.33	585.33		585.36	0.000145	1.48	1016.44	168.40	0.11
SixMileUsDs	63115 BJ	50%	700.00	577.33	583.11		583.12	0.000136	1.08	646.99	163.99	0.10
SixMileUsDs	63115 BJ	75%	300.00	577.33	581.26		581.27	0.000126	0.82	367.72	134.13	0.09
SixMileUsDs	63115 BJ	80%	250.00	577.33	580.90		580.91	0.000128	0.78	320.45	126.65	0.09
SixMileUsDs	63115 BJ	Aug 21	190.00	577.33	580.40		580.41	0.000133	0.73	259.86	116.35	0.09
SixMileUsDs	63115 BJ	90%	150.00	577.33	580.02		580.02	0.000139	0.69	216.43	108.37	0.09
SixMileUsDs	61540 BI	20%	2000.00	576.33	586.10		586.17	0.000220	2.08	986.85	138.61	0.13
SixMileUsDs	61540 BI	25%	1500.00	576.33	585.04		585.09	0.000207	1.82	839.45	137.81	0.13
SixMileUsDs	61540 BI	50%	700.00	576.33	582.85		582.88	0.000180	1.29	544.35	130.74	0.11
SixMileUsDs	61540 BI	75%	300.00	576.33	581.04		581.05	0.000161	0.94	317.86	109.41	0.10
SixMileUsDs	61540 BI	80%	250.00	576.33	580.68		580.69	0.000152	0.89	280.24	100.60	0.09
SixMileUsDs	61540 BI	Aug 21	190.00	576.33	580.19		580.20	0.000136	0.81	233.89	88.53	0.09
SixMileUsDs	61540 BI	90%	150.00	576.33	579.81		579.82	0.000119	0.74	202.34	79.27	0.08
SixMileUsDs	60064 BH	20%	2000.00	576.33	585.48		585.52	0.001226	1.63	1236.70	177.54	0.11
SixMileUsDs	60064 BH	25%	1500.00	576.33	584.44		584.48	0.001155	1.43	1055.47	174.89	0.10

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	60064 BH	50%	700.00	576.33	582.34		582.35	0.001000	1.01	693.46	168.63	0.09
SixMileUsDs	60064 BH	75%	300.00	576.33	580.59		580.59	0.000808	0.72	416.35	141.80	0.07
SixMileUsDs	60064 BH	80%	250.00	576.33	580.25		580.26	0.000780	0.68	369.76	134.85	0.07
SixMileUsDs	60064 BH	Aug 21	190.00	576.33	579.80		579.81	0.000727	0.61	311.21	125.56	0.07
SixMileUsDs	60064 BH	90%	150.00	576.33	579.47		579.47	0.000671	0.55	270.52	118.68	0.06
SixMileUsDs	58383 BG	20%	2000.00	575.33	584.80		584.86	0.000192	1.91	1055.30	150.69	0.13
SixMileUsDs	58383 BG	25%	1500.00	575.33	583.82		583.87	0.000175	1.66	909.07	148.58	0.12
SixMileUsDs	58383 BG	50%	700.00	575.33	581.87		581.89	0.000126	1.12	623.97	140.17	0.09
SixMileUsDs	58383 BG	75%	300.00	575.33	580.31		580.32	0.000069	0.71	420.52	119.08	0.07
SixMileUsDs	58383 BG	80%	250.00	575.33	580.00		580.00	0.000062	0.65	384.13	114.76	0.06
SixMileUsDs	58383 BG	Aug 21	190.00	575.33	579.59		579.59	0.000051	0.56	338.18	109.05	0.06
SixMileUsDs	58383 BG	90%	150.00	575.33	579.29		579.29	0.000042	0.49	306.13	104.89	0.05
SixMileUsDs	56884 BF	20%	2000.00	575.33	584.49		584.54	0.000230	1.90	1056.54	171.87	0.13
SixMileUsDs	56884 BF	25%	1500.00	575.33	583.53		583.57	0.000221	1.68	893.51	168.35	0.13
SixMileUsDs	56884 BF	50%	700.00	575.33	581.63		581.66	0.000197	1.21	577.39	162.04	0.11
SixMileUsDs	56884 BF	75%	300.00	575.33	580.16		580.18	0.000134	0.83	359.63	132.52	0.09
SixMileUsDs	56884 BF	80%	250.00	575.33	579.87		579.87	0.000127	0.78	320.91	126.04	0.09
SixMileUsDs	56884 BF	Aug 21	190.00	575.33	579.47		579.48	0.000114	0.70	273.22	117.56	0.08
SixMileUsDs	56884 BF	90%	150.00	575.33	579.19		579.20	0.000101	0.62	240.87	111.45	0.07
SixMileUsDs	55176 BE	20%	2000.00	574.33	584.16		584.20	0.000170	1.76	1138.37	160.82	0.12
SixMileUsDs	55176 BE	25%	1500.00	574.33	583.23		583.27	0.000146	1.51	991.39	157.68	0.11
SixMileUsDs	55176 BE	50%	700.00	574.33	581.42		581.44	0.000088	0.99	710.54	148.17	0.08
SixMileUsDs	55176 BE	75%	300.00	574.33	580.06		580.06	0.000038	0.57	521.80	129.29	0.05
SixMileUsDs	55176 BE	80%	250.00	574.33	579.77		579.78	0.000032	0.52	485.26	125.47	0.05
SixMileUsDs	55176 BE	Aug 21	190.00	574.33	579.40		579.40	0.000024	0.43	439.37	120.50	0.04
SixMileUsDs	55176 BE	90%	150.00	574.33	579.13		579.13	0.000019	0.37	407.61	116.93	0.03
SixMileUsDs	53410 BD	20%	2000.00	574.33	583.89		583.93	0.000141	1.63	1237.60	179.46	0.11
SixMileUsDs	53410 BD	25%	1500.00	574.33	583.00		583.03	0.000123	1.40	1078.56	177.52	0.10
SixMileUsDs	53410 BD	50%	700.00	574.33	581.28		581.29	0.000075	0.90	781.44	167.56	0.07
SixMileUsDs	53410 BD	75%	300.00	574.33	580.00		580.00	0.000031	0.52	581.36	146.23	0.05
SixMileUsDs	53410 BD	80%	250.00	574.33	579.72		579.72	0.000026	0.46	541.31	141.95	0.04
SixMileUsDs	53410 BD	Aug 21	190.00	574.33	579.36		579.36	0.000020	0.39	491.07	136.39	0.04
SixMileUsDs	53410 BD	90%	150.00	574.33	579.10		579.10	0.000015	0.33	456.32	132.41	0.03
SixMileUsDs	51916 BC	20%	2000.00	574.33	583.71		583.74	0.000106	1.37	1473.85	223.59	0.09
SixMileUsDs	51916 BC	25%	1500.00	574.33	582.84		582.86	0.000094	1.18	1279.41	222.38	0.09
SixMileUsDs	51916 BC	50%	700.00	574.33	581.18		581.19	0.000059	0.76	919.22	209.81	0.06
SixMileUsDs	51916 BC	75%	300.00	574.33	579.96		579.96	0.000025	0.44	677.82	183.01	0.04

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	51916 BC	80%	250.00	574.33	579.69		579.69	0.000021	0.40	628.89	176.97	0.04
SixMileUsDs	51916 BC	Aug 21	190.00	574.33	579.33		579.34	0.000016	0.33	567.82	169.12	0.03
SixMileUsDs	51916 BC	90%	150.00	574.33	579.08		579.08	0.000012	0.29	525.84	163.52	0.03
SixMileUsDs	49973 BB	20%	2000.00	573.33	583.49		583.52	0.000119	1.56	1298.68	180.40	0.10
SixMileUsDs	49973 BB	25%	1500.00	573.33	582.65		582.68	0.000099	1.32	1148.35	178.12	0.09
SixMileUsDs	49973 BB	50%	700.00	573.33	581.08		581.09	0.000052	0.80	873.93	169.87	0.06
SixMileUsDs	49973 BB	75%	300.00	573.33	579.92		579.92	0.000018	0.44	688.30	151.10	0.04
SixMileUsDs	49973 BB	80%	250.00	573.33	579.65		579.65	0.000015	0.39	648.76	147.35	0.03
SixMileUsDs	49973 BB	Aug 21	190.00	573.33	579.31		579.31	0.000011	0.32	598.92	142.49	0.03
SixMileUsDs	49973 BB	90%	150.00	573.33	579.06		579.06	0.000008	0.27	564.30	139.01	0.02
SixMileUsDs	48402 BA	20%	2000.00	573.33	583.29		583.33	0.000131	1.60	1262.02	178.51	0.10
SixMileUsDs	48402 BA	25%	1500.00	573.33	582.48		582.51	0.000109	1.35	1118.75	177.99	0.09
SixMileUsDs	48402 BA	50%	700.00	573.33	580.99		581.00	0.000056	0.82	857.69	169.19	0.06
SixMileUsDs	48402 BA	75%	300.00	573.33	579.89		579.89	0.000019	0.44	680.48	152.66	0.04
SixMileUsDs	48402 BA	80%	250.00	573.33	579.63		579.63	0.000016	0.39	641.36	148.79	0.03
SixMileUsDs	48402 BA	Aug 21	190.00	573.33	579.29		579.29	0.000011	0.32	592.05	143.77	0.03
SixMileUsDs	48402 BA	90%	150.00	573.33	579.05		579.05	0.000008	0.27	557.78	140.17	0.02
SixMileUsDs	46835 AZ	20%	2000.00	575.16	583.07		583.11	0.000152	1.63	1233.83	179.17	0.11
SixMileUsDs	46835 AZ	25%	1500.00	575.16	582.30		582.33	0.000125	1.37	1097.33	177.63	0.10
SixMileUsDs	46835 AZ	50%	700.00	575.16	580.90		580.91	0.000060	0.82	852.87	170.73	0.06
SixMileUsDs	46835 AZ	75%	300.00	575.16	579.86		579.86	0.000022	0.44	678.78	163.76	0.04
SixMileUsDs	46835 AZ	80%	250.00	575.16	579.60		579.60	0.000019	0.39	637.17	163.75	0.04
SixMileUsDs	46835 AZ	Aug 21	190.00	575.16	579.27		579.27	0.000015	0.33	583.10	163.73	0.03
SixMileUsDs	46835 AZ	90%	150.00	575.16	579.03		579.04	0.000011	0.28	544.39	163.71	0.03
SixMileUsDs	44954 AY	20%	2000.00	563.94	582.89		582.92	0.000068	1.39	1436.50	134.87	0.08
SixMileUsDs	44954 AY	25%	1500.00	563.94	582.17		582.19	0.000048	1.12	1339.88	134.13	0.06
SixMileUsDs	44954 AY	50%	700.00	563.94	580.85		580.86	0.000015	0.60	1165.72	126.99	0.03
SixMileUsDs	44954 AY	75%	300.00	563.94	579.84		579.84	0.000004	0.29	1040.40	121.69	0.02
SixMileUsDs	44954 AY	80%	250.00	563.94	579.59		579.59	0.000003	0.25	1009.86	121.36	0.02
SixMileUsDs	44954 AY	Aug 21	190.00	563.94	579.26		579.26	0.000002	0.20	970.26	120.93	0.01
SixMileUsDs	44954 AY	90%	150.00	563.94	579.03		579.03	0.000001	0.16	941.97	120.61	0.01
SixMileUsDs	43497 AX	20%	2000.00	572.78	582.78		582.81	0.000089	1.40	1429.56	174.81	0.09
SixMileUsDs	43497 AX	25%	1500.00	572.78	582.09		582.11	0.000067	1.15	1309.71	173.98	0.07
SixMileUsDs	43497 AX	50%	700.00	572.78	580.82		580.83	0.000025	0.64	1094.07	166.96	0.04
SixMileUsDs	43497 AX	75%	300.00	572.78	579.83		579.84	0.000008	0.32	932.67	160.91	0.02
SixMileUsDs	43497 AX	80%	250.00	572.78	579.58		579.59	0.000006	0.28	892.61	160.19	0.02
SixMileUsDs	43497 AX	Aug 21	190.00	572.78	579.26		579.26	0.000004	0.23	840.72	159.24	0.02

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	43497 AX	90%	150.00	572.78	579.03		579.03	0.000003	0.19	803.68	158.56	0.01
SixMileUsDs	41423 AW	20%	2000.00	570.87	582.59		582.62	0.000086	1.48	1360.61	148.56	0.08
SixMileUsDs	41423 AW	25%	1500.00	570.87	581.95		581.98	0.000061	1.19	1266.69	147.06	0.07
SixMileUsDs	41423 AW	50%	700.00	570.87	580.78		580.78	0.000021	0.64	1095.62	142.36	0.04
SixMileUsDs	41423 AW	75%	300.00	570.87	579.82		579.82	0.000006	0.31	963.40	136.47	0.02
SixMileUsDs	41423 AW	80%	250.00	570.87	579.57		579.58	0.000004	0.27	929.75	136.46	0.02
SixMileUsDs	41423 AW	Aug 21	190.00	570.87	579.25		579.25	0.000003	0.21	885.87	136.44	0.01
SixMileUsDs	41423 AW	90%	150.00	570.87	579.02		579.02	0.000002	0.18	854.36	136.42	0.01
SixMileUsDs	40041 AV	20%	2000.00	568.91	582.49		582.51	0.000073	1.31	1549.85	192.37	0.08
SixMileUsDs	40041 AV	25%	1500.00	568.91	581.88		581.90	0.000052	1.05	1434.33	189.54	0.07
SixMileUsDs	40041 AV	50%	700.00	568.91	580.75		580.75	0.000019	0.57	1221.47	182.58	0.04
SixMileUsDs	40041 AV	75%	300.00	568.91	579.81		579.81	0.000005	0.28	1056.93	170.95	0.02
SixMileUsDs	40041 AV	80%	250.00	568.91	579.57		579.57	0.000004	0.25	1015.12	170.35	0.02
SixMileUsDs	40041 AV	Aug 21	190.00	568.91	579.25		579.25	0.000003	0.20	960.77	169.56	0.01
SixMileUsDs	40041 AV	90%	150.00	568.91	579.02		579.02	0.000002	0.16	921.87	169.00	0.01
SixMileUsDs	38212 AU	20%	2000.00	574.21	582.31		582.34	0.000119	1.45	1379.34	196.65	0.10
SixMileUsDs	38212 AU	25%	1500.00	574.21	581.75		581.78	0.000088	1.18	1269.91	195.97	0.08
SixMileUsDs	38212 AU	50%	700.00	574.21	580.70		580.71	0.000033	0.66	1065.97	191.32	0.05
SixMileUsDs	38212 AU	75%	300.00	574.21	579.80		579.80	0.000010	0.33	896.26	185.78	0.03
SixMileUsDs	38212 AU	80%	250.00	574.21	579.56		579.56	0.000009	0.29	851.31	185.33	0.02
SixMileUsDs	38212 AU	Aug 21	190.00	574.21	579.24		579.24	0.000006	0.24	792.74	184.75	0.02
SixMileUsDs	38212 AU	90%	150.00	574.21	579.01		579.01	0.000005	0.20	750.74	184.33	0.02
SixMileUsDs	36814 AT	20%	2000.00	572.87	582.16		582.19	0.000098	1.37	1461.04	201.63	0.09
SixMileUsDs	36814 AT	25%	1500.00	572.87	581.65		581.67	0.000070	1.11	1357.73	197.08	0.07
SixMileUsDs	36814 AT	50%	700.00	572.87	580.66		580.67	0.000024	0.60	1167.92	190.34	0.04
SixMileUsDs	36814 AT	75%	300.00	572.87	579.79		579.79	0.000007	0.30	1004.86	183.08	0.02
SixMileUsDs	36814 AT	80%	250.00	572.87	579.55		579.55	0.000006	0.26	960.94	182.85	0.02
SixMileUsDs	36814 AT	Aug 21	190.00	572.87	579.23		579.23	0.000004	0.21	903.60	182.55	0.02
SixMileUsDs	36814 AT	90%	150.00	572.87	579.01		579.01	0.000003	0.17	862.39	182.33	0.01
SixMileUsDs	35150 AS	20%	2000.00	571.12	582.02	574.61	582.05	0.000077	1.27	1580.08	201.97	0.08
SixMileUsDs	35150 AS	25%	1500.00	571.12	581.55	574.29	581.56	0.000052	1.01	1485.94	198.26	0.06
SixMileUsDs	35150 AS	50%	700.00	571.12	580.63	573.59	580.64	0.000017	0.54	1304.81	194.87	0.04
SixMileUsDs	35150 AS	75%	300.00	571.12	579.78	573.15	579.78	0.000005	0.26	1141.93	186.61	0.02
SixMileUsDs	35150 AS	80%	250.00	571.12	579.54	573.06	579.54	0.000004	0.23	1097.58	185.85	0.02
SixMileUsDs	35150 AS	Aug 21	190.00	571.12	579.23	572.96	579.23	0.000003	0.18	1039.81	184.86	0.01
SixMileUsDs	35150 AS	90%	150.00	571.12	579.00	572.82	579.00	0.000002	0.15	998.40	184.15	0.01

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	34932 Bridge		Bridge									
SixMileUsDs	34703 AR	20%	2000.00	569.84	581.98		582.01	0.000079	1.32	1519.49	189.07	0.08
SixMileUsDs	34703 AR	25%	1500.00	569.84	581.52		581.54	0.000054	1.05	1432.97	188.01	0.07
SixMileUsDs	34703 AR	50%	700.00	569.84	580.62		580.63	0.000017	0.55	1265.25	185.77	0.04
SixMileUsDs	34703 AR	75%	300.00	569.84	579.78		579.78	0.000005	0.27	1109.05	183.58	0.02
SixMileUsDs	34703 AR	80%	250.00	569.84	579.54		579.54	0.000004	0.23	1065.50	182.90	0.02
SixMileUsDs	34703 AR	Aug 21	190.00	569.84	579.23		579.23	0.000003	0.19	1008.82	181.60	0.01
SixMileUsDs	34703 AR	90%	150.00	569.84	579.00		579.00	0.000002	0.15	968.37	179.45	0.01
SixMileUsDs	34572	20%	2000.00	570.95	581.95		581.98	0.000534	1.44	1388.01	204.18	0.10
SixMileUsDs	34572	25%	1500.00	570.95	581.50		581.52	0.000374	1.16	1296.38	202.79	0.08
SixMileUsDs	34572	50%	700.00	570.95	580.62		580.62	0.000131	0.63	1118.14	200.08	0.05
SixMileUsDs	34572	75%	300.00	570.95	579.77		579.78	0.000041	0.32	950.93	197.41	0.03
SixMileUsDs	34572	80%	250.00	570.95	579.54		579.54	0.000033	0.28	904.18	196.58	0.02
SixMileUsDs	34572	Aug 21	190.00	570.95	579.23		579.23	0.000024	0.23	843.31	195.38	0.02
SixMileUsDs	34572	90%	150.00	570.95	579.00		579.00	0.000018	0.19	799.81	193.56	0.02
SixMileUsDs	34378	20%	2000.00	573.44	581.82		581.85	0.000841	1.57	1278.56	237.02	0.12
SixMileUsDs	34378	25%	1500.00	573.44	581.40		581.43	0.000614	1.27	1181.13	236.15	0.10
SixMileUsDs	34378	50%	700.00	573.44	580.58		580.59	0.000242	0.71	987.28	234.42	0.06
SixMileUsDs	34378	75%	300.00	573.44	579.76		579.76	0.000090	0.38	796.33	232.70	0.04
SixMileUsDs	34378	80%	250.00	573.44	579.53		579.53	0.000079	0.34	741.61	232.21	0.03
SixMileUsDs	34378	Aug 21	190.00	573.44	579.22		579.22	0.000064	0.28	670.29	230.37	0.03
SixMileUsDs	34378	90%	150.00	573.44	579.00		579.00	0.000051	0.24	619.49	227.44	0.03
SixMileUsDs	34154	20%	2000.00	574.28	581.56		581.61	0.001489	1.78	1158.14	315.81	0.15
SixMileUsDs	34154	25%	1500.00	574.28	581.21		581.25	0.001122	1.46	1051.89	299.59	0.13
SixMileUsDs	34154	50%	700.00	574.28	580.50		580.51	0.000484	0.84	842.28	277.93	0.08
SixMileUsDs	34154	75%	300.00	574.28	579.73		579.73	0.000223	0.47	635.11	265.09	0.05
SixMileUsDs	34154	80%	250.00	574.28	579.50		579.50	0.000216	0.44	573.66	263.25	0.05
SixMileUsDs	34154	Aug 21	190.00	574.28	579.19		579.20	0.000202	0.39	494.11	260.54	0.05
SixMileUsDs	34154	90%	150.00	574.28	578.98		578.98	0.000187	0.34	437.87	255.57	0.05
SixMileUsDs	34006 AQ	20%	2000.00	577.16	581.45	578.74	581.50	0.000446	1.79	1122.65	300.63	0.16
SixMileUsDs	34006 AQ	25%	1500.00	577.16	581.13	578.53	581.16	0.000331	1.47	1027.66	299.32	0.14
SixMileUsDs	34006 AQ	50%	700.00	577.16	580.47	578.13	580.48	0.000142	0.85	829.68	296.58	0.09
SixMileUsDs	34006 AQ	75%	300.00	577.16	579.71	577.87	579.72	0.000071	0.50	607.46	293.46	0.06
SixMileUsDs	34006 AQ	80%	250.00	577.16	579.48	577.83	579.48	0.000072	0.47	539.31	292.50	0.06
SixMileUsDs	34006 AQ	Aug 21	190.00	577.16	579.18	577.76	579.18	0.000073	0.42	450.85	289.84	0.06
SixMileUsDs	34006 AQ	90%	150.00	577.16	578.96	577.71	578.96	0.000073	0.39	388.20	286.37	0.06

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33953 Dam		Inl Struct									
SixMileUsDs	33879	20%	2000.00	572.06	579.47		579.55	0.005034	2.20	909.76	380.31	0.25
SixMileUsDs	33879	25%	1500.00	572.06	579.13		579.19	0.004642	1.93	780.56	376.11	0.24
SixMileUsDs	33879	50%	700.00	572.06	578.39		578.42	0.004186	1.39	503.92	366.69	0.21
SixMileUsDs	33879	75%	300.00	572.06	575.96		576.12	0.010348	3.20	93.72	35.78	0.35
SixMileUsDs	33879	80%	250.00	572.06	575.63		575.78	0.010867	3.05	82.01	35.19	0.35
SixMileUsDs	33879	Aug 21	190.00	572.06	575.19		575.31	0.011508	2.86	66.55	33.09	0.35
SixMileUsDs	33879	90%	150.00	572.06	574.83		574.94	0.011782	2.72	55.21	30.13	0.35
SixMileUsDs	33793	20%	2000.00	570.64	577.74	577.74	578.30	0.119133	5.98	334.49	332.75	1.05
SixMileUsDs	33793	25%	1500.00	570.64	577.57	577.57	578.03	0.123932	5.43	276.50	327.81	1.04
SixMileUsDs	33793	50%	700.00	570.64	577.67	574.46	577.75	0.018890	2.27	308.76	330.56	0.41
SixMileUsDs	33793	75%	300.00	570.64	575.13	573.16	575.30	0.008784	3.33	90.21	26.35	0.32
SixMileUsDs	33793	80%	250.00	570.64	574.85	572.96	575.00	0.007729	3.01	83.02	25.73	0.30
SixMileUsDs	33793	Aug 21	190.00	570.64	574.47	572.71	574.57	0.006573	2.60	73.10	25.42	0.27
SixMileUsDs	33793	90%	150.00	570.64	574.16	572.52	574.25	0.005751	2.29	65.44	25.18	0.25
SixMileUsDs	33686	20%	2000.00	570.63	576.35		576.39	0.001629	1.56	1278.29	383.70	0.15
SixMileUsDs	33686	25%	1500.00	570.63	575.30		575.35	0.003109	1.71	878.93	376.32	0.20
SixMileUsDs	33686	50%	700.00	570.63	573.14	573.14	573.52	0.127863	4.98	140.61	195.54	1.03
SixMileUsDs	33686	75%	300.00	570.63	572.62	572.62	572.93	0.129912	4.51	66.47	107.87	1.01
SixMileUsDs	33686	80%	250.00	570.63	572.52	572.52	572.82	0.138478	4.44	56.29	98.18	1.03
SixMileUsDs	33686	Aug 21	190.00	570.63	572.38	572.38	572.67	0.135907	4.30	44.21	79.76	1.02
SixMileUsDs	33686	90%	150.00	570.63	572.24	572.24	572.54	0.136290	4.38	34.28	60.15	1.02
SixMileUsDs	33574	20%	2000.00	558.50	576.35		576.36	0.000072	0.56	3555.70	485.10	0.04
SixMileUsDs	33574	25%	1500.00	558.50	575.31		575.31	0.000066	0.49	3052.19	477.82	0.03
SixMileUsDs	33574	50%	700.00	558.50	573.20		573.21	0.000050	0.34	2069.13	451.84	0.03
SixMileUsDs	33574	75%	300.00	558.50	571.88		571.88	0.000017	0.20	1511.76	328.41	0.02
SixMileUsDs	33574	80%	250.00	558.50	571.69		571.69	0.000012	0.17	1454.26	304.87	0.01
SixMileUsDs	33574	Aug 21	190.00	558.50	571.45		571.45	0.000007	0.14	1384.52	274.37	0.01
SixMileUsDs	33574	90%	150.00	558.50	571.25		571.25	0.000005	0.11	1330.79	257.72	0.01
SixMileUsDs	33454	20%	2000.00	569.01	576.31		576.34	0.000710	1.22	1650.85	392.82	0.10
SixMileUsDs	33454	25%	1500.00	569.01	575.27		575.29	0.001018	1.21	1241.57	388.75	0.12
SixMileUsDs	33454	50%	700.00	569.01	573.16		573.19	0.001967	1.37	511.12	215.80	0.16
SixMileUsDs	33454	75%	300.00	569.01	571.85		571.87	0.002785	1.17	256.00	177.75	0.17
SixMileUsDs	33454	80%	250.00	569.01	571.67		571.69	0.002781	1.11	225.23	169.54	0.17
SixMileUsDs	33454	Aug 21	190.00	569.01	571.43		571.45	0.002931	1.02	185.78	164.61	0.17
SixMileUsDs	33454	90%	150.00	569.01	571.23		571.25	0.003342	0.98	153.35	160.41	0.18

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33320	20%	2000.00	568.22	576.21		576.24	0.000696	1.38	1456.46	285.76	0.11
SixMileUsDs	33320	25%	1500.00	568.22	575.14		575.16	0.000842	1.30	1152.85	280.14	0.11
SixMileUsDs	33320	50%	700.00	568.22	572.95		572.97	0.001335	1.20	582.08	223.41	0.13
SixMileUsDs	33320	75%	300.00	568.22	571.50		571.52	0.002370	1.08	278.15	194.06	0.16
SixMileUsDs	33320	80%	250.00	568.22	571.30		571.31	0.002733	1.05	238.43	193.23	0.17
SixMileUsDs	33320	Aug 21	190.00	568.22	571.03		571.04	0.003187	1.01	187.55	179.64	0.17
SixMileUsDs	33320	90%	150.00	568.22	570.81		570.83	0.002878	0.98	152.91	142.28	0.17
SixMileUsDs	33097 AP	20%	2000.00	567.57	576.09		576.15	0.000231	2.01	1044.47	169.12	0.14
SixMileUsDs	33097 AP	25%	1500.00	567.57	575.02		575.07	0.000233	1.80	865.59	165.62	0.13
SixMileUsDs	33097 AP	50%	700.00	567.57	572.83		572.85	0.000261	1.38	518.71	153.95	0.13
SixMileUsDs	33097 AP	75%	300.00	567.57	571.36		571.37	0.000298	1.02	295.43	150.12	0.13
SixMileUsDs	33097 AP	80%	250.00	567.57	571.15		571.16	0.000299	0.95	263.95	149.42	0.12
SixMileUsDs	33097 AP	Aug 21	190.00	567.57	570.87		570.88	0.000300	0.85	222.81	148.34	0.12
SixMileUsDs	33097 AP	90%	150.00	567.57	570.67		570.67	0.000300	0.78	192.58	144.24	0.12
SixMileUsDs	32936	20%	2000.00	568.44	576.03		576.08	0.001002	1.92	1044.26	163.44	0.13
SixMileUsDs	32936	25%	1500.00	568.44	574.96		575.00	0.001020	1.73	870.89	160.16	0.13
SixMileUsDs	32936	50%	700.00	568.44	572.75		572.78	0.001140	1.33	525.78	153.46	0.13
SixMileUsDs	32936	75%	300.00	568.44	571.27		571.29	0.001280	0.99	301.60	149.66	0.12
SixMileUsDs	32936	80%	250.00	568.44	571.06		571.07	0.001274	0.93	270.21	148.99	0.12
SixMileUsDs	32936	Aug 21	190.00	568.44	570.78		570.80	0.001256	0.83	229.19	147.55	0.12
SixMileUsDs	32936	90%	150.00	568.44	570.58		570.59	0.001212	0.75	199.15	144.20	0.11
SixMileUsDs	32638	20%	2000.00	567.38	575.72		575.78	0.001038	1.92	1057.48	173.91	0.13
SixMileUsDs	32638	25%	1500.00	567.38	574.64		574.69	0.001100	1.74	870.11	171.59	0.13
SixMileUsDs	32638	50%	700.00	567.38	572.34		572.37	0.001617	1.45	484.14	163.80	0.15
SixMileUsDs	32638	75%	300.00	567.38	570.59		570.62	0.004794	1.48	203.11	150.33	0.22
SixMileUsDs	32638	80%	250.00	567.38	570.32		570.35	0.006155	1.53	163.63	138.47	0.25
SixMileUsDs	32638	Aug 21	190.00	567.38	569.97		570.01	0.008698	1.61	118.20	120.07	0.29
SixMileUsDs	32638	90%	150.00	567.38	569.71		569.76	0.011948	1.68	89.16	107.33	0.33
SixMileUsDs	31795 AO	20%	2000.00	566.33	575.27		575.35	0.000298	2.24	906.74	145.51	0.15
SixMileUsDs	31795 AO	25%	1500.00	566.33	574.18		574.24	0.000309	2.02	747.84	142.30	0.15
SixMileUsDs	31795 AO	50%	700.00	566.33	571.78		571.82	0.000354	1.64	426.02	117.54	0.15
SixMileUsDs	31795 AO	75%	300.00	566.33	569.76		569.79	0.000412	1.37	218.62	88.49	0.15
SixMileUsDs	31795 AO	80%	250.00	566.33	569.43		569.45	0.000425	1.32	189.73	83.64	0.15
SixMileUsDs	31795 AO	Aug 21	190.00	566.33	568.98		569.00	0.000444	1.24	153.76	77.19	0.15
SixMileUsDs	31795 AO	90%	150.00	566.33	568.65		568.67	0.000460	1.17	128.66	72.35	0.15
SixMileUsDs	29614 AN	20%	2000.00	565.33	574.63		574.71	0.000290	2.32	873.69	130.45	0.15
SixMileUsDs	29614 AN	25%	1500.00	565.33	573.52		573.59	0.000289	2.06	730.67	128.39	0.15

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	29614 AN	50%	700.00	565.33	571.07		571.11	0.000299	1.61	435.25	108.77	0.14
SixMileUsDs	29614 AN	75%	300.00	565.33	568.99		569.01	0.000313	1.28	233.58	84.89	0.14
SixMileUsDs	29614 AN	80%	250.00	565.33	568.63		568.66	0.000318	1.22	204.28	80.84	0.14
SixMileUsDs	29614 AN	Aug 21	190.00	565.33	568.16		568.18	0.000327	1.14	167.05	75.37	0.13
SixMileUsDs	29614 AN	90%	150.00	565.33	567.80		567.81	0.000336	1.07	140.62	71.23	0.13
SixMileUsDs	28097 AM	20%	2000.00	564.33	574.30		574.35	0.000186	1.86	1096.81	164.93	0.12
SixMileUsDs	28097 AM	25%	1500.00	564.33	573.19		573.23	0.000186	1.65	916.27	162.28	0.12
SixMileUsDs	28097 AM	50%	700.00	564.33	570.72		570.74	0.000194	1.30	538.79	134.78	0.11
SixMileUsDs	28097 AM	75%	300.00	564.33	568.61		568.63	0.000203	1.04	288.08	103.67	0.11
SixMileUsDs	28097 AM	80%	250.00	564.33	568.25		568.27	0.000206	0.99	251.71	98.34	0.11
SixMileUsDs	28097 AM	Aug 21	190.00	564.33	567.77		567.78	0.000211	0.92	205.45	91.12	0.11
SixMileUsDs	28097 AM	90%	150.00	564.33	567.39		567.41	0.000216	0.87	172.55	85.61	0.11
SixMileUsDs	26514 AL	20%	2000.00	564.33	574.02		574.07	0.000166	1.80	1127.94	163.26	0.12
SixMileUsDs	26514 AL	25%	1500.00	564.33	572.92		572.96	0.000161	1.59	949.68	160.19	0.11
SixMileUsDs	26514 AL	50%	700.00	564.33	570.44		570.46	0.000161	1.22	573.67	136.87	0.11
SixMileUsDs	26514 AL	75%	300.00	564.33	568.34		568.35	0.000154	0.95	317.06	107.32	0.10
SixMileUsDs	26514 AL	80%	250.00	564.33	567.98		567.99	0.000153	0.90	279.22	102.24	0.10
SixMileUsDs	26514 AL	Aug 21	190.00	564.33	567.49		567.50	0.000152	0.82	230.76	95.34	0.09
SixMileUsDs	26514 AL	90%	150.00	564.33	567.11		567.12	0.000151	0.77	196.03	90.07	0.09
SixMileUsDs	25135 AK	20%	2000.00	564.33	573.73		573.80	0.000238	2.11	970.26	147.03	0.14
SixMileUsDs	25135 AK	25%	1500.00	564.33	572.64		572.69	0.000235	1.87	811.19	143.86	0.13
SixMileUsDs	25135 AK	50%	700.00	564.33	570.17		570.20	0.000234	1.45	482.44	117.36	0.13
SixMileUsDs	25135 AK	75%	300.00	564.33	568.07		568.09	0.000237	1.14	262.84	92.48	0.12
SixMileUsDs	25135 AK	80%	250.00	564.33	567.71		567.73	0.000240	1.09	230.20	88.19	0.12
SixMileUsDs	25135 AK	Aug 21	190.00	564.33	567.22		567.23	0.000247	1.01	188.23	82.33	0.12
SixMileUsDs	25135 AK	90%	150.00	564.33	566.84		566.85	0.000256	0.95	157.97	77.84	0.12
SixMileUsDs	23775 AJ	20%	2000.00	563.33	573.53		573.57	0.000117	1.54	1317.71	183.93	0.10
SixMileUsDs	23775 AJ	25%	1500.00	563.33	572.44		572.47	0.000112	1.35	1117.87	182.40	0.09
SixMileUsDs	23775 AJ	50%	700.00	563.33	569.98		569.99	0.000101	1.01	693.87	154.90	0.08
SixMileUsDs	23775 AJ	75%	300.00	563.33	567.90		567.91	0.000082	0.74	405.34	123.41	0.07
SixMileUsDs	23775 AJ	80%	250.00	563.33	567.55		567.55	0.000078	0.69	362.22	117.98	0.07
SixMileUsDs	23775 AJ	Aug 21	190.00	563.33	567.06		567.07	0.000072	0.62	306.66	110.60	0.07
SixMileUsDs	23775 AJ	90%	150.00	563.33	566.69		566.69	0.000067	0.56	266.53	104.94	0.06
SixMileUsDs	21935 AI	20%	2000.00	563.33	573.21		573.28	0.000220	2.05	993.58	145.45	0.13
SixMileUsDs	21935 AI	25%	1500.00	563.33	572.15		572.20	0.000204	1.80	843.20	139.21	0.13
SixMileUsDs	21935 AI	50%	700.00	563.33	569.72		569.75	0.000178	1.34	523.57	116.91	0.11
SixMileUsDs	21935 AI	75%	300.00	563.33	567.70		567.72	0.000142	0.97	309.71	94.80	0.09

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	21935 AI	80%	250.00	563.33	567.36		567.37	0.000135	0.90	277.51	91.01	0.09
SixMileUsDs	21935 AI	Aug 21	190.00	563.33	566.89		566.90	0.000123	0.81	235.94	85.86	0.09
SixMileUsDs	21935 AI	90%	150.00	563.33	566.53		566.54	0.000114	0.73	205.83	81.94	0.08
SixMileUsDs	19696 AH	20%	2000.00	564.00	572.62		572.70	0.000312	2.18	922.73	153.66	0.16
SixMileUsDs	19696 AH	25%	1500.00	564.00	571.56		571.62	0.000326	1.98	760.70	152.41	0.15
SixMileUsDs	19696 AH	50%	700.00	564.00	569.15		569.19	0.000373	1.65	424.48	120.90	0.16
SixMileUsDs	19696 AH	75%	300.00	564.00	567.16		567.19	0.000464	1.41	213.49	91.18	0.16
SixMileUsDs	19696 AH	80%	250.00	564.00	566.82		566.85	0.000496	1.36	183.36	86.10	0.16
SixMileUsDs	19696 AH	Aug 21	190.00	564.00	566.36		566.39	0.000555	1.31	145.36	79.24	0.17
SixMileUsDs	19696 AH	90%	150.00	564.00	566.01		566.04	0.000621	1.26	118.67	74.04	0.18
SixMileUsDs	18407 AG	20%	2000.00	563.00	572.33		572.38	0.000185	1.83	1112.02	171.03	0.12
SixMileUsDs	18407 AG	25%	1500.00	563.00	571.27		571.31	0.000182	1.62	932.02	168.04	0.12
SixMileUsDs	18407 AG	50%	700.00	563.00	568.84		568.87	0.000175	1.25	558.15	136.05	0.11
SixMileUsDs	18407 AG	75%	300.00	563.00	566.84		566.85	0.000162	0.96	313.47	108.27	0.10
SixMileUsDs	18407 AG	80%	250.00	563.00	566.49		566.51	0.000160	0.90	276.85	103.47	0.10
SixMileUsDs	18407 AG	Aug 21	190.00	563.00	566.02		566.03	0.000158	0.83	229.64	96.93	0.09
SixMileUsDs	18407 AG	90%	150.00	563.00	565.66		565.67	0.000157	0.77	195.60	91.93	0.09
SixMileUsDs	16725 AF	20%	2000.00	562.33	571.92		571.99	0.000292	2.22	912.65	145.65	0.15
SixMileUsDs	16725 AF	25%	1500.00	562.33	570.86		570.92	0.000294	1.98	759.44	144.70	0.15
SixMileUsDs	16725 AF	50%	700.00	562.33	568.46		568.50	0.000286	1.56	448.10	113.36	0.14
SixMileUsDs	16725 AF	75%	300.00	562.33	566.49		566.51	0.000258	1.20	250.63	87.56	0.12
SixMileUsDs	16725 AF	80%	250.00	562.33	566.15		566.17	0.000252	1.13	221.70	83.11	0.12
SixMileUsDs	16725 AF	Aug 21	190.00	562.33	565.69		565.71	0.000241	1.03	184.77	77.06	0.12
SixMileUsDs	16725 AF	90%	150.00	562.33	565.34		565.35	0.000231	0.95	158.49	72.45	0.11
SixMileUsDs	15278 AE	20%	2000.00	562.33	571.55		571.61	0.000234	2.00	1006.69	159.49	0.14
SixMileUsDs	15278 AE	25%	1500.00	562.33	570.49		570.54	0.000235	1.79	839.89	153.76	0.13
SixMileUsDs	15278 AE	50%	700.00	562.33	568.11		568.14	0.000208	1.37	510.41	123.66	0.12
SixMileUsDs	15278 AE	75%	300.00	562.33	566.19		566.20	0.000179	1.02	295.04	100.12	0.10
SixMileUsDs	15278 AE	80%	250.00	562.33	565.86		565.87	0.000173	0.95	262.62	96.08	0.10
SixMileUsDs	15278 AE	Aug 21	190.00	562.33	565.41		565.42	0.000165	0.86	220.79	90.60	0.10
SixMileUsDs	15278 AE	90%	150.00	562.33	565.07		565.08	0.000157	0.79	190.64	86.44	0.09
SixMileUsDs	13567 AD	20%	2000.00	562.33	571.19		571.24	0.000203	1.79	1119.89	182.91	0.13
SixMileUsDs	13567 AD	25%	1500.00	562.33	570.12		570.16	0.000205	1.61	929.31	174.59	0.12
SixMileUsDs	13567 AD	50%	700.00	562.33	567.78		567.81	0.000183	1.25	559.47	141.35	0.11
SixMileUsDs	13567 AD	75%	300.00	562.33	565.89		565.91	0.000167	0.94	317.79	114.54	0.10
SixMileUsDs	13567 AD	80%	250.00	562.33	565.57		565.58	0.000164	0.89	281.42	109.94	0.10
SixMileUsDs	13567 AD	Aug 21	190.00	562.33	565.13		565.14	0.000161	0.81	234.56	103.71	0.09

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	13567 AD	90%	150.00	562.33	564.80		564.81	0.000158	0.75	200.93	99.00	0.09
SixMileUsDs	11928 AC	20%	2000.00	562.33	570.79		570.85	0.000275	1.95	1026.02	180.98	0.14
SixMileUsDs	11928 AC	25%	1500.00	562.33	569.73		569.78	0.000275	1.79	839.37	169.08	0.14
SixMileUsDs	11928 AC	50%	700.00	562.33	567.41		567.45	0.000268	1.43	488.63	134.34	0.13
SixMileUsDs	11928 AC	75%	300.00	562.33	565.54		565.56	0.000283	1.14	262.87	106.13	0.13
SixMileUsDs	11928 AC	80%	250.00	562.33	565.21		565.23	0.000292	1.09	229.13	101.24	0.13
SixMileUsDs	11928 AC	Aug 21	190.00	562.33	564.77		564.78	0.000310	1.02	185.71	94.58	0.13
SixMileUsDs	11928 AC	90%	150.00	562.33	564.43		564.44	0.000332	0.97	154.37	89.46	0.13
SixMileUsDs	10164 AB	20%	2000.00	561.33	570.35		570.41	0.000229	1.84	1084.96	182.32	0.13
SixMileUsDs	10164 AB	25%	1500.00	561.33	569.31		569.36	0.000205	1.65	906.83	164.27	0.12
SixMileUsDs	10164 AB	50%	700.00	561.33	567.06		567.08	0.000164	1.23	568.23	135.61	0.11
SixMileUsDs	10164 AB	75%	300.00	561.33	565.22		565.23	0.000129	0.88	340.36	112.28	0.09
SixMileUsDs	10164 AB	80%	250.00	561.33	564.90		564.91	0.000123	0.82	305.08	108.22	0.09
SixMileUsDs	10164 AB	Aug 21	190.00	561.33	564.46		564.47	0.000114	0.73	258.99	102.67	0.08
SixMileUsDs	10164 AB	90%	150.00	561.33	564.12		564.13	0.000107	0.67	225.12	98.40	0.08
SixMileUsDs	8554 AA	20%	2000.00	561.33	569.93		569.99	0.000287	2.04	979.09	165.81	0.15
SixMileUsDs	8554 AA	25%	1500.00	561.33	568.93		568.98	0.000264	1.83	819.51	153.75	0.14
SixMileUsDs	8554 AA	50%	700.00	561.33	566.75		566.78	0.000213	1.36	513.00	127.42	0.12
SixMileUsDs	8554 AA	75%	300.00	561.33	564.98		564.99	0.000171	0.98	305.95	105.99	0.10
SixMileUsDs	8554 AA	80%	250.00	561.33	564.67		564.68	0.000164	0.91	273.79	102.26	0.10
SixMileUsDs	8554 AA	Aug 21	190.00	561.33	564.25		564.26	0.000154	0.82	231.74	97.17	0.09
SixMileUsDs	8554 AA	90%	150.00	561.33	563.92		563.93	0.000146	0.75	200.82	93.25	0.09
SixMileUsDs	7034 Z	20%	2000.00	561.33	569.42		569.50	0.000370	2.20	908.18	166.49	0.17
SixMileUsDs	7034 Z	25%	1500.00	561.33	568.46		568.52	0.000347	1.99	754.22	153.59	0.16
SixMileUsDs	7034 Z	50%	700.00	561.33	566.36		566.40	0.000296	1.52	461.37	125.45	0.14
SixMileUsDs	7034 Z	75%	300.00	561.33	564.66		564.67	0.000258	1.13	266.57	102.53	0.12
SixMileUsDs	7034 Z	80%	250.00	561.33	564.36		564.37	0.000253	1.06	236.57	98.53	0.12
SixMileUsDs	7034 Z	Aug 21	190.00	561.33	563.95		563.96	0.000247	0.96	197.51	93.06	0.12
SixMileUsDs	7034 Z	90%	150.00	561.33	563.63		563.65	0.000244	0.89	168.90	88.85	0.11
SixMileUsDs	5269 Y	20%	2000.00	560.33	568.54		568.65	0.000640	2.67	749.62	155.61	0.21
SixMileUsDs	5269 Y	25%	1500.00	560.33	567.63		567.72	0.000616	2.44	613.92	141.29	0.21
SixMileUsDs	5269 Y	50%	700.00	560.33	565.65		565.70	0.000547	1.92	364.45	110.21	0.19
SixMileUsDs	5269 Y	75%	300.00	560.33	564.04		564.08	0.000462	1.44	207.98	85.12	0.16
SixMileUsDs	5269 Y	80%	250.00	560.33	563.76		563.79	0.000443	1.35	184.78	80.73	0.16
SixMileUsDs	5269 Y	Aug 21	190.00	560.33	563.38		563.41	0.000413	1.22	155.17	74.77	0.15
SixMileUsDs	5269 Y	90%	150.00	560.33	563.09		563.11	0.000388	1.12	133.78	70.14	0.14

HEC-RAS Plan: Existing_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	3771 X	20%	2000.00	560.33	567.90		567.97	0.000332	2.02	991.45	191.93	0.16
SixMileUsDs	3771 X	25%	1500.00	560.33	567.03		567.08	0.000306	1.81	829.53	177.82	0.15
SixMileUsDs	3771 X	50%	700.00	560.33	565.14		565.17	0.000241	1.34	523.11	147.48	0.13
SixMileUsDs	3771 X	75%	300.00	560.33	563.65		563.66	0.000178	0.94	320.78	123.42	0.10
SixMileUsDs	3771 X	80%	250.00	560.33	563.39		563.40	0.000166	0.86	289.43	119.26	0.10
SixMileUsDs	3771 X	Aug 21	190.00	560.33	563.04		563.05	0.000149	0.76	248.91	113.66	0.09
SixMileUsDs	3771 X	90%	150.00	560.33	562.78		562.78	0.000135	0.68	219.02	109.34	0.09
SixMileUsDs	1581 W	20%	2000.00	560.33	567.17		567.23	0.000342	1.92	1040.24	221.32	0.16
SixMileUsDs	1581 W	25%	1500.00	560.33	566.35		566.39	0.000321	1.73	864.56	204.64	0.15
SixMileUsDs	1581 W	50%	700.00	560.33	564.59		564.62	0.000265	1.30	536.84	169.15	0.13
SixMileUsDs	1581 W	75%	300.00	560.33	563.24		563.25	0.000203	0.92	325.94	141.70	0.11
SixMileUsDs	1581 W	80%	250.00	560.33	563.00		563.01	0.000191	0.85	293.54	137.00	0.10
SixMileUsDs	1581 W	Aug 21	190.00	560.33	562.69		562.70	0.000171	0.75	252.35	130.77	0.10
SixMileUsDs	1581 W	90%	150.00	560.33	562.46		562.47	0.000156	0.68	222.10	126.00	0.09
SixMileUsDs	496 V	20%	2000.00	560.33	566.66	563.08	566.74	0.000601	2.34	856.39	208.01	0.20
SixMileUsDs	496 V	25%	1500.00	560.33	565.85	562.70	565.93	0.000600	2.16	696.00	190.47	0.20
SixMileUsDs	496 V	50%	700.00	560.33	564.15	561.93	564.20	0.000601	1.73	403.85	153.45	0.19
SixMileUsDs	496 V	75%	300.00	560.33	562.86	561.40	562.89	0.000600	1.34	224.08	125.35	0.18
SixMileUsDs	496 V	80%	250.00	560.33	562.65	561.31	562.68	0.000600	1.26	197.80	120.70	0.17
SixMileUsDs	496 V	Aug 21	190.00	560.33	562.37	561.20	562.39	0.000601	1.16	164.24	114.48	0.17
SixMileUsDs	496 V	90%	150.00	560.33	562.15	561.12	562.17	0.000601	1.07	140.12	109.80	0.17

B3:

Proposed Dam Removal Model Results for Flood Discharges

GFT

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	67345 BM	10yr	36300.00	579.33	614.47		615.36	0.000422	8.00	6078.75	262.03	0.24
SixMileUsDs	67345 BM	50yr	53000.00	579.33	621.16		622.44	0.000480	9.62	8560.15	558.80	0.27
SixMileUsDs	67345 BM	100yr	62000.00	579.33	624.26		625.61	0.000478	10.07	10403.10	625.14	0.27
SixMileUsDs	67345 BM	500yr	82000.00	579.33	629.79		631.33	0.000494	11.08	14231.97	720.77	0.28
SixMileUsDs	66163 BL	10yr	36300.00	578.33	614.23		614.88	0.000289	6.67	7063.40	299.10	0.20
SixMileUsDs	66163 BL	50yr	53000.00	578.33	620.94		621.87	0.000330	8.02	9292.90	401.18	0.22
SixMileUsDs	66163 BL	100yr	62000.00	578.33	623.96		625.05	0.000351	8.67	10653.30	500.05	0.23
SixMileUsDs	66163 BL	500yr	82000.00	578.33	629.40		630.76	0.000391	9.88	13562.21	566.82	0.25
SixMileUsDs	65093 BK	10yr	36300.00	577.33	614.01		614.57	0.000246	6.17	7563.24	321.81	0.18
SixMileUsDs	65093 BK	50yr	53000.00	577.33	620.71		621.50	0.000281	7.41	10060.31	441.79	0.20
SixMileUsDs	65093 BK	100yr	62000.00	577.33	623.72		624.66	0.000302	8.05	11833.20	656.12	0.21
SixMileUsDs	65093 BK	500yr	82000.00	577.33	629.18		630.31	0.000326	9.04	15573.80	704.32	0.23
SixMileUsDs	63115 BJ	10yr	36300.00	577.33	613.53		614.08	0.000245	6.08	8331.69	622.06	0.18
SixMileUsDs	63115 BJ	50yr	53000.00	577.33	620.28		620.94	0.000248	6.90	13132.67	762.77	0.19
SixMileUsDs	63115 BJ	100yr	62000.00	577.33	623.32		624.05	0.000255	7.34	15746.48	959.73	0.19
SixMileUsDs	63115 BJ	500yr	82000.00	577.33	628.83		629.64	0.000260	8.02	21175.20	1005.90	0.20
SixMileUsDs	61540 BI	10yr	36300.00	576.33	612.66		613.55	0.000415	7.84	6328.39	357.01	0.24
SixMileUsDs	61540 BI	50yr	53000.00	576.33	619.41		620.42	0.000402	8.70	11849.96	1064.69	0.24
SixMileUsDs	61540 BI	100yr	62000.00	576.33	622.60		623.55	0.000368	8.75	15382.61	1154.94	0.23
SixMileUsDs	61540 BI	500yr	82000.00	576.33	628.35		629.19	0.000316	8.81	22202.87	1214.44	0.22
SixMileUsDs	60064 BH	10yr	36300.00	576.33	612.14		612.39	0.001202	4.57	11006.90	738.12	0.14
SixMileUsDs	60064 BH	50yr	53000.00	576.33	619.10		619.33	0.000910	4.51	16698.79	870.22	0.13
SixMileUsDs	60064 BH	100yr	62000.00	576.33	622.34		622.55	0.000816	4.50	19573.34	910.80	0.12
SixMileUsDs	60064 BH	500yr	82000.00	576.33	628.09		628.31	0.000761	4.72	25095.17	984.53	0.12
SixMileUsDs	58383 BG	10yr	36300.00	575.33	610.71		611.39	0.000330	6.92	7858.02	652.28	0.21
SixMileUsDs	58383 BG	50yr	53000.00	575.33	617.75		618.47	0.000298	7.47	13229.71	834.06	0.21
SixMileUsDs	58383 BG	100yr	62000.00	575.33	621.05		621.76	0.000279	7.62	16129.92	937.53	0.20
SixMileUsDs	58383 BG	500yr	82000.00	575.33	626.86		627.57	0.000261	8.02	21850.07	1001.10	0.20
SixMileUsDs	56884 BF	10yr	36300.00	575.33	610.31		610.90	0.000291	6.36	6762.25	292.92	0.20
SixMileUsDs	56884 BF	50yr	53000.00	575.33	617.20		618.00	0.000310	7.47	10159.79	778.65	0.21
SixMileUsDs	56884 BF	100yr	62000.00	575.33	620.49		621.31	0.000299	7.74	12853.17	843.27	0.21
SixMileUsDs	56884 BF	500yr	82000.00	575.33	626.23		627.13	0.000295	8.37	17951.91	924.43	0.21
SixMileUsDs	55176 BE	10yr	36300.00	574.33	609.74		610.38	0.000315	6.52	6815.70	326.10	0.20
SixMileUsDs	55176 BE	50yr	53000.00	574.33	616.56		617.44	0.000343	7.73	9573.92	565.29	0.22
SixMileUsDs	55176 BE	100yr	62000.00	574.33	619.79		620.75	0.000344	8.16	11534.15	622.57	0.22
SixMileUsDs	55176 BE	500yr	82000.00	574.33	625.41		626.55	0.000362	9.09	15138.69	665.74	0.23

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	53410 BD	10yr	36300.00	574.33	609.26		609.84	0.000276	6.26	7446.76	388.54	0.19
SixMileUsDs	53410 BD	50yr	53000.00	574.33	616.09		616.85	0.000290	7.27	11241.25	704.46	0.20
SixMileUsDs	53410 BD	100yr	62000.00	574.33	619.34		620.15	0.000286	7.63	13600.53	768.15	0.21
SixMileUsDs	53410 BD	500yr	82000.00	574.33	624.98		625.92	0.000295	8.42	18096.37	819.17	0.21
SixMileUsDs	51916 BC	10yr	36300.00	574.33	609.12		609.45	0.000166	4.83	10688.99	602.08	0.15
SixMileUsDs	51916 BC	50yr	53000.00	574.33	616.00		616.42	0.000170	5.55	15048.13	679.95	0.16
SixMileUsDs	51916 BC	100yr	62000.00	574.33	619.26		619.72	0.000171	5.88	17507.14	1047.65	0.16
SixMileUsDs	51916 BC	500yr	82000.00	574.33	624.92		625.46	0.000177	6.50	23817.81	1161.47	0.17
SixMileUsDs	49973 BB	10yr	36300.00	573.33	608.41		609.01	0.000284	6.35	7302.28	351.13	0.20
SixMileUsDs	49973 BB	50yr	53000.00	573.33	615.12		615.94	0.000310	7.52	10186.56	637.25	0.21
SixMileUsDs	49973 BB	100yr	62000.00	573.33	618.31		619.23	0.000318	8.01	12631.94	830.42	0.22
SixMileUsDs	49973 BB	500yr	82000.00	573.33	623.92		624.96	0.000323	8.78	17471.27	892.09	0.22
SixMileUsDs	48402 BA	10yr	36300.00	573.33	607.93		608.55	0.000300	6.45	6859.69	307.96	0.20
SixMileUsDs	48402 BA	50yr	53000.00	573.33	614.58		615.44	0.000328	7.66	9017.94	357.19	0.22
SixMileUsDs	48402 BA	100yr	62000.00	573.33	617.73		618.71	0.000340	8.22	10666.83	869.60	0.22
SixMileUsDs	48402 BA	500yr	82000.00	573.33	623.24		624.41	0.000359	9.17	16417.48	1153.85	0.24
SixMileUsDs	46835 AZ	10yr	36300.00	575.16	607.66		608.07	0.000238	5.52	11490.67	738.93	0.17
SixMileUsDs	46835 AZ	50yr	53000.00	575.16	614.44		614.90	0.000223	6.08	16689.18	789.76	0.17
SixMileUsDs	46835 AZ	100yr	62000.00	575.16	617.66		618.14	0.000217	6.33	19245.13	799.13	0.17
SixMileUsDs	46835 AZ	500yr	82000.00	575.16	623.22		623.79	0.000226	7.03	23882.01	850.83	0.18
SixMileUsDs	44954 AY	10yr	36300.00	563.94	606.72		607.47	0.000386	7.17	6296.35	301.15	0.22
SixMileUsDs	44954 AY	50yr	53000.00	563.94	613.26		614.28	0.000425	8.46	8487.61	353.11	0.23
SixMileUsDs	44954 AY	100yr	62000.00	563.94	616.37		617.51	0.000439	9.04	9637.68	377.86	0.24
SixMileUsDs	44954 AY	500yr	82000.00	563.94	621.67		623.10	0.000489	10.29	14103.61	1044.61	0.26
SixMileUsDs	43497 AX	10yr	36300.00	572.78	606.36		606.93	0.000295	6.17	7199.04	389.17	0.19
SixMileUsDs	43497 AX	50yr	53000.00	572.78	612.93		613.67	0.000311	7.17	10586.17	670.19	0.20
SixMileUsDs	43497 AX	100yr	62000.00	572.78	616.08		616.87	0.000309	7.54	12875.23	809.48	0.21
SixMileUsDs	43497 AX	500yr	82000.00	572.78	621.47		622.37	0.000317	8.28	17531.17	885.37	0.21
SixMileUsDs	41423 AW	10yr	36300.00	570.87	605.37		606.17	0.000429	7.38	6224.88	340.42	0.23
SixMileUsDs	41423 AW	50yr	53000.00	570.87	612.02		612.92	0.000407	8.16	11061.68	868.71	0.23
SixMileUsDs	41423 AW	100yr	62000.00	570.87	615.31		616.17	0.000372	8.24	14017.78	951.57	0.22
SixMileUsDs	41423 AW	500yr	82000.00	570.87	620.84		621.67	0.000342	8.57	19525.12	1030.86	0.22
SixMileUsDs	40041 AV	10yr	36300.00	568.91	605.11		605.62	0.000274	5.97	7885.83	413.94	0.19
SixMileUsDs	40041 AV	50yr	53000.00	568.91	611.70		612.38	0.000292	7.00	11151.71	729.79	0.20
SixMileUsDs	40041 AV	100yr	62000.00	568.91	614.97		615.68	0.000281	7.25	13739.76	859.03	0.20

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	40041 AV	500yr	82000.00	568.91	620.45		621.23	0.000282	7.90	18925.14	1030.35	0.20
SixMileUsDs	38212 AU	10yr	36300.00	574.21	604.58		605.09	0.000298	5.93	8094.94	548.26	0.19
SixMileUsDs	38212 AU	50yr	53000.00	574.21	611.22		611.83	0.000285	6.64	12442.22	805.89	0.20
SixMileUsDs	38212 AU	100yr	62000.00	574.21	614.53		615.15	0.000268	6.83	15594.98	1122.99	0.19
SixMileUsDs	38212 AU	500yr	82000.00	574.21	620.06		620.70	0.000253	7.25	23617.14	1556.61	0.19
SixMileUsDs	36814 AT	10yr	36300.00	572.87	604.18		604.68	0.000286	5.86	8078.20	618.33	0.19
SixMileUsDs	36814 AT	50yr	53000.00	572.87	610.89		611.43	0.000256	6.37	13550.57	996.22	0.19
SixMileUsDs	36814 AT	100yr	62000.00	572.87	614.26		614.77	0.000228	6.38	16933.84	1011.10	0.18
SixMileUsDs	36814 AT	500yr	82000.00	572.87	619.81		620.34	0.000215	6.75	22875.88	1108.40	0.18
SixMileUsDs	35150 AS	10yr	36300.00	571.12	603.66	584.23	604.19	0.000296	5.97	6916.80	323.33	0.19
SixMileUsDs	35150 AS	50yr	53000.00	571.12	610.28	587.12	610.97	0.000298	6.85	10559.64	710.89	0.20
SixMileUsDs	35150 AS	100yr	62000.00	571.12	613.62	588.54	614.33	0.000284	7.10	13678.30	1285.49	0.20
SixMileUsDs	35150 AS	500yr	82000.00	571.12	619.28	591.50	619.94	0.000249	7.27	23288.61	2036.65	0.19
SixMileUsDs	34932 Bridge		Bridge									
SixMileUsDs	34703 AR	10yr	36300.00	569.84	603.44		604.01	0.000315	6.20	7246.26	504.80	0.20
SixMileUsDs	34703 AR	50yr	53000.00	569.84	610.18		610.83	0.000292	6.85	12379.21	1186.91	0.20
SixMileUsDs	34703 AR	100yr	62000.00	569.84	613.52		614.12	0.000260	6.85	17710.18	1929.12	0.19
SixMileUsDs	34703 AR	500yr	82000.00	569.84	619.33		619.79	0.000197	6.54	31493.14	2607.72	0.17
SixMileUsDs	34572	10yr	36300.00	570.95	603.48		603.89	0.001147	5.39	8175.22	693.10	0.18
SixMileUsDs	34572	50yr	53000.00	570.95	610.37		610.67	0.000755	5.06	16338.38	1641.76	0.15
SixMileUsDs	34572	100yr	62000.00	570.95	613.74		613.96	0.000548	4.59	22364.34	1900.50	0.13
SixMileUsDs	34572	500yr	82000.00	570.95	619.52		619.66	0.000349	4.02	34611.41	2232.84	0.11
SixMileUsDs	34378	10yr	36300.00	573.44	603.67		603.71	0.000168	2.04	27097.27	2356.81	0.07
SixMileUsDs	34378	50yr	53000.00	573.44	610.52		610.54	0.000095	1.78	45649.63	2887.17	0.05
SixMileUsDs	34378	100yr	62000.00	573.44	613.85		613.87	0.000075	1.69	55537.09	3082.52	0.05
SixMileUsDs	34378	500yr	82000.00	573.44	619.58		619.61	0.000058	1.63	73663.96	3211.44	0.04
SixMileUsDs	34154	10yr	36300.00	574.28	603.66		603.67	0.000093	1.49	35253.79	2513.42	0.05
SixMileUsDs	34154	50yr	53000.00	574.28	610.51		610.53	0.000060	1.40	53823.25	2853.96	0.04
SixMileUsDs	34154	100yr	62000.00	574.28	613.84		613.85	0.000049	1.35	63491.09	3010.13	0.04
SixMileUsDs	34154	500yr	82000.00	574.28	619.58		619.59	0.000041	1.35	82140.48	3587.85	0.04
SixMileUsDs	34006 AQ	10yr	36300.00	577.16	603.54		603.65	0.000120	3.20	21725.55	2026.19	0.11
SixMileUsDs	34006 AQ	50yr	53000.00	577.16	610.43		610.51	0.000076	2.99	38501.57	2834.87	0.09
SixMileUsDs	34006 AQ	100yr	62000.00	577.16	613.77		613.84	0.000062	2.86	49334.18	3509.79	0.08
SixMileUsDs	34006 AQ	500yr	82000.00	577.16	619.53		619.58	0.000046	2.72	70567.18	3815.61	0.07

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33879	10yr	36300.00	572.06	603.49		603.62	0.000412	3.12	14410.94	1302.69	0.11
SixMileUsDs	33879	50yr	53000.00	572.06	610.40		610.49	0.000248	2.82	29709.60	2814.63	0.09
SixMileUsDs	33879	100yr	62000.00	572.06	613.76		613.83	0.000181	2.57	40377.40	3565.01	0.07
SixMileUsDs	33879	500yr	82000.00	572.06	619.53		619.57	0.000107	2.18	61697.96	3812.92	0.06
SixMileUsDs	33793	10yr	36300.00	570.64	603.43		603.58	0.000469	3.32	13493.89	1164.96	0.11
SixMileUsDs	33793	50yr	53000.00	570.64	610.37		610.47	0.000284	3.01	27445.86	2953.45	0.09
SixMileUsDs	33793	100yr	62000.00	570.64	613.73		613.81	0.000208	2.75	38564.46	3695.04	0.08
SixMileUsDs	33793	500yr	82000.00	570.64	619.52		619.56	0.000115	2.26	60595.35	3899.53	0.06
SixMileUsDs	33686	10yr	36300.00	570.63	603.44		603.53	0.000237	2.57	15959.39	1031.53	0.08
SixMileUsDs	33686	50yr	53000.00	570.63	610.35		610.44	0.000201	2.72	26873.63	2233.71	0.08
SixMileUsDs	33686	100yr	62000.00	570.63	613.70		613.79	0.000173	2.68	36450.01	3229.50	0.07
SixMileUsDs	33686	500yr	82000.00	570.63	619.49		619.55	0.000113	2.37	57142.63	3732.58	0.06
SixMileUsDs	33574	10yr	36300.00	558.50	603.44		603.50	0.000115	1.97	20569.43	919.40	0.06
SixMileUsDs	33574	50yr	53000.00	558.50	610.35		610.41	0.000113	2.21	30374.98	1971.98	0.06
SixMileUsDs	33574	100yr	62000.00	558.50	613.70		613.77	0.000112	2.32	38582.00	2897.43	0.06
SixMileUsDs	33574	500yr	82000.00	558.50	619.48		619.54	0.000090	2.25	57466.21	3415.65	0.06
SixMileUsDs	33454	10yr	36300.00	569.01	603.39		603.48	0.000213	2.52	16771.96	827.43	0.08
SixMileUsDs	33454	50yr	53000.00	569.01	610.30		610.39	0.000199	2.78	25095.47	1788.38	0.08
SixMileUsDs	33454	100yr	62000.00	569.01	613.64		613.75	0.000195	2.91	32928.47	2838.31	0.08
SixMileUsDs	33454	500yr	82000.00	569.01	619.45		619.52	0.000135	2.64	49784.12	2980.18	0.07
SixMileUsDs	33320	10yr	36300.00	568.22	603.35		603.45	0.000258	2.83	17504.91	1181.88	0.09
SixMileUsDs	33320	50yr	53000.00	568.22	610.27		610.36	0.000210	2.91	26590.25	1834.06	0.08
SixMileUsDs	33320	100yr	62000.00	568.22	613.63		613.72	0.000194	2.95	35216.02	2967.72	0.08
SixMileUsDs	33320	500yr	82000.00	568.22	619.44		619.50	0.000134	2.66	54733.05	3679.97	0.07
SixMileUsDs	33097 AP	10yr	36300.00	567.57	602.93		603.36	0.000231	5.86	10724.53	670.25	0.18
SixMileUsDs	33097 AP	50yr	53000.00	567.57	609.72		610.27	0.000243	6.80	17091.65	1933.37	0.19
SixMileUsDs	33097 AP	100yr	62000.00	567.57	613.15		613.63	0.000210	6.66	24880.73	2589.88	0.18
SixMileUsDs	33097 AP	500yr	82000.00	567.57	619.15		619.45	0.000139	5.91	40587.63	2632.52	0.15
SixMileUsDs	32936	10yr	36300.00	568.44	602.92		603.27	0.000863	5.28	8690.25	460.17	0.16
SixMileUsDs	32936	50yr	53000.00	568.44	609.74		610.16	0.000878	6.02	14631.96	1764.36	0.17
SixMileUsDs	32936	100yr	62000.00	568.44	613.23		613.52	0.000630	5.39	21752.00	2194.96	0.14
SixMileUsDs	32936	500yr	82000.00	568.44	619.22		619.37	0.000339	4.31	35087.72	2231.21	0.11
SixMileUsDs	32638	10yr	36300.00	567.38	602.58		603.00	0.000952	5.54	7843.39	389.30	0.17
SixMileUsDs	32638	50yr	53000.00	567.38	609.45		609.90	0.000894	6.09	14203.63	1485.37	0.17
SixMileUsDs	32638	100yr	62000.00	567.38	613.03		613.33	0.000634	5.43	20027.81	1710.72	0.14
SixMileUsDs	32638	500yr	82000.00	567.38	619.07		619.26	0.000386	4.62	30857.23	1799.80	0.12

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	31795 AO	10yr	37500.00	566.33	601.68		602.47	0.000394	7.54	7418.10	521.09	0.23
SixMileUsDs	31795 AO	50yr	54500.00	566.33	608.52		609.40	0.000369	8.28	11868.49	777.59	0.23
SixMileUsDs	31795 AO	100yr	64000.00	566.33	612.03		612.89	0.000342	8.44	14821.09	905.52	0.23
SixMileUsDs	31795 AO	500yr	86000.00	566.33	617.96		618.88	0.000338	9.12	22469.57	1490.41	0.23
SixMileUsDs	29614 AN	10yr	37500.00	565.33	600.45		601.48	0.000504	8.51	5659.88	256.74	0.26
SixMileUsDs	29614 AN	50yr	54500.00	565.33	607.00		608.37	0.000546	9.99	7409.65	277.60	0.28
SixMileUsDs	29614 AN	100yr	64000.00	565.33	610.17		611.85	0.000593	10.97	9362.55	951.64	0.30
SixMileUsDs	29614 AN	500yr	86000.00	565.33	616.45		617.93	0.000507	11.11	19089.92	2046.97	0.28
SixMileUsDs	28097 AM	10yr	37500.00	564.33	600.04		600.76	0.000345	7.04	7410.00	641.57	0.22
SixMileUsDs	28097 AM	50yr	54500.00	564.33	606.79		607.57	0.000322	7.70	12253.94	968.02	0.22
SixMileUsDs	28097 AM	100yr	64000.00	564.33	610.10		610.95	0.000323	8.14	16794.58	1815.84	0.22
SixMileUsDs	28097 AM	500yr	86000.00	564.33	616.57		617.16	0.000232	7.58	30349.59	2169.80	0.19
SixMileUsDs	26514 AL	10yr	37500.00	564.33	599.68		600.21	0.000279	6.35	10907.94	991.14	0.19
SixMileUsDs	26514 AL	50yr	54500.00	564.33	606.60		607.06	0.000220	6.41	17995.47	1111.63	0.18
SixMileUsDs	26514 AL	100yr	64000.00	564.33	610.01		610.43	0.000196	6.38	23709.41	2182.86	0.17
SixMileUsDs	26514 AL	500yr	86000.00	564.33	616.43		616.79	0.000162	6.37	38752.96	2403.45	0.16
SixMileUsDs	25135 AK	10yr	37500.00	564.33	598.81		599.69	0.000451	7.93	6597.58	347.75	0.25
SixMileUsDs	25135 AK	50yr	54500.00	564.33	605.53		606.58	0.000443	8.92	10063.97	727.13	0.25
SixMileUsDs	25135 AK	100yr	64000.00	564.33	608.94		609.99	0.000416	9.14	13721.05	1593.57	0.25
SixMileUsDs	25135 AK	500yr	86000.00	564.33	615.60		616.44	0.000322	8.87	26153.50	2052.65	0.22
SixMileUsDs	23775 AJ	10yr	37500.00	563.33	598.58		599.13	0.000266	6.16	8481.82	547.80	0.19
SixMileUsDs	23775 AJ	50yr	54500.00	563.33	605.35		606.00	0.000264	6.96	13878.45	1484.00	0.20
SixMileUsDs	23775 AJ	100yr	64000.00	563.33	608.81		609.44	0.000243	7.05	20894.84	2248.36	0.19
SixMileUsDs	23775 AJ	500yr	86000.00	563.33	615.59		616.00	0.000165	6.41	36433.56	2318.70	0.16
SixMileUsDs	21935 AI	10yr	37500.00	563.33	597.44		598.42	0.000510	8.27	6198.42	293.18	0.26
SixMileUsDs	21935 AI	50yr	54500.00	563.33	603.95		605.26	0.000546	9.69	9236.42	885.98	0.28
SixMileUsDs	21935 AI	100yr	64000.00	563.33	607.31		608.72	0.000539	10.18	14781.00	2629.88	0.28
SixMileUsDs	21935 AI	500yr	86000.00	563.33	614.93		615.59	0.000281	8.24	35434.12	2748.08	0.21
SixMileUsDs	19696 AH	10yr	37500.00	564.00	596.35		597.28	0.000502	7.89	5856.40	278.84	0.26
SixMileUsDs	19696 AH	50yr	54500.00	564.00	602.82		604.04	0.000522	9.17	8582.15	835.40	0.27
SixMileUsDs	19696 AH	100yr	64000.00	564.00	606.25		607.52	0.000499	9.52	12360.47	1366.93	0.27
SixMileUsDs	19696 AH	500yr	86000.00	564.00	613.91		614.86	0.000350	8.98	24131.96	1704.95	0.23
SixMileUsDs	18407 AG	10yr	37500.00	563.00	595.86		596.65	0.000414	7.34	6637.35	332.48	0.23
SixMileUsDs	18407 AG	50yr	54500.00	563.00	602.34		603.37	0.000431	8.51	9083.08	444.99	0.25
SixMileUsDs	18407 AG	100yr	64000.00	563.00	605.76		606.88	0.000425	8.97	11023.73	658.76	0.25

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	18407 AG	500yr	86000.00	563.00	613.18		614.37	0.000384	9.54	17773.02	1092.05	0.24
SixMileUsDs	16725 AF	10yr	37500.00	562.33	594.58		595.75	0.000645	8.90	5417.40	282.37	0.29
SixMileUsDs	16725 AF	50yr	54500.00	562.33	600.88		602.42	0.000675	10.37	7341.71	339.15	0.31
SixMileUsDs	16725 AF	100yr	64000.00	562.33	604.20		605.93	0.000679	11.04	8605.83	434.03	0.31
SixMileUsDs	16725 AF	500yr	86000.00	562.33	611.57		613.48	0.000624	11.88	13773.27	1098.88	0.31
SixMileUsDs	15278 AE	10yr	37500.00	562.33	593.80		594.83	0.000571	8.31	5597.60	341.43	0.27
SixMileUsDs	15278 AE	50yr	54500.00	562.33	600.16		601.45	0.000570	9.49	8032.53	488.16	0.28
SixMileUsDs	15278 AE	100yr	64000.00	562.33	603.59		604.94	0.000543	9.84	10016.09	660.76	0.28
SixMileUsDs	15278 AE	500yr	86000.00	562.33	611.20		612.54	0.000460	10.22	16279.89	1153.70	0.26
SixMileUsDs	13567 AD	10yr	37500.00	562.33	593.13		593.90	0.000439	7.15	6305.78	341.33	0.24
SixMileUsDs	13567 AD	50yr	54500.00	562.33	599.52		600.50	0.000441	8.22	8560.38	363.74	0.25
SixMileUsDs	13567 AD	100yr	64000.00	562.33	602.96		604.03	0.000432	8.66	10005.00	475.96	0.25
SixMileUsDs	13567 AD	500yr	86000.00	562.33	610.58		611.77	0.000391	9.31	15345.45	959.40	0.24
SixMileUsDs	11928 AC	10yr	37500.00	562.33	592.34		593.14	0.000490	7.25	5893.37	300.16	0.25
SixMileUsDs	11928 AC	50yr	54500.00	562.33	598.70		599.74	0.000490	8.35	7895.25	329.44	0.25
SixMileUsDs	11928 AC	100yr	64000.00	562.33	602.13		603.28	0.000482	8.84	9323.58	483.25	0.26
SixMileUsDs	11928 AC	500yr	86000.00	562.33	609.93		611.11	0.000406	9.22	15852.19	1102.37	0.24
SixMileUsDs	10164 AB	10yr	37500.00	561.33	591.51		592.28	0.000472	7.22	6099.87	325.27	0.24
SixMileUsDs	10164 AB	50yr	54500.00	561.33	597.91		598.88	0.000459	8.21	8448.51	412.69	0.25
SixMileUsDs	10164 AB	100yr	64000.00	561.33	601.37		602.43	0.000447	8.65	10527.03	824.11	0.25
SixMileUsDs	10164 AB	500yr	86000.00	561.33	609.50		610.39	0.000323	8.39	18530.97	1106.72	0.22
SixMileUsDs	8554 AA	10yr	37500.00	561.33	590.63		591.46	0.000542	7.56	5860.67	328.12	0.26
SixMileUsDs	8554 AA	50yr	54500.00	561.33	597.08		598.10	0.000510	8.49	8136.02	377.96	0.26
SixMileUsDs	8554 AA	100yr	64000.00	561.33	600.61		601.69	0.000478	8.80	9506.25	396.80	0.26
SixMileUsDs	8554 AA	500yr	86000.00	561.33	608.58		609.77	0.000420	9.42	13670.46	758.11	0.25
SixMileUsDs	7034 Z	10yr	37500.00	561.33	589.66		590.58	0.000612	7.85	5630.40	343.51	0.28
SixMileUsDs	7034 Z	50yr	54500.00	561.33	596.21		597.29	0.000549	8.67	8017.37	386.12	0.27
SixMileUsDs	7034 Z	100yr	64000.00	561.33	599.81		600.94	0.000506	8.94	9448.73	409.40	0.27
SixMileUsDs	7034 Z	500yr	86000.00	561.33	607.89		609.12	0.000432	9.48	13066.80	563.60	0.25
SixMileUsDs	5269 Y	10yr	37500.00	560.33	588.44		589.42	0.000700	8.05	5173.06	283.34	0.29
SixMileUsDs	5269 Y	50yr	54500.00	560.33	595.07		596.25	0.000618	8.92	7295.39	366.23	0.29
SixMileUsDs	5269 Y	100yr	64000.00	560.33	598.78		599.99	0.000556	9.14	8701.83	390.15	0.28
SixMileUsDs	5269 Y	500yr	86000.00	560.33	607.05		608.33	0.000455	9.55	13040.91	823.35	0.26
SixMileUsDs	3771 X	10yr	37500.00	560.33	587.88		588.50	0.000435	6.38	6421.06	351.92	0.23
SixMileUsDs	3771 X	50yr	54500.00	560.33	594.66		595.40	0.000383	7.07	8923.42	413.73	0.23

HEC-RAS Plan: Prop_NoDam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	3771 X	100yr	64000.00	560.33	598.44		599.21	0.000346	7.26	10509.20	424.40	0.22
SixMileUsDs	3771 X	500yr	86000.00	560.33	606.82		607.67	0.000287	7.65	14388.16	536.23	0.21
SixMileUsDs	1581 W	10yr	37500.00	560.33	587.11		587.60	0.000352	5.72	7376.62	440.53	0.21
SixMileUsDs	1581 W	50yr	54500.00	560.33	594.06		594.62	0.000293	6.20	10490.03	455.93	0.20
SixMileUsDs	1581 W	100yr	64000.00	560.33	597.92		598.50	0.000263	6.36	12262.21	463.50	0.19
SixMileUsDs	1581 W	500yr	86000.00	560.33	606.41		607.06	0.000222	6.77	16656.35	729.68	0.18
SixMileUsDs	496 V	10yr	38500.00	560.33	586.50	572.48	587.15	0.000475	6.58	6713.74	408.47	0.24
SixMileUsDs	496 V	50yr	56500.00	560.33	593.50	575.12	594.23	0.000393	7.13	9706.16	444.00	0.23
SixMileUsDs	496 V	100yr	66500.00	560.33	597.40	576.50	598.15	0.000349	7.28	11473.96	460.32	0.22
SixMileUsDs	496 V	500yr	88000.00	560.33	606.00	579.22	606.78	0.000275	7.50	16227.46	673.46	0.20

B4:

Proposed Dam Removal Model Results for Non-Flood Discharges

GFT

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	67345 BM	20%	2000.00	579.33	587.09		587.18	0.000360	2.49	848.93	139.74	0.17
SixMileUsDs	67345 BM	25%	1500.00	579.33	586.00		586.08	0.000373	2.25	697.89	136.87	0.17
SixMileUsDs	67345 BM	50%	700.00	579.33	583.79		583.84	0.000447	1.76	403.61	128.40	0.17
SixMileUsDs	67345 BM	75%	300.00	579.33	582.07		582.11	0.000667	1.50	199.85	101.85	0.19
SixMileUsDs	67345 BM	80%	250.00	579.33	581.78		581.81	0.000723	1.47	170.43	95.55	0.19
SixMileUsDs	67345 BM	Aug 21	190.00	579.33	581.39		581.42	0.000810	1.41	134.79	87.33	0.20
SixMileUsDs	67345 BM	90%	150.00	579.33	581.10		581.13	0.000878	1.35	110.96	81.36	0.20
SixMileUsDs	66163 BL	20%	2000.00	578.33	586.81		586.86	0.000198	1.90	1069.37	158.49	0.13
SixMileUsDs	66163 BL	25%	1500.00	578.33	585.71		585.75	0.000198	1.70	895.45	157.76	0.12
SixMileUsDs	66163 BL	50%	700.00	578.33	583.45		583.48	0.000217	1.29	544.14	151.72	0.12
SixMileUsDs	66163 BL	75%	300.00	578.33	581.59		581.60	0.000293	1.08	277.05	124.44	0.13
SixMileUsDs	66163 BL	80%	250.00	578.33	581.25		581.26	0.000316	1.06	236.20	116.25	0.13
SixMileUsDs	66163 BL	Aug 21	190.00	578.33	580.78		580.80	0.000360	1.03	185.04	105.10	0.14
SixMileUsDs	66163 BL	90%	150.00	578.33	580.43		580.44	0.000412	1.01	149.08	96.49	0.14
SixMileUsDs	65093 BK	20%	2000.00	577.33	586.63		586.68	0.000153	1.71	1194.15	175.54	0.11
SixMileUsDs	65093 BK	25%	1500.00	577.33	585.53		585.57	0.000149	1.51	1003.79	171.49	0.11
SixMileUsDs	65093 BK	50%	700.00	577.33	583.27		583.29	0.000148	1.12	625.97	162.35	0.10
SixMileUsDs	65093 BK	75%	300.00	577.33	581.37		581.38	0.000153	0.88	342.04	129.58	0.10
SixMileUsDs	65093 BK	80%	250.00	577.33	581.02		581.03	0.000155	0.84	298.30	121.86	0.09
SixMileUsDs	65093 BK	Aug 21	190.00	577.33	580.54		580.55	0.000158	0.78	242.64	111.25	0.09
SixMileUsDs	65093 BK	90%	150.00	577.33	580.17		580.18	0.000161	0.74	202.81	103.00	0.09
SixMileUsDs	63115 BJ	20%	2000.00	577.33	586.33		586.37	0.000156	1.70	1185.47	169.69	0.11
SixMileUsDs	63115 BJ	25%	1500.00	577.33	585.23		585.27	0.000152	1.50	1000.98	168.32	0.11
SixMileUsDs	63115 BJ	50%	700.00	577.33	582.97		582.99	0.000152	1.12	624.78	163.76	0.10
SixMileUsDs	63115 BJ	75%	300.00	577.33	581.06		581.08	0.000155	0.88	341.30	130.00	0.10
SixMileUsDs	63115 BJ	80%	250.00	577.33	580.71		580.72	0.000159	0.84	296.63	122.70	0.10
SixMileUsDs	63115 BJ	Aug 21	190.00	577.33	580.22		580.23	0.000169	0.80	238.95	112.58	0.10
SixMileUsDs	63115 BJ	90%	150.00	577.33	579.83		579.84	0.000182	0.76	196.71	104.55	0.10
SixMileUsDs	61540 BI	20%	2000.00	576.33	586.00		586.07	0.000230	2.11	973.25	138.53	0.14
SixMileUsDs	61540 BI	25%	1500.00	576.33	584.93		584.98	0.000219	1.86	824.67	137.73	0.13
SixMileUsDs	61540 BI	50%	700.00	576.33	582.68		582.71	0.000206	1.35	522.31	130.51	0.12
SixMileUsDs	61540 BI	75%	300.00	576.33	580.78		580.80	0.000200	1.03	290.83	103.15	0.11
SixMileUsDs	61540 BI	80%	250.00	576.33	580.43		580.45	0.000189	0.98	256.33	94.56	0.10
SixMileUsDs	61540 BI	Aug 21	190.00	576.33	579.95		579.96	0.000168	0.89	213.60	82.70	0.10
SixMileUsDs	61540 BI	90%	150.00	576.33	579.57		579.58	0.000147	0.81	184.06	73.37	0.09
SixMileUsDs	60064 BH	20%	2000.00	576.33	585.35		585.39	0.001299	1.66	1213.92	175.47	0.11
SixMileUsDs	60064 BH	25%	1500.00	576.33	584.30		584.33	0.001251	1.46	1030.01	174.80	0.11
SixMileUsDs	60064 BH	50%	700.00	576.33	582.07		582.09	0.001241	1.08	649.55	168.27	0.10
SixMileUsDs	60064 BH	75%	300.00	576.33	580.19		580.20	0.001196	0.83	361.49	133.57	0.09

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	60064 BH	80%	250.00	576.33	579.87		579.88	0.001165	0.78	320.05	127.01	0.09
SixMileUsDs	60064 BH	Aug 21	190.00	576.33	579.44		579.45	0.001114	0.71	267.22	118.11	0.08
SixMileUsDs	60064 BH	90%	150.00	576.33	579.11		579.12	0.001061	0.65	229.81	111.38	0.08
SixMileUsDs	58383 BG	20%	2000.00	575.33	584.61		584.67	0.000209	1.96	1027.51	150.55	0.13
SixMileUsDs	58383 BG	25%	1500.00	575.33	583.61		583.65	0.000197	1.72	877.05	147.99	0.12
SixMileUsDs	58383 BG	50%	700.00	575.33	581.47		581.49	0.000167	1.23	567.91	137.00	0.11
SixMileUsDs	58383 BG	75%	300.00	575.33	579.75		579.76	0.000110	0.84	356.60	111.37	0.08
SixMileUsDs	58383 BG	80%	250.00	575.33	579.47		579.48	0.000098	0.77	326.11	107.51	0.08
SixMileUsDs	58383 BG	Aug 21	190.00	575.33	579.10		579.11	0.000081	0.66	286.99	102.33	0.07
SixMileUsDs	58383 BG	90%	150.00	575.33	578.83		578.83	0.000067	0.58	259.20	98.48	0.06
SixMileUsDs	56884 BF	20%	2000.00	575.33	584.27		584.33	0.000259	1.97	1018.89	171.62	0.14
SixMileUsDs	56884 BF	25%	1500.00	575.33	583.27		583.31	0.000260	1.77	849.52	168.06	0.14
SixMileUsDs	56884 BF	50%	700.00	575.33	581.13		581.16	0.000300	1.41	497.82	153.44	0.14
SixMileUsDs	56884 BF	75%	300.00	575.33	579.50		579.52	0.000277	1.09	276.05	118.08	0.13
SixMileUsDs	56884 BF	80%	250.00	575.33	579.24		579.26	0.000263	1.01	246.46	112.53	0.12
SixMileUsDs	56884 BF	Aug 21	190.00	575.33	578.90		578.91	0.000239	0.91	209.52	105.18	0.11
SixMileUsDs	56884 BF	90%	150.00	575.33	578.65		578.66	0.000213	0.81	184.15	99.82	0.11
SixMileUsDs	55176 BE	20%	2000.00	574.33	583.90		583.95	0.000188	1.82	1096.96	158.54	0.12
SixMileUsDs	55176 BE	25%	1500.00	574.33	582.91		582.95	0.000172	1.59	941.75	157.27	0.11
SixMileUsDs	55176 BE	50%	700.00	574.33	580.82		580.84	0.000124	1.12	624.70	139.50	0.09
SixMileUsDs	55176 BE	75%	300.00	574.33	579.30		579.31	0.000065	0.70	427.84	119.22	0.07
SixMileUsDs	55176 BE	80%	250.00	574.33	579.07		579.08	0.000055	0.62	400.67	116.14	0.06
SixMileUsDs	55176 BE	Aug 21	190.00	574.33	578.77		578.77	0.000041	0.52	366.06	112.10	0.05
SixMileUsDs	55176 BE	90%	150.00	574.33	578.55		578.55	0.000031	0.44	341.76	109.17	0.04
SixMileUsDs	53410 BD	20%	2000.00	574.33	583.59		583.64	0.000162	1.70	1185.08	178.87	0.11
SixMileUsDs	53410 BD	25%	1500.00	574.33	582.63		582.67	0.000150	1.48	1014.34	176.70	0.11
SixMileUsDs	53410 BD	50%	700.00	574.33	580.62		580.64	0.000111	1.04	674.83	155.76	0.09
SixMileUsDs	53410 BD	75%	300.00	574.33	579.20		579.20	0.000056	0.64	468.92	133.87	0.06
SixMileUsDs	53410 BD	80%	250.00	574.33	578.98		578.99	0.000046	0.57	440.77	130.59	0.05
SixMileUsDs	53410 BD	Aug 21	190.00	574.33	578.70		578.71	0.000034	0.47	404.76	126.27	0.05
SixMileUsDs	53410 BD	90%	150.00	574.33	578.50		578.50	0.000025	0.40	379.38	123.14	0.04
SixMileUsDs	51916 BC	20%	2000.00	574.33	583.39		583.42	0.000125	1.44	1401.84	223.14	0.10
SixMileUsDs	51916 BC	25%	1500.00	574.33	582.44		582.47	0.000119	1.26	1191.01	219.70	0.09
SixMileUsDs	51916 BC	50%	700.00	574.33	580.47		580.48	0.000094	0.90	773.94	194.33	0.08
SixMileUsDs	51916 BC	75%	300.00	574.33	579.12		579.12	0.000048	0.56	532.09	164.36	0.06
SixMileUsDs	51916 BC	80%	250.00	574.33	578.92		578.92	0.000040	0.50	499.73	159.93	0.05
SixMileUsDs	51916 BC	Aug 21	190.00	574.33	578.66		578.66	0.000029	0.41	458.36	154.07	0.04
SixMileUsDs	51916 BC	90%	150.00	574.33	578.47		578.47	0.000022	0.35	429.23	149.81	0.04

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	49973 BB	20%	2000.00	573.33	583.12		583.17	0.000140	1.64	1233.42	180.15	0.11
SixMileUsDs	49973 BB	25%	1500.00	573.33	582.20		582.23	0.000125	1.41	1069.05	175.02	0.10
SixMileUsDs	49973 BB	50%	700.00	573.33	580.30		580.31	0.000080	0.94	746.92	156.49	0.08
SixMileUsDs	49973 BB	75%	300.00	573.33	579.04		579.05	0.000032	0.53	561.71	138.74	0.05
SixMileUsDs	49973 BB	80%	250.00	573.33	578.86		578.86	0.000026	0.47	536.32	136.13	0.04
SixMileUsDs	49973 BB	Aug 21	190.00	573.33	578.61		578.62	0.000018	0.38	503.31	132.66	0.03
SixMileUsDs	49973 BB	90%	150.00	573.33	578.43		578.44	0.000013	0.31	479.66	130.11	0.03
SixMileUsDs	48402 BA	20%	2000.00	573.33	582.89		582.93	0.000158	1.70	1190.62	178.25	0.11
SixMileUsDs	48402 BA	25%	1500.00	573.33	581.99		582.02	0.000141	1.46	1030.33	177.66	0.10
SixMileUsDs	48402 BA	50%	700.00	573.33	580.17		580.18	0.000089	0.97	723.45	156.79	0.08
SixMileUsDs	48402 BA	75%	300.00	573.33	578.99		579.00	0.000035	0.55	549.58	139.29	0.05
SixMileUsDs	48402 BA	80%	250.00	573.33	578.82		578.82	0.000027	0.48	525.63	136.71	0.04
SixMileUsDs	48402 BA	Aug 21	190.00	573.33	578.59		578.59	0.000019	0.38	494.24	133.24	0.04
SixMileUsDs	48402 BA	90%	150.00	573.33	578.41		578.41	0.000013	0.32	471.58	130.69	0.03
SixMileUsDs	46835 AZ	20%	2000.00	575.16	582.62		582.66	0.000189	1.74	1153.18	178.43	0.12
SixMileUsDs	46835 AZ	25%	1500.00	575.16	581.74		581.78	0.000169	1.50	998.72	175.83	0.11
SixMileUsDs	46835 AZ	50%	700.00	575.16	580.01		580.03	0.000108	0.99	704.40	163.78	0.08
SixMileUsDs	46835 AZ	75%	300.00	575.16	578.93		578.93	0.000051	0.57	526.47	163.70	0.06
SixMileUsDs	46835 AZ	80%	250.00	575.16	578.76		578.77	0.000042	0.50	500.20	163.69	0.05
SixMileUsDs	46835 AZ	Aug 21	190.00	575.16	578.55		578.55	0.000031	0.41	464.66	163.68	0.04
SixMileUsDs	46835 AZ	90%	150.00	575.16	578.39		578.39	0.000023	0.34	438.21	163.67	0.04
SixMileUsDs	44954 AY	20%	2000.00	563.94	582.41		582.44	0.000079	1.46	1371.36	134.37	0.08
SixMileUsDs	44954 AY	25%	1500.00	563.94	581.58		581.60	0.000058	1.19	1260.72	133.52	0.07
SixMileUsDs	44954 AY	50%	700.00	563.94	579.94		579.95	0.000020	0.66	1052.75	121.83	0.04
SixMileUsDs	44954 AY	75%	300.00	563.94	578.90		578.91	0.000006	0.32	926.81	120.45	0.02
SixMileUsDs	44954 AY	80%	250.00	563.94	578.75		578.75	0.000004	0.28	908.13	120.24	0.02
SixMileUsDs	44954 AY	Aug 21	190.00	563.94	578.54		578.54	0.000003	0.22	882.72	119.96	0.01
SixMileUsDs	44954 AY	90%	150.00	563.94	578.38		578.38	0.000002	0.17	863.75	119.75	0.01
SixMileUsDs	43497 AX	20%	2000.00	572.78	582.27		582.30	0.000110	1.49	1341.18	174.20	0.09
SixMileUsDs	43497 AX	25%	1500.00	572.78	581.47		581.50	0.000088	1.25	1203.72	171.16	0.08
SixMileUsDs	43497 AX	50%	700.00	572.78	579.90		579.91	0.000040	0.74	943.54	161.11	0.05
SixMileUsDs	43497 AX	75%	300.00	572.78	578.89		578.89	0.000013	0.38	782.26	158.17	0.03
SixMileUsDs	43497 AX	80%	250.00	572.78	578.74		578.74	0.000010	0.33	758.23	157.73	0.03
SixMileUsDs	43497 AX	Aug 21	190.00	572.78	578.53		578.53	0.000007	0.26	725.45	157.12	0.02
SixMileUsDs	43497 AX	90%	150.00	572.78	578.37		578.38	0.000005	0.21	700.92	156.67	0.02
SixMileUsDs	41423 AW	20%	2000.00	570.87	582.04		582.08	0.000105	1.57	1279.64	147.24	0.09
SixMileUsDs	41423 AW	25%	1500.00	570.87	581.30		581.33	0.000078	1.28	1171.07	145.74	0.08
SixMileUsDs	41423 AW	50%	700.00	570.87	579.83		579.84	0.000030	0.73	964.70	136.47	0.05
SixMileUsDs	41423 AW	75%	300.00	570.87	578.87		578.87	0.000009	0.36	833.58	136.41	0.03

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	41423 AW	80%	250.00	570.87	578.72		578.72	0.000007	0.31	813.57	136.40	0.02
SixMileUsDs	41423 AW	Aug 21	190.00	570.87	578.52		578.52	0.000004	0.24	785.95	136.39	0.02
SixMileUsDs	41423 AW	90%	150.00	570.87	578.37		578.37	0.000003	0.20	765.09	136.38	0.01
SixMileUsDs	40041 AV	20%	2000.00	568.91	581.91		581.94	0.000092	1.40	1440.54	189.58	0.09
SixMileUsDs	40041 AV	25%	1500.00	568.91	581.20		581.22	0.000071	1.15	1306.25	188.70	0.08
SixMileUsDs	40041 AV	50%	700.00	568.91	579.79		579.80	0.000030	0.66	1052.90	170.89	0.05
SixMileUsDs	40041 AV	75%	300.00	568.91	578.86		578.86	0.000009	0.34	894.56	168.60	0.03
SixMileUsDs	40041 AV	80%	250.00	568.91	578.71		578.71	0.000007	0.29	870.36	168.25	0.02
SixMileUsDs	40041 AV	Aug 21	190.00	568.91	578.51		578.51	0.000005	0.23	836.89	167.76	0.02
SixMileUsDs	40041 AV	90%	150.00	568.91	578.36		578.36	0.000003	0.18	811.57	167.39	0.01
SixMileUsDs	38212 AU	20%	2000.00	574.21	581.68		581.72	0.000161	1.59	1256.41	195.89	0.11
SixMileUsDs	38212 AU	25%	1500.00	574.21	581.03		581.05	0.000128	1.33	1127.98	192.75	0.10
SixMileUsDs	38212 AU	50%	700.00	574.21	579.71		579.72	0.000060	0.80	879.97	185.62	0.06
SixMileUsDs	38212 AU	75%	300.00	574.21	578.83		578.83	0.000021	0.42	717.30	183.99	0.04
SixMileUsDs	38212 AU	80%	250.00	574.21	578.69		578.70	0.000017	0.36	691.97	183.74	0.03
SixMileUsDs	38212 AU	Aug 21	190.00	574.21	578.50		578.50	0.000011	0.29	656.59	183.38	0.03
SixMileUsDs	38212 AU	90%	150.00	574.21	578.35		578.35	0.000008	0.24	629.63	183.11	0.02
SixMileUsDs	36814 AT	20%	2000.00	572.87	581.48		581.52	0.000134	1.51	1325.44	196.28	0.10
SixMileUsDs	36814 AT	25%	1500.00	572.87	580.87		580.89	0.000100	1.24	1207.30	191.30	0.09
SixMileUsDs	36814 AT	50%	700.00	572.87	579.64		579.65	0.000041	0.72	978.53	182.95	0.05
SixMileUsDs	36814 AT	75%	300.00	572.87	578.81		578.81	0.000013	0.36	826.07	182.14	0.03
SixMileUsDs	36814 AT	80%	250.00	572.87	578.68		578.68	0.000010	0.31	801.92	182.01	0.03
SixMileUsDs	36814 AT	Aug 21	190.00	572.87	578.49		578.49	0.000007	0.25	767.89	181.83	0.02
SixMileUsDs	36814 AT	90%	150.00	572.87	578.35		578.35	0.000005	0.20	741.79	181.70	0.02
SixMileUsDs	35150 AS	20%	2000.00	571.12	581.29	574.61	581.32	0.000104	1.40	1434.76	197.91	0.09
SixMileUsDs	35150 AS	25%	1500.00	571.12	580.73	574.29	580.75	0.000076	1.13	1323.98	197.17	0.08
SixMileUsDs	35150 AS	50%	700.00	571.12	579.59	573.61	579.60	0.000028	0.63	1106.62	186.01	0.05
SixMileUsDs	35150 AS	75%	300.00	571.12	578.79	573.15	578.79	0.000008	0.31	959.41	183.47	0.02
SixMileUsDs	35150 AS	80%	250.00	571.12	578.66	573.06	578.66	0.000006	0.27	935.84	183.06	0.02
SixMileUsDs	35150 AS	Aug 21	190.00	571.12	578.48	572.96	578.48	0.000004	0.21	902.43	182.48	0.02
SixMileUsDs	35150 AS	90%	150.00	571.12	578.34	572.82	578.34	0.000003	0.17	876.72	182.03	0.01
SixMileUsDs	34932 Bridge		Bridge									
SixMileUsDs	34703 AR	20%	2000.00	569.84	581.23		581.26	0.000108	1.45	1378.97	187.35	0.09
SixMileUsDs	34703 AR	25%	1500.00	569.84	580.69		580.71	0.000078	1.17	1277.42	185.94	0.08
SixMileUsDs	34703 AR	50%	700.00	569.84	579.57		579.58	0.000030	0.65	1071.93	183.01	0.05
SixMileUsDs	34703 AR	75%	300.00	569.84	578.79		578.79	0.000008	0.32	929.92	177.37	0.02
SixMileUsDs	34703 AR	80%	250.00	569.84	578.66		578.66	0.000006	0.28	907.37	176.15	0.02
SixMileUsDs	34703 AR	Aug 21	190.00	569.84	578.48		578.48	0.000004	0.22	875.52	174.40	0.02

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	34703 AR	90%	150.00	569.84	578.34		578.34	0.000003	0.18	851.15	172.97	0.01
SixMileUsDs	34572	20%	2000.00	570.95	581.19		581.23	0.000779	1.62	1234.10	201.85	0.12
SixMileUsDs	34572	25%	1500.00	570.95	580.66		580.69	0.000588	1.33	1126.80	200.21	0.10
SixMileUsDs	34572	50%	700.00	570.95	579.56		579.57	0.000256	0.77	909.11	196.67	0.06
SixMileUsDs	34572	75%	300.00	570.95	578.78		578.79	0.000083	0.40	757.78	191.23	0.04
SixMileUsDs	34572	80%	250.00	570.95	578.66		578.66	0.000063	0.34	733.66	189.58	0.03
SixMileUsDs	34572	Aug 21	190.00	570.95	578.48		578.48	0.000042	0.27	699.60	187.22	0.02
SixMileUsDs	34572	90%	150.00	570.95	578.34		578.34	0.000029	0.22	673.56	185.40	0.02
SixMileUsDs	34378	20%	2000.00	573.44	580.98		581.03	0.001467	1.85	1080.27	235.25	0.15
SixMileUsDs	34378	25%	1500.00	573.44	580.49		580.53	0.001194	1.55	966.16	234.23	0.13
SixMileUsDs	34378	50%	700.00	573.44	579.48		579.50	0.000652	0.96	731.01	232.11	0.10
SixMileUsDs	34378	75%	300.00	573.44	578.76		578.76	0.000271	0.53	564.97	224.27	0.06
SixMileUsDs	34378	80%	250.00	573.44	578.64		578.64	0.000219	0.46	538.07	222.68	0.05
SixMileUsDs	34378	Aug 21	190.00	573.44	578.46		578.46	0.000160	0.38	499.57	220.39	0.04
SixMileUsDs	34378	90%	150.00	573.44	578.33		578.33	0.000121	0.32	469.86	218.61	0.04
SixMileUsDs	34154	20%	2000.00	574.28	580.40		580.50	0.004387	2.47	815.14	270.99	0.25
SixMileUsDs	34154	25%	1500.00	574.28	580.01		580.08	0.003868	2.13	710.04	267.31	0.23
SixMileUsDs	34154	50%	700.00	574.28	579.20		579.23	0.002718	1.42	495.39	260.65	0.18
SixMileUsDs	34154	75%	300.00	574.28	578.63		578.64	0.001519	0.86	350.10	247.60	0.13
SixMileUsDs	34154	80%	250.00	574.28	578.53		578.54	0.001323	0.77	325.89	245.36	0.12
SixMileUsDs	34154	Aug 21	190.00	574.28	578.38		578.39	0.001109	0.66	289.80	241.98	0.11
SixMileUsDs	34154	90%	150.00	574.28	578.26		578.27	0.000961	0.57	261.36	239.29	0.10
SixMileUsDs	34006 AQ	20%	2000.00	577.16	579.86		580.01	0.002519	3.09	651.01	294.08	0.36
SixMileUsDs	34006 AQ	25%	1500.00	577.16	579.51		579.62	0.002474	2.76	547.13	292.61	0.35
SixMileUsDs	34006 AQ	50%	700.00	577.16	578.77		578.84	0.002587	2.10	333.65	282.55	0.34
SixMileUsDs	34006 AQ	75%	300.00	577.16	577.91	577.87	578.05	0.024457	3.03	99.04	262.99	0.87
SixMileUsDs	34006 AQ	80%	250.00	577.16	577.83	577.83	577.99	0.031976	3.12	80.05	248.26	0.97
SixMileUsDs	34006 AQ	Aug 21	190.00	577.16	577.76	577.76	577.90	0.036827	3.07	61.89	218.92	1.02
SixMileUsDs	34006 AQ	90%	150.00	577.16	577.71	577.71	577.84	0.037833	2.92	51.38	199.99	1.02
SixMileUsDs	33879	20%	2000.00	572.06	579.47		579.55	0.005034	2.20	909.76	380.31	0.25
SixMileUsDs	33879	25%	1500.00	572.06	579.13		579.19	0.004642	1.93	780.56	376.11	0.24
SixMileUsDs	33879	50%	700.00	572.06	578.39		578.42	0.004186	1.39	503.92	366.69	0.21
SixMileUsDs	33879	75%	300.00	572.06	575.96		576.12	0.010348	3.20	93.72	35.78	0.35
SixMileUsDs	33879	80%	250.00	572.06	575.63		575.78	0.010867	3.05	82.01	35.19	0.35
SixMileUsDs	33879	Aug 21	190.00	572.06	575.19		575.31	0.011508	2.86	66.55	33.09	0.35
SixMileUsDs	33879	90%	150.00	572.06	574.83		574.94	0.011782	2.72	55.21	30.13	0.35
SixMileUsDs	33793	20%	2000.00	570.64	577.74	577.74	578.30	0.119133	5.98	334.49	332.75	1.05
SixMileUsDs	33793	25%	1500.00	570.64	577.57	577.57	578.03	0.123961	5.43	276.48	327.81	1.04

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33793	50%	700.00	570.64	577.67	574.46	577.75	0.018878	2.27	308.83	330.57	0.41
SixMileUsDs	33793	75%	300.00	570.64	575.13	573.16	575.30	0.008784	3.33	90.21	26.35	0.32
SixMileUsDs	33793	80%	250.00	570.64	574.85	572.96	575.00	0.007729	3.01	83.02	25.73	0.30
SixMileUsDs	33793	Aug 21	190.00	570.64	574.47	572.71	574.57	0.006573	2.60	73.10	25.42	0.27
SixMileUsDs	33793	90%	150.00	570.64	574.16	572.52	574.25	0.005751	2.29	65.44	25.18	0.25
SixMileUsDs	33686	20%	2000.00	570.63	576.35		576.39	0.001629	1.56	1278.29	383.70	0.15
SixMileUsDs	33686	25%	1500.00	570.63	575.30		575.35	0.003109	1.71	878.93	376.32	0.20
SixMileUsDs	33686	50%	700.00	570.63	573.14	573.14	573.52	0.128022	4.98	140.52	195.39	1.04
SixMileUsDs	33686	75%	300.00	570.63	572.62	572.62	572.93	0.129912	4.51	66.47	107.87	1.01
SixMileUsDs	33686	80%	250.00	570.63	572.52	572.52	572.82	0.138478	4.44	56.29	98.18	1.03
SixMileUsDs	33686	Aug 21	190.00	570.63	572.38	572.38	572.67	0.135907	4.30	44.21	79.76	1.02
SixMileUsDs	33686	90%	150.00	570.63	572.24	572.24	572.54	0.136290	4.38	34.28	60.15	1.02
SixMileUsDs	33574	20%	2000.00	558.50	576.35		576.36	0.000072	0.56	3555.70	485.10	0.04
SixMileUsDs	33574	25%	1500.00	558.50	575.31		575.31	0.000066	0.49	3052.19	477.82	0.03
SixMileUsDs	33574	50%	700.00	558.50	573.20		573.21	0.000050	0.34	2069.13	451.84	0.03
SixMileUsDs	33574	75%	300.00	558.50	571.88		571.88	0.000017	0.20	1511.76	328.41	0.02
SixMileUsDs	33574	80%	250.00	558.50	571.69		571.69	0.000012	0.17	1454.26	304.87	0.01
SixMileUsDs	33574	Aug 21	190.00	558.50	571.45		571.45	0.000007	0.14	1384.52	274.37	0.01
SixMileUsDs	33574	90%	150.00	558.50	571.25		571.25	0.000005	0.11	1330.79	257.72	0.01
SixMileUsDs	33454	20%	2000.00	569.01	576.31		576.34	0.000710	1.22	1650.85	392.82	0.10
SixMileUsDs	33454	25%	1500.00	569.01	575.27		575.29	0.001018	1.21	1241.57	388.75	0.12
SixMileUsDs	33454	50%	700.00	569.01	573.16		573.19	0.001967	1.37	511.12	215.80	0.16
SixMileUsDs	33454	75%	300.00	569.01	571.85		571.87	0.002785	1.17	256.00	177.75	0.17
SixMileUsDs	33454	80%	250.00	569.01	571.67		571.69	0.002781	1.11	225.23	169.54	0.17
SixMileUsDs	33454	Aug 21	190.00	569.01	571.43		571.45	0.002931	1.02	185.78	164.61	0.17
SixMileUsDs	33454	90%	150.00	569.01	571.23		571.25	0.003342	0.98	153.35	160.41	0.18
SixMileUsDs	33320	20%	2000.00	568.22	576.21		576.24	0.000696	1.38	1456.46	285.76	0.11
SixMileUsDs	33320	25%	1500.00	568.22	575.14		575.16	0.000842	1.30	1152.85	280.14	0.11
SixMileUsDs	33320	50%	700.00	568.22	572.95		572.97	0.001335	1.20	582.08	223.41	0.13
SixMileUsDs	33320	75%	300.00	568.22	571.50		571.52	0.002370	1.08	278.15	194.06	0.16
SixMileUsDs	33320	80%	250.00	568.22	571.30		571.31	0.002733	1.05	238.43	193.23	0.17
SixMileUsDs	33320	Aug 21	190.00	568.22	571.03		571.04	0.003187	1.01	187.55	179.64	0.17
SixMileUsDs	33320	90%	150.00	568.22	570.81		570.83	0.002878	0.98	152.91	142.28	0.17
SixMileUsDs	33097 AP	20%	2000.00	567.57	576.09		576.15	0.000231	2.01	1044.47	169.12	0.14
SixMileUsDs	33097 AP	25%	1500.00	567.57	575.02		575.07	0.000233	1.80	865.59	165.62	0.13
SixMileUsDs	33097 AP	50%	700.00	567.57	572.83		572.85	0.000261	1.38	518.71	153.95	0.13
SixMileUsDs	33097 AP	75%	300.00	567.57	571.36		571.37	0.000298	1.02	295.43	150.12	0.13
SixMileUsDs	33097 AP	80%	250.00	567.57	571.15		571.16	0.000299	0.95	263.95	149.42	0.12
SixMileUsDs	33097 AP	Aug 21	190.00	567.57	570.87		570.88	0.000300	0.85	222.81	148.34	0.12

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33097 AP	90%	150.00	567.57	570.67		570.67	0.000300	0.78	192.58	144.24	0.12
SixMileUsDs	32936	20%	2000.00	568.44	576.03		576.08	0.001002	1.92	1044.26	163.44	0.13
SixMileUsDs	32936	25%	1500.00	568.44	574.96		575.00	0.001020	1.73	870.89	160.16	0.13
SixMileUsDs	32936	50%	700.00	568.44	572.75		572.78	0.001140	1.33	525.78	153.46	0.13
SixMileUsDs	32936	75%	300.00	568.44	571.27		571.29	0.001280	0.99	301.60	149.66	0.12
SixMileUsDs	32936	80%	250.00	568.44	571.06		571.07	0.001274	0.93	270.21	148.99	0.12
SixMileUsDs	32936	Aug 21	190.00	568.44	570.78		570.80	0.001256	0.83	229.19	147.55	0.12
SixMileUsDs	32936	90%	150.00	568.44	570.58		570.59	0.001212	0.75	199.15	144.20	0.11
SixMileUsDs	32638	20%	2000.00	567.38	575.72		575.78	0.001038	1.92	1057.48	173.91	0.13
SixMileUsDs	32638	25%	1500.00	567.38	574.64		574.69	0.001100	1.74	870.11	171.59	0.13
SixMileUsDs	32638	50%	700.00	567.38	572.34		572.37	0.001617	1.45	484.14	163.80	0.15
SixMileUsDs	32638	75%	300.00	567.38	570.59		570.62	0.004794	1.48	203.11	150.33	0.22
SixMileUsDs	32638	80%	250.00	567.38	570.32		570.35	0.006155	1.53	163.63	138.47	0.25
SixMileUsDs	32638	Aug 21	190.00	567.38	569.97		570.01	0.008698	1.61	118.20	120.07	0.29
SixMileUsDs	32638	90%	150.00	567.38	569.71		569.76	0.011948	1.68	89.16	107.33	0.33
SixMileUsDs	31795 AO	20%	2000.00	566.33	575.27		575.35	0.000298	2.24	906.74	145.51	0.15
SixMileUsDs	31795 AO	25%	1500.00	566.33	574.18		574.24	0.000309	2.02	747.84	142.30	0.15
SixMileUsDs	31795 AO	50%	700.00	566.33	571.78		571.82	0.000354	1.64	426.02	117.54	0.15
SixMileUsDs	31795 AO	75%	300.00	566.33	569.76		569.79	0.000412	1.37	218.62	88.49	0.15
SixMileUsDs	31795 AO	80%	250.00	566.33	569.43		569.45	0.000425	1.32	189.73	83.64	0.15
SixMileUsDs	31795 AO	Aug 21	190.00	566.33	568.98		569.00	0.000444	1.24	153.76	77.19	0.15
SixMileUsDs	31795 AO	90%	150.00	566.33	568.65		568.67	0.000460	1.17	128.66	72.35	0.15
SixMileUsDs	29614 AN	20%	2000.00	565.33	574.63		574.71	0.000290	2.32	873.69	130.45	0.15
SixMileUsDs	29614 AN	25%	1500.00	565.33	573.52		573.59	0.000289	2.06	730.67	128.39	0.15
SixMileUsDs	29614 AN	50%	700.00	565.33	571.07		571.11	0.000299	1.61	435.25	108.77	0.14
SixMileUsDs	29614 AN	75%	300.00	565.33	568.99		569.01	0.000313	1.28	233.58	84.89	0.14
SixMileUsDs	29614 AN	80%	250.00	565.33	568.63		568.66	0.000318	1.22	204.28	80.84	0.14
SixMileUsDs	29614 AN	Aug 21	190.00	565.33	568.16		568.18	0.000327	1.14	167.05	75.37	0.13
SixMileUsDs	29614 AN	90%	150.00	565.33	567.80		567.81	0.000336	1.07	140.62	71.23	0.13
SixMileUsDs	28097 AM	20%	2000.00	564.33	574.30		574.35	0.000186	1.86	1096.81	164.93	0.12
SixMileUsDs	28097 AM	25%	1500.00	564.33	573.19		573.23	0.000186	1.65	916.27	162.28	0.12
SixMileUsDs	28097 AM	50%	700.00	564.33	570.72		570.74	0.000194	1.30	538.79	134.78	0.11
SixMileUsDs	28097 AM	75%	300.00	564.33	568.61		568.63	0.000203	1.04	288.08	103.67	0.11
SixMileUsDs	28097 AM	80%	250.00	564.33	568.25		568.27	0.000206	0.99	251.71	98.34	0.11
SixMileUsDs	28097 AM	Aug 21	190.00	564.33	567.77		567.78	0.000211	0.92	205.45	91.12	0.11
SixMileUsDs	28097 AM	90%	150.00	564.33	567.39		567.41	0.000216	0.87	172.55	85.61	0.11
SixMileUsDs	26514 AL	20%	2000.00	564.33	574.02		574.07	0.000166	1.80	1127.94	163.26	0.12
SixMileUsDs	26514 AL	25%	1500.00	564.33	572.92		572.96	0.000161	1.59	949.68	160.19	0.11

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	26514 AL	50%	700.00	564.33	570.44		570.46	0.000161	1.22	573.67	136.87	0.11
SixMileUsDs	26514 AL	75%	300.00	564.33	568.34		568.35	0.000154	0.95	317.06	107.32	0.10
SixMileUsDs	26514 AL	80%	250.00	564.33	567.98		567.99	0.000153	0.90	279.22	102.24	0.10
SixMileUsDs	26514 AL	Aug 21	190.00	564.33	567.49		567.50	0.000152	0.82	230.76	95.34	0.09
SixMileUsDs	26514 AL	90%	150.00	564.33	567.11		567.12	0.000151	0.77	196.03	90.07	0.09
SixMileUsDs	25135 AK	20%	2000.00	564.33	573.73		573.80	0.000238	2.11	970.26	147.03	0.14
SixMileUsDs	25135 AK	25%	1500.00	564.33	572.64		572.69	0.000235	1.87	811.19	143.86	0.13
SixMileUsDs	25135 AK	50%	700.00	564.33	570.17		570.20	0.000234	1.45	482.44	117.36	0.13
SixMileUsDs	25135 AK	75%	300.00	564.33	568.07		568.09	0.000237	1.14	262.84	92.48	0.12
SixMileUsDs	25135 AK	80%	250.00	564.33	567.71		567.73	0.000240	1.09	230.20	88.19	0.12
SixMileUsDs	25135 AK	Aug 21	190.00	564.33	567.22		567.23	0.000247	1.01	188.23	82.33	0.12
SixMileUsDs	25135 AK	90%	150.00	564.33	566.84		566.85	0.000256	0.95	157.97	77.84	0.12
SixMileUsDs	23775 AJ	20%	2000.00	563.33	573.53		573.57	0.000117	1.54	1317.71	183.93	0.10
SixMileUsDs	23775 AJ	25%	1500.00	563.33	572.44		572.47	0.000112	1.35	1117.87	182.40	0.09
SixMileUsDs	23775 AJ	50%	700.00	563.33	569.98		569.99	0.000101	1.01	693.87	154.90	0.08
SixMileUsDs	23775 AJ	75%	300.00	563.33	567.90		567.91	0.000082	0.74	405.34	123.41	0.07
SixMileUsDs	23775 AJ	80%	250.00	563.33	567.55		567.55	0.000078	0.69	362.22	117.98	0.07
SixMileUsDs	23775 AJ	Aug 21	190.00	563.33	567.06		567.07	0.000072	0.62	306.66	110.60	0.07
SixMileUsDs	23775 AJ	90%	150.00	563.33	566.69		566.69	0.000067	0.56	266.53	104.94	0.06
SixMileUsDs	21935 AI	20%	2000.00	563.33	573.21		573.28	0.000220	2.05	993.58	145.45	0.13
SixMileUsDs	21935 AI	25%	1500.00	563.33	572.15		572.20	0.000204	1.80	843.20	139.21	0.13
SixMileUsDs	21935 AI	50%	700.00	563.33	569.72		569.75	0.000178	1.34	523.57	116.91	0.11
SixMileUsDs	21935 AI	75%	300.00	563.33	567.70		567.72	0.000142	0.97	309.71	94.80	0.09
SixMileUsDs	21935 AI	80%	250.00	563.33	567.36		567.37	0.000135	0.90	277.51	91.01	0.09
SixMileUsDs	21935 AI	Aug 21	190.00	563.33	566.89		566.90	0.000123	0.81	235.94	85.86	0.09
SixMileUsDs	21935 AI	90%	150.00	563.33	566.53		566.54	0.000114	0.73	205.83	81.94	0.08
SixMileUsDs	19696 AH	20%	2000.00	564.00	572.62		572.70	0.000312	2.18	922.73	153.66	0.16
SixMileUsDs	19696 AH	25%	1500.00	564.00	571.56		571.62	0.000326	1.98	760.70	152.41	0.15
SixMileUsDs	19696 AH	50%	700.00	564.00	569.15		569.19	0.000373	1.65	424.48	120.90	0.16
SixMileUsDs	19696 AH	75%	300.00	564.00	567.16		567.19	0.000464	1.41	213.49	91.18	0.16
SixMileUsDs	19696 AH	80%	250.00	564.00	566.82		566.85	0.000496	1.36	183.36	86.10	0.16
SixMileUsDs	19696 AH	Aug 21	190.00	564.00	566.36		566.39	0.000555	1.31	145.36	79.24	0.17
SixMileUsDs	19696 AH	90%	150.00	564.00	566.01		566.04	0.000621	1.26	118.67	74.04	0.18
SixMileUsDs	18407 AG	20%	2000.00	563.00	572.33		572.38	0.000185	1.83	1112.02	171.03	0.12
SixMileUsDs	18407 AG	25%	1500.00	563.00	571.27		571.31	0.000182	1.62	932.02	168.04	0.12
SixMileUsDs	18407 AG	50%	700.00	563.00	568.84		568.87	0.000175	1.25	558.15	136.05	0.11
SixMileUsDs	18407 AG	75%	300.00	563.00	566.84		566.85	0.000162	0.96	313.47	108.27	0.10
SixMileUsDs	18407 AG	80%	250.00	563.00	566.49		566.51	0.000160	0.90	276.86	103.47	0.10
SixMileUsDs	18407 AG	Aug 21	190.00	563.00	566.02		566.03	0.000158	0.83	229.64	96.93	0.09

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	18407 AG	90%	150.00	563.00	565.66		565.67	0.000157	0.77	195.60	91.93	0.09
SixMileUsDs	16725 AF	20%	2000.00	562.33	571.92		571.99	0.000292	2.22	912.65	145.65	0.15
SixMileUsDs	16725 AF	25%	1500.00	562.33	570.86		570.92	0.000294	1.98	759.44	144.70	0.15
SixMileUsDs	16725 AF	50%	700.00	562.33	568.46		568.50	0.000286	1.56	448.10	113.36	0.14
SixMileUsDs	16725 AF	75%	300.00	562.33	566.49		566.51	0.000258	1.20	250.63	87.56	0.12
SixMileUsDs	16725 AF	80%	250.00	562.33	566.15		566.17	0.000252	1.13	221.71	83.12	0.12
SixMileUsDs	16725 AF	Aug 21	190.00	562.33	565.69		565.71	0.000241	1.03	184.77	77.06	0.12
SixMileUsDs	16725 AF	90%	150.00	562.33	565.34		565.35	0.000231	0.95	158.49	72.45	0.11
SixMileUsDs	15278 AE	20%	2000.00	562.33	571.55		571.61	0.000234	2.00	1006.69	159.49	0.14
SixMileUsDs	15278 AE	25%	1500.00	562.33	570.49		570.54	0.000235	1.79	839.89	153.76	0.13
SixMileUsDs	15278 AE	50%	700.00	562.33	568.11		568.14	0.000208	1.37	510.41	123.66	0.12
SixMileUsDs	15278 AE	75%	300.00	562.33	566.19		566.20	0.000179	1.02	295.04	100.12	0.10
SixMileUsDs	15278 AE	80%	250.00	562.33	565.86		565.87	0.000173	0.95	262.63	96.08	0.10
SixMileUsDs	15278 AE	Aug 21	190.00	562.33	565.41		565.42	0.000165	0.86	220.79	90.60	0.10
SixMileUsDs	15278 AE	90%	150.00	562.33	565.07		565.08	0.000157	0.79	190.64	86.44	0.09
SixMileUsDs	13567 AD	20%	2000.00	562.33	571.19		571.24	0.000203	1.79	1119.89	182.91	0.13
SixMileUsDs	13567 AD	25%	1500.00	562.33	570.12		570.16	0.000205	1.61	929.32	174.59	0.12
SixMileUsDs	13567 AD	50%	700.00	562.33	567.78		567.81	0.000183	1.25	559.47	141.35	0.11
SixMileUsDs	13567 AD	75%	300.00	562.33	565.89		565.91	0.000167	0.94	317.78	114.54	0.10
SixMileUsDs	13567 AD	80%	250.00	562.33	565.57		565.58	0.000164	0.89	281.43	109.94	0.10
SixMileUsDs	13567 AD	Aug 21	190.00	562.33	565.13		565.14	0.000161	0.81	234.56	103.71	0.09
SixMileUsDs	13567 AD	90%	150.00	562.33	564.80		564.81	0.000158	0.75	200.93	99.00	0.09
SixMileUsDs	11928 AC	20%	2000.00	562.33	570.79		570.85	0.000275	1.95	1026.02	180.98	0.14
SixMileUsDs	11928 AC	25%	1500.00	562.33	569.73		569.78	0.000275	1.79	839.38	169.08	0.14
SixMileUsDs	11928 AC	50%	700.00	562.33	567.41		567.45	0.000268	1.43	488.63	134.34	0.13
SixMileUsDs	11928 AC	75%	300.00	562.33	565.54		565.56	0.000283	1.14	262.87	106.13	0.13
SixMileUsDs	11928 AC	80%	250.00	562.33	565.21		565.23	0.000292	1.09	229.13	101.24	0.13
SixMileUsDs	11928 AC	Aug 21	190.00	562.33	564.77		564.78	0.000310	1.02	185.71	94.58	0.13
SixMileUsDs	11928 AC	90%	150.00	562.33	564.43		564.44	0.000332	0.97	154.37	89.46	0.13
SixMileUsDs	10164 AB	20%	2000.00	561.33	570.35		570.41	0.000229	1.84	1084.96	182.32	0.13
SixMileUsDs	10164 AB	25%	1500.00	561.33	569.31		569.36	0.000205	1.65	906.84	164.27	0.12
SixMileUsDs	10164 AB	50%	700.00	561.33	567.06		567.08	0.000164	1.23	568.23	135.61	0.11
SixMileUsDs	10164 AB	75%	300.00	561.33	565.22		565.23	0.000129	0.88	340.36	112.28	0.09
SixMileUsDs	10164 AB	80%	250.00	561.33	564.90		564.91	0.000123	0.82	305.10	108.22	0.09
SixMileUsDs	10164 AB	Aug 21	190.00	561.33	564.46		564.47	0.000114	0.73	258.99	102.67	0.08
SixMileUsDs	10164 AB	90%	150.00	561.33	564.12		564.13	0.000107	0.67	225.12	98.40	0.08
SixMileUsDs	8554 AA	20%	2000.00	561.33	569.93		569.99	0.000287	2.04	979.09	165.81	0.15
SixMileUsDs	8554 AA	25%	1500.00	561.33	568.93		568.98	0.000264	1.83	819.52	153.75	0.14

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	8554 AA	50%	700.00	561.33	566.75		566.78	0.000213	1.36	513.00	127.42	0.12
SixMileUsDs	8554 AA	75%	300.00	561.33	564.98		564.99	0.000171	0.98	305.94	105.99	0.10
SixMileUsDs	8554 AA	80%	250.00	561.33	564.67		564.68	0.000164	0.91	273.80	102.26	0.10
SixMileUsDs	8554 AA	Aug 21	190.00	561.33	564.25		564.26	0.000154	0.82	231.74	97.17	0.09
SixMileUsDs	8554 AA	90%	150.00	561.33	563.92		563.93	0.000146	0.75	200.82	93.25	0.09
SixMileUsDs	7034 Z	20%	2000.00	561.33	569.42		569.50	0.000370	2.20	908.18	166.49	0.17
SixMileUsDs	7034 Z	25%	1500.00	561.33	568.46		568.52	0.000347	1.99	754.23	153.59	0.16
SixMileUsDs	7034 Z	50%	700.00	561.33	566.36		566.40	0.000296	1.52	461.37	125.45	0.14
SixMileUsDs	7034 Z	75%	300.00	561.33	564.66		564.67	0.000258	1.13	266.56	102.53	0.12
SixMileUsDs	7034 Z	80%	250.00	561.33	564.36		564.37	0.000253	1.06	236.60	98.54	0.12
SixMileUsDs	7034 Z	Aug 21	190.00	561.33	563.95		563.96	0.000247	0.96	197.51	93.06	0.12
SixMileUsDs	7034 Z	90%	150.00	561.33	563.63		563.65	0.000244	0.89	168.90	88.85	0.11
SixMileUsDs	5269 Y	20%	2000.00	560.33	568.54		568.65	0.000640	2.67	749.62	155.61	0.21
SixMileUsDs	5269 Y	25%	1500.00	560.33	567.63		567.72	0.000616	2.44	613.93	141.29	0.21
SixMileUsDs	5269 Y	50%	700.00	560.33	565.65		565.70	0.000547	1.92	364.45	110.21	0.19
SixMileUsDs	5269 Y	75%	300.00	560.33	564.04		564.08	0.000462	1.44	207.96	85.11	0.16
SixMileUsDs	5269 Y	80%	250.00	560.33	563.76		563.79	0.000443	1.35	184.83	80.74	0.16
SixMileUsDs	5269 Y	Aug 21	190.00	560.33	563.38		563.41	0.000413	1.22	155.17	74.77	0.15
SixMileUsDs	5269 Y	90%	150.00	560.33	563.09		563.11	0.000388	1.12	133.78	70.14	0.14
SixMileUsDs	3771 X	20%	2000.00	560.33	567.90		567.97	0.000332	2.02	991.45	191.93	0.16
SixMileUsDs	3771 X	25%	1500.00	560.33	567.03		567.08	0.000306	1.81	829.54	177.82	0.15
SixMileUsDs	3771 X	50%	700.00	560.33	565.14		565.17	0.000241	1.34	523.11	147.48	0.13
SixMileUsDs	3771 X	75%	300.00	560.33	563.65		563.66	0.000178	0.94	320.72	123.41	0.10
SixMileUsDs	3771 X	80%	250.00	560.33	563.39		563.41	0.000166	0.86	289.54	119.27	0.10
SixMileUsDs	3771 X	Aug 21	190.00	560.33	563.04		563.05	0.000149	0.76	248.93	113.66	0.09
SixMileUsDs	3771 X	90%	150.00	560.33	562.78		562.78	0.000135	0.68	219.03	109.34	0.09
SixMileUsDs	1581 W	20%	2000.00	560.33	567.17		567.23	0.000342	1.92	1040.24	221.32	0.16
SixMileUsDs	1581 W	25%	1500.00	560.33	566.35		566.39	0.000321	1.73	864.58	204.64	0.15
SixMileUsDs	1581 W	50%	700.00	560.33	564.59		564.62	0.000265	1.30	536.84	169.15	0.13
SixMileUsDs	1581 W	75%	300.00	560.33	563.23		563.25	0.000203	0.92	325.84	141.69	0.11
SixMileUsDs	1581 W	80%	250.00	560.33	563.00		563.02	0.000190	0.85	293.76	137.03	0.10
SixMileUsDs	1581 W	Aug 21	190.00	560.33	562.70		562.70	0.000171	0.75	252.36	130.77	0.10
SixMileUsDs	1581 W	90%	150.00	560.33	562.46		562.47	0.000156	0.68	222.11	126.01	0.09
SixMileUsDs	496 V	20%	2000.00	560.33	566.66	563.08	566.74	0.000601	2.34	856.39	208.01	0.20
SixMileUsDs	496 V	25%	1500.00	560.33	565.85	562.70	565.93	0.000600	2.16	696.00	190.47	0.20
SixMileUsDs	496 V	50%	700.00	560.33	564.15	561.93	564.20	0.000601	1.73	403.85	153.45	0.19
SixMileUsDs	496 V	75%	300.00	560.33	562.86	561.40	562.89	0.000600	1.34	224.08	125.35	0.18
SixMileUsDs	496 V	80%	250.00	560.33	562.65	561.31	562.68	0.000600	1.26	197.80	120.70	0.17
SixMileUsDs	496 V	Aug 21	190.00	560.33	562.37	561.20	562.39	0.000601	1.16	164.24	114.48	0.17

HEC-RAS Plan: Prop_NoDam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	496 V	90%	150.00	560.33	562.15	561.12	562.17	0.000601	1.07	140.12	109.80	0.17

B5:

Proposed Dam Improvement Model Results for Flood Discharges

GFT

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	67345 BM	10yr	36300.00	579.33	614.47		615.37	0.000422	8.00	6079.04	262.03	0.24
SixMileUsDs	67345 BM	50yr	53000.00	579.33	621.17		622.44	0.000480	9.62	8563.59	558.83	0.27
SixMileUsDs	67345 BM	100yr	62000.00	579.33	624.26		625.61	0.000478	10.07	10405.69	625.18	0.27
SixMileUsDs	67345 BM	500yr	82000.00	579.33	629.79		631.34	0.000493	11.08	14236.02	720.78	0.28
SixMileUsDs	66163 BL	10yr	36300.00	578.33	614.23		614.88	0.000289	6.67	7063.74	299.10	0.20
SixMileUsDs	66163 BL	50yr	53000.00	578.33	620.94		621.87	0.000330	8.01	9295.40	401.20	0.22
SixMileUsDs	66163 BL	100yr	62000.00	578.33	623.97		625.05	0.000351	8.67	10655.41	500.07	0.23
SixMileUsDs	66163 BL	500yr	82000.00	578.33	629.40		630.77	0.000390	9.88	13565.46	566.83	0.25
SixMileUsDs	65093 BK	10yr	36300.00	577.33	614.01		614.57	0.000246	6.17	7563.64	321.83	0.18
SixMileUsDs	65093 BK	50yr	53000.00	577.33	620.71		621.51	0.000281	7.41	10063.11	442.01	0.20
SixMileUsDs	65093 BK	100yr	62000.00	577.33	623.72		624.66	0.000301	8.05	11836.08	656.21	0.21
SixMileUsDs	65093 BK	500yr	82000.00	577.33	629.19		630.31	0.000326	9.04	15577.92	704.34	0.23
SixMileUsDs	63115 BJ	10yr	36300.00	577.33	613.53		614.08	0.000244	6.08	8332.49	622.12	0.18
SixMileUsDs	63115 BJ	50yr	53000.00	577.33	620.29		620.95	0.000248	6.90	13137.85	762.86	0.19
SixMileUsDs	63115 BJ	100yr	62000.00	577.33	623.32		624.05	0.000255	7.34	15750.93	959.75	0.19
SixMileUsDs	63115 BJ	500yr	82000.00	577.33	628.83		629.65	0.000260	8.02	21181.40	1005.92	0.20
SixMileUsDs	61540 BI	10yr	36300.00	576.33	612.66		613.55	0.000415	7.84	6328.89	357.07	0.24
SixMileUsDs	61540 BI	50yr	53000.00	576.33	619.42		620.42	0.000401	8.70	11858.28	1065.01	0.24
SixMileUsDs	61540 BI	100yr	62000.00	576.33	622.61		623.55	0.000367	8.75	15388.74	1154.96	0.23
SixMileUsDs	61540 BI	500yr	82000.00	576.33	628.36		629.19	0.000316	8.81	22211.09	1214.59	0.22
SixMileUsDs	60064 BH	10yr	36300.00	576.33	612.14		612.39	0.001202	4.57	11008.03	738.14	0.14
SixMileUsDs	60064 BH	50yr	53000.00	576.33	619.11		619.33	0.000909	4.51	16705.96	870.26	0.13
SixMileUsDs	60064 BH	100yr	62000.00	576.33	622.34		622.56	0.000816	4.50	19578.23	910.97	0.12
SixMileUsDs	60064 BH	500yr	82000.00	576.33	628.10		628.32	0.000760	4.72	25101.96	984.55	0.12
SixMileUsDs	58383 BG	10yr	36300.00	575.33	610.71		611.39	0.000330	6.92	7859.18	652.29	0.21
SixMileUsDs	58383 BG	50yr	53000.00	575.33	617.76		618.48	0.000297	7.46	13237.86	834.10	0.21
SixMileUsDs	58383 BG	100yr	62000.00	575.33	621.06		621.76	0.000278	7.61	16135.87	937.59	0.20
SixMileUsDs	58383 BG	500yr	82000.00	575.33	626.87		627.57	0.000261	8.01	21857.96	1001.12	0.20
SixMileUsDs	56884 BF	10yr	36300.00	575.33	610.31		610.90	0.000291	6.36	6762.78	292.92	0.20
SixMileUsDs	56884 BF	50yr	53000.00	575.33	617.21		618.01	0.000310	7.47	10167.78	778.88	0.21
SixMileUsDs	56884 BF	100yr	62000.00	575.33	620.49		621.32	0.000299	7.74	12858.83	843.28	0.21
SixMileUsDs	56884 BF	500yr	82000.00	575.33	626.24		627.14	0.000295	8.37	17959.59	924.47	0.21
SixMileUsDs	55176 BE	10yr	36300.00	574.33	609.74		610.38	0.000315	6.52	6816.31	326.10	0.20
SixMileUsDs	55176 BE	50yr	53000.00	574.33	616.57		617.45	0.000343	7.73	9580.07	565.71	0.22

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	55176 BE	100yr	62000.00	574.33	619.80		620.76	0.000344	8.16	11538.56	622.58	0.22
SixMileUsDs	55176 BE	500yr	82000.00	574.33	625.42		626.56	0.000361	9.09	15144.62	665.76	0.23
SixMileUsDs	53410 BD	10yr	36300.00	574.33	609.26		609.84	0.000276	6.26	7447.57	388.64	0.19
SixMileUsDs	53410 BD	50yr	53000.00	574.33	616.10		616.86	0.000289	7.27	11249.33	704.59	0.20
SixMileUsDs	53410 BD	100yr	62000.00	574.33	619.35		620.16	0.000286	7.63	13606.21	768.51	0.21
SixMileUsDs	53410 BD	500yr	82000.00	574.33	624.99		625.92	0.000295	8.41	18103.97	819.23	0.21
SixMileUsDs	51916 BC	10yr	36300.00	574.33	609.12		609.46	0.000166	4.83	10690.27	602.08	0.15
SixMileUsDs	51916 BC	50yr	53000.00	574.33	616.01		616.43	0.000170	5.55	15056.06	679.97	0.16
SixMileUsDs	51916 BC	100yr	62000.00	574.33	619.26		619.73	0.000171	5.88	17515.02	1049.38	0.16
SixMileUsDs	51916 BC	500yr	82000.00	574.33	624.93		625.47	0.000177	6.49	23828.73	1161.51	0.17
SixMileUsDs	49973 BB	10yr	36300.00	573.33	608.42		609.01	0.000284	6.34	7303.10	351.13	0.20
SixMileUsDs	49973 BB	50yr	53000.00	573.33	615.13		615.96	0.000310	7.51	10194.35	638.91	0.21
SixMileUsDs	49973 BB	100yr	62000.00	573.33	618.32		619.24	0.000317	8.01	12638.84	830.44	0.22
SixMileUsDs	49973 BB	500yr	82000.00	573.33	623.93		624.97	0.000323	8.77	17480.41	892.12	0.22
SixMileUsDs	48402 BA	10yr	36300.00	573.33	607.93		608.55	0.000300	6.45	6860.43	307.97	0.20
SixMileUsDs	48402 BA	50yr	53000.00	573.33	614.59		615.45	0.000328	7.66	9022.59	357.38	0.22
SixMileUsDs	48402 BA	100yr	62000.00	573.33	617.73		618.72	0.000340	8.21	10674.31	870.83	0.22
SixMileUsDs	48402 BA	500yr	82000.00	573.33	623.25		624.42	0.000359	9.17	16430.30	1153.90	0.23
SixMileUsDs	46835 AZ	10yr	36300.00	575.16	607.66		608.07	0.000238	5.52	11492.52	738.97	0.17
SixMileUsDs	46835 AZ	50yr	53000.00	575.16	614.45		614.91	0.000223	6.08	16699.84	789.78	0.17
SixMileUsDs	46835 AZ	100yr	62000.00	575.16	617.67		618.15	0.000217	6.33	19252.11	799.15	0.17
SixMileUsDs	46835 AZ	500yr	82000.00	575.16	623.23		623.80	0.000226	7.03	23891.46	850.86	0.18
SixMileUsDs	44954 AY	10yr	36300.00	563.94	606.72		607.47	0.000385	7.17	6297.19	301.18	0.22
SixMileUsDs	44954 AY	50yr	53000.00	563.94	613.28		614.29	0.000425	8.46	8492.72	353.60	0.23
SixMileUsDs	44954 AY	100yr	62000.00	563.94	616.38		617.52	0.000439	9.03	9641.30	377.91	0.24
SixMileUsDs	44954 AY	500yr	82000.00	563.94	621.69		623.11	0.000489	10.29	14117.33	1045.71	0.26
SixMileUsDs	43497 AX	10yr	36300.00	572.78	606.36		606.93	0.000295	6.16	7200.15	389.26	0.19
SixMileUsDs	43497 AX	50yr	53000.00	572.78	612.95		613.68	0.000310	7.17	10596.44	670.42	0.20
SixMileUsDs	43497 AX	100yr	62000.00	572.78	616.09		616.88	0.000308	7.53	12883.39	809.70	0.21
SixMileUsDs	43497 AX	500yr	82000.00	572.78	621.49		622.39	0.000316	8.28	17543.01	885.40	0.21
SixMileUsDs	41423 AW	10yr	36300.00	570.87	605.38		606.17	0.000428	7.38	6225.96	340.46	0.23
SixMileUsDs	41423 AW	50yr	53000.00	570.87	612.04		612.93	0.000406	8.15	11077.01	869.09	0.23
SixMileUsDs	41423 AW	100yr	62000.00	570.87	615.32		616.18	0.000372	8.23	14028.70	951.61	0.22
SixMileUsDs	41423 AW	500yr	82000.00	570.87	620.85		621.68	0.000341	8.56	19540.23	1030.88	0.22

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	40041 AV	10yr	36300.00	568.91	605.11		605.62	0.000274	5.97	7887.25	413.94	0.19
SixMileUsDs	40041 AV	50yr	53000.00	568.91	611.72		612.40	0.000292	7.00	11164.98	729.86	0.20
SixMileUsDs	40041 AV	100yr	62000.00	568.91	614.99		615.69	0.000280	7.25	13749.93	859.17	0.20
SixMileUsDs	40041 AV	500yr	82000.00	568.91	620.46		621.24	0.000282	7.90	18940.67	1030.67	0.20
SixMileUsDs	38212 AU	10yr	36300.00	574.21	604.58		605.10	0.000298	5.93	8096.94	548.34	0.19
SixMileUsDs	38212 AU	50yr	53000.00	574.21	611.24		611.85	0.000284	6.64	12457.78	807.32	0.20
SixMileUsDs	38212 AU	100yr	62000.00	574.21	614.54		615.16	0.000268	6.83	15608.91	1124.88	0.19
SixMileUsDs	38212 AU	500yr	82000.00	574.21	620.07		620.71	0.000253	7.24	23642.05	1557.13	0.19
SixMileUsDs	36814 AT	10yr	36300.00	572.87	604.19		604.68	0.000286	5.86	8080.58	618.42	0.19
SixMileUsDs	36814 AT	50yr	53000.00	572.87	610.91		611.45	0.000256	6.36	13570.76	996.25	0.19
SixMileUsDs	36814 AT	100yr	62000.00	572.87	614.27		614.78	0.000228	6.37	16946.92	1011.38	0.18
SixMileUsDs	36814 AT	500yr	82000.00	572.87	619.83		620.35	0.000214	6.74	22894.08	1108.43	0.18
SixMileUsDs	35150 AS	10yr	36300.00	571.12	603.66	584.19	604.20	0.000296	5.97	6918.10	323.54	0.19
SixMileUsDs	35150 AS	50yr	53000.00	571.12	610.30	587.13	610.99	0.000297	6.85	10574.13	713.80	0.20
SixMileUsDs	35150 AS	100yr	62000.00	571.12	613.64	588.54	614.34	0.000284	7.10	13696.21	1288.39	0.20
SixMileUsDs	35150 AS	500yr	82000.00	571.12	619.30	591.50	619.96	0.000249	7.26	23324.84	2043.28	0.19
SixMileUsDs	34932 Bridge		Bridge									
SixMileUsDs	34703 AR	10yr	36300.00	569.84	603.44		604.01	0.000314	6.20	7248.35	504.90	0.20
SixMileUsDs	34703 AR	50yr	53000.00	569.84	610.20		610.85	0.000292	6.85	12401.34	1190.74	0.20
SixMileUsDs	34703 AR	100yr	62000.00	569.84	613.53		614.13	0.000259	6.84	17739.39	1931.22	0.19
SixMileUsDs	34703 AR	500yr	82000.00	569.84	619.35		619.81	0.000197	6.53	31540.58	2609.52	0.17
SixMileUsDs	34572	10yr	36300.00	570.95	603.49		603.89	0.001147	5.39	8178.06	693.80	0.18
SixMileUsDs	34572	50yr	53000.00	570.95	610.39		610.68	0.000753	5.06	16368.67	1644.33	0.15
SixMileUsDs	34572	100yr	62000.00	570.95	613.76		613.97	0.000547	4.58	22392.65	1901.53	0.13
SixMileUsDs	34572	500yr	82000.00	570.95	619.54		619.68	0.000349	4.02	34650.96	2235.99	0.11
SixMileUsDs	34378	10yr	36300.00	573.44	603.67		603.71	0.000167	2.04	27106.76	2357.78	0.07
SixMileUsDs	34378	50yr	53000.00	573.44	610.54		610.56	0.000094	1.78	45701.62	2887.83	0.05
SixMileUsDs	34378	100yr	62000.00	573.44	613.86		613.88	0.000075	1.69	55582.06	3083.79	0.05
SixMileUsDs	34378	500yr	82000.00	573.44	619.60		619.62	0.000058	1.63	73720.21	3211.69	0.04
SixMileUsDs	34154	10yr	36300.00	574.28	603.66		603.68	0.000093	1.49	35264.07	2513.51	0.05
SixMileUsDs	34154	50yr	53000.00	574.28	610.53		610.54	0.000060	1.39	53874.85	2855.13	0.04
SixMileUsDs	34154	100yr	62000.00	574.28	613.85		613.87	0.000049	1.35	63535.00	3011.46	0.04
SixMileUsDs	34154	500yr	82000.00	574.28	619.59		619.61	0.000041	1.35	82203.75	3589.53	0.04

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	34006 AQ	10yr	36300.00	577.16	603.54	585.40	603.65	0.000120	3.20	21734.08	2026.65	0.11
SixMileUsDs	34006 AQ	50yr	53000.00	577.16	610.45	587.36	610.53	0.000076	2.98	38553.50	2837.02	0.09
SixMileUsDs	34006 AQ	100yr	62000.00	577.16	613.79	588.85	613.85	0.000061	2.86	49386.26	3510.54	0.08
SixMileUsDs	34006 AQ	500yr	82000.00	577.16	619.55	591.59	619.60	0.000046	2.72	70634.71	3816.02	0.07
SixMileUsDs	33953 Dam		Inl Struct									
SixMileUsDs	33879	10yr	36300.00	572.06	603.49		603.62	0.000412	3.12	14410.94	1302.69	0.11
SixMileUsDs	33879	50yr	53000.00	572.06	610.40		610.49	0.000248	2.82	29709.60	2814.63	0.09
SixMileUsDs	33879	100yr	62000.00	572.06	613.76		613.83	0.000181	2.57	40377.40	3565.01	0.07
SixMileUsDs	33879	500yr	82000.00	572.06	619.53		619.57	0.000107	2.18	61697.96	3812.92	0.06
SixMileUsDs	33793	10yr	36300.00	570.64	603.43		603.58	0.000469	3.32	13493.89	1164.96	0.11
SixMileUsDs	33793	50yr	53000.00	570.64	610.37		610.47	0.000284	3.01	27445.86	2953.45	0.09
SixMileUsDs	33793	100yr	62000.00	570.64	613.73		613.81	0.000208	2.75	38564.46	3695.04	0.08
SixMileUsDs	33793	500yr	82000.00	570.64	619.52		619.56	0.000115	2.26	60595.35	3899.53	0.06
SixMileUsDs	33686	10yr	36300.00	570.63	603.44		603.53	0.000237	2.57	15959.39	1031.53	0.08
SixMileUsDs	33686	50yr	53000.00	570.63	610.35		610.44	0.000201	2.72	26873.63	2233.71	0.08
SixMileUsDs	33686	100yr	62000.00	570.63	613.70		613.79	0.000173	2.68	36450.01	3229.50	0.07
SixMileUsDs	33686	500yr	82000.00	570.63	619.49		619.55	0.000113	2.37	57142.63	3732.58	0.06
SixMileUsDs	33574	10yr	36300.00	558.50	603.44		603.50	0.000115	1.97	20569.43	919.40	0.06
SixMileUsDs	33574	50yr	53000.00	558.50	610.35		610.41	0.000113	2.21	30374.98	1971.98	0.06
SixMileUsDs	33574	100yr	62000.00	558.50	613.70		613.77	0.000112	2.32	38582.00	2897.43	0.06
SixMileUsDs	33574	500yr	82000.00	558.50	619.48		619.54	0.000090	2.25	57466.21	3415.65	0.06
SixMileUsDs	33454	10yr	36300.00	569.01	603.39		603.48	0.000213	2.52	16771.96	827.43	0.08
SixMileUsDs	33454	50yr	53000.00	569.01	610.30		610.39	0.000199	2.78	25095.47	1788.38	0.08
SixMileUsDs	33454	100yr	62000.00	569.01	613.64		613.75	0.000195	2.91	32928.47	2838.31	0.08
SixMileUsDs	33454	500yr	82000.00	569.01	619.45		619.52	0.000135	2.64	49784.12	2980.18	0.07
SixMileUsDs	33320	10yr	36300.00	568.22	603.35		603.45	0.000258	2.83	17504.91	1181.88	0.09
SixMileUsDs	33320	50yr	53000.00	568.22	610.27		610.36	0.000210	2.91	26590.25	1834.06	0.08
SixMileUsDs	33320	100yr	62000.00	568.22	613.63		613.72	0.000194	2.95	35216.02	2967.72	0.08
SixMileUsDs	33320	500yr	82000.00	568.22	619.44		619.50	0.000134	2.66	54733.05	3679.97	0.07
SixMileUsDs	33097 AP	10yr	36300.00	567.57	602.93		603.36	0.000231	5.86	10724.53	670.25	0.18
SixMileUsDs	33097 AP	50yr	53000.00	567.57	609.72		610.27	0.000243	6.80	17091.65	1933.37	0.19
SixMileUsDs	33097 AP	100yr	62000.00	567.57	613.15		613.63	0.000210	6.66	24880.73	2589.88	0.18
SixMileUsDs	33097 AP	500yr	82000.00	567.57	619.15		619.45	0.000139	5.91	40587.63	2632.52	0.15

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	32936	10yr	36300.00	568.44	602.92		603.27	0.000863	5.28	8690.25	460.17	0.16
SixMileUsDs	32936	50yr	53000.00	568.44	609.74		610.16	0.000878	6.02	14631.96	1764.36	0.17
SixMileUsDs	32936	100yr	62000.00	568.44	613.23		613.52	0.000630	5.39	21752.00	2194.96	0.14
SixMileUsDs	32936	500yr	82000.00	568.44	619.22		619.37	0.000339	4.31	35087.72	2231.21	0.11
SixMileUsDs	32638	10yr	36300.00	567.38	602.58		603.00	0.000952	5.54	7843.39	389.30	0.17
SixMileUsDs	32638	50yr	53000.00	567.38	609.45		609.90	0.000894	6.09	14203.63	1485.37	0.17
SixMileUsDs	32638	100yr	62000.00	567.38	613.03		613.33	0.000634	5.43	20027.81	1710.72	0.14
SixMileUsDs	32638	500yr	82000.00	567.38	619.07		619.26	0.000386	4.62	30857.23	1799.80	0.12
SixMileUsDs	31795 AO	10yr	37500.00	566.33	601.68		602.47	0.000394	7.54	7418.10	521.09	0.23
SixMileUsDs	31795 AO	50yr	54500.00	566.33	608.52		609.40	0.000369	8.28	11868.49	777.59	0.23
SixMileUsDs	31795 AO	100yr	64000.00	566.33	612.03		612.89	0.000342	8.44	14821.09	905.52	0.23
SixMileUsDs	31795 AO	500yr	86000.00	566.33	617.96		618.88	0.000338	9.12	22469.57	1490.41	0.23
SixMileUsDs	29614 AN	10yr	37500.00	565.33	600.45		601.48	0.000504	8.51	5659.88	256.74	0.26
SixMileUsDs	29614 AN	50yr	54500.00	565.33	607.00		608.37	0.000546	9.99	7409.65	277.60	0.28
SixMileUsDs	29614 AN	100yr	64000.00	565.33	610.17		611.85	0.000593	10.97	9362.55	951.64	0.30
SixMileUsDs	29614 AN	500yr	86000.00	565.33	616.45		617.93	0.000507	11.11	19089.92	2046.97	0.28
SixMileUsDs	28097 AM	10yr	37500.00	564.33	600.04		600.76	0.000345	7.04	7410.00	641.57	0.22
SixMileUsDs	28097 AM	50yr	54500.00	564.33	606.79		607.57	0.000322	7.70	12253.94	968.02	0.22
SixMileUsDs	28097 AM	100yr	64000.00	564.33	610.10		610.95	0.000323	8.14	16794.58	1815.84	0.22
SixMileUsDs	28097 AM	500yr	86000.00	564.33	616.57		617.16	0.000232	7.58	30349.59	2169.80	0.19
SixMileUsDs	26514 AL	10yr	37500.00	564.33	599.68		600.21	0.000279	6.35	10907.94	991.14	0.19
SixMileUsDs	26514 AL	50yr	54500.00	564.33	606.60		607.06	0.000220	6.41	17995.47	1111.63	0.18
SixMileUsDs	26514 AL	100yr	64000.00	564.33	610.01		610.43	0.000196	6.38	23709.41	2182.86	0.17
SixMileUsDs	26514 AL	500yr	86000.00	564.33	616.43		616.79	0.000162	6.37	38752.96	2403.45	0.16
SixMileUsDs	25135 AK	10yr	37500.00	564.33	598.81		599.69	0.000451	7.93	6597.58	347.75	0.25
SixMileUsDs	25135 AK	50yr	54500.00	564.33	605.53		606.58	0.000443	8.92	10063.97	727.13	0.25
SixMileUsDs	25135 AK	100yr	64000.00	564.33	608.94		609.99	0.000416	9.14	13721.05	1593.57	0.25
SixMileUsDs	25135 AK	500yr	86000.00	564.33	615.60		616.44	0.000322	8.87	26153.50	2052.65	0.22
SixMileUsDs	23775 AJ	10yr	37500.00	563.33	598.58		599.13	0.000266	6.16	8481.82	547.80	0.19
SixMileUsDs	23775 AJ	50yr	54500.00	563.33	605.35		606.00	0.000264	6.96	13878.45	1484.00	0.20
SixMileUsDs	23775 AJ	100yr	64000.00	563.33	608.81		609.44	0.000243	7.05	20894.84	2248.36	0.19
SixMileUsDs	23775 AJ	500yr	86000.00	563.33	615.59		616.00	0.000165	6.41	36433.56	2318.70	0.16
SixMileUsDs	21935 AI	10yr	37500.00	563.33	597.44		598.42	0.000510	8.27	6198.42	293.18	0.26

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	21935 AI	50yr	54500.00	563.33	603.95		605.26	0.000546	9.69	9236.42	885.98	0.28
SixMileUsDs	21935 AI	100yr	64000.00	563.33	607.31		608.72	0.000539	10.18	14781.00	2629.88	0.28
SixMileUsDs	21935 AI	500yr	86000.00	563.33	614.93		615.59	0.000281	8.24	35434.12	2748.08	0.21
SixMileUsDs	19696 AH	10yr	37500.00	564.00	596.35		597.28	0.000502	7.89	5856.40	278.84	0.26
SixMileUsDs	19696 AH	50yr	54500.00	564.00	602.82		604.04	0.000522	9.17	8582.15	835.40	0.27
SixMileUsDs	19696 AH	100yr	64000.00	564.00	606.25		607.52	0.000499	9.52	12360.47	1366.93	0.27
SixMileUsDs	19696 AH	500yr	86000.00	564.00	613.91		614.86	0.000350	8.98	24131.96	1704.95	0.23
SixMileUsDs	18407 AG	10yr	37500.00	563.00	595.86		596.65	0.000414	7.34	6637.35	332.48	0.23
SixMileUsDs	18407 AG	50yr	54500.00	563.00	602.34		603.37	0.000431	8.51	9083.08	444.99	0.25
SixMileUsDs	18407 AG	100yr	64000.00	563.00	605.76		606.88	0.000425	8.97	11023.73	658.76	0.25
SixMileUsDs	18407 AG	500yr	86000.00	563.00	613.18		614.37	0.000384	9.54	17773.02	1092.05	0.24
SixMileUsDs	16725 AF	10yr	37500.00	562.33	594.58		595.75	0.000645	8.90	5417.40	282.37	0.29
SixMileUsDs	16725 AF	50yr	54500.00	562.33	600.88		602.42	0.000675	10.37	7341.71	339.15	0.31
SixMileUsDs	16725 AF	100yr	64000.00	562.33	604.20		605.93	0.000679	11.04	8605.83	434.03	0.31
SixMileUsDs	16725 AF	500yr	86000.00	562.33	611.57		613.48	0.000624	11.88	13773.27	1098.88	0.31
SixMileUsDs	15278 AE	10yr	37500.00	562.33	593.80		594.83	0.000571	8.31	5597.60	341.43	0.27
SixMileUsDs	15278 AE	50yr	54500.00	562.33	600.16		601.45	0.000570	9.49	8032.53	488.16	0.28
SixMileUsDs	15278 AE	100yr	64000.00	562.33	603.59		604.94	0.000543	9.84	10016.09	660.76	0.28
SixMileUsDs	15278 AE	500yr	86000.00	562.33	611.20		612.54	0.000460	10.22	16279.89	1153.70	0.26
SixMileUsDs	13567 AD	10yr	37500.00	562.33	593.13		593.90	0.000439	7.15	6305.78	341.33	0.24
SixMileUsDs	13567 AD	50yr	54500.00	562.33	599.52		600.50	0.000441	8.22	8560.38	363.74	0.25
SixMileUsDs	13567 AD	100yr	64000.00	562.33	602.96		604.03	0.000432	8.66	10005.00	475.96	0.25
SixMileUsDs	13567 AD	500yr	86000.00	562.33	610.58		611.77	0.000391	9.31	15345.45	959.40	0.24
SixMileUsDs	11928 AC	10yr	37500.00	562.33	592.34		593.14	0.000490	7.25	5893.37	300.16	0.25
SixMileUsDs	11928 AC	50yr	54500.00	562.33	598.70		599.74	0.000490	8.35	7895.25	329.44	0.25
SixMileUsDs	11928 AC	100yr	64000.00	562.33	602.13		603.28	0.000482	8.84	9323.58	483.25	0.26
SixMileUsDs	11928 AC	500yr	86000.00	562.33	609.93		611.11	0.000406	9.22	15852.19	1102.37	0.24
SixMileUsDs	10164 AB	10yr	37500.00	561.33	591.51		592.28	0.000472	7.22	6099.87	325.27	0.24
SixMileUsDs	10164 AB	50yr	54500.00	561.33	597.91		598.88	0.000459	8.21	8448.51	412.69	0.25
SixMileUsDs	10164 AB	100yr	64000.00	561.33	601.37		602.43	0.000447	8.65	10527.03	824.11	0.25
SixMileUsDs	10164 AB	500yr	86000.00	561.33	609.50		610.39	0.000323	8.39	18530.97	1106.72	0.22
SixMileUsDs	8554 AA	10yr	37500.00	561.33	590.63		591.46	0.000542	7.56	5860.67	328.12	0.26
SixMileUsDs	8554 AA	50yr	54500.00	561.33	597.08		598.10	0.000510	8.49	8136.02	377.96	0.26
SixMileUsDs	8554 AA	100yr	64000.00	561.33	600.61		601.69	0.000478	8.80	9506.25	396.80	0.26

HEC-RAS Plan: Prop_Dam_Flood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	8554 AA	500yr	86000.00	561.33	608.58		609.77	0.000420	9.42	13670.46	758.11	0.25
SixMileUsDs	7034 Z	10yr	37500.00	561.33	589.66		590.58	0.000612	7.85	5630.40	343.51	0.28
SixMileUsDs	7034 Z	50yr	54500.00	561.33	596.21		597.29	0.000549	8.67	8017.37	386.12	0.27
SixMileUsDs	7034 Z	100yr	64000.00	561.33	599.81		600.94	0.000506	8.94	9448.73	409.40	0.27
SixMileUsDs	7034 Z	500yr	86000.00	561.33	607.89		609.12	0.000432	9.48	13066.80	563.60	0.25
SixMileUsDs	5269 Y	10yr	37500.00	560.33	588.44		589.42	0.000700	8.05	5173.06	283.34	0.29
SixMileUsDs	5269 Y	50yr	54500.00	560.33	595.07		596.25	0.000618	8.92	7295.39	366.23	0.29
SixMileUsDs	5269 Y	100yr	64000.00	560.33	598.78		599.99	0.000556	9.14	8701.83	390.15	0.28
SixMileUsDs	5269 Y	500yr	86000.00	560.33	607.05		608.33	0.000455	9.55	13040.91	823.35	0.26
SixMileUsDs	3771 X	10yr	37500.00	560.33	587.88		588.50	0.000435	6.38	6421.06	351.92	0.23
SixMileUsDs	3771 X	50yr	54500.00	560.33	594.66		595.40	0.000383	7.07	8923.42	413.73	0.23
SixMileUsDs	3771 X	100yr	64000.00	560.33	598.44		599.21	0.000346	7.26	10509.20	424.40	0.22
SixMileUsDs	3771 X	500yr	86000.00	560.33	606.82		607.67	0.000287	7.65	14388.16	536.23	0.21
SixMileUsDs	1581 W	10yr	37500.00	560.33	587.11		587.60	0.000352	5.72	7376.62	440.53	0.21
SixMileUsDs	1581 W	50yr	54500.00	560.33	594.06		594.62	0.000293	6.20	10490.03	455.93	0.20
SixMileUsDs	1581 W	100yr	64000.00	560.33	597.92		598.50	0.000263	6.36	12262.21	463.50	0.19
SixMileUsDs	1581 W	500yr	86000.00	560.33	606.41		607.06	0.000222	6.77	16656.35	729.68	0.18
SixMileUsDs	496 V	10yr	38500.00	560.33	586.50	572.48	587.15	0.000475	6.58	6713.74	408.47	0.24
SixMileUsDs	496 V	50yr	56500.00	560.33	593.50	575.12	594.23	0.000393	7.13	9706.16	444.00	0.23
SixMileUsDs	496 V	100yr	66500.00	560.33	597.40	576.50	598.15	0.000349	7.28	11473.96	460.32	0.22
SixMileUsDs	496 V	500yr	88000.00	560.33	606.00	579.22	606.78	0.000275	7.50	16227.46	673.46	0.20

B6:

Proposed Dam Improvement Model Results for Non-Flood Discharges

GFT

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	67345 BM	20%	2000.00	579.33	587.18		587.27	0.000344	2.46	861.27	139.80	0.17
SixMileUsDs	67345 BM	25%	1500.00	579.33	586.09		586.16	0.000353	2.21	710.19	136.94	0.16
SixMileUsDs	67345 BM	50%	700.00	579.33	583.90		583.95	0.000402	1.70	417.62	128.58	0.16
SixMileUsDs	67345 BM	75%	300.00	579.33	582.25		582.28	0.000520	1.37	218.47	105.63	0.17
SixMileUsDs	67345 BM	80%	250.00	579.33	581.97		581.99	0.000542	1.32	188.90	99.55	0.17
SixMileUsDs	67345 BM	Aug 21	190.00	579.33	581.58		581.61	0.000572	1.25	152.43	91.49	0.17
SixMileUsDs	67345 BM	90%	150.00	579.33	581.30		581.32	0.000591	1.18	127.53	85.55	0.17
SixMileUsDs	66163 BL	20%	2000.00	578.33	586.91		586.96	0.000189	1.88	1085.50	158.56	0.12
SixMileUsDs	66163 BL	25%	1500.00	578.33	585.82		585.86	0.000186	1.67	912.29	157.83	0.12
SixMileUsDs	66163 BL	50%	700.00	578.33	583.60		583.63	0.000190	1.24	566.93	151.93	0.11
SixMileUsDs	66163 BL	75%	300.00	578.33	581.90		581.92	0.000201	0.94	317.92	132.13	0.11
SixMileUsDs	66163 BL	80%	250.00	578.33	581.61		581.63	0.000196	0.89	280.64	125.14	0.10
SixMileUsDs	66163 BL	Aug 21	190.00	578.33	581.24		581.25	0.000185	0.81	235.29	116.06	0.10
SixMileUsDs	66163 BL	90%	150.00	578.33	580.97		580.98	0.000168	0.73	205.35	109.66	0.09
SixMileUsDs	65093 BK	20%	2000.00	577.33	586.74		586.78	0.000145	1.68	1213.57	175.63	0.11
SixMileUsDs	65093 BK	25%	1500.00	577.33	585.65		585.68	0.000140	1.49	1023.96	171.62	0.10
SixMileUsDs	65093 BK	50%	700.00	577.33	583.44		583.46	0.000128	1.07	654.37	162.64	0.09
SixMileUsDs	65093 BK	75%	300.00	577.33	581.76		581.77	0.000104	0.76	394.00	138.20	0.08
SixMileUsDs	65093 BK	80%	250.00	577.33	581.47		581.48	0.000095	0.70	356.03	131.96	0.08
SixMileUsDs	65093 BK	Aug 21	190.00	577.33	581.12		581.12	0.000080	0.61	310.04	123.98	0.07
SixMileUsDs	65093 BK	90%	150.00	577.33	580.87		580.87	0.000066	0.54	280.00	118.48	0.06
SixMileUsDs	63115 BJ	20%	2000.00	577.33	586.45		586.50	0.000147	1.67	1207.04	169.89	0.11
SixMileUsDs	63115 BJ	25%	1500.00	577.33	585.37		585.40	0.000141	1.47	1024.15	168.44	0.10
SixMileUsDs	63115 BJ	50%	700.00	577.33	583.19		583.21	0.000126	1.06	660.93	164.13	0.09
SixMileUsDs	63115 BJ	75%	300.00	577.33	581.56		581.57	0.000094	0.73	408.39	140.25	0.08
SixMileUsDs	63115 BJ	80%	250.00	577.33	581.30		581.31	0.000085	0.67	372.30	134.83	0.07
SixMileUsDs	63115 BJ	Aug 21	190.00	577.33	580.97		580.97	0.000069	0.58	328.97	128.03	0.06
SixMileUsDs	63115 BJ	90%	150.00	577.33	580.75		580.75	0.000055	0.50	301.36	123.49	0.06
SixMileUsDs	61540 BI	20%	2000.00	576.33	586.15		586.22	0.000215	2.07	993.49	138.64	0.13
SixMileUsDs	61540 BI	25%	1500.00	576.33	585.09		585.14	0.000201	1.81	846.77	137.85	0.13
SixMileUsDs	61540 BI	50%	700.00	576.33	582.96		582.98	0.000166	1.26	557.84	130.89	0.11
SixMileUsDs	61540 BI	75%	300.00	576.33	581.39		581.40	0.000119	0.84	358.20	118.14	0.08
SixMileUsDs	61540 BI	80%	250.00	576.33	581.15		581.16	0.000101	0.76	330.47	112.22	0.08
SixMileUsDs	61540 BI	Aug 21	190.00	576.33	580.85		580.86	0.000075	0.64	298.26	104.91	0.07
SixMileUsDs	61540 BI	90%	150.00	576.33	580.66		580.67	0.000056	0.54	278.52	100.17	0.06
SixMileUsDs	60064 BH	20%	2000.00	576.33	585.54		585.58	0.001190	1.61	1247.84	177.57	0.11
SixMileUsDs	60064 BH	25%	1500.00	576.33	584.52		584.55	0.001110	1.41	1068.36	174.94	0.10

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	60064 BH	50%	700.00	576.33	582.48		582.50	0.000889	0.98	718.52	168.83	0.08
SixMileUsDs	60064 BH	75%	300.00	576.33	581.07		581.08	0.000523	0.62	487.59	151.82	0.06
SixMileUsDs	60064 BH	80%	250.00	576.33	580.88		580.89	0.000428	0.54	459.22	147.91	0.05
SixMileUsDs	60064 BH	Aug 21	190.00	576.33	580.66		580.66	0.000304	0.45	426.44	143.26	0.05
SixMileUsDs	60064 BH	90%	150.00	576.33	580.52		580.52	0.000216	0.37	406.71	140.39	0.04
SixMileUsDs	58383 BG	20%	2000.00	575.33	584.89		584.94	0.000184	1.89	1068.49	150.76	0.12
SixMileUsDs	58383 BG	25%	1500.00	575.33	583.93		583.97	0.000166	1.63	924.61	148.87	0.11
SixMileUsDs	58383 BG	50%	700.00	575.33	582.08		582.09	0.000110	1.07	653.23	142.87	0.09
SixMileUsDs	58383 BG	75%	300.00	575.33	580.89		580.90	0.000045	0.61	492.41	127.19	0.05
SixMileUsDs	58383 BG	80%	250.00	575.33	580.74		580.75	0.000035	0.53	473.45	125.10	0.05
SixMileUsDs	58383 BG	Aug 21	190.00	575.33	580.56		580.57	0.000023	0.42	451.34	122.62	0.04
SixMileUsDs	58383 BG	90%	150.00	575.33	580.45		580.46	0.000015	0.34	438.03	121.10	0.03
SixMileUsDs	56884 BF	20%	2000.00	575.33	584.59		584.64	0.000218	1.87	1074.11	171.98	0.13
SixMileUsDs	56884 BF	25%	1500.00	575.33	583.65		583.69	0.000205	1.65	914.29	168.49	0.12
SixMileUsDs	56884 BF	50%	700.00	575.33	581.88		581.90	0.000160	1.13	617.14	165.98	0.10
SixMileUsDs	56884 BF	75%	300.00	575.33	580.81		580.81	0.000073	0.67	449.12	146.41	0.07
SixMileUsDs	56884 BF	80%	250.00	575.33	580.68		580.68	0.000057	0.58	430.10	143.57	0.06
SixMileUsDs	56884 BF	Aug 21	190.00	575.33	580.52		580.52	0.000038	0.47	407.97	140.20	0.05
SixMileUsDs	56884 BF	90%	150.00	575.33	580.42		580.43	0.000026	0.38	394.74	138.14	0.04
SixMileUsDs	55176 BE	20%	2000.00	574.33	584.28		584.32	0.000161	1.73	1157.60	160.95	0.11
SixMileUsDs	55176 BE	25%	1500.00	574.33	583.37		583.41	0.000136	1.48	1014.23	157.87	0.10
SixMileUsDs	55176 BE	50%	700.00	574.33	581.70		581.71	0.000076	0.93	752.02	153.61	0.07
SixMileUsDs	55176 BE	75%	300.00	574.33	580.74		580.75	0.000024	0.49	613.27	138.40	0.04
SixMileUsDs	55176 BE	80%	250.00	574.33	580.63		580.63	0.000018	0.42	597.34	136.86	0.04
SixMileUsDs	55176 BE	Aug 21	190.00	574.33	580.49		580.49	0.000011	0.33	578.50	135.01	0.03
SixMileUsDs	55176 BE	90%	150.00	574.33	580.40		580.40	0.000007	0.26	567.11	133.88	0.02
SixMileUsDs	53410 BD	20%	2000.00	574.33	584.02		584.06	0.000132	1.60	1261.83	179.59	0.10
SixMileUsDs	53410 BD	25%	1500.00	574.33	583.16		583.19	0.000113	1.36	1107.49	177.88	0.09
SixMileUsDs	53410 BD	50%	700.00	574.33	581.58		581.59	0.000062	0.84	832.05	170.24	0.07
SixMileUsDs	53410 BD	75%	300.00	574.33	580.70		580.71	0.000019	0.44	688.33	157.09	0.04
SixMileUsDs	53410 BD	80%	250.00	574.33	580.60		580.60	0.000014	0.37	671.74	155.46	0.03
SixMileUsDs	53410 BD	Aug 21	190.00	574.33	580.47		580.47	0.000009	0.29	651.93	153.48	0.02
SixMileUsDs	53410 BD	90%	150.00	574.33	580.39		580.39	0.000006	0.23	639.90	152.27	0.02
SixMileUsDs	51916 BC	20%	2000.00	574.33	583.86		583.89	0.000099	1.34	1506.74	224.74	0.09
SixMileUsDs	51916 BC	25%	1500.00	574.33	583.02		583.04	0.000085	1.14	1318.68	222.62	0.08
SixMileUsDs	51916 BC	50%	700.00	574.33	581.50		581.51	0.000048	0.71	986.40	212.82	0.06
SixMileUsDs	51916 BC	75%	300.00	574.33	580.68		580.68	0.000015	0.37	815.57	199.04	0.03

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	51916 BC	80%	250.00	574.33	580.58		580.58	0.000011	0.31	795.82	196.82	0.03
SixMileUsDs	51916 BC	Aug 21	190.00	574.33	580.46		580.46	0.000007	0.25	772.10	194.12	0.02
SixMileUsDs	51916 BC	90%	150.00	574.33	580.38		580.38	0.000005	0.20	757.66	192.46	0.02
SixMileUsDs	49973 BB	20%	2000.00	573.33	583.65		583.68	0.000111	1.53	1327.90	180.51	0.10
SixMileUsDs	49973 BB	25%	1500.00	573.33	582.84		582.87	0.000090	1.28	1182.96	178.65	0.09
SixMileUsDs	49973 BB	50%	700.00	573.33	581.41		581.42	0.000042	0.75	932.07	173.84	0.06
SixMileUsDs	49973 BB	75%	300.00	573.33	580.65		580.66	0.000012	0.37	803.38	161.51	0.03
SixMileUsDs	49973 BB	80%	250.00	573.33	580.56		580.56	0.000009	0.32	788.44	160.19	0.03
SixMileUsDs	49973 BB	Aug 21	190.00	573.33	580.45		580.45	0.000005	0.25	770.26	158.58	0.02
SixMileUsDs	49973 BB	90%	150.00	573.33	580.38		580.38	0.000004	0.20	759.11	157.58	0.02
SixMileUsDs	48402 BA	20%	2000.00	573.33	583.46		583.50	0.000121	1.56	1293.51	178.62	0.10
SixMileUsDs	48402 BA	25%	1500.00	573.33	582.69		582.72	0.000098	1.31	1156.09	178.12	0.09
SixMileUsDs	48402 BA	50%	700.00	573.33	581.34		581.35	0.000045	0.76	917.95	173.19	0.06
SixMileUsDs	48402 BA	75%	300.00	573.33	580.63		580.64	0.000012	0.38	798.56	163.25	0.03
SixMileUsDs	48402 BA	80%	250.00	573.33	580.55		580.55	0.000009	0.32	784.28	162.24	0.03
SixMileUsDs	48402 BA	Aug 21	190.00	573.33	580.44		580.44	0.000006	0.25	766.74	160.72	0.02
SixMileUsDs	48402 BA	90%	150.00	573.33	580.37		580.37	0.000004	0.20	755.92	159.77	0.02
SixMileUsDs	46835 AZ	20%	2000.00	575.16	583.26		583.30	0.000139	1.58	1268.71	179.36	0.10
SixMileUsDs	46835 AZ	25%	1500.00	575.16	582.53		582.56	0.000111	1.32	1138.11	178.26	0.09
SixMileUsDs	46835 AZ	50%	700.00	575.16	581.27		581.28	0.000048	0.76	916.49	171.91	0.06
SixMileUsDs	46835 AZ	75%	300.00	575.16	580.61		580.62	0.000013	0.37	804.23	169.82	0.03
SixMileUsDs	46835 AZ	80%	250.00	575.16	580.53		580.53	0.000010	0.32	790.28	169.07	0.03
SixMileUsDs	46835 AZ	Aug 21	190.00	575.16	580.43		580.43	0.000006	0.25	772.98	166.80	0.02
SixMileUsDs	46835 AZ	90%	150.00	575.16	580.36		580.37	0.000004	0.20	762.30	165.23	0.02
SixMileUsDs	44954 AY	20%	2000.00	563.94	583.10		583.13	0.000064	1.37	1464.39	135.16	0.07
SixMileUsDs	44954 AY	25%	1500.00	563.94	582.41		582.43	0.000044	1.09	1372.14	134.38	0.06
SixMileUsDs	44954 AY	50%	700.00	563.94	581.23		581.24	0.000014	0.58	1214.17	130.62	0.03
SixMileUsDs	44954 AY	75%	300.00	563.94	580.60		580.61	0.000003	0.26	1134.35	126.03	0.02
SixMileUsDs	44954 AY	80%	250.00	563.94	580.53		580.53	0.000002	0.22	1124.33	125.73	0.01
SixMileUsDs	44954 AY	Aug 21	190.00	563.94	580.43		580.43	0.000001	0.17	1111.76	125.34	0.01
SixMileUsDs	44954 AY	90%	150.00	563.94	580.36		580.36	0.000001	0.14	1103.93	124.00	0.01
SixMileUsDs	43497 AX	20%	2000.00	572.78	582.99		583.02	0.000084	1.37	1467.10	177.07	0.08
SixMileUsDs	43497 AX	25%	1500.00	572.78	582.34		582.36	0.000060	1.11	1352.82	174.28	0.07
SixMileUsDs	43497 AX	50%	700.00	572.78	581.21		581.21	0.000021	0.60	1157.86	167.65	0.04
SixMileUsDs	43497 AX	75%	300.00	572.78	580.60		580.60	0.000005	0.28	1056.64	163.51	0.02
SixMileUsDs	43497 AX	80%	250.00	572.78	580.52		580.52	0.000004	0.24	1043.92	163.20	0.02
SixMileUsDs	43497 AX	Aug 21	190.00	572.78	580.42		580.42	0.000002	0.18	1027.86	162.82	0.01

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	43497 AX	90%	150.00	572.78	580.36		580.36	0.000001	0.15	1017.80	162.58	0.01
SixMileUsDs	41423 AW	20%	2000.00	570.87	582.82		582.85	0.000080	1.44	1394.35	148.77	0.08
SixMileUsDs	41423 AW	25%	1500.00	570.87	582.21		582.24	0.000055	1.16	1304.99	147.60	0.07
SixMileUsDs	41423 AW	50%	700.00	570.87	581.16		581.17	0.000018	0.61	1151.19	144.36	0.04
SixMileUsDs	41423 AW	75%	300.00	570.87	580.59		580.59	0.000004	0.28	1069.07	141.82	0.02
SixMileUsDs	41423 AW	80%	250.00	570.87	580.51		580.52	0.000003	0.24	1058.41	141.57	0.02
SixMileUsDs	41423 AW	Aug 21	190.00	570.87	580.42		580.42	0.000002	0.18	1045.05	137.53	0.01
SixMileUsDs	41423 AW	90%	150.00	570.87	580.36		580.36	0.000001	0.14	1036.76	137.07	0.01
SixMileUsDs	40041 AV	20%	2000.00	568.91	582.72		582.75	0.000067	1.27	1595.22	192.55	0.08
SixMileUsDs	40041 AV	25%	1500.00	568.91	582.15		582.16	0.000047	1.02	1485.09	189.87	0.06
SixMileUsDs	40041 AV	50%	700.00	568.91	581.14		581.15	0.000016	0.54	1294.85	188.63	0.04
SixMileUsDs	40041 AV	75%	300.00	568.91	580.58		580.59	0.000004	0.25	1191.30	181.68	0.02
SixMileUsDs	40041 AV	80%	250.00	568.91	580.51		580.51	0.000003	0.21	1177.92	181.27	0.01
SixMileUsDs	40041 AV	Aug 21	190.00	568.91	580.42		580.42	0.000002	0.16	1160.89	179.13	0.01
SixMileUsDs	40041 AV	90%	150.00	568.91	580.36		580.36	0.000001	0.13	1150.29	177.01	0.01
SixMileUsDs	38212 AU	20%	2000.00	574.21	582.56		582.59	0.000106	1.40	1429.09	196.96	0.09
SixMileUsDs	38212 AU	25%	1500.00	574.21	582.04		582.06	0.000076	1.13	1325.30	196.32	0.08
SixMileUsDs	38212 AU	50%	700.00	574.21	581.10		581.11	0.000027	0.61	1143.07	193.02	0.04
SixMileUsDs	38212 AU	75%	300.00	574.21	580.57		580.58	0.000007	0.29	1041.49	190.49	0.02
SixMileUsDs	38212 AU	80%	250.00	574.21	580.50		580.50	0.000005	0.24	1027.96	189.75	0.02
SixMileUsDs	38212 AU	Aug 21	190.00	574.21	580.41		580.41	0.000003	0.19	1010.61	188.81	0.01
SixMileUsDs	38212 AU	90%	150.00	574.21	580.35		580.35	0.000002	0.15	999.66	188.20	0.01
SixMileUsDs	36814 AT	20%	2000.00	572.87	582.43		582.46	0.000087	1.32	1515.69	203.55	0.08
SixMileUsDs	36814 AT	25%	1500.00	572.87	581.94		581.96	0.000061	1.06	1416.71	200.98	0.07
SixMileUsDs	36814 AT	50%	700.00	572.87	581.07		581.08	0.000020	0.56	1246.15	192.63	0.04
SixMileUsDs	36814 AT	75%	300.00	572.87	580.57		580.57	0.000005	0.26	1149.45	189.88	0.02
SixMileUsDs	36814 AT	80%	250.00	572.87	580.50		580.50	0.000003	0.22	1136.36	189.43	0.02
SixMileUsDs	36814 AT	Aug 21	190.00	572.87	580.41		580.41	0.000002	0.17	1119.42	188.80	0.01
SixMileUsDs	36814 AT	90%	150.00	572.87	580.35		580.35	0.000001	0.14	1108.71	187.68	0.01
SixMileUsDs	35150 AS	20%	2000.00	571.12	582.31	574.61	582.33	0.000069	1.22	1638.14	204.18	0.08
SixMileUsDs	35150 AS	25%	1500.00	571.12	581.86	574.29	581.87	0.000046	0.97	1547.22	198.67	0.06
SixMileUsDs	35150 AS	50%	700.00	571.12	581.05	573.59	581.05	0.000014	0.51	1386.47	197.59	0.03
SixMileUsDs	35150 AS	75%	300.00	571.12	580.56	573.15	580.56	0.000003	0.23	1291.08	194.68	0.02
SixMileUsDs	35150 AS	80%	250.00	571.12	580.49	573.06	580.49	0.000002	0.20	1277.99	194.51	0.01
SixMileUsDs	35150 AS	Aug 21	190.00	571.12	580.41	572.96	580.41	0.000001	0.15	1260.94	194.29	0.01
SixMileUsDs	35150 AS	90%	150.00	571.12	580.35	572.82	580.35	0.000001	0.12	1250.07	194.14	0.01

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	34932 Bridge		Bridge									
SixMileUsDs	34703 AR	20%	2000.00	569.84	582.27		582.29	0.000071	1.27	1574.36	189.74	0.08
SixMileUsDs	34703 AR	25%	1500.00	569.84	581.83		581.85	0.000047	1.01	1491.79	188.73	0.06
SixMileUsDs	34703 AR	50%	700.00	569.84	581.04		581.04	0.000014	0.52	1342.79	186.85	0.03
SixMileUsDs	34703 AR	75%	300.00	569.84	580.56		580.56	0.000003	0.24	1253.60	185.61	0.02
SixMileUsDs	34703 AR	80%	250.00	569.84	580.49		580.49	0.000002	0.20	1241.21	185.44	0.01
SixMileUsDs	34703 AR	Aug 21	190.00	569.84	580.41		580.41	0.000001	0.16	1225.06	185.21	0.01
SixMileUsDs	34703 AR	90%	150.00	569.84	580.35		580.35	0.000001	0.12	1214.74	185.07	0.01
SixMileUsDs	34572	20%	2000.00	570.95	582.24		582.27	0.000466	1.38	1447.96	205.07	0.09
SixMileUsDs	34572	25%	1500.00	570.95	581.82		581.83	0.000320	1.10	1360.36	203.76	0.08
SixMileUsDs	34572	50%	700.00	570.95	581.03		581.04	0.000104	0.58	1201.94	201.36	0.04
SixMileUsDs	34572	75%	300.00	570.95	580.56		580.56	0.000025	0.27	1106.63	199.90	0.02
SixMileUsDs	34572	80%	250.00	570.95	580.49		580.49	0.000018	0.23	1093.36	199.70	0.02
SixMileUsDs	34572	Aug 21	190.00	570.95	580.40		580.41	0.000011	0.18	1076.03	199.43	0.01
SixMileUsDs	34572	90%	150.00	570.95	580.35		580.35	0.000007	0.14	1064.97	199.26	0.01
SixMileUsDs	34378	20%	2000.00	573.44	582.13		582.16	0.000698	1.48	1352.94	237.68	0.11
SixMileUsDs	34378	25%	1500.00	573.44	581.73		581.76	0.000497	1.19	1259.44	236.85	0.09
SixMileUsDs	34378	50%	700.00	573.44	581.01		581.01	0.000176	0.64	1087.35	235.32	0.05
SixMileUsDs	34378	75%	300.00	573.44	580.55		580.55	0.000045	0.31	980.59	234.36	0.03
SixMileUsDs	34378	80%	250.00	573.44	580.49		580.49	0.000033	0.26	965.45	234.23	0.02
SixMileUsDs	34378	Aug 21	190.00	573.44	580.40		580.40	0.000021	0.20	945.57	234.05	0.02
SixMileUsDs	34378	90%	150.00	573.44	580.35		580.35	0.000013	0.16	932.83	233.93	0.01
SixMileUsDs	34154	20%	2000.00	574.28	581.93		581.97	0.001113	1.62	1278.44	332.42	0.13
SixMileUsDs	34154	25%	1500.00	574.28	581.59		581.62	0.000817	1.32	1167.73	317.75	0.11
SixMileUsDs	34154	50%	700.00	574.28	580.95		580.96	0.000310	0.73	973.78	298.71	0.07
SixMileUsDs	34154	75%	300.00	574.28	580.54		580.54	0.000086	0.36	852.09	280.40	0.03
SixMileUsDs	34154	80%	250.00	574.28	580.48		580.48	0.000063	0.30	835.16	276.13	0.03
SixMileUsDs	34154	Aug 21	190.00	574.28	580.40		580.40	0.000040	0.24	813.02	270.44	0.02
SixMileUsDs	34154	90%	150.00	574.28	580.34		580.34	0.000026	0.19	798.95	269.75	0.02
SixMileUsDs	34006 AQ	20%	2000.00	577.16	581.85	578.74	581.89	0.000324	1.62	1242.96	302.28	0.14
SixMileUsDs	34006 AQ	25%	1500.00	577.16	581.53	578.53	581.56	0.000234	1.32	1147.68	300.97	0.12
SixMileUsDs	34006 AQ	50%	700.00	577.16	580.93	578.13	580.94	0.000087	0.73	967.84	298.49	0.07
SixMileUsDs	34006 AQ	75%	300.00	577.16	580.53	577.87	580.53	0.000024	0.36	848.88	296.84	0.04
SixMileUsDs	34006 AQ	80%	250.00	577.16	580.47	577.83	580.47	0.000018	0.30	831.29	296.60	0.03
SixMileUsDs	34006 AQ	Aug 21	190.00	577.16	580.39	577.76	580.39	0.000011	0.24	807.77	296.27	0.03
SixMileUsDs	34006 AQ	90%	150.00	577.16	580.34	577.71	580.34	0.000008	0.19	792.62	296.06	0.02

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33953 Dam		Inl Struct									
SixMileUsDs	33879	20%	2000.00	572.06	579.47		579.55	0.005034	2.20	909.76	380.31	0.25
SixMileUsDs	33879	25%	1500.00	572.06	579.13		579.19	0.004642	1.93	780.56	376.11	0.24
SixMileUsDs	33879	50%	700.00	572.06	578.39		578.42	0.004186	1.39	503.92	366.69	0.21
SixMileUsDs	33879	75%	300.00	572.06	575.96		576.12	0.010348	3.20	93.72	35.78	0.35
SixMileUsDs	33879	80%	250.00	572.06	575.63		575.78	0.010867	3.05	82.01	35.19	0.35
SixMileUsDs	33879	Aug 21	190.00	572.06	575.19		575.31	0.011508	2.86	66.55	33.09	0.35
SixMileUsDs	33879	90%	150.00	572.06	574.83		574.94	0.011782	2.72	55.21	30.13	0.35
SixMileUsDs	33793	20%	2000.00	570.64	577.74	577.74	578.30	0.119133	5.98	334.49	332.75	1.05
SixMileUsDs	33793	25%	1500.00	570.64	577.57	577.57	578.03	0.123932	5.43	276.50	327.81	1.04
SixMileUsDs	33793	50%	700.00	570.64	577.67	574.46	577.75	0.018878	2.27	308.83	330.57	0.41
SixMileUsDs	33793	75%	300.00	570.64	575.13	573.16	575.30	0.008784	3.33	90.21	26.35	0.32
SixMileUsDs	33793	80%	250.00	570.64	574.85	572.96	575.00	0.007729	3.01	83.02	25.73	0.30
SixMileUsDs	33793	Aug 21	190.00	570.64	574.47	572.71	574.57	0.006573	2.60	73.10	25.42	0.27
SixMileUsDs	33793	90%	150.00	570.64	574.16	572.52	574.25	0.005751	2.29	65.44	25.18	0.25
SixMileUsDs	33686	20%	2000.00	570.63	576.35		576.39	0.001629	1.56	1278.29	383.70	0.15
SixMileUsDs	33686	25%	1500.00	570.63	575.30		575.35	0.003109	1.71	878.93	376.32	0.20
SixMileUsDs	33686	50%	700.00	570.63	573.14	573.14	573.52	0.128022	4.98	140.52	195.39	1.04
SixMileUsDs	33686	75%	300.00	570.63	572.62	572.62	572.93	0.129912	4.51	66.47	107.87	1.01
SixMileUsDs	33686	80%	250.00	570.63	572.52	572.52	572.82	0.138478	4.44	56.29	98.18	1.03
SixMileUsDs	33686	Aug 21	190.00	570.63	572.38	572.38	572.67	0.135907	4.30	44.21	79.76	1.02
SixMileUsDs	33686	90%	150.00	570.63	572.24	572.24	572.54	0.136290	4.38	34.28	60.15	1.02
SixMileUsDs	33574	20%	2000.00	558.50	576.35		576.36	0.000072	0.56	3555.70	485.10	0.04
SixMileUsDs	33574	25%	1500.00	558.50	575.31		575.31	0.000066	0.49	3052.19	477.82	0.03
SixMileUsDs	33574	50%	700.00	558.50	573.20		573.21	0.000050	0.34	2069.13	451.84	0.03
SixMileUsDs	33574	75%	300.00	558.50	571.88		571.88	0.000017	0.20	1511.76	328.41	0.02
SixMileUsDs	33574	80%	250.00	558.50	571.69		571.69	0.000012	0.17	1454.26	304.87	0.01
SixMileUsDs	33574	Aug 21	190.00	558.50	571.45		571.45	0.000007	0.14	1384.52	274.37	0.01
SixMileUsDs	33574	90%	150.00	558.50	571.25		571.25	0.000005	0.11	1330.79	257.72	0.01
SixMileUsDs	33454	20%	2000.00	569.01	576.31		576.34	0.000710	1.22	1650.85	392.82	0.10
SixMileUsDs	33454	25%	1500.00	569.01	575.27		575.29	0.001018	1.21	1241.57	388.75	0.12
SixMileUsDs	33454	50%	700.00	569.01	573.16		573.19	0.001967	1.37	511.12	215.80	0.16
SixMileUsDs	33454	75%	300.00	569.01	571.85		571.87	0.002785	1.17	256.00	177.75	0.17
SixMileUsDs	33454	80%	250.00	569.01	571.67		571.69	0.002781	1.11	225.23	169.54	0.17
SixMileUsDs	33454	Aug 21	190.00	569.01	571.43		571.45	0.002931	1.02	185.78	164.61	0.17
SixMileUsDs	33454	90%	150.00	569.01	571.23		571.25	0.003342	0.98	153.35	160.41	0.18

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	33320	20%	2000.00	568.22	576.21		576.24	0.000696	1.38	1456.46	285.76	0.11
SixMileUsDs	33320	25%	1500.00	568.22	575.14		575.16	0.000842	1.30	1152.85	280.14	0.11
SixMileUsDs	33320	50%	700.00	568.22	572.95		572.97	0.001335	1.20	582.08	223.41	0.13
SixMileUsDs	33320	75%	300.00	568.22	571.50		571.52	0.002370	1.08	278.15	194.06	0.16
SixMileUsDs	33320	80%	250.00	568.22	571.30		571.31	0.002733	1.05	238.43	193.23	0.17
SixMileUsDs	33320	Aug 21	190.00	568.22	571.03		571.04	0.003187	1.01	187.55	179.64	0.17
SixMileUsDs	33320	90%	150.00	568.22	570.81		570.83	0.002878	0.98	152.91	142.28	0.17
SixMileUsDs	33097 AP	20%	2000.00	567.57	576.09		576.15	0.000231	2.01	1044.47	169.12	0.14
SixMileUsDs	33097 AP	25%	1500.00	567.57	575.02		575.07	0.000233	1.80	865.59	165.62	0.13
SixMileUsDs	33097 AP	50%	700.00	567.57	572.83		572.85	0.000261	1.38	518.71	153.95	0.13
SixMileUsDs	33097 AP	75%	300.00	567.57	571.36		571.37	0.000298	1.02	295.43	150.12	0.13
SixMileUsDs	33097 AP	80%	250.00	567.57	571.15		571.16	0.000299	0.95	263.95	149.42	0.12
SixMileUsDs	33097 AP	Aug 21	190.00	567.57	570.87		570.88	0.000300	0.85	222.81	148.34	0.12
SixMileUsDs	33097 AP	90%	150.00	567.57	570.67		570.67	0.000300	0.78	192.58	144.24	0.12
SixMileUsDs	32936	20%	2000.00	568.44	576.03		576.08	0.001002	1.92	1044.26	163.44	0.13
SixMileUsDs	32936	25%	1500.00	568.44	574.96		575.00	0.001020	1.73	870.89	160.16	0.13
SixMileUsDs	32936	50%	700.00	568.44	572.75		572.78	0.001140	1.33	525.78	153.46	0.13
SixMileUsDs	32936	75%	300.00	568.44	571.27		571.29	0.001280	0.99	301.60	149.66	0.12
SixMileUsDs	32936	80%	250.00	568.44	571.06		571.07	0.001274	0.93	270.21	148.99	0.12
SixMileUsDs	32936	Aug 21	190.00	568.44	570.78		570.80	0.001256	0.83	229.19	147.55	0.12
SixMileUsDs	32936	90%	150.00	568.44	570.58		570.59	0.001212	0.75	199.15	144.20	0.11
SixMileUsDs	32638	20%	2000.00	567.38	575.72		575.78	0.001038	1.92	1057.48	173.91	0.13
SixMileUsDs	32638	25%	1500.00	567.38	574.64		574.69	0.001100	1.74	870.11	171.59	0.13
SixMileUsDs	32638	50%	700.00	567.38	572.34		572.37	0.001617	1.45	484.14	163.80	0.15
SixMileUsDs	32638	75%	300.00	567.38	570.59		570.62	0.004794	1.48	203.11	150.33	0.22
SixMileUsDs	32638	80%	250.00	567.38	570.32		570.35	0.006155	1.53	163.63	138.47	0.25
SixMileUsDs	32638	Aug 21	190.00	567.38	569.97		570.01	0.008698	1.61	118.20	120.07	0.29
SixMileUsDs	32638	90%	150.00	567.38	569.71		569.76	0.011948	1.68	89.16	107.33	0.33
SixMileUsDs	31795 AO	20%	2000.00	566.33	575.27		575.35	0.000298	2.24	906.74	145.51	0.15
SixMileUsDs	31795 AO	25%	1500.00	566.33	574.18		574.24	0.000309	2.02	747.84	142.30	0.15
SixMileUsDs	31795 AO	50%	700.00	566.33	571.78		571.82	0.000354	1.64	426.02	117.54	0.15
SixMileUsDs	31795 AO	75%	300.00	566.33	569.76		569.79	0.000412	1.37	218.62	88.49	0.15
SixMileUsDs	31795 AO	80%	250.00	566.33	569.43		569.45	0.000425	1.32	189.73	83.64	0.15
SixMileUsDs	31795 AO	Aug 21	190.00	566.33	568.98		569.00	0.000444	1.24	153.76	77.19	0.15
SixMileUsDs	31795 AO	90%	150.00	566.33	568.65		568.67	0.000460	1.17	128.66	72.35	0.15
SixMileUsDs	29614 AN	20%	2000.00	565.33	574.63		574.71	0.000290	2.32	873.69	130.45	0.15
SixMileUsDs	29614 AN	25%	1500.00	565.33	573.52		573.59	0.000289	2.06	730.67	128.39	0.15

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	29614 AN	50%	700.00	565.33	571.07		571.11	0.000299	1.61	435.25	108.77	0.14
SixMileUsDs	29614 AN	75%	300.00	565.33	568.99		569.01	0.000313	1.28	233.58	84.89	0.14
SixMileUsDs	29614 AN	80%	250.00	565.33	568.63		568.66	0.000318	1.22	204.28	80.84	0.14
SixMileUsDs	29614 AN	Aug 21	190.00	565.33	568.16		568.18	0.000327	1.14	167.05	75.37	0.13
SixMileUsDs	29614 AN	90%	150.00	565.33	567.80		567.81	0.000336	1.07	140.62	71.23	0.13
SixMileUsDs	28097 AM	20%	2000.00	564.33	574.30		574.35	0.000186	1.86	1096.81	164.93	0.12
SixMileUsDs	28097 AM	25%	1500.00	564.33	573.19		573.23	0.000186	1.65	916.27	162.28	0.12
SixMileUsDs	28097 AM	50%	700.00	564.33	570.72		570.74	0.000194	1.30	538.79	134.78	0.11
SixMileUsDs	28097 AM	75%	300.00	564.33	568.61		568.63	0.000203	1.04	288.08	103.67	0.11
SixMileUsDs	28097 AM	80%	250.00	564.33	568.25		568.27	0.000206	0.99	251.71	98.34	0.11
SixMileUsDs	28097 AM	Aug 21	190.00	564.33	567.77		567.78	0.000211	0.92	205.45	91.12	0.11
SixMileUsDs	28097 AM	90%	150.00	564.33	567.39		567.41	0.000216	0.87	172.55	85.61	0.11
SixMileUsDs	26514 AL	20%	2000.00	564.33	574.02		574.07	0.000166	1.80	1127.94	163.26	0.12
SixMileUsDs	26514 AL	25%	1500.00	564.33	572.92		572.96	0.000161	1.59	949.68	160.19	0.11
SixMileUsDs	26514 AL	50%	700.00	564.33	570.44		570.46	0.000161	1.22	573.67	136.87	0.11
SixMileUsDs	26514 AL	75%	300.00	564.33	568.34		568.35	0.000154	0.95	317.06	107.32	0.10
SixMileUsDs	26514 AL	80%	250.00	564.33	567.98		567.99	0.000153	0.90	279.22	102.24	0.10
SixMileUsDs	26514 AL	Aug 21	190.00	564.33	567.49		567.50	0.000152	0.82	230.76	95.34	0.09
SixMileUsDs	26514 AL	90%	150.00	564.33	567.11		567.12	0.000151	0.77	196.03	90.07	0.09
SixMileUsDs	25135 AK	20%	2000.00	564.33	573.73		573.80	0.000238	2.11	970.26	147.03	0.14
SixMileUsDs	25135 AK	25%	1500.00	564.33	572.64		572.69	0.000235	1.87	811.19	143.86	0.13
SixMileUsDs	25135 AK	50%	700.00	564.33	570.17		570.20	0.000234	1.45	482.44	117.36	0.13
SixMileUsDs	25135 AK	75%	300.00	564.33	568.07		568.09	0.000237	1.14	262.84	92.48	0.12
SixMileUsDs	25135 AK	80%	250.00	564.33	567.71		567.73	0.000240	1.09	230.20	88.19	0.12
SixMileUsDs	25135 AK	Aug 21	190.00	564.33	567.22		567.23	0.000247	1.01	188.23	82.33	0.12
SixMileUsDs	25135 AK	90%	150.00	564.33	566.84		566.85	0.000256	0.95	157.97	77.84	0.12
SixMileUsDs	23775 AJ	20%	2000.00	563.33	573.53		573.57	0.000117	1.54	1317.71	183.93	0.10
SixMileUsDs	23775 AJ	25%	1500.00	563.33	572.44		572.47	0.000112	1.35	1117.87	182.40	0.09
SixMileUsDs	23775 AJ	50%	700.00	563.33	569.98		569.99	0.000101	1.01	693.87	154.90	0.08
SixMileUsDs	23775 AJ	75%	300.00	563.33	567.90		567.91	0.000082	0.74	405.34	123.41	0.07
SixMileUsDs	23775 AJ	80%	250.00	563.33	567.55		567.55	0.000078	0.69	362.22	117.98	0.07
SixMileUsDs	23775 AJ	Aug 21	190.00	563.33	567.06		567.07	0.000072	0.62	306.66	110.60	0.07
SixMileUsDs	23775 AJ	90%	150.00	563.33	566.69		566.69	0.000067	0.56	266.52	104.94	0.06
SixMileUsDs	21935 AI	20%	2000.00	563.33	573.21		573.28	0.000220	2.05	993.58	145.45	0.13
SixMileUsDs	21935 AI	25%	1500.00	563.33	572.15		572.20	0.000204	1.80	843.20	139.21	0.13
SixMileUsDs	21935 AI	50%	700.00	563.33	569.72		569.75	0.000178	1.34	523.57	116.91	0.11
SixMileUsDs	21935 AI	75%	300.00	563.33	567.70		567.72	0.000142	0.97	309.71	94.80	0.09

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	21935 AI	80%	250.00	563.33	567.36		567.37	0.000135	0.90	277.51	91.01	0.09
SixMileUsDs	21935 AI	Aug 21	190.00	563.33	566.89		566.90	0.000123	0.81	235.94	85.86	0.09
SixMileUsDs	21935 AI	90%	150.00	563.33	566.53		566.53	0.000114	0.73	205.83	81.94	0.08
SixMileUsDs	19696 AH	20%	2000.00	564.00	572.62		572.70	0.000312	2.18	922.73	153.66	0.16
SixMileUsDs	19696 AH	25%	1500.00	564.00	571.56		571.62	0.000326	1.98	760.70	152.41	0.15
SixMileUsDs	19696 AH	50%	700.00	564.00	569.15		569.19	0.000373	1.65	424.48	120.90	0.16
SixMileUsDs	19696 AH	75%	300.00	564.00	567.16		567.19	0.000464	1.41	213.49	91.18	0.16
SixMileUsDs	19696 AH	80%	250.00	564.00	566.82		566.85	0.000496	1.36	183.36	86.10	0.16
SixMileUsDs	19696 AH	Aug 21	190.00	564.00	566.36		566.39	0.000555	1.31	145.36	79.24	0.17
SixMileUsDs	19696 AH	90%	150.00	564.00	566.01		566.04	0.000621	1.26	118.66	74.03	0.18
SixMileUsDs	18407 AG	20%	2000.00	563.00	572.33		572.38	0.000185	1.83	1112.02	171.03	0.12
SixMileUsDs	18407 AG	25%	1500.00	563.00	571.27		571.31	0.000182	1.62	932.02	168.04	0.12
SixMileUsDs	18407 AG	50%	700.00	563.00	568.84		568.87	0.000175	1.25	558.15	136.05	0.11
SixMileUsDs	18407 AG	75%	300.00	563.00	566.84		566.85	0.000162	0.96	313.47	108.27	0.10
SixMileUsDs	18407 AG	80%	250.00	563.00	566.49		566.51	0.000160	0.90	276.86	103.47	0.10
SixMileUsDs	18407 AG	Aug 21	190.00	563.00	566.02		566.03	0.000158	0.83	229.64	96.93	0.09
SixMileUsDs	18407 AG	90%	150.00	563.00	565.66		565.67	0.000157	0.77	195.59	91.93	0.09
SixMileUsDs	16725 AF	20%	2000.00	562.33	571.92		571.99	0.000292	2.22	912.65	145.65	0.15
SixMileUsDs	16725 AF	25%	1500.00	562.33	570.86		570.92	0.000294	1.98	759.44	144.70	0.15
SixMileUsDs	16725 AF	50%	700.00	562.33	568.46		568.50	0.000286	1.56	448.10	113.36	0.14
SixMileUsDs	16725 AF	75%	300.00	562.33	566.49		566.51	0.000258	1.20	250.63	87.56	0.12
SixMileUsDs	16725 AF	80%	250.00	562.33	566.15		566.17	0.000252	1.13	221.71	83.12	0.12
SixMileUsDs	16725 AF	Aug 21	190.00	562.33	565.69		565.71	0.000241	1.03	184.77	77.06	0.12
SixMileUsDs	16725 AF	90%	150.00	562.33	565.34		565.35	0.000231	0.95	158.49	72.45	0.11
SixMileUsDs	15278 AE	20%	2000.00	562.33	571.55		571.61	0.000234	2.00	1006.69	159.49	0.14
SixMileUsDs	15278 AE	25%	1500.00	562.33	570.49		570.54	0.000235	1.79	839.89	153.76	0.13
SixMileUsDs	15278 AE	50%	700.00	562.33	568.11		568.14	0.000208	1.37	510.41	123.66	0.12
SixMileUsDs	15278 AE	75%	300.00	562.33	566.19		566.20	0.000179	1.02	295.04	100.12	0.10
SixMileUsDs	15278 AE	80%	250.00	562.33	565.86		565.87	0.000173	0.95	262.63	96.08	0.10
SixMileUsDs	15278 AE	Aug 21	190.00	562.33	565.41		565.42	0.000165	0.86	220.79	90.60	0.10
SixMileUsDs	15278 AE	90%	150.00	562.33	565.07		565.08	0.000157	0.79	190.64	86.44	0.09
SixMileUsDs	13567 AD	20%	2000.00	562.33	571.19		571.24	0.000203	1.79	1119.89	182.91	0.13
SixMileUsDs	13567 AD	25%	1500.00	562.33	570.12		570.16	0.000205	1.61	929.31	174.59	0.12
SixMileUsDs	13567 AD	50%	700.00	562.33	567.78		567.81	0.000183	1.25	559.47	141.35	0.11
SixMileUsDs	13567 AD	75%	300.00	562.33	565.89		565.91	0.000167	0.94	317.78	114.54	0.10
SixMileUsDs	13567 AD	80%	250.00	562.33	565.57		565.58	0.000164	0.89	281.44	109.94	0.10
SixMileUsDs	13567 AD	Aug 21	190.00	562.33	565.13		565.14	0.000161	0.81	234.56	103.71	0.09

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	13567 AD	90%	150.00	562.33	564.80		564.81	0.000158	0.75	200.92	99.00	0.09
SixMileUsDs	11928 AC	20%	2000.00	562.33	570.79		570.85	0.000275	1.95	1026.02	180.98	0.14
SixMileUsDs	11928 AC	25%	1500.00	562.33	569.73		569.78	0.000275	1.79	839.37	169.08	0.14
SixMileUsDs	11928 AC	50%	700.00	562.33	567.41		567.45	0.000268	1.43	488.63	134.34	0.13
SixMileUsDs	11928 AC	75%	300.00	562.33	565.54		565.56	0.000283	1.14	262.86	106.13	0.13
SixMileUsDs	11928 AC	80%	250.00	562.33	565.21		565.23	0.000292	1.09	229.14	101.24	0.13
SixMileUsDs	11928 AC	Aug 21	190.00	562.33	564.77		564.78	0.000310	1.02	185.70	94.58	0.13
SixMileUsDs	11928 AC	90%	150.00	562.33	564.43		564.44	0.000332	0.97	154.36	89.46	0.13
SixMileUsDs	10164 AB	20%	2000.00	561.33	570.35		570.41	0.000229	1.84	1084.96	182.32	0.13
SixMileUsDs	10164 AB	25%	1500.00	561.33	569.31		569.36	0.000205	1.65	906.83	164.27	0.12
SixMileUsDs	10164 AB	50%	700.00	561.33	567.06		567.08	0.000164	1.23	568.23	135.61	0.11
SixMileUsDs	10164 AB	75%	300.00	561.33	565.22		565.23	0.000129	0.88	340.35	112.28	0.09
SixMileUsDs	10164 AB	80%	250.00	561.33	564.90		564.91	0.000123	0.82	305.10	108.22	0.09
SixMileUsDs	10164 AB	Aug 21	190.00	561.33	564.46		564.47	0.000114	0.73	258.98	102.67	0.08
SixMileUsDs	10164 AB	90%	150.00	561.33	564.12		564.13	0.000107	0.67	225.10	98.40	0.08
SixMileUsDs	8554 AA	20%	2000.00	561.33	569.93		569.99	0.000287	2.04	979.09	165.81	0.15
SixMileUsDs	8554 AA	25%	1500.00	561.33	568.93		568.98	0.000264	1.83	819.51	153.75	0.14
SixMileUsDs	8554 AA	50%	700.00	561.33	566.75		566.78	0.000213	1.36	513.00	127.42	0.12
SixMileUsDs	8554 AA	75%	300.00	561.33	564.98		564.99	0.000171	0.98	305.93	105.99	0.10
SixMileUsDs	8554 AA	80%	250.00	561.33	564.67		564.68	0.000164	0.91	273.81	102.26	0.10
SixMileUsDs	8554 AA	Aug 21	190.00	561.33	564.25		564.26	0.000154	0.82	231.73	97.17	0.09
SixMileUsDs	8554 AA	90%	150.00	561.33	563.92		563.93	0.000146	0.75	200.81	93.24	0.09
SixMileUsDs	7034 Z	20%	2000.00	561.33	569.42		569.50	0.000370	2.20	908.18	166.49	0.17
SixMileUsDs	7034 Z	25%	1500.00	561.33	568.46		568.52	0.000347	1.99	754.22	153.59	0.16
SixMileUsDs	7034 Z	50%	700.00	561.33	566.36		566.40	0.000296	1.52	461.37	125.45	0.14
SixMileUsDs	7034 Z	75%	300.00	561.33	564.65		564.67	0.000258	1.13	266.54	102.53	0.12
SixMileUsDs	7034 Z	80%	250.00	561.33	564.36		564.37	0.000253	1.06	236.61	98.54	0.12
SixMileUsDs	7034 Z	Aug 21	190.00	561.33	563.95		563.96	0.000247	0.96	197.49	93.06	0.12
SixMileUsDs	7034 Z	90%	150.00	561.33	563.63		563.65	0.000244	0.89	168.89	88.85	0.11
SixMileUsDs	5269 Y	20%	2000.00	560.33	568.54		568.65	0.000640	2.67	749.62	155.61	0.21
SixMileUsDs	5269 Y	25%	1500.00	560.33	567.63		567.72	0.000616	2.44	613.92	141.29	0.21
SixMileUsDs	5269 Y	50%	700.00	560.33	565.65		565.70	0.000547	1.92	364.45	110.21	0.19
SixMileUsDs	5269 Y	75%	300.00	560.33	564.04		564.08	0.000462	1.44	207.92	85.10	0.16
SixMileUsDs	5269 Y	80%	250.00	560.33	563.77		563.79	0.000443	1.35	184.84	80.75	0.16
SixMileUsDs	5269 Y	Aug 21	190.00	560.33	563.38		563.41	0.000414	1.22	155.14	74.76	0.15
SixMileUsDs	5269 Y	90%	150.00	560.33	563.09		563.11	0.000388	1.12	133.76	70.14	0.14

HEC-RAS Plan: Prop_Dam_NonFlood River: CoalRiver Reach: SixMileUsDs (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SixMileUsDs	3771 X	20%	2000.00	560.33	567.90		567.97	0.000332	2.02	991.45	191.93	0.16
SixMileUsDs	3771 X	25%	1500.00	560.33	567.03		567.08	0.000306	1.81	829.53	177.82	0.15
SixMileUsDs	3771 X	50%	700.00	560.33	565.14		565.17	0.000241	1.34	523.11	147.48	0.13
SixMileUsDs	3771 X	75%	300.00	560.33	563.65		563.66	0.000178	0.94	320.63	123.40	0.10
SixMileUsDs	3771 X	80%	250.00	560.33	563.39		563.41	0.000166	0.86	289.58	119.28	0.10
SixMileUsDs	3771 X	Aug 21	190.00	560.33	563.04		563.05	0.000149	0.76	248.85	113.65	0.09
SixMileUsDs	3771 X	90%	150.00	560.33	562.78		562.78	0.000135	0.69	218.98	109.33	0.09
SixMileUsDs	1581 W	20%	2000.00	560.33	567.17		567.23	0.000342	1.92	1040.24	221.32	0.16
SixMileUsDs	1581 W	25%	1500.00	560.33	566.35		566.39	0.000321	1.73	864.56	204.64	0.15
SixMileUsDs	1581 W	50%	700.00	560.33	564.59		564.62	0.000265	1.30	536.84	169.15	0.13
SixMileUsDs	1581 W	75%	300.00	560.33	563.23		563.25	0.000203	0.92	325.67	141.66	0.11
SixMileUsDs	1581 W	80%	250.00	560.33	563.00		563.02	0.000190	0.85	293.84	137.04	0.10
SixMileUsDs	1581 W	Aug 21	190.00	560.33	562.69		562.70	0.000172	0.75	252.22	130.75	0.10
SixMileUsDs	1581 W	90%	150.00	560.33	562.46		562.47	0.000156	0.68	222.01	125.99	0.09
SixMileUsDs	496 V	20%	2000.00	560.33	566.66	563.08	566.74	0.000601	2.34	856.39	208.01	0.20
SixMileUsDs	496 V	25%	1500.00	560.33	565.85	562.70	565.93	0.000600	2.16	696.00	190.47	0.20
SixMileUsDs	496 V	50%	700.00	560.33	564.15	561.93	564.20	0.000601	1.73	403.85	153.45	0.19
SixMileUsDs	496 V	75%	300.00	560.33	562.86	561.40	562.89	0.000600	1.34	224.08	125.35	0.18
SixMileUsDs	496 V	80%	250.00	560.33	562.65	561.31	562.68	0.000600	1.26	197.80	120.70	0.17
SixMileUsDs	496 V	Aug 21	190.00	560.33	562.37	561.20	562.39	0.000601	1.16	164.24	114.48	0.17
SixMileUsDs	496 V	90%	150.00	560.33	562.15	561.12	562.17	0.000601	1.07	140.12	109.80	0.17

B7:

Maps Showing Cross Sections Used in Hydraulic Analysis

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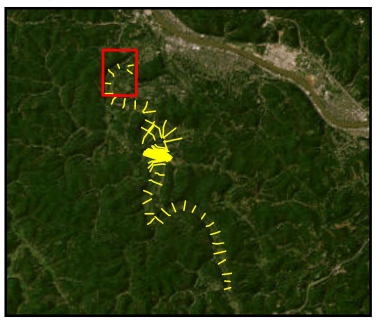


Figure: Map Showing Cross Sections used in Hydraulic Analysis

Coal River Watershed Planning Study
Lock and Dam No. 3

Kanawha County, West Virginia

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Base map provided by ArcGIS Online Web Services.

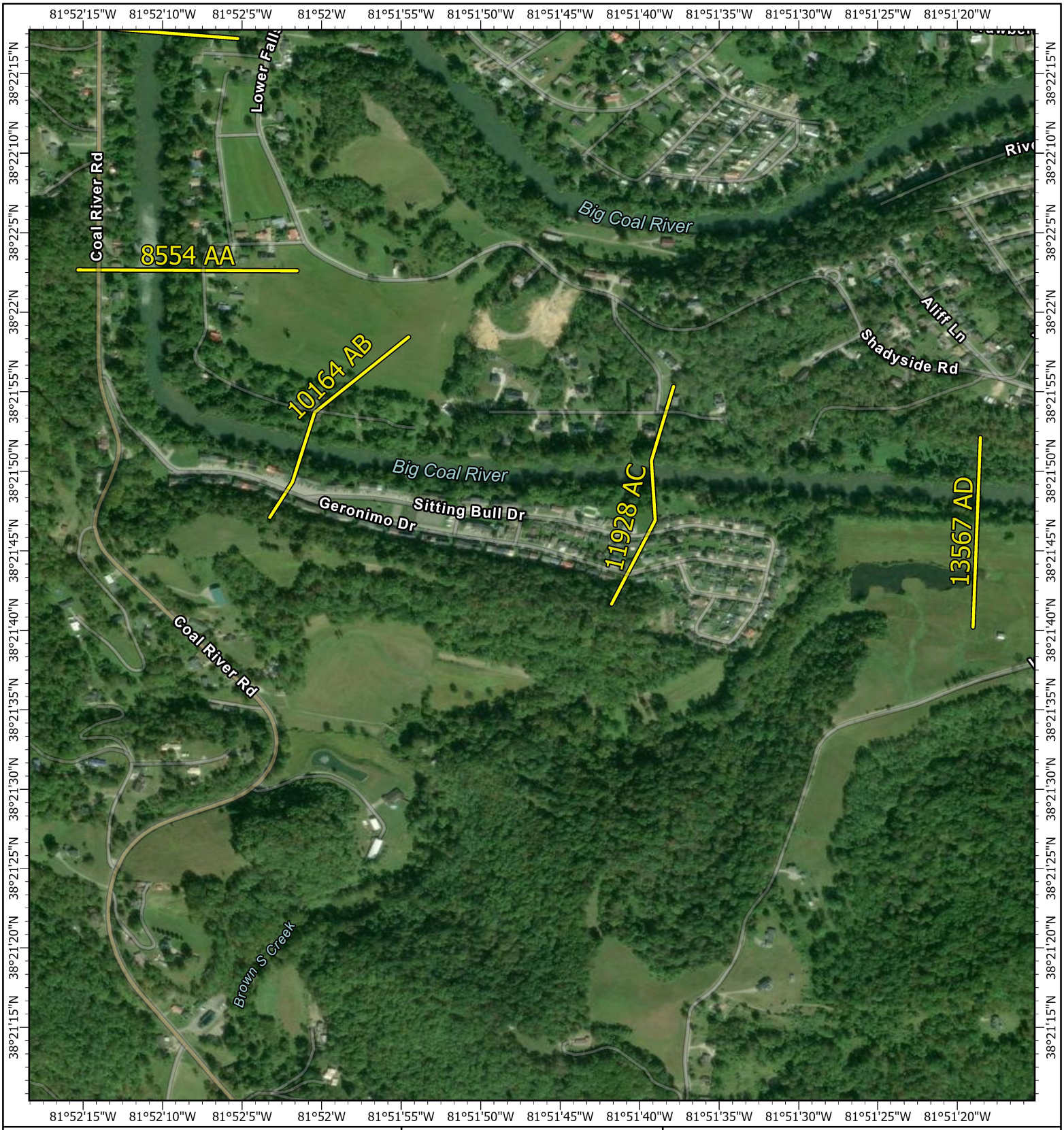
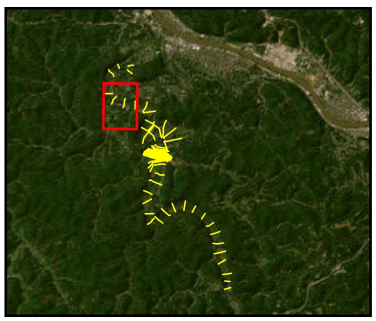


Figure: Map Showing Cross Sections used in Hydraulic Analysis

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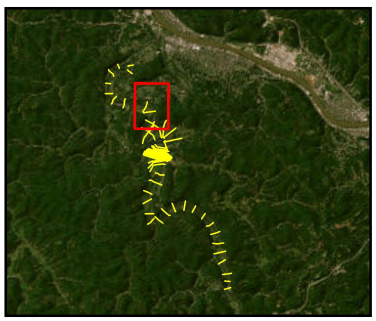


Figure: Map Showing Cross Sections used in Hydraulic Analysis

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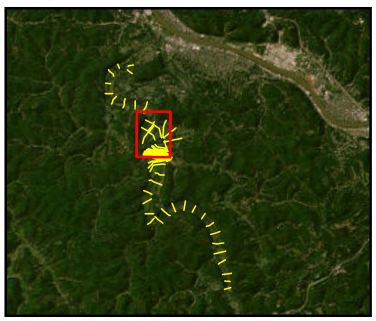


Figure: Map Showing Cross Sections used in Hydraulic Analysis

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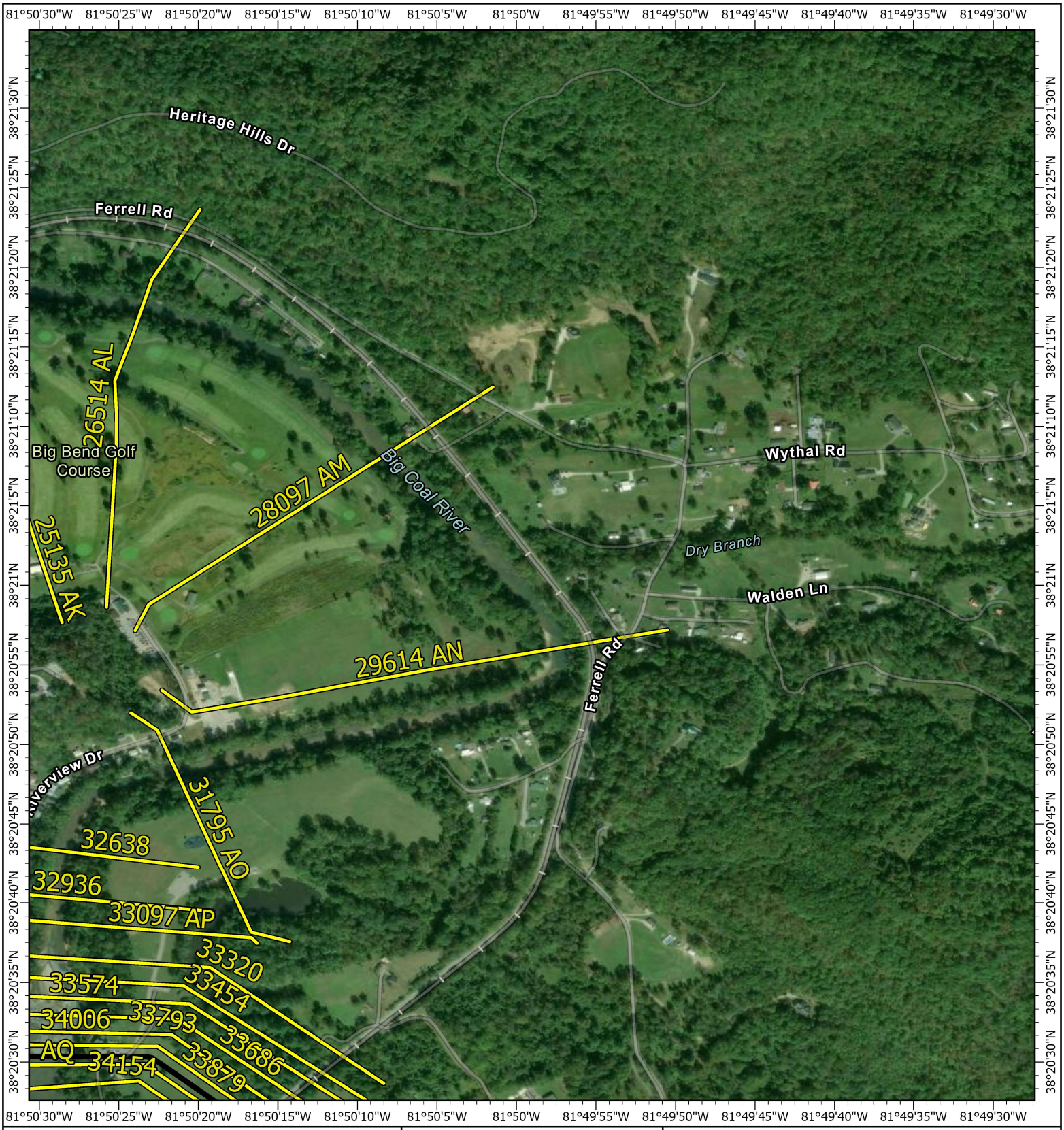
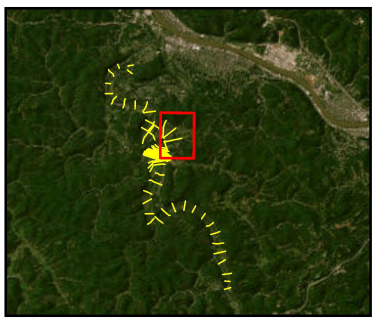


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Base map provided by ArcGIS Online Web Services.

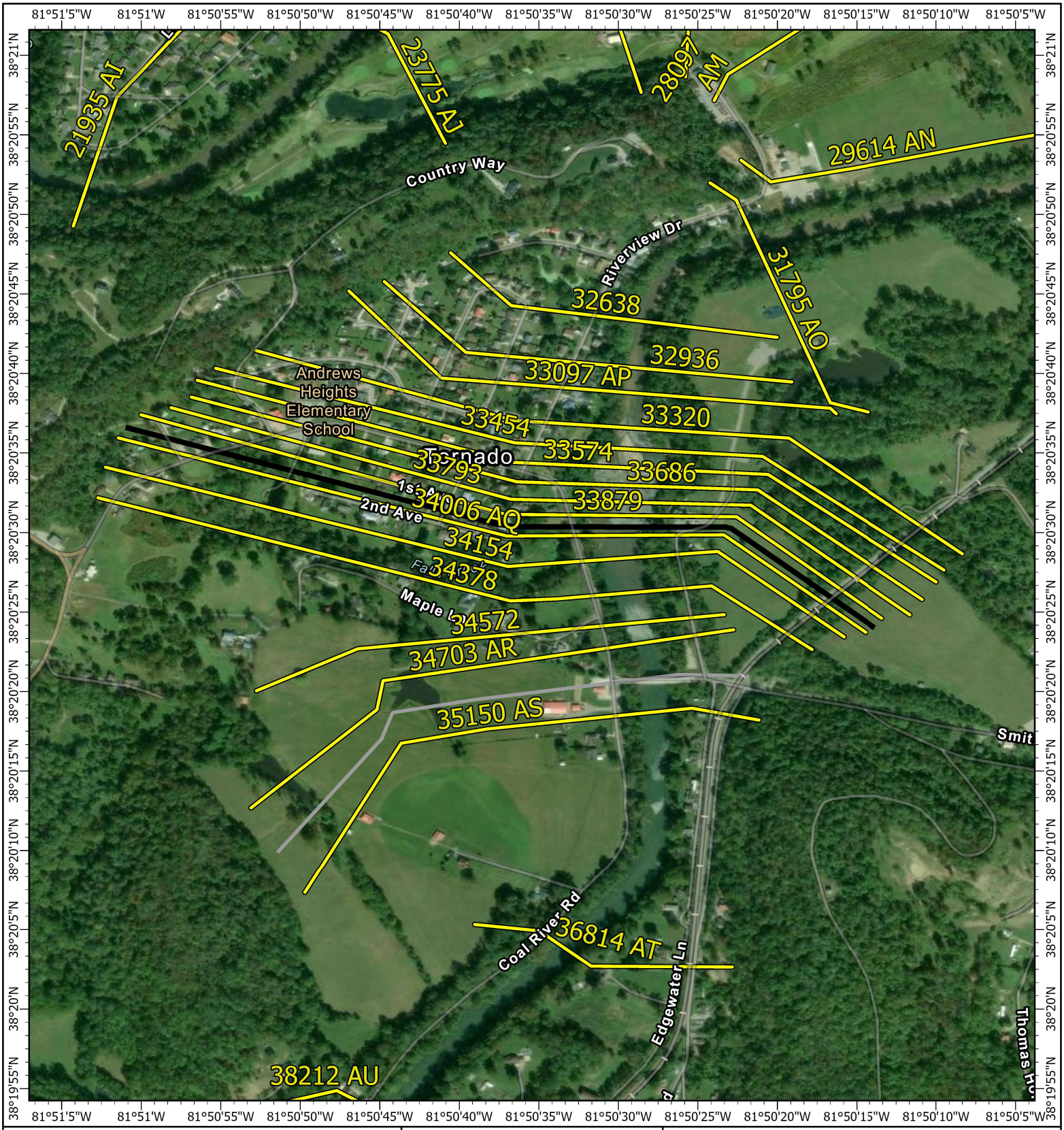
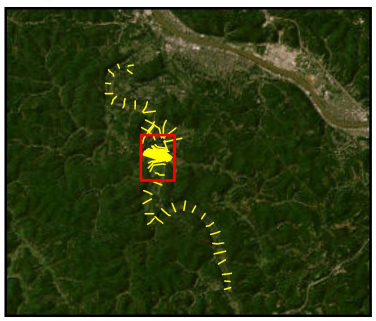


Figure: Map Showing Cross Sections used in Hydraulic Analysis

Coal River Watershed Planning Study
Lock and Dam No. 3

Kanawha County, West Virginia

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- CrossSections
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GFT

N

0 475 950 1,900 Feet

Base map provided by ArcGIS Online Web Services.

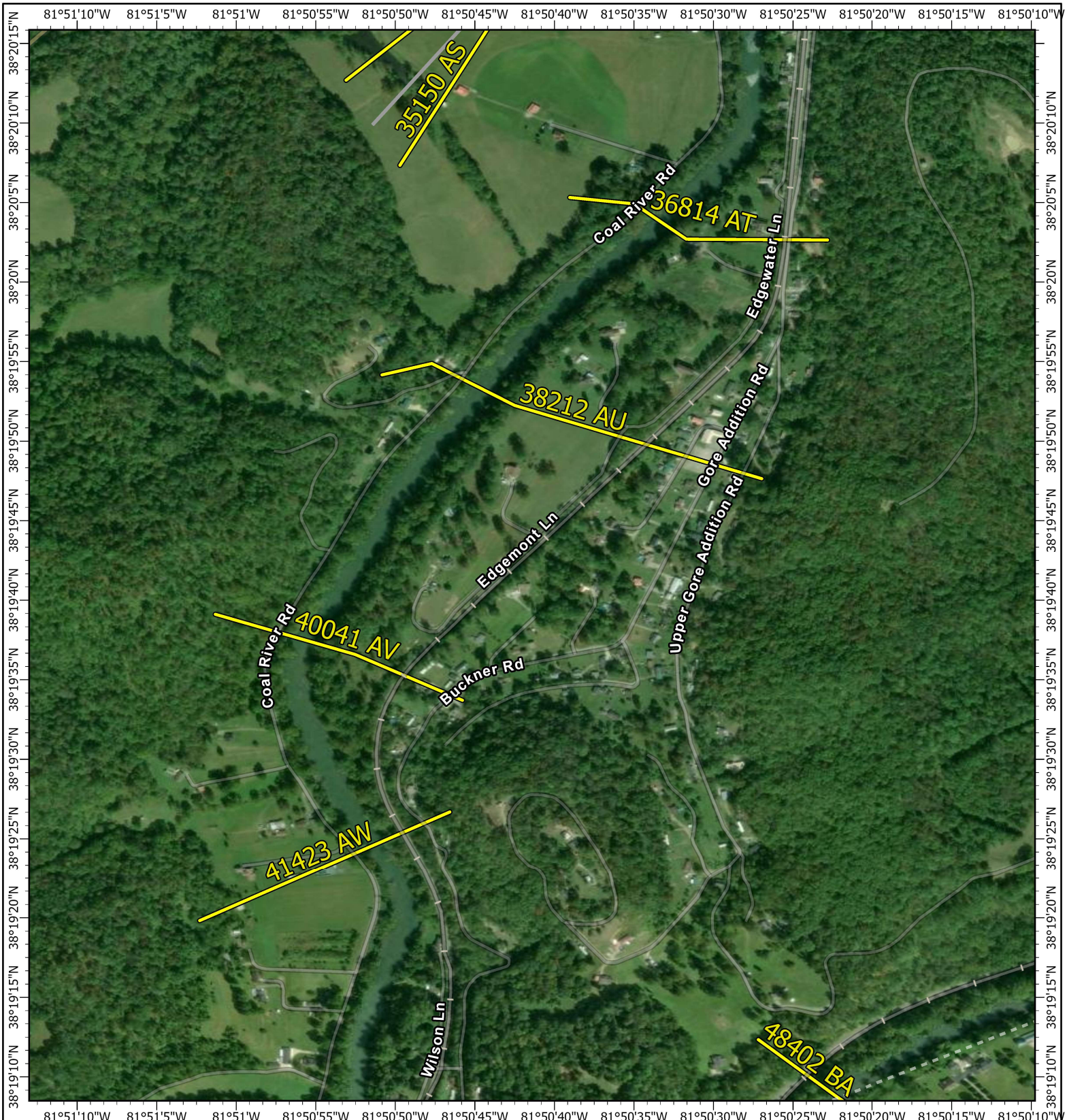
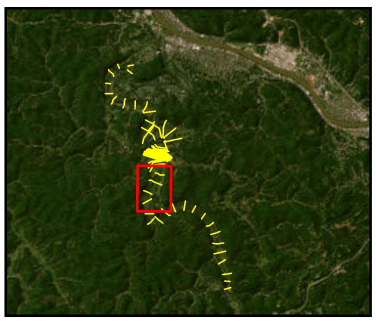


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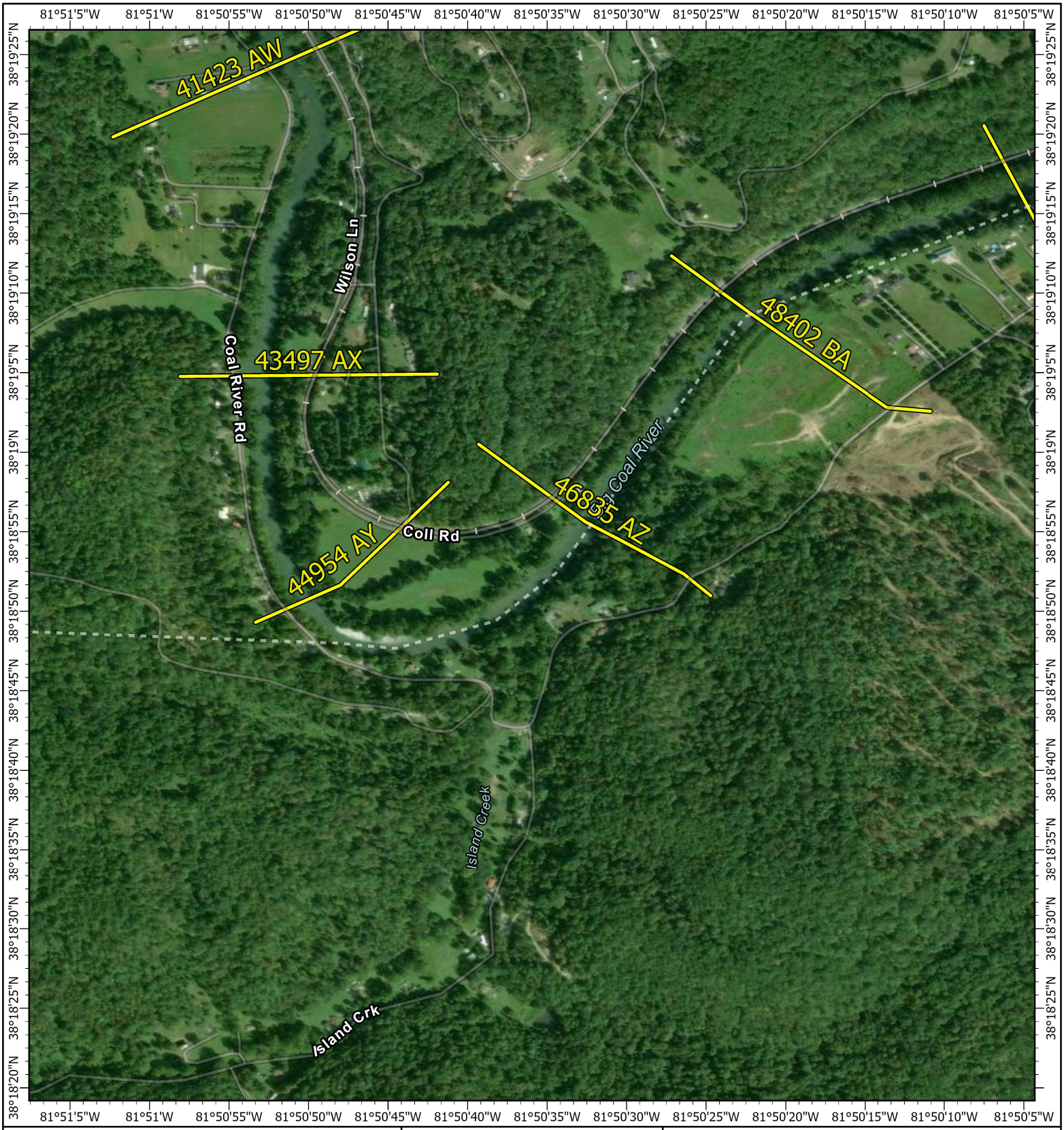
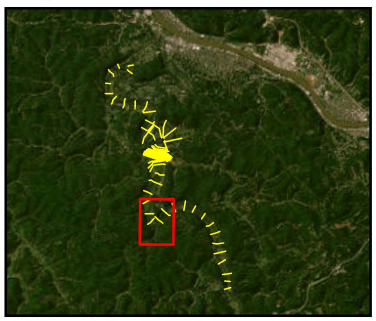


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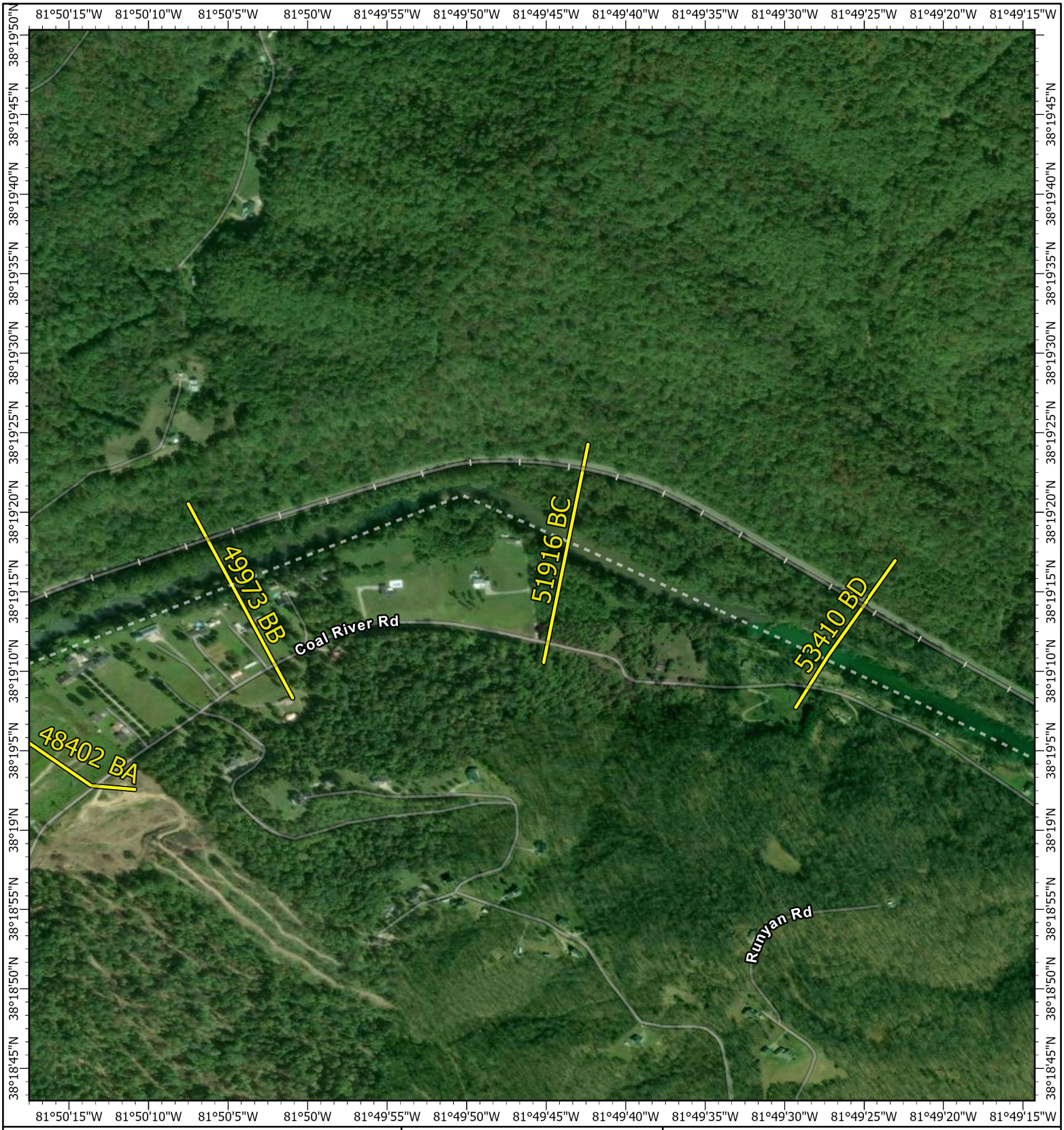
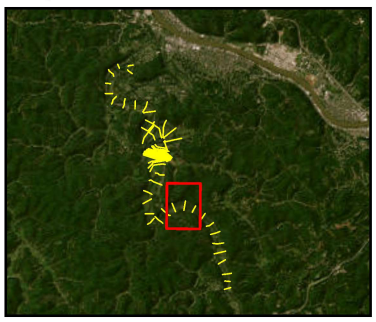


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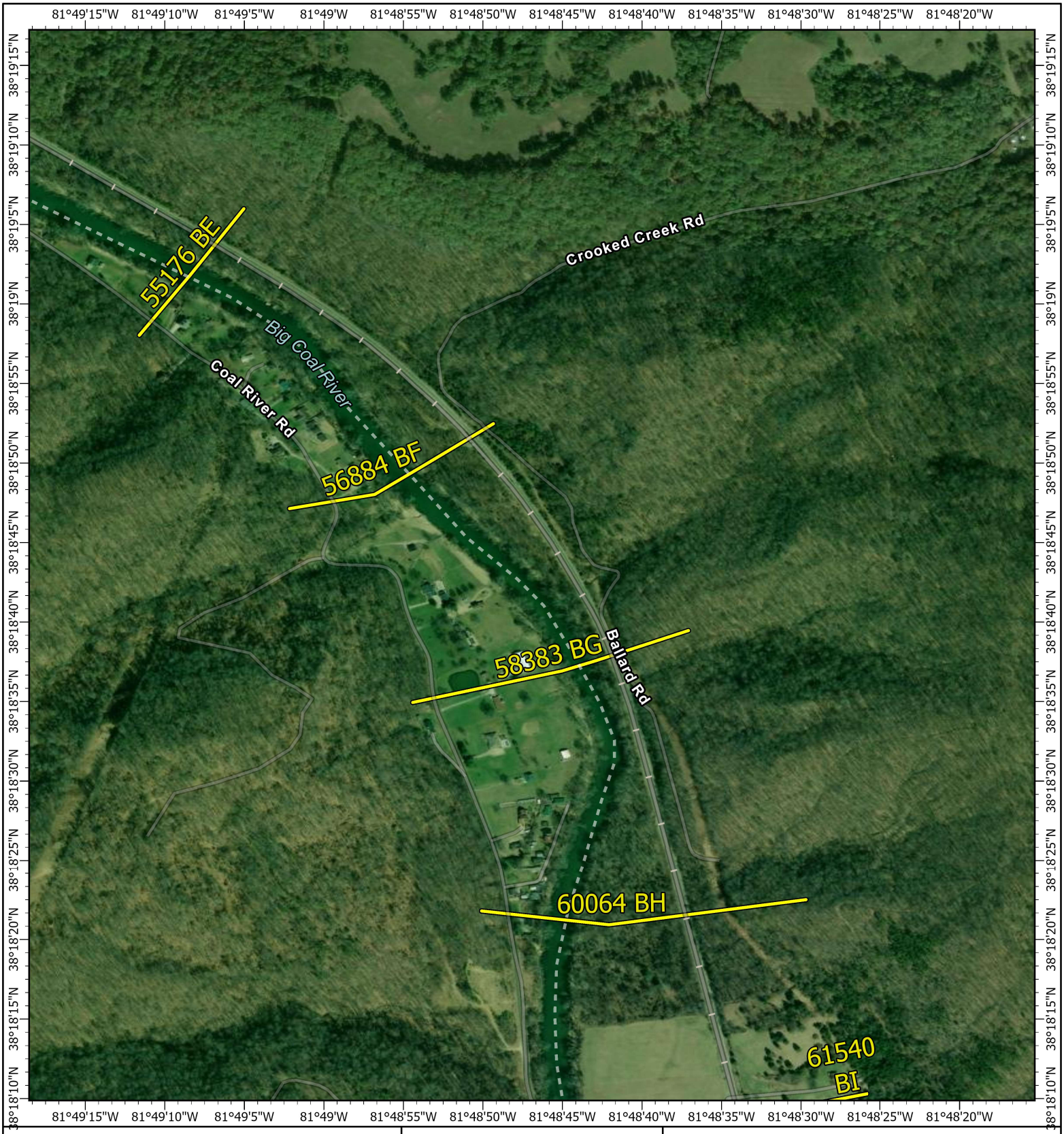
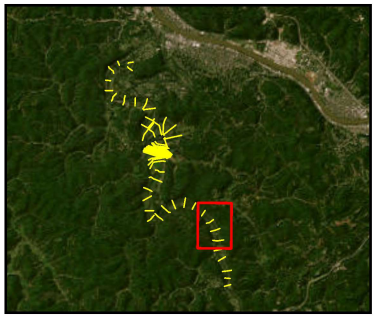


Figure: Map Showing Cross Sections used in Hydraulic Analysis

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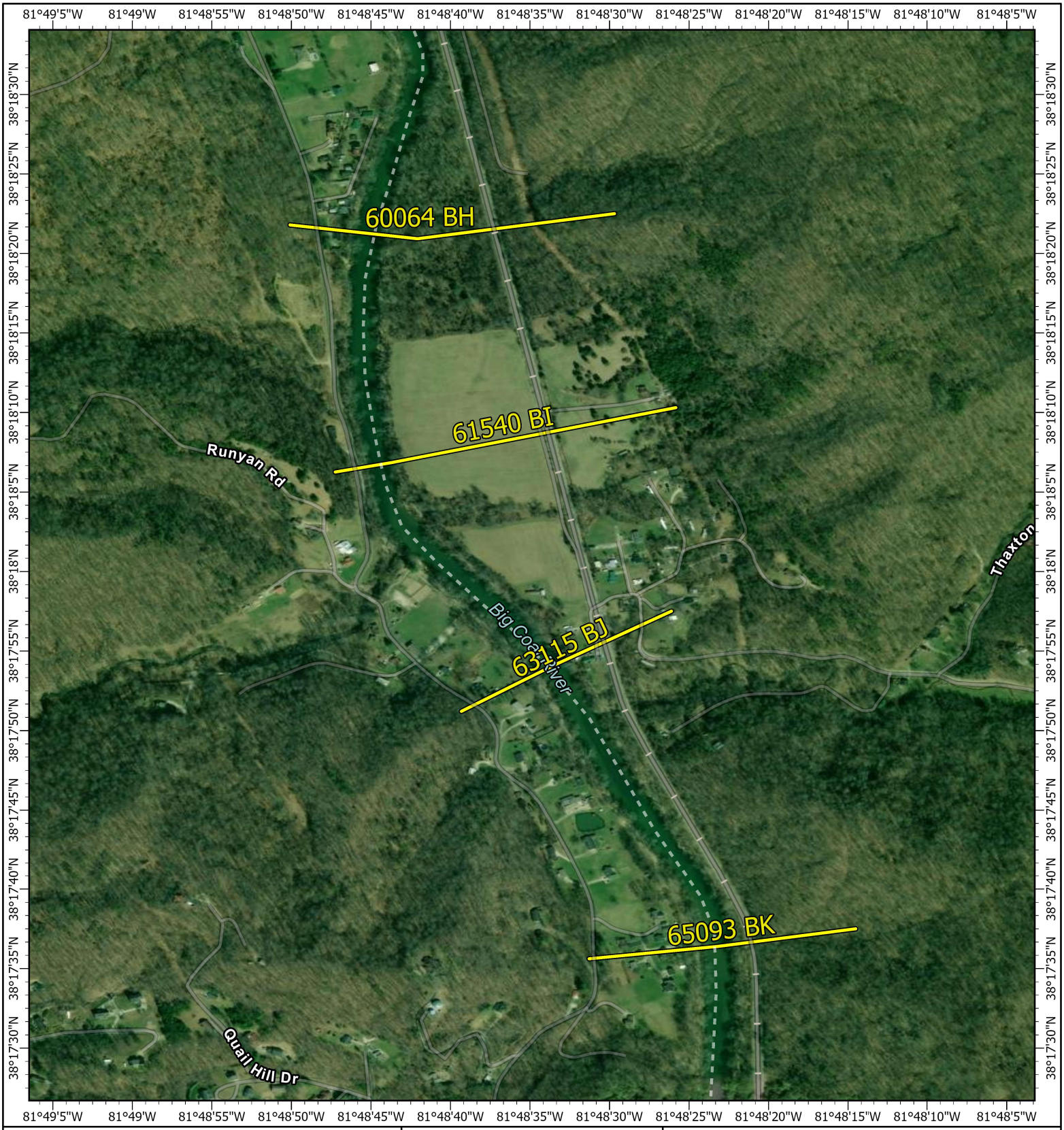
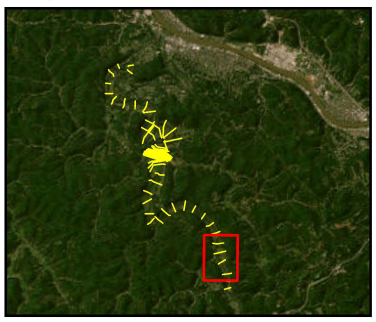


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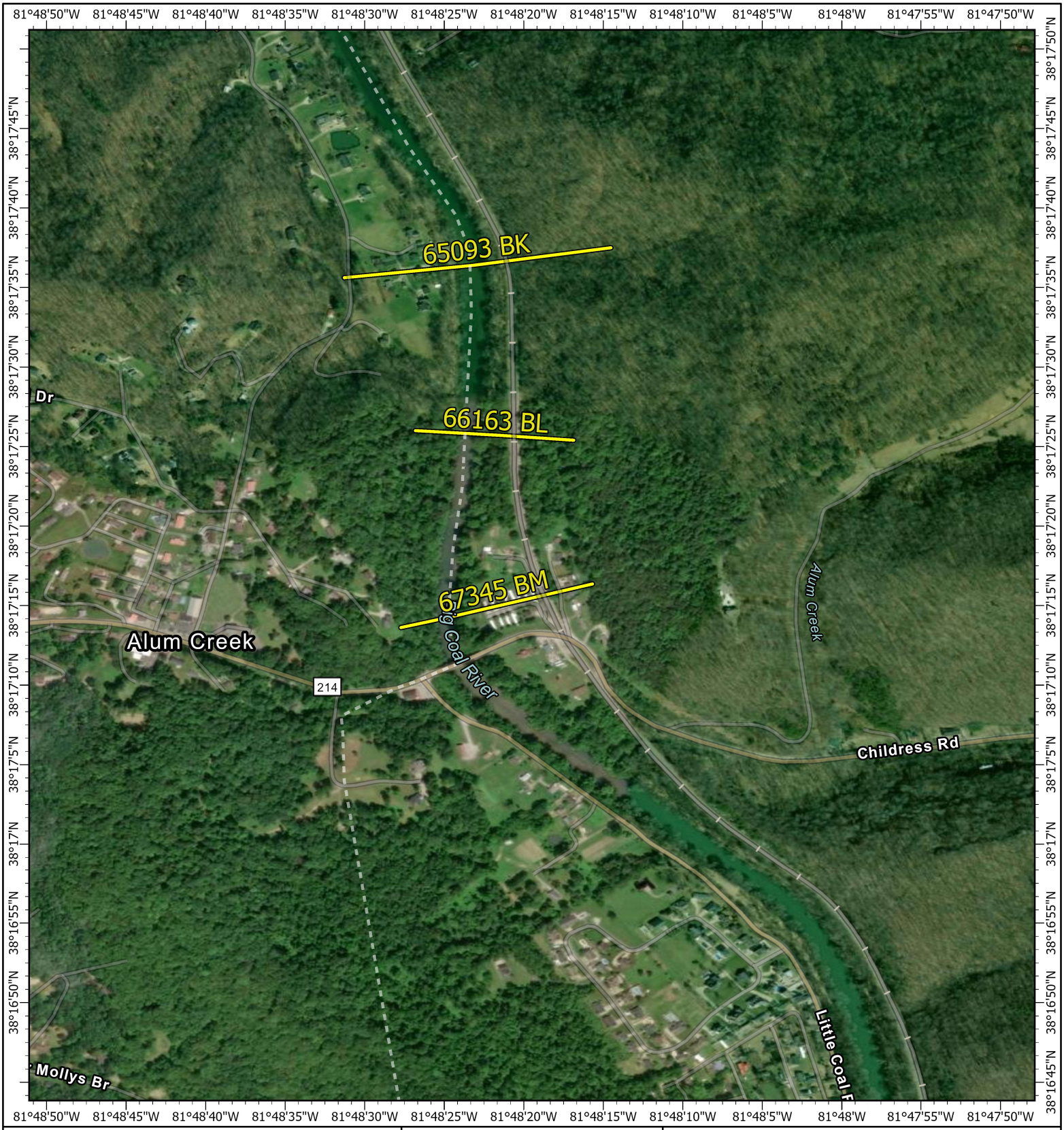
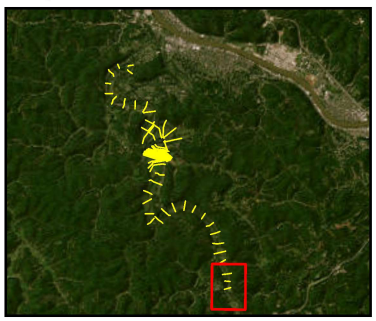


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Base map provided by ArcGIS Online Web Services.

Appendix C:

Crossing Structure Information and Drawings

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APPENDIX C: CROSSING STRUCTURE INFORMATION AND DRAWINGS

The modeled reach of Coal River has a bridge between FEMA lettered cross section AR and AS. The information about this structure was taken from existing HEC-2 model, presented below:

High Chord Elevation (Upstream/Downstream):	617.5/617.5 ft
Low Chord Elevation (Upstream/Downstream):	605.7/605.7 ft
Weir Coefficient:	2.0
Maximum Submergence:	0.98
Bridge Width:	30 ft.
Minimum Weir Flow Elevation:	609.0 ft
Number of Piers:	1
Pier Width:	8 ft
Minimum Pier Elevation (Upstream/Downstream):	571/559 ft
Maximum Pier Elevation (Upstream/Downstream):	605.7/605.7 ft

