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9 The West Side Irrigation District

10 BEFORE THE STATE WATER RESOURCES CONTROL BOARD

11 ENFORCEMENT ACTION ENFO1949 )  
12 DRAFT CEASE AND DESIST ORDER ) WRITTEN REBUTTAL TESTIMONY  
13 REGARDING UNAUTHORIZED ) OF RICK MARTINEZ  
14 DIVERSIONS RO THREATENED )  
15 UNAUTHORIZED DIVERSIONS OF )  
16 WATER FROM OLD RIVER IN SAN )  
17 JOAQUIN COUNTY )  
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Hearing Date: March 21, 2016  
Hearing Officer: Frances Spivy-Weber

1. I have reviewed the written testimony submitted by Kathryn Bare and Kathy Mrowka in the above enforcement action against The West Side Irrigation District (“**WSID**” or “**District**”). The purpose of my testimony is to address and correct factual errors in the testimony.

2. I have worked for WSID for over 20 years in various capacities, but have spent all of those twenty years in the field operating the irrigation and drainage facilities of the District to provide irrigation water and drainage services to landowners within WSID.

**BARE TESTIMONY**

3. Ms. Bare states (WR-13 at page 6) that “*WSID’s drain collects tailwater collected from lands beyond WSID’s boundaries, and that these amounts are included in the ‘Accretion Water Diverted’ table.*” Water in the Bethany Drain exclusively includes the following sources of water *during the irrigation season*<sup>1</sup>:

- Irrigation tail water from within the District,
- Tile drainage water, including both groundwater accretions and percolated irrigation

<sup>1</sup> Municipal storm water does enter the Bethany Drain during the non-irrigation season, which is not at issue here.

1 water, from within the District boundaries, and

- 2 • Tile drainage of groundwater accretions from within a limited area of the City of Tracy  
3 (approximately 1,400 acres).

4 All three sources of water are delivered into the WSID Bethany Drain, and remain under the  
5 control of WSID from the time they enter the drain until they are discharged into the Intake  
6 Canal.

7 4. The third category of water is the *only* source of water in the Bethany Drain  
8 during the irrigation season originating outside of the district boundaries, and is a relatively small  
9 contribution. Assuming groundwater accretions are equal per acre to that from within the  
10 district, such runoff is coming from approximately 1,300 acres compared to 6,400 acres within  
11 the District. Under this most conservative assumption, less than 20% of the drainage water in the  
12 Bethany Drain during the irrigation season comes from outside of the District's boundaries, and  
13 is comprised of shallow groundwater.

14 5. Ms. Bare states (WR-13 at page 6) that "*WSID began measuring the flows from*  
15 *Bethany Drain into its diversion cut in 2015, using visual observation of a permanent weir*  
16 *constructed in early 2015 (WSID claims to have used a temporary weir in 2014), but it is not*  
17 *clear how often WSID collects these observations, whether the weir is calibrated accurately, how*  
18 *the accretions are calculated based on the weir observations*".

19 6. Based solely upon Ms. Bare's testimony, Ms. Mrowka states (WR-7 at page 13)  
20 that "*West Side does not appear to accurately measure the amount of discharge or the amount of*  
21 *diversions to ensure that West Side does not divert more water than is discharged at the Bethany*  
22 *Drain*".

23 7. Contrary to these assertions, WSID does accurately measure the amount of  
24 discharge and the amount of diversions to ensure that it does not divert more water than is  
25 discharged from the Bethany Drain.

26 8. WSID actually began measuring the flows from Bethany Drain into the Intake  
27 Channel in 2014, not 2015.

28 9. From May 27, through July 2, 2014, I measured the flows from Bethany Drain

1 into the Intake Canal through visual observation. I have twenty years of experience with  
2 estimating flows in the ditches and canals of the District through visual observation. In any given  
3 year, I introduce water into WSID irrigation laterals and canals in response to water orders from  
4 landowners, and estimate the flow required to meet the order. My initial estimates are then  
5 confirmed with measurements, at the farm gates.

6 10. Over the past twenty years, through estimates and confirming measurements, I  
7 have developed a keen accuracy with visual observations. As an example, in 2012 WSID was  
8 receiving deliveries from the Central Valley Project (“CVP”) from its turnout on the Delta  
9 Mendota Canal through a meter installed and approved by the San Luis and Delta Mendota  
10 Water Authority (“Authority”). I was informed by the Authority that WSID was receiving 20  
11 cubic feet per second (cfs) of CVP water through the metered turnout. However, from my  
12 practiced visual observation, I informed the WSID General Manager that we were receiving only  
13 10 cfs through that turnout, rather than the 20 cfs being reported by the meter. Upon notification,  
14 Authority employees confirmed that WSID was receiving only 10 cfs of CVP water from the  
15 turnout, and adjusted WSID’s billing accordingly.

16 11. On July 3, 2014 the District installed a temporary rectangular weir to improve  
17 measurement accuracy. A true and correct copy of a photograph I took of the temporary weir is  
18 identified as **EXHIBIT WSID0161**.

19 12. Prior to the 2015 irrigation season, in March of 2015, the District installed a  
20 permanent rectangular weir to measure flows from Bethany Drain into the Intake Canal. A true  
21 and correct copy of a photograph I took of the permanent weir is identified as **EXHIBIT**  
22 **WSID0162**.

23 13. The District measures the water discharged from the Bethany Drain into the  
24 District’s Intake Canal daily at low tide, after any inundation by Old River water has flowed  
25 back into Old River, using the rectangular weir described above. A weir is an overflow structure  
26 built across an open channel that can be used to measure flow. For water freely falling over a  
27 weir there is a mathematical relationship between the depth of flow over the weir and the flow  
28 rate passing over the weir. In general, the greater the depth of flow over the weir, the greater the

1 flow rate. The overflow portion of the weir is called the weir “crest.” The vertical height/depth of  
2 the water above the crest of the weir is called the “head” over the weir; it is the parameter that is  
3 measured and used to determine the flow rate. A weir discharge measurement consists of  
4 measuring the head relative to the crest at the proper location, and then using a standard table or  
5 equation for the specific shape and size of weir to determine discharge. Commonly, a staff gage,  
6 having a graduated scale with the zero placed at the same elevation as the weir crest, measures  
7 head. I measure the flow at the weir board, and use the table identified as **EXHIBIT WSID0163**  
8 for calculating flow from the WSID weir.

9 14. I take the measurements in the manner described above daily at the lowest  
10 observed tide for accuracy. In November of 2015 I submitted to the Prosecution Team a copy of  
11 my hand written daily calendars from 2014 and 2015 that indicate daily measurements are taken  
12 of the flows from Bethany Drain into the Intake Canal. My calendars for 2014 and 2015 are  
13 identified as **EXHIBIT WSID0164**.

14 15. From my experience, discharge from the Bethany Drain does not vary  
15 significantly during the day, and I believe that a daily measurement accurately captures a 24 hour  
16 flow from the Bethany Drain into the Intake Canal.

17 16. Ms. Bare further asserts (at WR-13 at p. 6):

18 *The “Accretion Water Diverted” table [provided in WR-135, page 8] lists the total*  
19 *amount of tailwater and accretion flows delivered to WSID water users, and not the total*  
20 *amount of such water pumped from the diversion cut. From this, it is reasonable to*  
21 *conclude due to potential conveyance losses that WSID may need to pump more than the*  
22 *Bethany Drain discharges in order to deliver an amount equivalent to the Bethany Drain*  
23 *discharges to its water users. If WSID at any time pumps at a greater rate than the*  
24 *Bethany Drain discharge, WSID would draw water from the Old River through its*  
25 *unregulated diversion cut.*

26 Ms. Bare is correct, the “Accretion Water Diverted” table prepared by WSID and identified as  
27 **WR-135**, lists on pages 7 and 8 the total amount of tailwater and accretion flows delivered to  
28 WSID water users, and not the total amount of such water pumped from the diversion cut. It is  
possible that some minor conveyance losses may occur between the intake pumps and the final  
delivery gate, and that WSID may need to pump more than the Bethany Drain discharges in

1 order to deliver an amount equivalent to the Bethany Dain discharges to its water users.  
2 However, in order to accommodate this, when I pump accretion flows from the Intake Canal I  
3 insure that at all times I am pumping ½ to 1 cfs less than the accretion inflows measured from the  
4 Bethany Drain in order to account for any conveyance losses.

5 17. WSID's current agricultural conveyance system includes 58 miles of canals and  
6 pipelines. The majority of this system, approximately 73%, is lined canals or pipelines, with  
7 minimal conveyance losses. Only 16 miles of the system, about 27%, are unlined canals. My  
8 estimation of total system losses through this 27% of the system is less than 5% annually.

9 18. **EXHIBIT WSID0165** is a compilation table comparing the cfs measurement of  
10 flow from the Bethany Drain into the Intake Canal from my calendar (**EXHIBIT WSID0164**) in  
11 Column 2, and a the accretion flow deliveries to customers from **EXHIBIT WR-135** in Column  
12 3, for May through October of 2015. When viewing this comparison table, it is important to note  
13 that deliveries from the District's irrigation system are not instantaneous; water pumped from the  
14 Intake Canal on one day will still be available in the District's laterals and conveyance canals for  
15 several days, available for pumping. Therefore, one cannot simply look at the measured Bethany  
16 Drain flow for one day and compare it directly to the calculated deliveries for that date – rather,  
17 it would be more accurate to take a running average over multiple days to make such a  
18 comparison.

19 19. Diversions from the Intake Canal are measured by pump measurement. During  
20 the 2014 and 2015 curtailment periods, I operated only two of WSID's pumps from the intake  
21 canal, pumps 1 and 7. These pumps are VFD (variable frequency drive), which means they can  
22 be operated at variable speeds, which through experience I have determined represent a certain  
23 flow rate. For example, as shown on the Pump Plant Motor Ratings sheet designated as  
24 **EXHIBIT WSID0166**, Pump 1 has 350 horsepower at full speed, at which it will pump 11 cfs  
25 from the Intake Canal into the Upper Main Canal. I know from experience that running Pump 1  
26 at 57 Hz<sup>2</sup> will result in a flow of approximately 6 cfs.

27  
28 \_\_\_\_\_  
<sup>2</sup> A hertz is an international measure of electrical frequency, with 1 Hz being one cycle per second.

1           20.     I confirm the volume of water being pumped at the Intake Canal by measuring  
2 flows in the canals at the farm gates. Meter gates are used to measure head upstream and  
3 downstream from the farm delivery gate, using a level to measure head pressure. The difference  
4 in head in the two measurements is the effective operating head across the gate, and the  
5 discharge can be determined from it. The table I use for calculating flow based upon the head  
6 pressure measurement is shown in **EXHIBIT WSID0167**.

7           21.     Mr. Bare states on page 3 of WR-13 that “*any WSID diversion of [the City’s*  
8 *treated wastewater] would potentially reduce flows downstream as compared to before the*  
9 *Agreement*”. On August of 2014 WSID frequently pumped 13 cfs of treated wastewater made  
10 available from the City of Tracy by contract. When I observed water levels in the intake channel  
11 as well as in Old River above and below the intake channel at these times of pumping, I did not  
12 observe any changes in water levels or flows in Old River or in the WSID intake channel as a  
13 result of WSID’s diversions.

14 **MROWKA TESTIMONY**

15           22.     In her written testimony, Ms. Mrowka states (WR-7 at page 10):

16           *West Side provides drainage services to lands inside the district as well as lands outside*  
17 *and upslope of the district boundaries. The drainage water (tailwater) from the lands*  
18 *outside and upslope of West Side is being discharged into district’s Upper Main Canal*  
19 *(UMC), which conveys irrigation water to the lands within West Side that are served by*  
20 *that facility.*

21 Ms. Mrowka does not provide any citations to support her testimony, however, it appears to be a  
22 1986 letter from WSID to the State Water Resources Control Board stating that the District  
23 receives drainage water from other districts. This information is forty years old, and does not  
24 provide an accurate description of WSID’s drainage operations in 2016. For example, in 1998  
25 WSID entered into a drainage agreement to provide drainage services to Byron-Bethany  
26 Irrigation District. See **EXHIBIT WSID0168**. That agreement was terminated in 2007. See  
27 **EXHIBIT WSID0169**. Some lands located within Pescadero Reclamation District 2058 drain  
28 into Sugar Cut, which is a facility also used by WSID for drainage, but unrelated to and located 8  
miles away from, the Bethany Drain. In fact, in order to confirm that there is no outside drainage

1 into the WSID facilities other than those described in my testimony, I drove the entire WSID  
2 drainage system in January of 2016 and confirm that there are no physical facilities capable of  
3 allowing discharge of irrigation return flow or tailwater into the Bethany Drain other than as  
4 described in my testimony.

5 When describing the drainage services provided by WSID, it is important to distinguish  
6 between the irrigation season and the non-irrigation season. While WSID does provide drainage  
7 service to some industrial lands upslope of the District boundaries by written agreement, those  
8 services are provided only for stormwater runoff during the non-irrigation season, and there are  
9 no tile drains located on these lands. Further, none of the upslope lands drain into the Bethany  
10 Drain at any time during the irrigation season, and drain into Sugar Cut during the non-irrigation  
11 season. There is no tailwater drainage entering the District facilities from upslope lands into the  
12 Upper Main Canal or the Bethany Drain during the irrigation season.

13 23. Ms. Mrowka continues (WR-7 at page 10):

14 *In 2009, West Side estimated the quantity of upslope drain water (water entering the*  
15 *district from lands outside and upslope of the district which was being discharged into*  
16 *the UMC) to be 2,500 af. (WR-159, pp. 3, 13, 18.).*

17 While this statement is correct, it is irrelevant to WSID's 2014 and 2015 irrigation operations.  
18 As mentioned above, there is no tailwater drainage entering the District facilities from upslope  
19 lands into the Upper Main Canal or the Bethany Drain during the irrigation season. In fact, after  
20 2009 the City of Tracy and WSID amended their drainage agreement (see **EXHIBIT**  
21 **WSID0012**) and made improvements so that all stormwater drainage from these upslope lands  
22 discharged during the non-irrigation season is directed to Sugar Cut and not Bethany Drain.

23 24. Ms. Mrowka states (WR-7 at p. 10):

24 *In 2009, the irrigation drainage from the service area (in-district surface return flows)*  
25 *was estimated to be 40 to 100 af. Tailwater spill at the lower end of the system was*  
26 *estimated to be 50 to 100 af, with the quantity recovered and reused estimated to be 40 to*  
27 *80 af. (WR-159, pp. 3, 13, 18.)*

28 To support her testimony, Ms. Mrowka relies on a November 2009 Water Management Plan  
(**WR-159**) ("**Plan**") prepared by WSID as a requirement of the District's water service contract

1 with the United States Bureau of Reclamation for Central Valley Project Water. The Plan had a  
2 life of 5 years and would need to be updated to reflect current conditions; however, WSID is now  
3 exempt from this requirement and no longer prepares such a plan. The Plan is over 6 years old  
4 and is no longer accurately reflects circumstances within the District. In addition, I operated the  
5 WSID drainage system in 2008, and the statement in the Plan that in-district surface return flows  
6 from irrigation was estimated to be 40 to 100 acre feet, and that tailwater spill at the lower end of  
7 the system was estimated to be 50 to 100 af, with the quantity recovered and reused estimated to  
8 be 40 to 80 af, would have been a correct representation of quantities on a daily basis, not an  
9 annual basis. In 2008 WSID pumped over 25,000 acre feet of river water to irrigate less than  
10 5,000 acres of crops (see **EXHIBIT WR-116**), providing over 5 acre feet per acre of water duty  
11 for the irrigation season. Based upon these diversions, a reasonable estimate of, and my  
12 recollection of, the return flows available from surface water irrigation would have been at least  
13 40 to 100 acre feet per day. It is also important to note, of course, that irrigated acreage has  
14 increased since 2008, and irrigation operations in the District have significantly changed since  
15 that time; with the installation of drip irrigation on much of the acreage in the District the water  
16 use per acre has been reduced.

17 25. What was not described in the Plan, however, is the amount of groundwater  
18 accretions into the WSID drainage system, and ultimately the Bethany Drain, from the District's  
19 tile water drainage system.

20 26. The history and original purpose of the Bethany Drain is explained in a 1924  
21 report obtained by WSID from Naglee-Burke Irrigation District maintained by the district since  
22 1924 (**EXHIBIT WSID0011**), prepared by Thomas H means Engineering ("**Drainage Report**").  
23 The existing drainage system was installed in the 1930's to protect lands from high groundwater  
24 tables. During the twenty years that I have been employed by the District, the tile water  
25 discharges into the Bethany Drain have remained a relatively constant and continual year round  
26 supply of discharge into the WSID drainage system. Surprisingly, groundwater accretions from  
27 tile drains flowing into the Bethany Drain are not significantly reduced after the irrigation season  
28 ends, but continue through the winter months.



1           27.     The Drainage Report confirms that drainage is needed within WSID to protect  
2 lands from high water tables, and notes that in 1924 water stood at less than 4 feet from the  
3 surface within WSID. See **EXHIBIT WSID0011** at pages 14-19.

4           28.     Title to the Bethany Drain was acquired by WSID over time from the 1930's and  
5 1940's. True and correct copies of three deeds to portions of the Bethany Drain that exemplify  
6 the Deeds held by WSID for the Bethany Drain are attached hereto as **EXHIBITS WSIS0014,**  
7 **WSID0015** and **WSID0016**. These deeds are official records of the district and are true and  
8 correct copies of public records recorded in San Joaquin County.

9           29.     Ms. Mrowka states (WR-7 at page 11):

10           *In 2014, West Side diverted as follows: March 1,819 af; April 1,859 af; May 3,073 af;*  
11 *and June 1,350 af. (WR-122.) Total 2014 diversion was 8,102 af. (WR-122.) . . . By*  
12 *comparing the 2014 reported use to in-district surface return flows, it is apparent that*  
13 *that West Side's claimed diversions of return flows far exceeded return flows generated*  
*within the district.*

14 Ms. Mrowka's statement compares apples to oranges, and is inaccurate for several reasons. First,  
15 it compares 2014 diversions to 2008 estimated irrigation return flow estimates, with no evidence  
16 that the flow estimates reported in the Plan continue to be accurate. Second, it compares the  
17 District's 2014 diversions only to surface water return flows identified in the outdated 2009 Plan,  
18 ignoring the tile drain accretions from groundwater, which are substantial, the quantity of river  
19 water legally diverted prior to the May 27, 2014 curtailment, and the water pumped from Old  
20 River under contract from the City of Tracy.

21           30.     Ms. Mrowka states (WR-7 at p. 11):

22           *In addition to the estimated tailwater spill of 50 to 100 af, the West Side Main Drain*  
23 *contains water from the City. Tracy has two separate outfalls for storm runoff generated*  
24 *within the Westside Channel Watershed. The City and West Side have entered into*  
25 *drainage agreements that have authorized discharges of City storm runoff into West Side*  
26 *facilities and West Side water into City facilities. The 2002 Drainage Agreement*  
27 *authorizes the City to discharge a maximum rate of 145 cfs into the West Side Main*  
28 *Drain. The West Side Main Drain is a tailwater ditch that conveys irrigation tailwater*  
*and urban runoff from designated portions of the City and conveys it to the West Side*  
*intake area connecting to Old River at Wicklund Road. (WR-192, pp. 1.15, 2.4 [true and*  
*correct].)*

1 Very simply, during the irrigation season there is no storm water runoff delivered from the City  
2 under the 2010 Drainage Agreement.

3 31. Ms. Mrowka further states (WR-7 at p. 11-12):

4 *The District's Main Drain collects irrigation return water from District landowners (40*  
5 *to 100 af). . .*

6 The District's Bethany Drain does collect irrigation return water from District landowners, but  
7 the 40 to 100 acre foot estimate from the outdated Plan is not an accurate estimate of that  
8 discharge either in 2009 or 2014/2015.

9 *The District's Main Drain collects. . . irrigation return water from lands upslope and*  
10 *outside the District's boundaries . . . and discharges that return water directly into the*  
11 *District's Intake Canal approximately 1,200 feet upstream from the District's pumping*  
12 *station, and approximately 4,500 feet downstream from the Intake Canal opening to Old*  
13 *River.*

14 The Bethany Drain does not collect irrigation return water from any lands upslope and outside  
15 the District's boundaries; only storm drain water is collected from these upslope lands during the  
16 non-irrigation season. Further, storm drain water collected from the upslope lands during the  
17 non-irrigation season does not discharge into the Bethany Drain or the District's Intake Canal,  
18 rather, it discharges into Sugar Cut, and then directly into Tom Paine Slough approximately 8  
19 miles upstream of the confluence of the District's Intake Canal with Old River.

20 *The District's Main Drain collects. . . municipal drainage from lands within the City of*  
21 *Tracy, and discharges that return water directly into the District's Intake Canal*  
22 *approximately 1,200 feet upstream from the District's pumping station, and*  
23 *approximately 4,500 feet downstream from the Intake Canal opening to Old River.*

24 As also mentioned above, water in the Bethany Drain does include minor amounts of tile  
25 drainage groundwater accretions from within limited areas of the City of Tracy, outside of the  
26 District boundaries, constituting less than 20% of the flow in the Bethany Drain at that time.

27 32. Ms. Mrowka refers to a map identified at WR-165, of which she states (WR-7 at  
28 p. 11):

29 *. . . shows that tailwater from outside of the West Side district boundaries contributes*  
30 *flow to both the West Side Intake Canal and Old River. Exhibit WR-165 links physical*  
31 *locations along the drainage system to Google earth images showing the flows in the*  
32 *drainage system and drainage facilities. This map shows that in August of 2015, there*

1                    *was flow in the canal, and that flow came from areas outside of the West Side district*  
2                    *boundaries. (WR- 165.)*

3 It is not clear how the map shows that tailwater from outside WSID's boundaries contributes  
4 flow to the Intake Canal.

5                    WR-165 PHOTOS 1 and 2 are Google images of Old River, the WSID Intake Canal, and  
6 the City of Tracy emergency discharge ditch. The City of Tracy emergency discharge ditch,  
7 which appears to be full of water in WR-165 Photos 1 and 2, is not part of the District's  
8 irrigation or drainage system. Rather, it is a ditch, identified in the 2010 Drainage Agreement,  
9 intended to evacuate storm drain water in an emergency. As the picture indicates, there are three  
10 drainage pumps at the end of the ditch intended to pump flood waters over the levee into Old  
11 River in case of an emergency. These pumps have never been used since their installation. There  
12 is also a radial gate that connects this ditch with the Bethany Drain, which has also never been  
13 used.

14                    WR-165 PHOTO 3 is simply a Google image of the WSID Intake Canal and the Bethany  
15 Drain.

16                    WR-165 PHOTO 4 is a Google image of the WSID Bethany Drain at the corner of Grant  
17 Line Road and Lammers Road, located within the boundaries of the District.

18                    The map itself does illustrate, in orange dotted lines, that portion of the historic tile drain  
19 system located underneath the City of Tracy. It is this limited system that allows groundwater  
20 accretions from within the depicted area of the City of Tracy to enter the District's drainage  
21 system, constituting less than 20% of the flow in the Bethany Drain at that time.

22 I declare under penalty of perjury under the laws of the State of California that the foregoing is  
23 true and correct.

24                    Executed this 22<sup>nd</sup> day of February, 2016 in Tracy, California.

25  
26                    

27                    RICK MARTINEZ

28