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FEDERAL ENERGY
REGULATORY COMMISSION

CONSOLIDATED WATER POWER COMPANY

GENERAL OFFICES
P. O. BOX 8050, WISCONSIN RAPIDS, WI 54495-8050

July 14, 1994

ORIGINAL

Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

RE: DuBay Hydroelectric Project - FERC No. 1953, Low Dissolved Oxygen Report

Dear Secretary Cashell:

The attached report summarizes the information surrounding observed low dissolved oxygen (D.O.) events (less than 5.0 ppm) monitored by Consolidated Water Power Company (CWPCo.) during the month of June 1994. This report is in accordance with the commission's order requesting notification within 30 days of low D.O. events.

Sincerely,

CONSOLIDATED WATER POWER COMPANY


Mark E. Anderson
Resources Coordinator

Route: K.K. Knapp - R.L. Hilliker - File

CC: Mr. Ronald A. Lesniak, Regional Director, Federal Energy Regulatory Commission,
Chicago Regional Office, 230 South Dearborn Street, Room 3130, Chicago, IL 60604

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DuBay Hydroelectric Project, No. 1953 - Low Dissolved Oxygen Report, June 1994

1. The following dates in June had periods of low dissolved oxygen monitored in the tailrace of the DuBay hydroelectric project:

- June 17 - 3 hours, 1 hour each of separate events.
- June 18 - 12 hours, two separate periods of low D.O., one 5 hours in length, the second 7 hours.
- June 19 - 24 hours continuous low D.O.
- June 20 - 7 hours, two separate periods of low D.O., one 6 hours in length, the second 1 hour.
- June 22 - 11 hours, two separate periods of low D.O., one 2 hours in length, the second 9 hours.
- June 23 - 20 hours, two separate periods of low D.O., one 4 hours in length, the second 16 hours.
- June 24 - 14 hours continuous low D.O.
- June 26 - 21 hours continuous low D.O.
- June 27 - 10 hours continuous low D.O.

2. Actions taken. Upon notification of low D.O. during the late hours of June 17, CWPCo. initiated the plan to install the skimmer weir to test the theory that it may increase the level of D.O. in the tailrace. The skimmer weir was installed on the morning of June 18 and remained in place throughout the period until being pulled on June 30. During this time, the calibration of the on-line monitor was verified by a separate hand held unit. CWPCo. also attempted to increase the D.O. levels by running No. 1 unit continuously and/or shutting No. 1 unit down and running No. 2 unit 24 hours/day.

3. Observations. Attachment 1 is a printout of the daily flows during the period of low D.O. and attachment 2 a record of the air temperature. As seen from these reports, this period was a time of very hot, dry weather combined with low flows. Attachment 3 is a table listing specific flows, air and water temperatures, and D.O. readings (if known) of DuBay, the Big Eau Pleine (EP) reservoir.

As evidenced on the report sheets, the installation of the skimmer weirs did not positively influence the level of dissolved oxygen in the tailrace. Attempts at operation of generating units utilizing varying schedules was also unsuccessful. The low D.O. readings seemed to follow the periods of higher ambient and water temperatures combined with low flows due to little precipitation during this period.

DuBay Hydroelectric Project, No. 1953 - Low Dissolved Oxygen Report, June 1994

Enclosures:

Attachment 1 - Monthly river flow report, June 1994

Attachment 2 - Monthly weather data, June 1994

Attachment 3 - Low D.O. event compiled data report, June 1994

Attachment 4 - Continuous monitoring D.O. printout, 17 - 27 June 1994 (9 pages)

NOTE: Attachment 4 report dates reflect one day after actual monitored day.

TO: Ken Knapp - PS Mike Schreier - PS Sue Polkamp Ellen Reitz-Meyer

1994
Jun 1993

Monthly River Record of CWP Co. System

Day	Merr Flow	Wausau Flow	Roth Flow	Eau Pln Flow	Dubay Flow	St Pnt Flow	Wis Rap Flow	Petrwell Flow	Cas Rock Flow	Eau Pln Head	Dubay Head	Petrwell Head	Cas Rock Head
1	2,064	2,238	2,727	35	2,804	2,964	3,291	3,211	3,904	44.25	14.82	23.84	81.71
2	1,745	1,755	2,158	35	3,054	3,120	3,164	3,211	3,482	44.21	14.88	23.84	81.64
3	1,414	1,175	1,571	405	2,614	3,042	3,210	3,192	3,450	44.18	14.63	23.81	81.65
4	1,852	1,800	2,092	422	2,080	2,145	2,450	3,160	3,450	44.10	14.46	23.82	81.68
5	2,193	1,998	2,370	421	1,664	2,145	2,592	2,780	3,144	44.02	14.41	23.79	81.66
6	1,958	2,081	2,711	67	2,308	1,911	2,601	2,800	3,128	43.98	14.70	23.78	81.71
7	1,751	1,739	2,263	35	2,502	2,496	2,525	2,735	3,065	44.13	14.75	23.79	81.76
8	1,295	1,213	1,775	405	2,429	2,340	2,855	2,834	3,065	44.10	14.76	23.78	81.73
9	1,503	1,318	1,734	421	2,155	2,106	2,590	2,707	3,065	44.03	14.68	23.74	81.79
10	1,577	1,586	1,921	421	1,851	2,028	2,495	2,002	2,716	43.97	14.60	23.71	81.78
11	1,731	1,549	1,860	420	1,987	1,833	2,357	2,400	3,081	43.89	14.66	23.81	81.73
12	1,803	1,827	2,183	420	1,772	1,521	2,132	2,794	3,450	43.83	14.59	23.89	81.71
13	2,032	1,872	2,255	419	2,510	2,730	2,917	3,206	3,673	43.78	14.87	23.86	81.69
14	1,930	2,159	2,652	419	2,467	2,535	2,955	3,178	3,872	43.66	14.82	23.84	81.69
15	1,836	1,814	2,252	419	2,702	2,847	3,043	3,475	4,432	43.64	14.84	23.87	81.68
16	1,629	1,754	2,191	418	2,467	2,301	2,790	3,475	4,032	43.57	14.78	23.85	81.63
17	1,473	1,412	1,716	418	2,404	2,379	2,651	3,464	3,593	43.50	14.74	23.81	81.55
18	1,608	1,664	1,931	417	2,210	2,028	2,556	3,028	3,144	43.43	14.60	23.73	81.58
19	1,533	1,440	1,640	416	1,957	1,872	2,694	3,230	3,087	43.34	14.48	23.71	81.61
20	1,476	1,400	1,915	416	1,911	1,755	2,143	2,727	3,029	43.24	14.46	23.63	81.66
21	1,923	1,726	1,895	415	1,475	1,716	2,046	2,231	2,337	43.17	14.37	23.69	81.71
22	1,719	1,994	2,206	414	1,728	1,431	1,874	2,026	2,568	43.06	14.53	23.64	81.81
23	1,103	1,079	1,426	414	2,257	2,324	2,469	2,016	2,309	42.95	14.71	23.56	81.72
24	1,243	1,098	1,391	413	1,964	1,833	2,166	2,415	3,030	42.86	14.68	23.65	81.94
25	1,308	1,236	1,476	412	1,515	1,794	2,277	1,526	1,966	42.75	14.56	23.16	81.76
26	1,471	1,480	1,679	412	1,356	1,404	1,800	2,430	3,018	42.70	14.52	23.89	81.90
27	1,503	1,302	1,496	411	1,604	1,404	1,579	2,326	3,113	42.61	14.60	23.87	81.82
28	1,923	1,891	2,117	411	1,866	1,794	1,924	2,149	3,162	42.53	14.72	23.74	81.81
29	1,563	1,659	2,001	410	1,948	2,058	2,698	2,160	3,046	42.47	14.81	23.77	81.85
30	1,237	1,233	1,496	410	2,061	1,911	2,275	2,530	3,081	42.38	14.86	23.84	81.77
7/1										42.31	14.83	23.79	81.79

	Merr Flow	Wausau Flow	Roth Flow	Eau Pln Flow	Dubay Flow	St Pnt Flow	Wis Rap Flow	Petrwell Flow	Cas Rock Flow	Eau Pln Head	Dubay Head	Petrwell Head	Cas Rock Head
Max	2,193	2,238	2,727	422	3,054	3,120	3,291	3,475	4,432	44.25	14.88	23.89	81.94
Min	1,103	1,079	1,391	35	1,356	1,404	1,579	1,526	1,966	42.31	14.37	23.16	81.55
Avg	1,647	1,616	1,970	366	2,121	2,126	2,504	2,714	3,183	43.44	14.67	23.76	81.73

Monthly Range in feet ---> 1.94 0.51 0.73 0.39

HISTORIC DATA - WIS RAPIDS PLANT FOR JUNE:

----- Monthly Averages -----
 Wis Rapids average monthly flow since 1914 -----> 5,809 cfs
 Wis Rapids record low since 1914 (set 1988) -----> 1,308 cfs
 Wis Rapids record high since 1914 (set 1943) ----> 19,560 cfs

WEATHER DATA

MONT: JUNE 1994

WR Goose

Date	Stage & Tendency	SIX	Precip.	New Snow	Snow on Ground	Temperatures			Sent
						H	L	P	
6/1	2.90 Z	-	-	-	-	69	39	42	
6/2	3.06 R	-	-	-	-	70	40	51	
6/3	2.96 F					76	47	52	
6/4	2.58 F					84	48	60	
6/5	2.82 R		.28			72	57	62	
6/6	2.68 F					84	56	61	
6/7	2.90 R		.04			72	39	43	
8	2.82 F					67	38	43	
9	2.74 F					76	39	57	
10	2.82 R		T			77	54	54	
11	2.74 F		.03			79	53	57	
12	2.68 F		.33			85	55	65	
13	3.00 F		.02			81	59	42	
14	3.00 S					94	64	76	
15	3.06 R					93	74	76	
16	2.82 F					93	73	75	
17	2.74 F					95	74	75	
18	3.06 R		.08			91	66	67	
19	2.58 F		T			86	66	72	
20	2.58 S		T			89	65	65	
21	2.50 F					87	59	63	
22	2.50 S					87	63	70	
23	2.90 R		.28			70	57	60	
24	2.50 F		.05			82	56	59	
25	2.74 R		.46			87	58	60	
26	2.50 F		.07			74	57	62	
27	2.50 S		.14			81	59	69	
28	2.90 R		.25			78	58	58	
29	2.82 F		T			77	56	56	
30	2.74 F					81	55	69	

LOW D.O. EVENT COMPILED DATA REPORT

DATE	AIR TEMP. (F)	WATER		DB D.O. (ppm)	DB FLOW (cfs)	EP D.O. (ppm)	EP FLOW (cfs)	% DB FLOW/MOS FLO (cfs)	% DB FLOW
		TEMP (C)							
		20.0 (+)				9.4 (+)			
June 17	95	24.1	2404	5.5	418	17.39%	1716	71.38%	
June 18	91	24.6	2210	4.9	417	18.87%	1931	87.38%	
June 19	86	24.8	1957	3.8	416	21.26%	1640	83.80%	
June 20	89	25.8	1911	5.3	416	21.77%	1915	100.21%	
June 22	87	25.7	1728	4.7	414	23.96%	2206	127.66%	
June 23	70	25.2	2257	4.2	414	18.34%	1426	63.18%	
June 24	82	24.9	1964	4.8	413	21.03%	1391	70.82%	
June 26	74	25.5	1356	4.6	412	30.38%	1679	123.82%	
June 27	81	24.5	1604	5.0	411	25.62%	1496	93.27%	

(+) Water Temperature and D.O. taken on 8 June 1994 by WV/C personnel

(*) D.O. taken on 23 June 1994 by WV/C personnel

DuBay Flows based on mathematical calculation using actual hydroelectric generation for the day.

DuBay D.O.s are recorded immediately below the powerhouse at the edge of a pier between Nos. 1 and 2 units.

Big Eau Pleine flows are gathered from Wisconsin Valley Improvement Company data.

Big Eau Pleine D.O.s are recorded twice a month approximately 100' below the tailrace.

706E

Dubay Oxygen 24 HR report

06/18/1994 07:02:56

TIME	oxygen	temp.	unit 1	mw total	all
0800	5.25	23.27	1.47	6.02	
0900	5.24	23.34	1.49	6.02	
1000	5.05	23.34	1.43	8.09	
1100	5.31	23.68	1.44	8.02	
1200	5.94	24.30	1.45	8.05	
1300	6.20	24.54	1.44	8.03	
1400	6.45	25.20	1.46	8.01	
1500	6.16	25.09	1.47	5.93	
1600	6.10	25.09	1.47	5.96	
1700	6.35	24.99	1.48	5.97	
1800	6.43	25.16	1.48	6.01	
1900	5.85	24.41	1.48	6.04	
2000	5.49	24.30	1.45	6.04	
2100	5.18	24.03	1.49	6.05	
2200	5.29	23.58	1.55	1.54	
2300	5.06	23.55	1.56	1.55	
2400	5.13	23.68	1.56	1.55	
0100	4.89	23.58	1.56	1.56	
0200	5.03	23.82	1.56	1.55	
0300	5.26	23.72	1.56	1.56	
0400	4.83	23.72	1.56	1.56	
0500	5.09	23.68	1.56	1.56	
0600	4.94	23.79	1.57	1.57	
0700	5.20	23.89	1.57	1.58	
AVG	5.49	24.07	1.50	4.58	
MAX	6.45	25.20	1.57	8.09	
MIN	4.83	23.27	1.43	1.54	

6005

Dubay Oxygen 24 HR report

06/19/1994 07:02:39

TIME	oxygen	temp.	unit 1 mw total	all
0800	5.03	23.96	1.54	3.81
0900	5.31	24.20	1.46	5.84
1000	5.22	24.30	1.47	5.88
1100	5.33	24.54	1.47	5.90
1200	4.74	24.54	1.45	5.84
1300	4.90	24.44	1.44	5.83
1400	4.91	24.92	1.44	5.83
1500	4.94	25.02	1.43	5.84
1600	4.86	24.85	1.42	5.83
1700	5.10	24.68	1.44	5.83
1800	5.15	24.92	1.45	5.97
1900	5.14	25.09	1.42	5.90
2000	5.28	25.33	1.41	5.92
2100	814.20	2234.07	1.35	5.85
2200	814.20	2234.07	1.35	5.85
2300	814.20	2234.07	1.35	5.85
2400	5.14	25.16	1.50	1.49
0100	4.97	24.78	1.48	1.47
0200	4.59	24.51	1.50	1.50
0300	4.63	24.65	1.50	1.50
0400	4.61	24.54	1.50	1.50
0500	4.43	24.41	1.47	1.47
0600	4.40	24.34	1.51	1.51
0700	4.19	24.27	1.52	1.52
AVG	106.06	300.82	1.45	4.32
MAX	814.20	2234.07	1.54	5.97
MIN	4.19	23.96	1.35	1.47

Calibrations and rechecks.

Unit
Ox

4002

Dubay Oxygen 24 HR report

06/20/1994 07:02:34

TIME	oxygen	temp.	unit	1 mw total	all
0800	4.05	24.61	1.41	5.76	
0900	4.11	24.41	1.41	5.74	
1000	4.08	24.61	1.41	5.70	
1100	4.46	24.96	1.39	5.82	
1200	4.72	25.13	1.41	5.75	
1300	4.40	25.16	1.41	5.79	
1400	4.31	25.13	1.42	5.71	
1500	4.24	25.02	1.41	5.78	
1600	4.25	25.06	1.39	5.79	
1700	4.00	24.99	1.38	5.75	
1800	4.06	24.99	1.40	5.81	
1900	3.44	24.61	1.37	5.77	
2000	3.83	24.82	1.43	3.65	
2100	3.81	24.85	1.46	3.75	
2200	3.69	24.85	1.44	3.68	
2300	3.51	24.98	1.49	1.49	
2400	3.23	24.41	1.50	1.49	
0100	3.36	24.54	1.49	1.49	
0200	2.95	24.44	1.51	1.51	
0300	2.99	24.51	1.51	1.52	
0400	3.05	24.54	1.48	1.48	
0500	3.44	24.75	1.50	1.50	
0600	3.44	24.68	1.51	1.51	
0700	3.78	24.85	1.49	1.49	
AVG	3.80	24.77	1.44	3.91	
MAX	4.72	25.16	1.51	5.82	
MIN	2.95	24.41	1.37	1.48	

Wair - wind
6-18-94
RU

801B

Dubay Oxygen 24 HR report

06/21/1994 07:02:39

TIME	oxygen	temp.	unit 1	mw total	all
0800	3.69	24.82	1.43	5.71	5.71
0900	3.74	24.85	1.41	5.74	5.74
1000	3.74	25.02	1.43	5.72	5.72
1100	4.35	25.40	-0.00	4.22	4.22
1200	4.35	25.58	-0.00	4.25	4.25
1300	4.60	25.68	-0.00	4.31	4.31
1400	5.14	25.92	-0.00	4.26	4.26
1500	5.08	26.16	-0.00	4.29	4.29
1600	5.71	26.23	-0.00	4.25	4.25
1700	5.91	26.37	-0.00	4.37	4.37
1800	6.44	26.33	-0.00	4.44	4.44
1900	6.55	26.43	-0.00	4.40	4.40
2000	6.56	26.40	-0.00	4.50	4.50
2100	6.38	26.30	-0.00	4.51	4.51
2200	6.31	26.23	-0.00	4.48	4.48
2300	6.15	26.19	-0.00	4.49	4.49
2400	6.21	26.19	-0.00	4.47	4.47
0100	5.46	25.68	1.42	1.42	1.42
0200	5.24	25.64	1.43	1.43	1.43
0300	5.15	25.54	1.44	1.43	1.43
0400	5.30	25.64	1.45	1.44	1.44
0500	5.06	25.47	1.45	1.44	1.44
0600	5.01	25.51	1.46	1.46	1.46
0700	4.91	25.37	1.45	4.96	4.96
AVG	5.29	25.79	0.60	3.83	3.83
MAX	6.56	26.43	1.46	5.74	5.74
MIN	3.69	24.82	-0.00	1.42	1.42

4065

Dubay Oxygen 24 HR report

06/23/1994 07:02:41

TIME	oxygen	temp.	unit	1 mw total	all
0800	5.28	25.61	1.43	3.75	
0900	* 4.58	25.51	1.44	5.95	
1000	* 5.22	25.64	1.41	5.88	
1100	* 4.78	25.58	1.45	5.92	
1200	* 5.24	25.68	1.43	5.93	
1300	5.09	25.85	1.46	5.94	
1400	5.81	26.13	1.44	5.95	
1500	5.66	26.33	1.44	5.92	
1600	5.61	26.37	1.50	3.77	
1700	6.09	26.23	1.49	3.76	
1800	5.64	25.99	1.50	3.79	
1900	5.54	25.95	1.50	3.81	
2000	5.90	25.92	1.51	3.80	
2100	5.40	25.92	1.49	3.78	
2200	5.33	25.88	1.49	3.76	
2300	* 4.55	25.61	1.50	1.50	
2400	3.74	25.27	1.53	1.52	
0100	3.30	25.27	1.53	1.53	
0200	3.33	25.27	1.51	1.51	
0300	3.49	25.30	1.53	1.52	
0400	3.55	25.33	1.52	1.52	
0500	3.20	25.20	1.54	1.54	
0600	3.42	25.16	1.53	1.53	
0700	3.19	25.16	1.52	1.34	
AVG	4.70	25.67	1.49	3.55	
MAX	6.09	26.37	1.54	5.95	
MIN	3.19	25.16	1.41	1.34	

TIME	oxygen	temp.	unit	1 mw total	all
0800	4.46	25.33	1.47	6.05	
0900	3.66	25.23	1.38	7.84	
1000	4.04	25.27	1.38	7.82	
1100	4.14	25.27	1.37	7.76	
1200	5.44	25.54	1.40	5.76	
1300	5.03	25.44	1.43	5.79	
1400	3.09	25.47	1.44	5.84	
1500	5.13	25.54	1.44	5.86	
1600	4.94	25.44	1.42	5.82	
1700	4.93	25.40	1.43	5.80	
1800	4.29	25.30	1.43	5.82	
1900	4.34	25.30	1.44	5.79	
2000	3.90	25.20	1.44	5.80	
2100	4.28	25.27	1.46	3.76	
2200	4.36	25.27	1.51	1.50	
2300	3.29	25.13	1.50	1.49	
2400	3.45	25.02	1.51	1.50	
0100	3.31	24.99	1.51	1.51	
0200	3.48	25.02	1.50	1.50	
0300	3.60	25.02	1.50	1.50	
0400	3.59	24.99	1.50	1.51	
0500	3.74	24.96	1.52	1.52	
0600	3.98	24.96	1.53	1.53	
0700	4.16	24.92	1.53	1.54	
AVG	4.19	25.22	1.46	4.19	
MAX	5.44	25.54	1.53	7.84	
MIN	3.29	24.92	1.37	1.49	

6076

Dubay Oxygen 24 HR report

06/25/1994 07:02:30

TIME	oxygen	temp.	unit #1	unit #2	unit #3	unit #4	total all
0800	4.06	24.78	1.44	2.22	1.56	2.14	7.37
0900	4.56	24.82	-0.00	2.27	0.01	2.17	4.44
1000	4.54	24.89	-0.00	2.30	0.01	2.23	4.54
1100	4.49	24.96	-0.00	2.25	0.01	2.23	4.48
1200	4.74	25.06	-0.00	2.32	0.01	2.24	4.57
1300	4.43	25.06	-0.00	2.29	0.01	2.23	4.53
1400	4.26	25.02	-0.00	2.27	0.01	2.24	4.51
1500	4.31	25.09	-0.00	2.26	0.01	2.21	4.47
1600	4.24	24.99	-0.00	2.28	0.01	2.23	4.52
1700	4.34	24.85	-0.00	2.24	0.01	2.31	4.55
1800	4.84	24.92	-0.00	2.29	0.00	2.34	4.62
1900	4.60	24.85	-0.00	2.30	0.00	2.27	4.57
2000	4.70	24.75	-0.00	2.24	0.00	2.31	4.56
2100	4.56	24.78	-0.00	2.30	0.01	2.27	4.57
2200	5.13	24.82	-0.00	2.26	0.01	2.25	4.51
2300	5.56	24.96	-0.00	2.34	0.01	-0.01	2.33
2400	5.25	24.82	-0.00	2.34	0.01	-0.01	2.34
0100	5.19	24.75	-0.00	2.36	0.01	-0.01	2.36
0200	5.38	24.75	-0.00	2.33	0.01	-0.01	2.33
0300	5.29	24.75	-0.00	2.34	0.01	-0.01	2.34
0400	5.38	24.68	-0.00	2.39	0.01	-0.01	2.39
0500	5.30	24.68	-0.00	2.32	0.01	-0.01	2.32
0600	5.35	24.65	-0.00	2.37	0.01	-0.01	2.37
0700	5.24	24.61	-0.00	2.36	0.02	-0.01	2.36
AVG	4.82	24.85	0.06	2.30	0.07	1.40	3.83
MAX	5.56	25.09	1.44	2.39	1.56	2.34	7.37
MIN	4.06	24.61	-0.00	2.22	0.00	-0.01	2.32

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TIME	oxygen	temp	unit #1	unit #2	unit #3	unit #4	total
0800	5.41	24.92	-0.00	2.25	0.01	2.27	4.52
0900	5.39	24.65	1.44	2.31	0.01	-0.01	3.74
1000	5.21	24.78	-0.00	2.25	0.01	2.28	4.54
1100	4.84	24.75	-0.00	2.25	0.01	2.29	4.55
1200	4.99	24.78	-0.00	2.33	0.02	-0.01	2.33
1300	4.58	24.78	-0.00	2.37	0.02	-0.01	2.37
1400	4.65	24.75	-0.00	2.35	0.02	-0.01	2.35
1500	4.53	24.72	-0.00	2.37	0.02	-0.01	2.38
1600	4.16	24.58	-0.00	2.35	0.02	-0.01	2.35
1700	4.39	24.54	-0.00	2.39	0.02	-0.01	2.39
1800	4.50	24.58	-0.00	2.33	0.02	-0.01	2.33
1900	4.35	24.44	-0.00	2.37	0.02	-0.01	2.37
2000	4.41	24.44	-0.00	2.36	0.01	-0.01	2.36
2100	4.34	24.37	-0.00	2.39	0.02	-0.01	2.40
2200	4.45	24.37	-0.00	2.36	0.02	-0.01	2.36
2300	4.41	24.30	-0.00	2.36	0.02	-0.01	2.36
2400	4.56	24.27	-0.00	2.42	0.02	-0.01	2.42
0100	4.40	24.27	-0.00	2.40	0.02	-0.02	2.40
0200	4.64	24.23	-0.00	2.39	0.02	-0.02	2.39
0300	4.44	24.23	-0.00	2.40	0.02	-0.01	2.41
0400	4.30	24.17	-0.00	2.38	0.02	-0.01	2.39
0500	4.31	24.20	-0.00	2.41	0.02	-0.01	2.42
0600	4.26	24.13	-0.00	2.37	0.02	-0.01	2.38
0700	4.16	24.13	-0.00	2.38	0.02	-0.01	2.38
AVG	4.57	24.47	0.06	2.36	0.02	0.27	2.70
MAX	5.41	24.92	1.44	2.42	0.02	2.29	4.55
MIN	4.16	24.13	-0.00	2.25	0.01	-0.02	2.33

TIME	oxygen	temp.	unit #1	unit #2	unit #3	unit #4	total all
0800	4.43	24.10	-0.00	2.31	0.02	2.13	4.45
0900	4.51	24.17	-0.00	2.27	0.01	2.18	4.45
1000	4.49	24.20	-0.00	2.30	0.01	2.20	4.51
1100	4.68	24.27	-0.00	2.28	0.02	2.25	4.54
1200	4.96	24.37	-0.00	2.28	0.02	2.21	4.51
1300	4.59	24.27	-0.00	2.29	0.02	2.22	4.52
1400	4.83	24.37	-0.00	2.25	0.01	2.25	4.51
1500	4.90	24.30	-0.00	2.28	0.01	2.19	4.48
1600	4.86	24.51	-0.00	2.27	0.01	2.20	4.48
1700	4.95	24.51	-0.00	2.26	0.01	2.18	4.43
1800	5.33	24.51	-0.00	2.34	0.01	-0.01	2.34
1900	5.03	24.51	-0.00	2.36	0.01	-0.01	2.36
2000	5.22	24.51	-0.00	2.34	0.01	-0.01	2.34
2100	5.36	24.51	-0.00	2.38	0.01	-0.01	2.38
2200	5.34	24.48	-0.00	2.38	0.01	-0.01	2.38
2300	5.49	24.37	-0.00	2.41	0.02	-0.01	2.41
2400	4.95	24.34	-0.00	2.40	0.02	-0.01	2.40
0100	5.35	24.34	-0.00	2.40	0.02	-0.01	2.40
0200	5.26	24.30	-0.00	2.37	0.02	-0.01	2.37
0300	5.13	24.23	-0.00	2.40	0.02	-0.01	2.40
0400	5.11	24.17	-0.00	2.40	0.02	-0.01	2.41
0500	5.15	24.17	-0.00	2.40	0.02	-0.01	2.41
0600	5.18	24.13	-0.00	2.39	0.02	-0.01	2.39
0700	5.08	24.13	-0.00	2.39	0.02	-0.01	2.39
AVG	5.01	24.32	-0.00	2.34	0.02	0.91	3.26
MAX	5.49	24.51	-0.00	2.41	0.02	2.25	4.54
MIN	4.43	24.10	-0.00	2.25	0.01	-0.01	2.34