U.S. Army Corps of Engineers - Little Rock District
Pertinent Data File
for the 2020 Low Dissolved Oxygen (DO) Season

28May - All water quality gages are installed except left bank at Norfork.
03Jun - 18 tons of LOX deliverd. 23.4 tons onhand.
07Jun - 21.1 tons of LOX delivered. 44.5 tons onhand.
10Jun - Temp spike bleow Beaver during spill. USGS checked gage. Tail water temp was around 75 deg.
16Jun - Table Rock tailwater DO values dropped from over 8 ppm to less than 5 ppm in less than a day, with no generation. USACE assumes this is erroneous data. USACE contacted USGS MO and they will be servicing the gage Thursday morning.
18Jun - USGS MO staff cleaned and calibrated the Table Rock tailwater DO sensor and the School of the Ozarks DO sensor.
19Jun - Table Rock blocked open vacuum breaker vents.
22Jun - Norfork blocked open vacuum breaker vents.
26Jun - June D.O. profiles delivered

	2020 I.D.O.	VS	2019 I.D.O
Beaver:	22Jun2020 7.60	VS	8.06 24Jun2019
Table Rock:	23Jun2020 5.46	VS	6.67 25Jun2019
Bull Shoals:	23Jun2020 7.82	VS	8.30 26Jun2019
Norfork:	24Jun2020 5.55	VS	6.14 26Jun2019
Greers Ferry:	25Jun2020 7.04	VS	7.87 27Jun2019

22Jul - LOX system is online.
29Jul - Table Rock RMGR 100% nameplate (200 MW)
31Jul - Table Rock RMGR 90% nameplate (180 MW)
31Jul - Norfork RMGR 95% nameplate (76 MW)
31Jul - 1.2 tons LOx injected in past 24 hrs; 43.6 tons on hand
06Aug - Norfork RMGR 90% nameplate (72 MW)
07Aug - July D.O. profiles delivered

	2020 I.D.O.	VS	2019 I.D.O
Table Rock:	04Aug2020 2.36	VS	4.21 30Jul2019
Bull Shoals:	28Jul2020 6.03	VS	6.53 31Jul2019
Norfork:	28Jul2020 2.66	VS	3.58 31Jul2019

10Aug - Norfork RMGR 85% nameplate (68 MW)
10Aug - 42.1 tons of LOx on hand
10Aug - Table Rock RMGR 85% nameplate (170 MW)
11Aug - Beaver, Bull Shoals, and Greers Ferry blocked open vacuum breaker vents.
12Aug - Norfork RMGR 75% nameplate (60 MW)
13Aug - Norfork RMGR 85% nameplate (68 MW) due to DO improvement from siphon flow adjustments
15Aug - 6.8 tons LOx injected in past 24 hrs; 35.3 tons on hand
17Aug - Table Rock RMGR 80% nameplate (160 MW)
18Aug - 12.2 tons LOx injected in past 24 hrs; 22.4 tons on hand
19Aug - 6.3 tons LOx injected in past 24 hrs; 16.1 tons on hand
20Aug - 5.2 tons LOx injected in past 24 hrs; 28.9 tons on hand
21Aug - 16.9 tons LOx injected in past 24 hrs; 18.9 tons on hand
21Aug - Table Rock RMGR 70% nameplate (140 MW)
22Aug - 11.2 tons LOx injected in past 24 hrs; 7.7 tons on hand
23Aug - 4.2 tons LOx injected in past 24 hrs; 25.3 tons on hand

25Aug - 2.7 tons LOx injected in past 24 hrs; 22.6 tons on hand
30Aug - 2.6 tons LOx injected in past 24 hrs; 46.4 tons on hand
31Aug - 0.5 tons LOx injected in past 24 hrs; 46.0 tons on hand
31Aug - August D.O. profiles delivered

	2020 I.D.O.	VS	2019 I.D.O
Table Rock:	25Aug2020 1.42	VS	2.32 27Aug2019
Bull Shoals:	26Aug2020 3.93	VS	4.41 28Aug2019
Norfork:	26Aug2020 0.97	VS	1.67 27Aug2019

02Sep - 1.6 tons LOx injected in past 24 hrs; 44.4 tons on hand
07Sep - Norfork RMGR 75% nameplate (60 MW)
15Sep - Norfork RMGR 70% nameplate (56 MW)
15Sep - Bull Shoals RMGR 90% nameplate (36 MW units 1-4, 41 MW units 5-8)
16Sep - Table Rock RMGR 64% nameplate (128 MW)
16Sep - 0.5 tons LOX injected in past 24 hrs. 43.5 tons on hand
17Sep - 0.5 tons LOX injected in past 24 hrs. 42.9 tons on hand
21Sep - Norfork RMGR 65% nameplate (52 MW)
24Sep - Norfork RMGR 61% nameplate (49 MW, with unit 1 @ 20 MW and unit 2 @ 29 MW)
25Sep - September D.O. profiles delivered

	2020 I.D.O.	VS	2019 I.D.O
Table Rock:	22Sep2020 0.97	VS	0.3 02Oct2019
Bull Shoals:	23Sep2020 1.70	VS	1.48 03Oct2019
Norfork:	23Sep2020 0.02	VS	0.26 03Oct2019

28Sep - Table Rock RMGR 60% nameplate (30 MW per unit)
01Oct - Bull Shoals RMGR 85% nameplate (34 MW units 1-4, 38 MW units 5-8)
01Oct - Norfork RMGR 56% nameplate (20 MW unit 1, 25 MW unit 2)
05Oct - Norfork RMGR 50% nameplate (40 MW)
06Oct - Bull Shoals RMGR 80% nameplate (32 MW units 1-4, 36 MW units 5-8)
07Oct - Bull Shoals RMGR 75% nameplate (30 MW units 1-4, 34 MW units 5-8)
07Oct - Norfork RMGR 58% nameplate (46 MW, with unit 1 @ 20 MW and unit 2 @ 26 MW) due to DO improvement from spillway release
08Oct - Bull Shoals RMGR 67.5% nameplate (27 MW units 1-4, 30 MW units 5-8)
08Oct - Norfork RMGR 75% nameplate (60 MW) due to DO improvement from additional spillway release
10Oct - Norfork RMGR 61% nameplate (20 MW unit 1, 29 MW unit 2)
10Oct - Norfork RMGR 50% nameplate (40 MW) due to reduction of spillway release
13Oct - Norfork RMGR 45% nameplate (36 MW)
14Oct - Norfork right bank sensor cleaned. Now reading 2 mg/l higher. Spillway gate closed to test current RMGR
14Oct - Bull Shoals RMGR 70% nameplate
16Oct - Norfork RMGR 50% nameplate (40 MW)
20Oct - Bull Shoals RMGR 65% nameplate (26 MW units 1-4, 29 MW units 5-8)
20Oct - Norfork siphon returned to automatic mode; new RMGRs tested
21Oct - Norfork RMGR 40% nameplate
21Oct - 2.7 tons LOX injected. 39.1 tons on hand
22Oct - Norfork RMGR 37.5% nameplate
27Oct - Norfork RMGR 42.5% nameplate
28Oct - Norfork RMGR 47.5% nameplate
28Oct - 0.9 tons LOX injected. 38.2 tons on hand
01Nov - 37.9 tons LOx on hand
02Nov - Norfork RMGR 50% nameplate
02Nov - Table Rock RMGR lifted while spilling
03Nov - Norfork RMGR 47.5% nameplate
03Nov - Table Rock returning to RMGR 60% nameplate (30 MW per unit) after spillway

closure
03Nov - Beaver RMGR 90% nameplate
04Nov - October D.O. profiles delivered

	2020 I.D.O.	VS	2019 I.D.O
Table Rock:	30Oct2020 0.28	VS	0.23 30Oct2019
Bull Shoals:	28Oct2020 1.29	VS	2.78 31Oct2019
Norfork:	27Oct2020 2.95	VS	3.09 01Nov2019

04Nov - Beaver RMGR 85% nameplate
04Nov - Norfork RMGR 60% nameplate (24 MW per unit) due to siphon on round the clock
05Nov - Norfork RMGR 62.5% nameplate (25 MW per unit) to get out of rough zone
05Nov - 4.6 tons LOX injected. 33.3 tons on hand
05Nov - Table Rock RMGR 54% nameplate
06Nov - Norfork RMGR 75% nameplate
07Nov - Norfork RMGR 80% nameplate
09Nov - Beaver RMGR 80% nameplate
09Nov - Beaver RMGR 90% nameplate
13Nov - Norfork RMGR 85% nameplate
15Nov - Norfork RMGR 90% nameplate
16Nov - Beaver RMGR 95% nameplate
16Nov - Table Rock RMGR 60% nameplate
16Nov - Table Rock RMGR 66% nameplate
17Nov - Norfork RMGR 100% nameplate
17Nov - Beaver RMGR 100% nameplate
17Nov - Bull Shoals RMGR 75% nameplate (30 MW units 1-4, 34 MW units 5-8)
17Nov - Table Rock RMGR 80% nameplate
18Nov - 2.9 tons LOX injected.
19Nov - 15.9 tons LOX injected.
20Nov - Beaver and Norfork RMGRs lifted
20Nov - Bull Shoals RMGR 80% nameplate (32 MW units 1-4, 36 MW units 5-8)
20Nov - 21.9 tons LOX injected.
21Nov - 3.6 tons LOX injected. No LOX remaining.
23Nov - Bull Shoals RMGR 85% nameplate (34 MW units 1-4, 38 MW units 5-8)
24Nov - Bull Shoals RMGR 92.5% nameplate (37 MW units 1-4, 42 MW units 5-8)
25Nov - Table Rock RMGR lifted
27Nov - Table Rock RMGR 95% nameplate (48 MW per unit)
30Nov - Table Rock RMGR lifted
30Nov - Bull Shoals RMGR 95% nameplate (38 MW units 1-4, 43 MW units 5-8)
01Dec - Bull Shoals RMGR lifted
01Dec - Norfork siphon returned to automatic mode
08Dec - Bull Shoals and Table Rock close vacuum breaker vents
15Dec - Vents closed at Beaver, Norfork and Greers Ferry
15Dec - November D.O. profiles delivered

	2020 I.D.O.	VS	2019 I.D.O
Beaver:	09Dec2020 1.90	VS	4.70 04Dec2019
Table Rock:	08Dec2020 5.79	VS	7.06 04Dec2019
Bull Shoals:	09Dec2020 6.97	VS	7.32 05Dec2019
Norfork:	10Dec2020 5.50	VS	6.61 03Dec2019
Greers Ferry:	07Dec2020 2.83	VS	3.71 02Dec2019

15Dec - Greers Ferry vents reopened
18Dec - Beaver vents reopened
28Dec - Beaver vents closed
11Jan - Greers Ferry vents closed