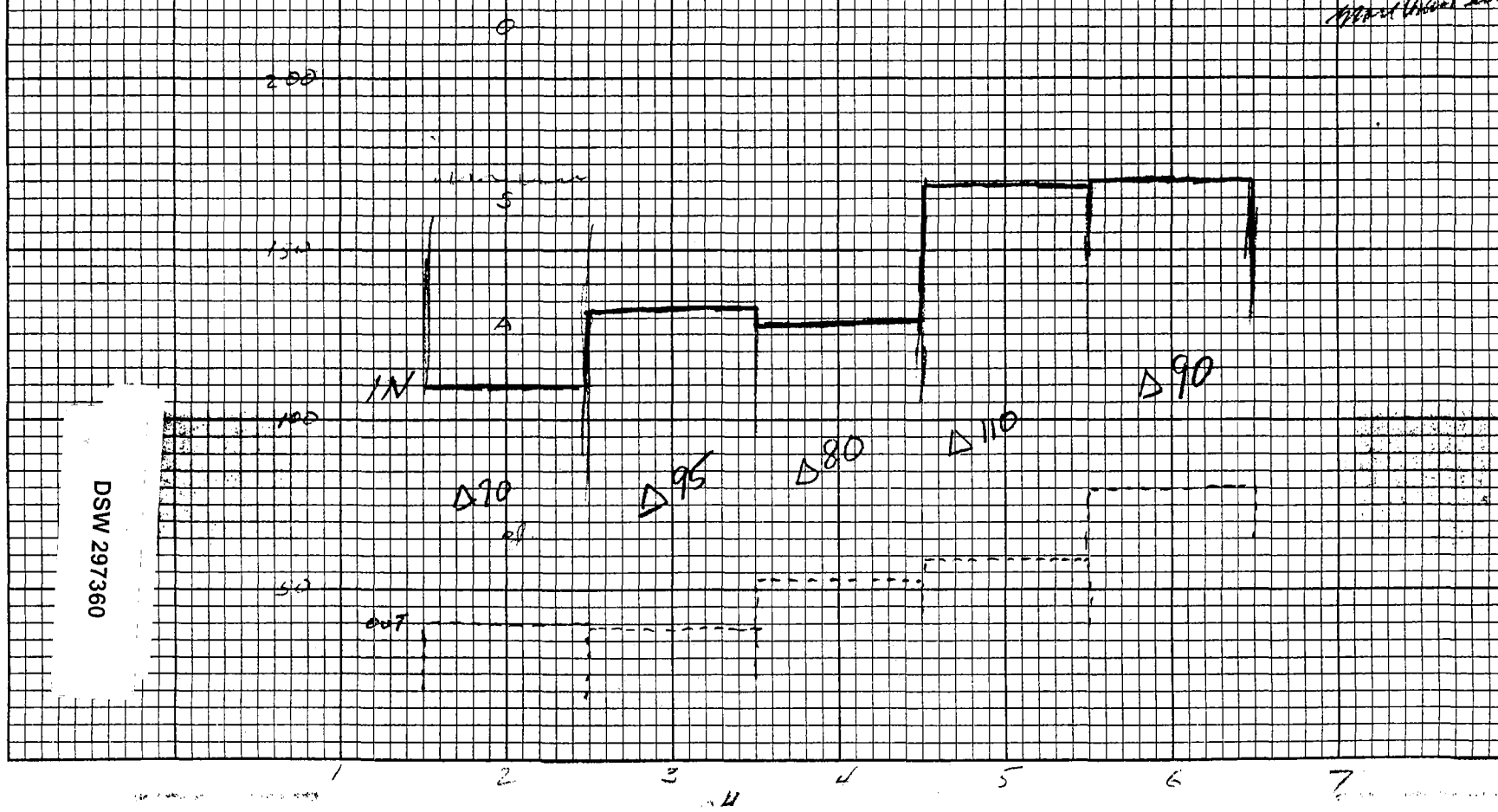
K+E 10 X 10 TO THE INCH 46 0703
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.

in
Suspended Solids PPM

27000000 G/D
225000000 #/D

Δ70 = 225 × 70 = 16750 #/day
Δ110 = 225 × 110 = 24800 #/day
Δ110 at 70 #/ft³ ≈ 355 ft³/day.
× 30
1065 ft³/mo.
= 22' × 22' × 22'
more than usual per month

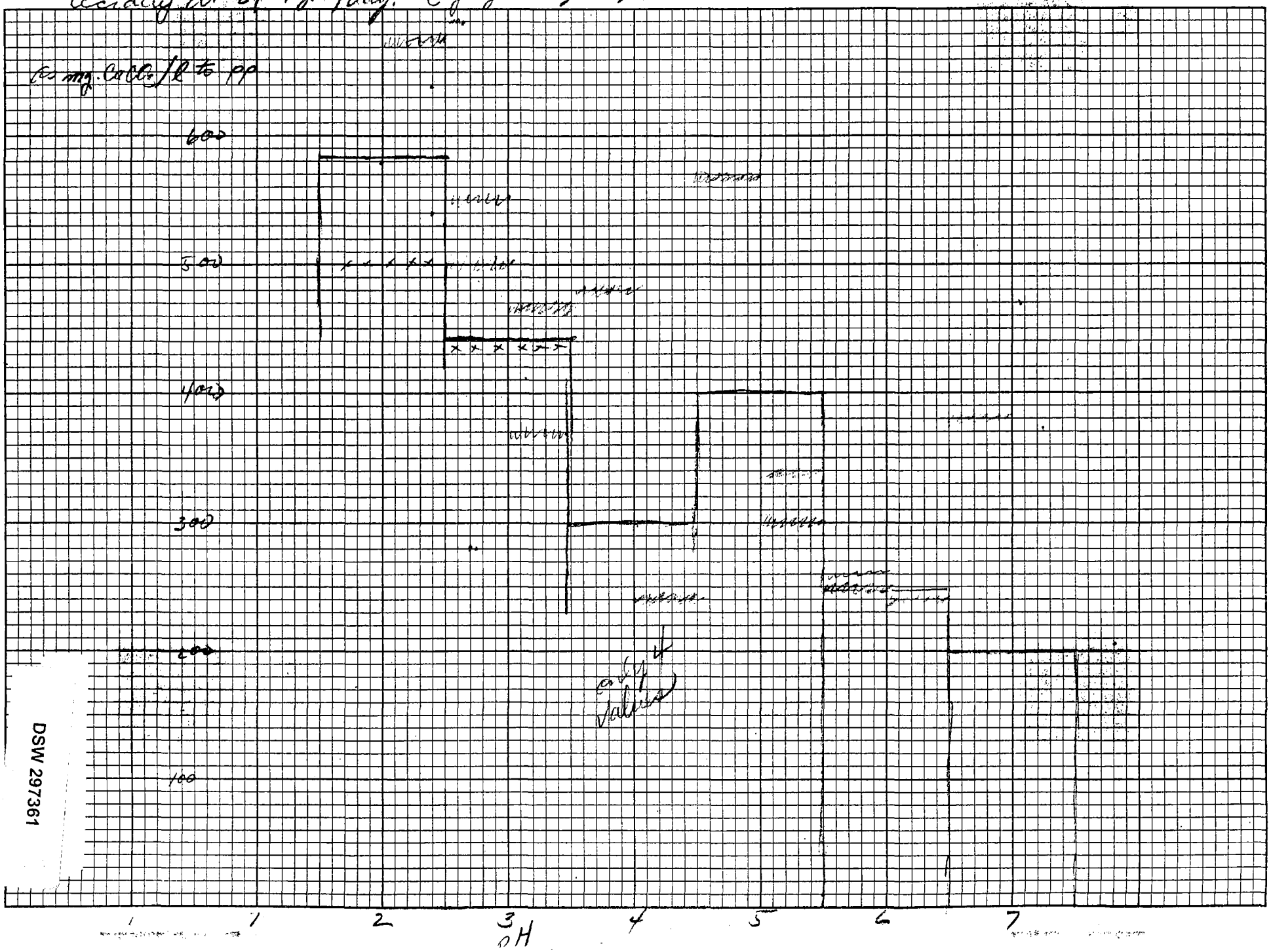


DSW 297360

STLCOPCB4067271

K+E 10 X 10 TO THE INCH 46 0703
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.

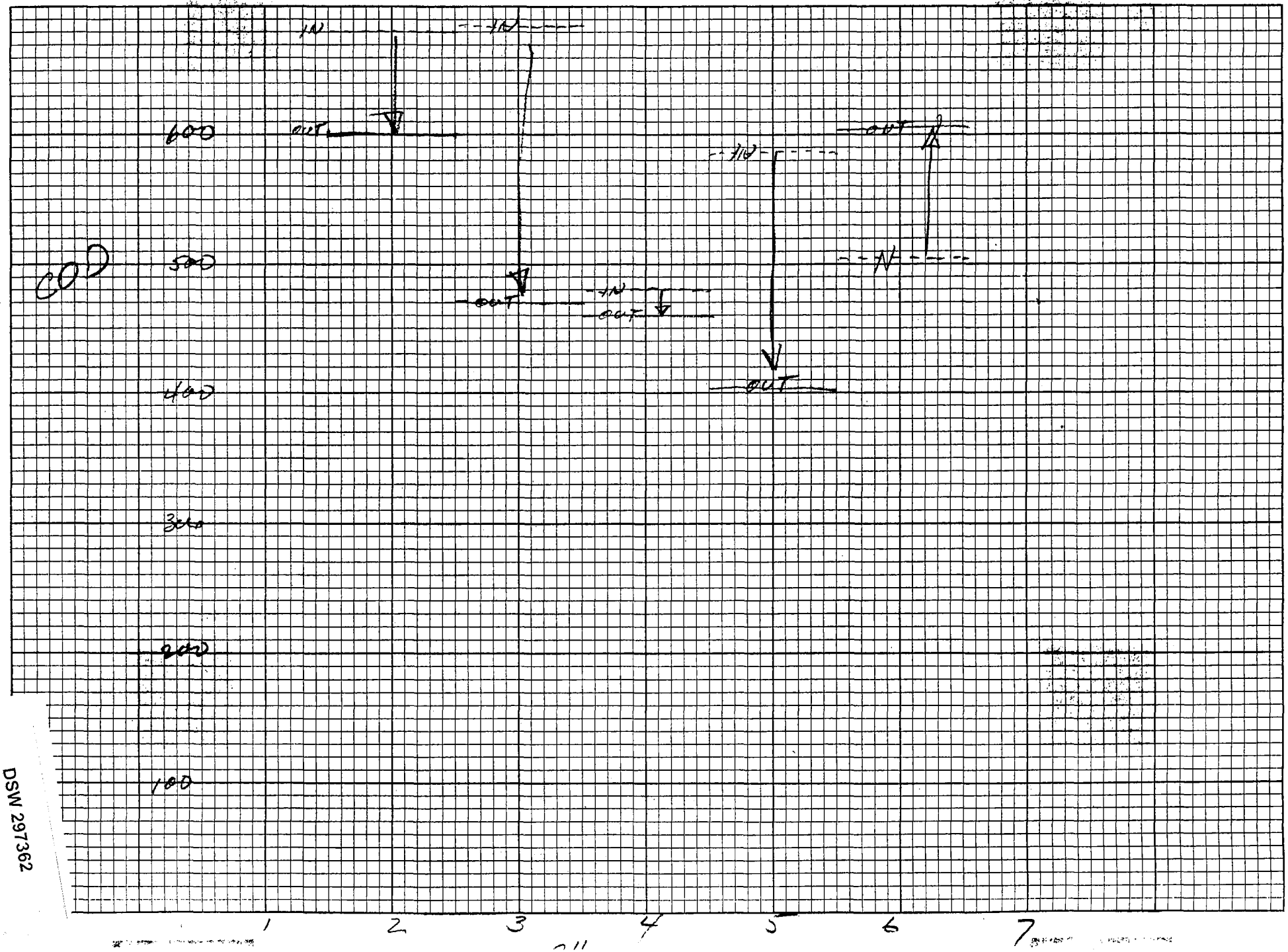
acidity at 27 m gal/day. (July - Aug - Sept)



DSW 297361

STLCOPCB4067272

K+E 10 X 10 TO THE INCH 46 0703
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.



DSW 297362
STLCOPCB4067273

13Mg/D

	IN pH	Sus Sol	COD	φ	acid	OUT pH	Sus Sol	COD	φ
	2.4	193	1240	5.6	640	2.4	48	440	9.0
	2.0	163	1120	5.6	580	3.0	43	760	5.2
	5.5	122	880	6.8	532	2.3	37	520	5.2
	2.4	184	1120	10.0	544	2.5	27	520	11.6
	2.6	217	—	17.6	688	2.8	81	—	14.8
	2.6	217	—	17.6	688	2.8	81	—	14.8
	2.6	217	—	17.6	688	2.8	81	—	14.8
	2.7	58	720	6.6	280	2.5	26	600	6.0
	2.7	58	720	6.6	280	2.5	26	600	6.0
10	7.8	151	1280	5.6	206	5.2	35	1000	4.6
	1.3	1145	—	—	—	1.4	288	—	2.0
	2.0	1145	1048	—	—	2.1	288	40	2.0
	2.1	1145	1240	9.6	80	2.2	288	1000	9.0
	2.2	164	400	9.6	300	2.3	43	360	9.0
	1.9	132	400	6.8	300	2.1	25	360	5.2
	1.3	132	440	9.4	328	1.4	25	280	8.2
	1.3	93	550	8.0	332	1.4	27	320	8.2
	2.0	96	440	8.0	620	2.1	11	400	5.2
	2.1	444	1080	7.6	200	2.2	79	280	7.2
20	2.2	715	600	7.0	480	2.3	15	480	6.2
	1.9	99	—	9.6	520	2.2	24	—	7.2
	1.8	209	500	9.6	532	2.2	49	480	7.2
	2.3	77	320	8.0	800	5.0	9	240	9.0
	5.8	172	500	9.8	280	3.5	10	600	8.4
	5.6	145	680	8.0	80	5.3	27	480	8.4
	2.3	211	520	12.0	480	2.2	7	320	12.2
	2.3	211	520	12.0	480	2.2	7	320	12.2
	3.3	66	360	9.8	160	2.4	23	480	12.2
	3.3	66	360	9.8	160	2.4	23	480	12.2
	1.9	100	400	12.6	104	1.2	20	400	9.6
	—	[illegible]	[illegible]	[illegible]	[illegible]	—	48	515	[illegible]

Acid Average J.A.S.O. = 435

3 g average

DSW 297363

STLCOPCB4067274

OUT

pH 1.5 to 2.5

SS	COD	ϕ
48	440	9.0
37	520	5.2
288	40	2.0
288	1000	9.0
43	360	9.0
25	360	5.2
11	400	5.2
79	280	7.2
15	480	6.2
24	—	7.2
49	480	7.2
7	320	12.2
7	320	12.2
23	480	12.2
23	480	12.2
48	515	4.4
14/1015	5/6475	116/1425.6
63½	430	7.85
19.2%		

2.5 to 3.5

SS	COD	ϕ
43	760	5.2
27	520	11.6
81	—	14.8
81	—	14.8
81	—	14.8
26	600	6.0
26	600	6.0
7/365	4/2480	7/73.2
52	620	10.4
40.6%		

3.5 to 4.5

SS	COD	ϕ
10	600	8.4

4.5 to 5.5

SS	COD	ϕ
39	1000	4.6
9	240	9.0
27	480	8.4
75	1720	2
25	573	7.33
	70%	

5.5 to 6.5

SS	COD	ϕ

1N

	COD		acid
193	1240	5.6	640
168	1120	5.6	580
184	1120	10.0	544
1145	1048	—	—
1145	1240	9.6	800
164	400	9.6	300
132	400	6.8	300
96	440	8.0	620
444	1080	7.6	200
715	100	2.0	480
99	—	9.6	520
209	600	9.6	532
77	320	8.0	800
211	520	12.0	480
211	520	12.0	480
100	400	12.6	104
16/5288	10/7148		9/7460
330	720		497

217	—	17.6	688
217	—	17.6	688
217	—	17.6	688
58	720	6.6	280
58	720	6.6	280
66	360	9.8	160
66	360	9.8	160
899	460	856	2944
128	540	12.2	421

			acid
122	880	6.8	532
84	760	6.0	166
	1640		698
	820		349

172	500	9.8	250	51
145	480	80	80	
			330	
			180	

DSW 297364

FORM 7411-6 U.S.A.

STLCOPCB4067275

27

In pH	Susol	COD	ϕ	Acid
2.2	105	320	5.0	480
5.3	163	—	6.2	588
5.0	141	800	3.2	320
5.6	127	280	6.8	200
5.1	141	760	8.0	240
5.0	144	460	9.6	400
5.5	26	360	4.8	480
5.5	216	280	9.2	180
6.6	189	160	3.6	136
5.8	203	100	7.4	172
5.1	208	400	7.0	152
5.4	202	320	8.8	132
4.8	69	560	7.6	1120
3.2	246	640	8.0	200
2.7	182	860	6.2	440
4.1	181	480	7.2	224
2.5	207	800	8.4	520
3.1	173	920	6.4	220
2.8	239	640	6.8	332
4.5	155	760	7.6	200
3.2	164	1480	9.0	692
3.2	164	1480	9.0	692
2.4	228	1000	7.8	600
2.5	125	640	6.0	620
2.5	125	640	6.0	1000
2.8	102	520	6.4	400
2.2	127	140	6.6	680
2.4	174	980	9.2	480
3.1	44	360	7.2	200

20 mgal

Out

pH	Susol	COD	ϕ
2.2	99	280	5.2
3.8	44	—	6.0
4.5	34	440	3.6
3.2	27	260	7.4
2.9	31	440	8.8
2.5	78	560	8.0
5.5	70	560	8.4
5.5	165	900	7.6
6.4	61	320	4.4
4.5	49	300	6.8
4.9	80	280	6.6
4.8	43	200	5.6
3.9	61	740	7.4
3.4	71	460	6.4
2.7	70	200	6.8
4.0	43	400	6.8
2.7	95	620	7.6
2.9	58	560	6.0
2.6	57	440	5.7
3.8	39	480	7.2
2.7	59	600	10.6
2.7	59	600	10.6
2.8	154	1120	7.6
2.5	85	400	5.4
2.5	35	400	5.4
2.5	44	920	6.6
2.2	34	860	6.0
2.4	28	620	9.0
3.0	6	400	7.2

DSW 297365

STLCOPCB4067276

A

Flow 27 Mgal/day

to p.p.

In pH	Sus Sol PPM	COD	Φ#	Acid MG/L CaCO3
2.8	37	680	8.8	—
2.3	85	—	7.6	532
23	89	60	4.8	820
2.6	75	720	3.2	—
4.7	123	380	6.4	188
6.6	139	120	8.8	380
5.6	127	360	8.0	200
4.8	112	760	9.6	764
4.2	169	400	8.4	240
3.2	47	400	7.6	440
2.5	47	520	6.8	280
5.7	167	800	5.8	200
5.2	183	865	7.2	480
5.1	169	560	8.4	580
3.0	142	600	8.2	532
5.0	201	320	10.8	260
1.6	247	800	6.6	560
5.2	235	168	7.0	120
5.8	189	1000	6.4	168
3.2	148	1060	5.8	372
5.0	164	760	6.8	460
4.8	147	600	6.6	570
6.4	242	1680	6.8	240
5.1	321	1280	5.6	160
3.0	165	360	4.4	240
5.7	161	684	3.6	280
5.1	145	240	2.8	480
2.3	132	800	5.2	240

27/4020/370

avg 68% removal

Out pH	Sus Sol PPM	PPM COD	Φ#
2.8	19	560	7.2
2.1	44	—	6.4
2.3	37	900	5.6
2.5	17	360	3.2
2.0	38	240	5.4
5.3	42	—	7.0
4.3	57	140	6.6
2.3	41	400	8.0
3.2	46	300	7.6
5.4	27	180	8.0
3.4	22	280	6.0
2.5	?	400	6.0
4.4	80	400	5.6
2.7	41	320	7.6
2.8	50	440	6.4
2.3	41	600	13.4
1.6	36	400	5.4
2.9	58	400	6.3
4.8	68	600	5.6
2.8	42	440	6.2
2.9	34	400	6.6
3.0	49	400	5.8
5.1	55	560	6.0
5.1	136	700	7.2
3.1	77	580	3.0
4.1	43	600	4.4
3.1	27	400	2.4
2.5	9	560	4.8

DSW 297366

STLCOPCB4067277

27 MGD

IN					OUT				
pH	Sus Sol	COD	Φ	Acid	pH	Sus Sol	COD	Φ	
32	174	400	64	—	34	70	460	74	
31	181	760	70	—	29	60	500	64	
30	96	740	94	—	31	53	620	84	
33	89	800	90	—	32	37	720	78	
32	174	1040	40	—	29	24	520	60	
32	67	680	84	620	32	45	480	84	
58	359	560	84	320	30	13	400	80	
32	372	680	88	—	61	22	840	80	
30	83	340	168	840	27	31	460	96	
30	75	1040	94	1200	27	16	360	80	
23	33	880	124	600	27	4	720	74	
59	46	210	92	280	27	36	80	126	
21	99	400	86	600	27	47	400	94	
30	309	1200	92	520	29	37	380	78	
31	159	520	88	320	32	25	140	100	
21	87	460	100	760	21	57	260	96	
29	131	400	92	480	29	13	360	86	
31	67	460	76	600	30	8	400	60	
23	23	1400	90	640	23	9	1660	84	
31	110	600	100	400	25	44	960	110	
29	55	400	92	440	29	20	1000	96	
22	87	—	68	—	24	40	—	56	
29	46	360	60	380	28	22	300	64	
27	72	560	76	480	30	11	440	68	
29	111	460	84	600	31	11	360	60	
71	431	690	76	80	67	33	60	62	
32	15	260	86	120	67	6	220	74	
28	213	700	—	400	24	7	340	—	
37	53	480	102	480	34	21	300	74	
27	83	281	114	500	26	23	245	84	

July

DSW 297367

STLCOPCB4067278

2 TM 6/D IN

0-1.5 IN			
SS	COD	ϕ	AGD
127	280	6.8	200
216	360	14.8	480
216	280	9.2	180
203	100	7.4	120
189	440	3.2	160
139	120	8.8	360
127	360	8.0	200
167	800	5.8	200
189	1000	6.4	168
242	1480	6.8	240
161	684	3.6	280
359	560	8.4	320
146	210	9.2	280
431	690	7.6	80
1813	5549		2720
1170	505		247
	100 TO 1680		168 TO 480

1.5-2.5 IN			
SS	COD	ϕ	AGD
105	320	5.0	480
228	1000	7.8	600
85	—	7.6	532
89	60	4.8	820
247	800	6.6	560
132	800	5.2	240
33	880	12.4	600
99	400	8.6	600
87	460	10.0	760
23	1400	9.0	640
87	—	6.8	—
1215	6120	83.8	5832
110	680	7.5	583
	60 TO 140	4.8 TO 12.4	480 TO 820
SEPT			
165			
105 TO 228			
AUG			
138			
85 TO 247			
JULY			
66			
23 TO 99			

2.5-3.5 IN			
SS	COD	ϕ	AGD
246	640	8.0	200
182	840	6.2	440
209	800	8.4	520
175	920	6.4	220
238	640	6.8	332
164	1480	9.0	692
164	1480	9.0	692
37	680	8.5	—
75	720	3.2	—
47	400	7.6	400
47	520	6.8	280
42	600	8.2	532
148	1060	5.8	372
165	360	4.4	240
174	400	6.4	—
181	760	7.0	—
96	740	9.4	—
89	800	9.0	—
174	1040	4.0	—
67	680	8.4	620
372	680	6.8	—
83	340	16.8	840
75	1040	9.4	94
309	1200	9.2	520
159	520	8.8	320
131	400	9.2	480
67	460	7.6	600
110	400	10.0	400
55	400	9.2	440
46	560	6.0	380
72	560	7.6	480
111	400	8.4	600
15	260	8.6	120
213	700	—	400
83	281	11.6	500
41	840	10.4	420
3047	17569	2.4321	
132	686		441
	140 TO 1480		94 TO 842
	SEPT 914		SEPT 442
	640 TO 1480		200 TO 692
	AUG 620		AUG 373
	340 TO 1060		240 TO 532
	JULY 616		JULY 464
			94 TO 842

3-5-4.5 IN			
SS	COD	ϕ	AGD
189	480	7.2	224
169	400	8.4	240
108	560	8.8	240
53	480	10.2	480
198			
4511	1920		
127	480		
53 TO 181	400 TO 560		

4.5-5.5 IN			
SS	COD	ϕ	AGD
163	—	6.2	568
141	800	3.2	320
141	760	8.0	240
144	440	9.6	400
208	400	7.0	152
202	320	8.8	152
69	540	7.6	1120
155	760	7.6	200
123	380	6.4	184
112	760	9.6	764
183	865	7.2	423
169	560	8.4	580
201	320	10.8	260
235	168	7.0	120
164	760	6.8	460
147	600	6.6	570
321	1280	5.6	160
145	340	2.8	420
1830	9973		7194
168	586		400
69 TO 324	168 TO 1280		120 TO 1120
			SEPT 391
			132 TO 1120
Sept 153			
69 TO 208			AUG 406
AUG 180			120 TO 764
112 TO 521			

5.5 TO 6.5			
189	160	3.6	136
189	120	8.8	380
431	690	7.6	80
	970		596
	323		199

6.5 TO 7.5			
193			
163			
184			
164			
132			
96			
444			
345			
89			
209			
77			
241			
241			
211			
100			

FORM 7411-6 U.S.A.

DSW 297368

STLCOPCB4067279

Sus. Solids ant.

	1.5-2.5	2.5-3.5	3.5-4.5	4.5-5.5	5.5-6.5	6.5-7.5
Alg.	9	70	57	42	22	33
	40	60	80	27	70	6
	18	53	43	68	165	2 39
	44	37	44	55	61	20
	37	26	61	136	4 328	
	38	45	43	34	81	
	41	13	39	47		
	41	31	7 367	80		
	30	10	52 3/7	43		
	27	6		9 532		
	79	36		59		
	34	47				
	6 23	37				
	12 481	25				
	40	13				
		8				
		14				
		20				
		22				
		11				
		11				
		7				
		21				
		23				
		19				
Aug.		17				
		46				
		22				
		41				
		53				
		58				
		42				
		34				
		49				
		77				
		27				
		9				
		27				
		31				
Sept		78				
		71				
		70				
		95				
		56				
		57				
		59				
		59				
		154				
		35				
		35				
		44				
		6				
		24 6				
		53 2050				
		38.7				

DSW 297369

FORM 7411-6 U.S.A.

STLCOPCB4067280

27 MG/D OUT — SEPT — AUG — July

Φ -1.5			1.5-2.5			2.5-3.5			3.5-4.5			4.5-5.5			5.5-6.5			over 6.5			
SS	COD	Φ	SS	COD	Φ	SS	COD	Φ	SS	COD	Φ	SS	COD	Φ	SS	COD	Φ				
			99	280	6.2	27	260	7.4	44	—	6.0	84	400	3.6	70	360	8.4	11	6	220	7.4
			44	—	6.4	31	440	8.8	61	740	7.4	47	500	8.8	165	900	7.6				
			37	900	5.6	78	560	8.0	43	400	6.8	30	280	6.0	41	520	4.4				
			38	740	5.4	71	440	6.4	39	480	7.2	43	200	5.6	22	840	8.0				
			41	400	8.0	70	700	6.8	57	140	6.6	42	—	7.0		605					
			41	600	10.4	95	620	7.6	80	400	5.6	27	180	8.0							
			30	400	5.4	56	560	6.0	43	600	4.4	68	600	5.6							
			27	320	7.2	57	440	6.7	1367	2760		55	560	6.0							
			9	1660	8.4	59	600	10.6	52	460		136	700	7.2							
			40	—	5.6	59	600	10.6	39 TO 80	140 TO 740		532	403								
			18	620	7.6	154	1120	7.6				59									
11	424					19	560	7.2				27 TO 136									
39.5	5420					17	360	3.2													
	602					46	300	7.6													
9 TO 99			240 TO 1660			22	280	6.0													
						—	400	6.0													
						41	320	7.6													
						50	440	6.4													
						52	400	6.3													
						42	440	6.2													
						31	400	6.6													
						49	400	5.8													
						77	580	3.0													
						27	400	2.4													
						9	560	4.5													
						70	460	7.4													
						60	500	6.4													
						53	620	8.4													
						37	720	7.8													
						26	520	6.0													
						45	480	8.4													
						13	400	8.0													
						31	460	9.6													
						10	560	8.0													
						6	720	7.4													
						36	80	12.6													
						47	400	9.4													
						37	380	7.8													
						25	140	10.0													
						57	260	9.6													
						13	360	8.6													
						8	400	6.0													
						44	960	11.0													
						20	1000	9.6													
						22	300	6.4													
						11	440	4.8													
						11	360	6.0													
						7	340	—													
						21	300	7.4													
						23	345	8.6													
						1055	85														
						472															

DSW 297370

Capacity to P.P. MG/L CaCO3

STLCOPCB4067281

Acid. Sept. Aug July.

2.5 & 3	3 & 3.5	3.5 & 4 acid	4 & 4.5	4.5 & 5	5 & 5.5	5.5 & 6.0
440	200	480	224	1120	568	200
520	220		240	200	520	480
332	692		240	2 | 1320	240	180
620	692			160	400	172
1000	200			188	152	4 | 4032
400	200			764	132	258
6 | 3312	6 | 2204			570	6 | 1812	200
552	367			568	302	200
250	440				480	2 168
480	532				580	280
440	372				260	320
380	240				120	280
480	620				460	
600	840				160	2480
400	1200				480	248
500	520				336	
620	320					
	600					
	400					
	120					
	16 | 8408					
	467					

2.70 2.5

532

820

6-6.5

240

1.5-2.5	2.5-3.5	3.5-4.5 out.	4-5-5.5	5-5-6.5	7.18
440	688		146	332	206
580	688			280	
544	688			80	
80	280				
360	280				
360	140				
620	160				
200	7 | 2942				
480	120				
520					
532	2942				
800	35 | 12348				
480	15290				
480	436				
164	overall				
15 | 14660					
444					

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