

Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

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AP-42 Section Number: 9.10.1.2

Reference Number: 23

Title: Particulate Emission Study for
Michigan Sugar Company, Carrollton,
Michigan

Swanson Environmental, Inc.

Swanson Environmental, Inc.

November 1989

DEC 11 1989

PARTICULATE EMISSION STUDY
FOR
MICHIGAN SUGAR COMPANY
CARROLTON, MICHIGAN
CL

DATES OF TESTING:
November 14 and 16, 1989

Prepared For:

Michigan Sugar Company
P.O. Box 1348
Saginaw, Michigan 48605

Prepared By:

Swanson Environmental, Inc.
24156 Haggerty Road
Farmington Hills, Michigan 48024

MA-5490



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EMISSION STUDY
PULP DRIER STACK
MICHIGAN SUGAR COMPANY
CARROLTON, MICHIGAN
DECEMBER 5, 1989

EXECUTIVE SUMMARY

Swanson Environmental, Inc. was retained by Michigan Sugar Company to sample the particulate emissions from the beet pulp drier located in Carrolton, Michigan.

The purpose of the study was to determine whether the particulate emissions were in compliance with Michigan Sugar's Special Conditions Permit Number 300-86A requirements. The results of the two tests are as follows:

TEST NO.	TEST DATE	STACK GAS FLOW RATE	GRAIN PER DSCF	LBS/1000 LBS GAS	LBS/1000LBS DRY 50% EA	LBS/HOUR
P-1	11/14/89	33672	0.0643	0.084	0.251	18.56
P-2	11/14/89	37871	0.0462	0.064	0.225	14.98
P-3	11/14/89	38795	0.0703	0.100	0.363	23.39
AVERAGE		36779	0.0603	0.083	0.280	18.98
P-1	11/16/89	46482	0.0411	0.069	0.238	16.37
P-2	11/16/89	37617	0.0478	0.067	0.230	15.42
P-3	11/16/89	41090	0.0558	0.085	0.203	19.65
AVERAGE		41730	0.0482	0.074	0.224	17.15

1.0 INTRODUCTION

Swanson Environmental, Inc., was retained by Michigan Sugar Company, of Saginaw, Michigan to conduct two particulate emission tests on the beet pulp drier stack at the Carrolton plant, located in Carrolton, Michigan.

The purpose of the study was to determine whether the particulate emissions from two different aspiration rates were in compliance with Michigan Sugar's Special Conditions Permit Number 300-86A. The tests were in accordance with the procedures outlined for Method 17 of 40 CFR 60, Appendix A.

The study was conducted on November 14 and 16, 1989 by Mr. Mark Hook, Mr. Dan Larin, Mr. Mark Morter, and Mr. Andrew Secord of Swanson Environmental, Inc. Mr. Mark Suhr of Michigan Sugar assisted in the study.

2.0 PROCESS DESCRIPTION

Expanded cossettes, or pulp, discharged from the diffuser is pressed to remove excess moisture. The pulp is then dried by feeding the material into large revolving drums through which hot air is drawn. The drying reduces the pulp moisture to approximately 12% from a high of approximately 80%. The moist air leaves the drum and passes through a multiclone and a side stream is sent through a baghouse. The bag house is aspirated at two different rates and the recirculated air is used to

combust the heating flame. The drier exhaust is discharged to the atmosphere via a 100 foot high, 8 foot diameter stack. Sampling was performed from the elevated walkway located approximately 60 feet above ground level.

3.0 GENERAL

Prior to the start of testing the stack diameter was measured and a total of 12 traverse points were selected. Four 4-inch diameter sampling ports were previously installed on the 96" diameter stack (Figure 1). Preliminary velocity traverses (USEPA Method 2) and wet bulb-dry bulb moisture determinations (USEPA Method 4) were performed at the sampling location. All velocity measurements used a calibrated S-type pitot tube with an attached thermocouple probe.

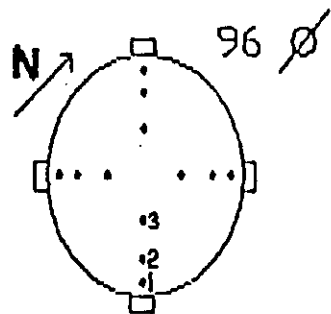
Following the calculation of gas density and gas velocities, a sampling nozzle size was determined which would allow isokinetic sampling at all measured points.

4.0 PARTICULATE SAMPLING PROCEDURE

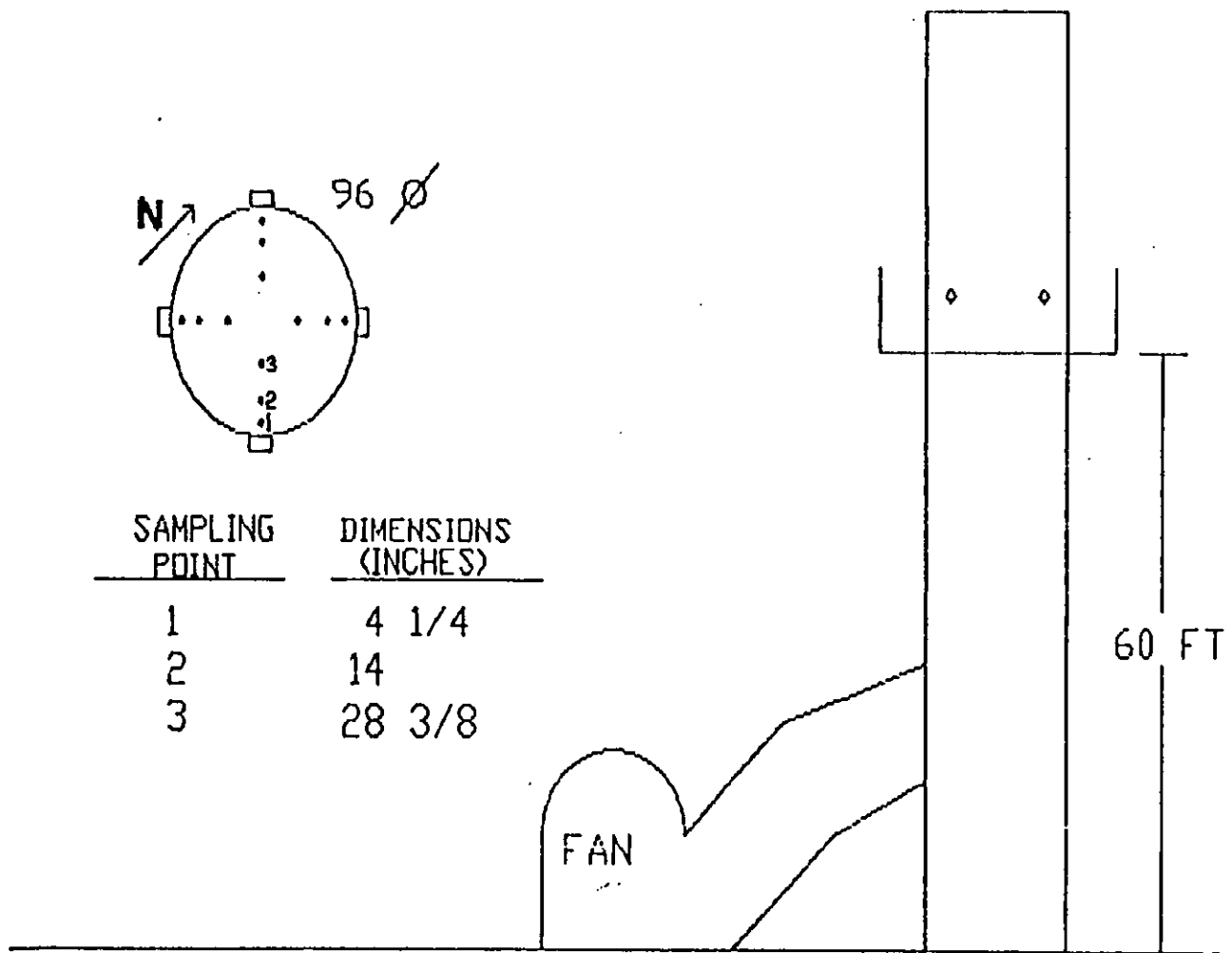
The sampling train used to sample the drier stack emissions followed 40 CFR 60, Appendix A, USEPA Method 17. This method is also approved by the Michigan Department of Natural Resources, as Method 5C. The sampling train components were:

1. An appropriately sized stainless steel sample nozzle;
2. One 47 MM A/E glass fiber filter backed up with a ceramic thimble and a holder for each;

FIGURE 1
 BEET PULP DRIER STACK
 MICHIGAN SUGAR COMPANY
 CARROLTON MICHIGAN



SAMPLING POINT	DIMENSIONS (INCHES)
1	4 1/4
2	14
3	28 3/8



3. A six-foot stainless steel sample probe;
4. A one-half inch diameter flexible sample line;
5. Four impingers placed in an insulated ice water bath in the following sequence:
 - a) A modified impinger containing 100 ml of distilled water
 - b) A modified impinger containing 100 ml of distilled water
 - c) A standard Greenburg-Smith impinger containing no collecting media to act as a dry condensate trap; and
 - d) A modified impinger containing approximately 300 grams of pre-dried silica gel.
6. Sampled gas measuring train containing the following components in sequence:
 - a) An umbilical sampling line;
 - b) A vacuum gauge;
 - c) A leakless, oil type pump;
 - d) A calibrated dry test gas meter;
 - e) A calibrated gas flow orifice; and
 - f) An inclined water column manometer.

The observed test velocity head reading was used in the isokinetic point sampling rate calculations. The sampling time for each of the 12 points was 5 minutes.

Prior to testing the first and second impingers were loaded with 100 ml of deionized water each. The third impinger remained empty. The fourth impinger was filled with

approximately 300 grams of silica gel and weighed. After the total sample train was assembled, a pretest leak test was made at 15" Hg. During sampling, the sample gas flow conditions and rate were monitored, adjusted and recorded. A post-test leak test was made at a vacuum equal to or greater than the highest system vacuum incurred during the test period. After the test, the sampling train was disassembled for transfer of the collected materials.

5.0 ANALYTICAL PROCEDURES

The water filled impinger volumes were measured and recorded. The silica gel impinger was reweighed. The filters were placed in their sample containers and the filter holder and probe were brushed and flushed with acetone. The acetone flushings were placed in a labeled container. 68e preweighed filters were oven dried for two hours, then placed in a desiccator for 24 hours, weighed, and then redissiccated for 12 hours prior to final weighing. The initial and final weights were determined on the same analytical balance accurate to 0.1 milligram.

All acetone flushing solutions were placed in individual preweighed aluminum dishes and the acetone was evaporated at 70° F. The aluminum dishes were desiccated for 24 hours, weighed, and then redessiccated for 12 hours. The initial and final weights were determined on the same analytical balance.

6.0 RESULTS OF TESTING

The results of testing for November 14 and 16, 1989, are found in Table 1 in the executive summary. All field sampling data,

velocity traverse data, and calibration sheets are located in the appendix.

7.0 DISCUSSION OF RESULTS

The Michigan Sugar Pulp drier stack at Carrolton, Michigan had average emission rates of 0.074 pound, and 0.083 pounds per 1000 pounds of actual stack gas. This falls below the maximum allowable emission standard (0.10 pounds total particulate per 1000 pounds of gas) as set forth by the Michigan Department of Natural Resources in the Air Pollution Control Commission's particulate matter emission schedule, Chapter R336.1331, Subpart J entitled Exhaust Systems serving material handling equipment not otherwise listed in Table 31".

Therefore, the pulp drier exhaust stack complies with the State of Michigan standard pertaining to total particulate emissions under actual operating conditions.

Report Prepared By:

Mark B. Morter

Mark B. Morter

Assistant Environmental Engineer

MM1:MA-5490.R01

APPENDIX

SWANSON ENVIRONMENTAL INC.

TEST No.: P-1

PLANT: MI SUGAR PITOT No: 4.00 CALIBRATION PITOT: 0.8280
 DATE: 11-14-89 METER BOX: NUTECH NOZ. DIA. Inches : 0.310
 LOCATION: CARROLLTON AMB TEMP F. 55.00 STACK DIA. Inches : 96.00
 OPERATOR: M. MORTER B.P. In. Hg. 29.33 STACK PRESS In. H2O: 0.04
 SOURCE: PULP DRIER ASSUMED %M: 30.0 H2O VOL. Ml. : 362.700
 LEAK TST: 0.01 METER DEL-H 1.78 METER f: 4.806
 Hg INT.: 15.00 Kiso: 1549.196 Yd: 1.005
 LEAK TST: 0.02 PROBE LEN: 48.00 SAMPLE PTS: 12
 Hg FIN.: 15.00 W.B. TEMP F. 135.00 TOT. TIME: 60.00

SAMPLE POINTS	PITOT SQRT	ORIFICE No.	DRY GAS	METER TEMP F	STACK TEMP F	PITOT DELTA
1	0.46	0.84	253.27	58.00	185.00	0.21
2	0.33	0.44	255.96	59.00	189.00	0.11
3	0.42	0.72	257.68	60.00	188.00	0.18
4	0.32	0.40	259.84	62.00	185.00	0.10
5	0.33	0.44	261.53	64.00	186.00	0.11
6	0.30	0.37	263.38	65.00	180.00	0.09
7	0.35	0.49	265.04	66.00	182.00	0.12
8	0.32	0.42	266.88	67.00	168.00	0.10
9	0.32	0.42	268.68	68.00	166.00	0.10
10	0.37	0.58	270.52	68.00	175.00	0.14
11	0.42	0.75	272.40	68.00	169.00	0.18
12	0.33	0.46	274.66	69.00	165.00	0.11
			276.56			

FINAL # 0.36 0.53 23.29 64.50 178.17

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SWANSON ENVIRONMENTAL INC.

TEST No.: P-2

PLANT: MI SUGAR PITOT No: 4.00 CALIBRATION PITOT: 0.8280
 DATE: 11-14-89 METER BOX: NUTECH NOZ. DIA. Inches : 0.310
 LOCATION: CARROLLTON AMB TEMP F. 52.00 STACK DIA. Inches : 96.00
 OPERATOR: A. SECORD B.P. In. Hg. 29.34 STACK PRESS In. H2O: 0.04
 SOURCE: PULP DRIER ASSUMED %M: 30.0 H2O VOL. Ml. : 304.100
 LEAK TST: 0.01 METER DEL-H 1.78 METER f: 4.806
 Hg INT.: 15.00 Kiso: 1549.196 Yd: 1.005
 LEAK TST: 0.00 PROBE LEN: 48.00 SAMPLE PTS: 12
 Hg FIN.: 7.00 W.B. TEMP F. 135.00 TOT. TIME: 60.00

SAMPLE POINTS	PITOT SQRT	ORIFICE No.	DRY GAS	METER TEMP	STACK TEMP	PITOT DELTA
1	0.28	0.31	277.08	60.00	180.00	0.08
2	0.42	0.69	278.66	59.00	199.00	0.18
3	0.30	0.35	280.93	61.00	194.00	0.09
4	0.49	0.91	282.44	63.00	201.00	0.24
5	0.49	0.92	284.64	65.00	201.00	0.24
6	0.45	0.76	287.28	66.00	203.00	0.20
7	0.45	0.77	289.73	67.00	198.00	0.20
8	0.35	0.46	292.15	67.00	201.00	0.12
9	0.39	0.58	294.08	68.00	201.00	0.15
10	0.32	0.39	296.14	65.00	186.00	0.10
11	0.30	0.34	297.91	68.00	212.00	0.09
12	0.30	0.35	299.69	68.00	199.00	0.09
			301.25			

FINAL # 0.38 0.57 24.17 64.75 197.92
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SWANSON ENVIRONMENTAL INC.

TEST No.: P-3

PLANT: MI SUGAR PITOT No: 4.00 CALIBRATION PITOT: 0.8280
 DATE: 11-14-89 METER BOX: NUTECH NOZ. DIA. Inches : 0.310
 LOCATION: CARROLLTON AMB TEMP F. 50.00 STACK DIA. Inches : 96.00
 OPERATOR: A. SECORD B.P. In. Hg. 29.30 STACK PRESS In. H2O: 0.04
 SOURCE: PULP DRIER ASSUMED %M: 30.0 H2O VOL. Ml. : 278.400
 LEAK TST: 0.01 METER DEL-H 1.78 METER f: 4.806
 Hg INT.: 15.00 Kiso: 1549.196 Yd: 1.005
 LEAK TST: 0.00 PROBE LEN: 48.00 SAMPLE PTS: 12
 Hg FIN.: 8.00 W.B. TEMP F. 135.00 TOT. TIME: 60.00

SAMPLE POINTS	PITOT SQRT	ORIFICE No.	DRY GAS	METER TEMP	STACK TEMP	PITOT DELTA
1	0.32	0.39	301.42	61.00	175.00	0.10
2	0.35	0.45	303.17	58.00	206.00	0.12
3	0.41	0.63	305.03	59.00	211.00	0.17
4	0.36	0.57	307.22	60.00	188.00	0.13
5	0.53	0.82	309.36	61.00	209.00	0.28
6	0.35	0.45	311.95	62.00	214.00	0.12
7	0.41	0.65	313.90	62.00	200.00	0.17
8	0.44	0.71	316.18	62.00	214.00	0.19
9	0.39	0.56	318.55	63.00	209.00	0.15
10	0.35	0.46	320.68	63.00	202.00	0.12
11	0.32	0.37	322.63	62.00	211.00	0.10
12	0.32	0.38	324.38	62.00	206.00	0.10
			326.10			

FINAL # 0.38 0.54 24.68 61.25 203.75
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SWANSON ENVIRONMENTAL, INC.

PITOT TRAVERSE DATA

PLANT:	MI SUGAR	PITOT No.	4.00	STACK PRES. In. H2O	0.04
DATE:	11-14-89	STACK DIA.	96.00	STACK TEMP. F.	175.00
TIME:	9:30 AM	B.P. In.Hg.	29.33	STACK AREA Sq.Ft.	50.27
WB. TEMP	135.00	DB. TEMP.	175.00	SAMPLE POINTS	12.00
		Cp :	0.83	Ps:	29.33

SAMPLE POINTS	PITOT SQRT	PITOT DELTA	STACK TEMP
1	0.37	0.14	173.00
2	0.42	0.18	173.00
3	0.40	0.16	172.00
4	0.33	0.11	173.00
5	0.35	0.12	175.00
6	0.36	0.13	174.00
7	0.39	0.15	174.00
8	0.40	0.16	178.00
9	0.37	0.14	170.00
10	0.36	0.13	171.00
11	0.36	0.13	168.00
12	0.33	0.11	165.00
13	0.00		
14	0.00		
15	0.00		
16	0.00		
17	0.00		
18	0.00		
19	0.00		
20	0.00		
21	0.00		
22	0.00		
23	0.00		
24	0.00		

AVERAGES: 0.37 172.17

- 1). Vs= 1389.26
- 2). Qs= 69831.70
- 3). Qscfm= 57397.23

Vs = 2.9 Cp 60 SQRT(Ts*DELTA-P)*SQRT(29.92/Ps*1/Gs)
 Qs = Vs*As AND Qscfm=Qs*530/(Ts+460)*Ps/29.92

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SWANSON ENVIRONMENTAL, INC.
PARTICULATE SAMPLING DATA AND CALCULATIONS

PLANT: MI SUGAR

DATE: 11-2-89 14

SOURCE: PULP DRIER

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531
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	CLOCK TIME:	60.00	60.00	60.00
	1.00 NUMBER	P-1	P-2	P-3
B.	STACK DIAMETER, In	96.00	96.00	96.00
C.	STACK AREA, Sq.Ft	50.27	50.27	50.27
D.	No. SAMPLE POINTS	12.00	12.00	12.00
E.	TOTAL SAMPLE TIME, MIN.	60.00	60.00	60.00
F.	NOZZLE DIAMETER, In.	0.310	0.310	0.310
G.	NOZZLE AREA, Sq.Ft.	0.00052	0.00052	0.00052
H.	CALIBRATION FACTORS:			
	PITOT TUBE, Cp	0.828	0.828	0.828
	GAS METER, y	1.005	1.005	1.005
I.	BAROMETRIC PRESSURE,	29.33	29.34	29.30
	In.Hg.			
J.	STACK STATIC PRESSURE	0.04	0.04	0.04
	In.H2O			
K.	STACK GAS TEMP.	178.17	197.92	203.75
L.	AVG. Sq. Rt. VEL. HEAD	0.36	0.38	0.38
M.	AVG. METER TEMP.	64.50	64.75	61.25
N.	AVG. METER PRESS., H2O	0.53	0.57	0.54
O.	METER VOL., ACTUAL			
	Cu. Ft.	23.29	24.17	24.68
P.	METER VOL., @STP	23.22	24.09	24.73
Q.	LIQUID VOL., H2O COND.,	362.70	304.10	278.40
	Ml.			
R.	VAPOR VOL., H2O COND.,	17.19	14.41	13.20
	@STP, Cu.Ft.			
S.	TOTAL GAS SAMPLED,	40.41	38.51	37.93
	@ STP, Cu.Ft.			
T.	%MOISTURE IN EXHAUST GAS			
	1) AT TEST LOCATION	42.55	37.43	34.79
	2) BEFORE COLLECTOR	0.00	0.00	0.00
U.	DRY GAS COMP. %O2	14.3	15.7	16.3
	%CO2	3.1	2.4	1.8
	%CO	0.1	0.2	0.1
	%N2	81.3	81.0	82.7
V.	DENSITY & MOL. Wt. -STACK GAS			
	1) DRY, @ STP, Lbs/Cu.Ft.	0.0743	0.0744	0.0754
	2) WET, @ STP, Lbs/Cu.Ft.	0.0625	0.0640	0.0654
	3) WET @ STACK, Lbs/Cu.Ft.	0.0509	0.0505	0.0511
	4) MOL.Wt., @ STP, Lb/MOLE	28.75	28.79	29.19
W.	WEIGHT OF GAS SAMPLED:			
	1) DRY GAS, Lbs	1.73	1.79	1.87
	2) WET GAS, Lbs	2.52	2.46	2.48
X.	TOTAL PARTICULATE COLLECTED	0.0968	0.0721	0.1128

(GRAMS)

Y. AVERAGE GAS VELOCITY, FPM	1432.16	1524.35	1513.72
Z. STACK GAS FLOW RATE			
1)AT STACK, Qa, ACFM	71988	76622	76088
2)AT Std., Qstd, SCFM	58607	60528	59497
3)Std. DRY, Qdg, SCFM	33672	37871	38795
AA. PERCENT EXCESS AIR	200.11	276.65	297.10
BB. CONCENTRATION CONVERSION FACTORS:			
1)50% E.A., AFTER COLLECTOR	1.53	1.79	1.91
2)50% E.A., BEFORE COLLECTOR	2.97	3.49	3.62
3)MOISTURE BEFORE COLLECTOR	1.46	1.37	1.33
CC. PARTICULATE CONCENTRATION:			
1)Lbs/1000 Lbs., ACTUAL	0.084	0.064	0.100
2)Lbs/1000 Lbs., DRY	0.124	0.089	0.133
3)Lbs/1000 Lbs., WET @ 50%E.A	0.129	0.115	0.191
4)Lbs/1000 Lbs., DRY @ 50%E.A	0.251	0.225	0.363
5)GRAINS / DSCF	0.0643	0.0462	0.0703
6)POUNDS / HOUR	18.56	14.98	23.39
DD. PERCENT ISOKINETIC	110.19	101.67	101.88

SWANSON ENVIRONMENTAL, INC.

PLANT: MI SUGAR TEST DATE: 11-1489 TEST No.:P-1
SOURCE: PULP DRIER WTS. DATE: 11-17-89

FRACTION A ACETONE RINSES FRACTION A TOTAL WTS (mg) = 183.03

	ACE. RINSE	ACE BLANK	CONT. BLANK	5A FILTER RINS
LIQUID VL	89.00	94.00		0.00
CONT. No.81024-77		90609-40	91031-79	0
FIN. WTS.	1775.30	1568.70	1563.50	0.00
INT. WTS.	1586.60	1562.70	1563.70	0.00
NET WTS.	188.70	6.00	-0.20 mg	0.00
CONT CORR	-0.20	-0.20		-0.20
NET WTS.	188.90	6.20 mg		0.20
ACE CORR.	5.87			5.87
FINAL WTS	183.03 mg			mg -5.67

FRACTION B FRONT FILTER FRACTION B TOTAL WTS (mg) = 53.50

	TEST FILTER	BLANK FILTER
FILTER No80729-13		80801-18
FINAL WT.	56937.30	46455.60
INT. WT.	56883.80	46455.60
NET WT.	53.50	0.00 mg
BLK. CORR	0.00	
FINAL WT.	53.50 mg	

FRACTION C BACK UP FILTER FRACTION C TOTAL WTS (mg) = -139.70

	FILTER No91027-05	BLANK91027-25
FINAL WT.	0.00	140.00
INT. WT.	139.70	139.90
NET WT.	-139.70	0.10 mg
BLK. CORR	0.00	
FINAL WT.	-139.70 mg	

TOTAL WEIGHTS (mg) = 96.83
TOTAL WEIGHTS (g) = 0.10

(1) DO NOT APPLY ANY WEIGHT LOSS CORRECTION FOR
LIQUID BLANKS.

*BLANK CORR. WT.= FINAL USED WT./INITIAL BLANK WT * NET CHANGE IN BLANK
*ACE. CORR. WT.= RINSE LIQ./BLANK LIQ. * BLANK LIQ. GAIN IN WT.

SWANSON ENVIRONMENTAL, INC.

PLANT: MI SUGAR TEST DATE: 11-14-89 TEST No: P-2
SOURCE: PULP DRIER WTS. DATE: 11-17-89

FRACTION A ACETONE RINSES		FRACTION A TOTAL WTS (mg) =		151.4
ACE. RINSE	ACE BLANK	CONT. BLANK	5A FILTER RINSE	
LIQUID VL	77.00	94.00		0.00
CONT. No.81024-78	90609-40	91031-79		0
FIN. WTS.	1731.60	1568.70	1563.50	0.00
INT. WTS.	1575.30	1562.70	1563.70	0.00
NET WTS.	156.30	6.00	-0.20 mg	0.00
CONT CORR	-0.20	-0.20		-0.20
NET WTS.	156.50	6.20 mg		0.20
ACE CORR.	5.08			5.08
FINAL WTS	151.42 mg		mg	-4.88

FRACTION B FRONT FILTER FRACTION B TOTAL WTS (mg) = 61.90

TEST FILTER	BLANK FILTER
FILTER No80729-14	80801-18
FINAL WT. 38685.80	46455.60
INT. WT. 38623.90	46455.60
NET WT. 61.90	0.00 mg
BLK. CORR 0.00	
FINAL WT. 61.90 mg	

FRACTION C BACK UP FILTER FRACTION C TOTAL WTS (mg) = -141.20

FILTER No91027-07	BLANK91027-25
FINAL WT. 0.00	140.00
INT. WT. 141.20	139.90
NET WT. -141.20	0.10 mg
BLK. CORR 0.00	
FINAL WT. -141.20 mg	

TOTAL WEIGHTS (mg) = 72.12
TOTAL WEIGHTS (g) = 0.07

(1) DO NOT APPLY ANY WEIGHT LOSS CORRECTION FOR LIQUID BLANKS.

*BLANK CORR. WT.= FINAL USED WT./INITIAL BLANK WT * NET CHANGE IN BLANK
*ACE. CORR. WT.= RINSE LIQ./BLANK LIQ. * BLANK LIQ. GAIN IN WT.

SWANSON ENVIRONMENTAL, INC.

PLANT: MI SUGAR TEST DATE: 11-1489 TEST No: P-3
SOURCE: PULP DRIER WTS. DATE: 11-17-89

FRACTION A ACETONE RINSES FRACTION A TOTAL WTS (mg) = 171.7

	ACE. RINSE	ACE BLANK	CONT. BLANK	5A FILTER RINS
LIQUID VL	89.00	94.00		0.00
CONT. No. 90609-38		90609-40	91031-79	0
FIN. WTS.	1729.90	1568.70	1563.50	0.00
INT. WTS.	1552.50	1562.70	1563.70	0.00
NET WTS.	177.40	6.00	-0.20 mg	0.00
CONT CORR	-0.20	-0.20		-0.20
NET WTS.	177.60	6.20 mg		0.20
ACE CORR.	5.87			5.87
FINAL WTS	171.73 mg			mg -5.67

FRACTION B FRONT FILTER FRACTION B TOTAL WTS (mg) = 77.50

	TEST FILTER	BLANK FILTER
FILTER No. 91030-04		80801-18
FINAL WT.	51217.50	46455.60
INT. WT.	51140.00	46455.60
NET WT.	77.50	0.00 mg
BLK. CORR	0.00	
FINAL WT.	77.50 mg	

FRACTION C BACK UP FILTER FRACTION C TOTAL WTS (mg) = -136.40

	FILTER No. 91027-11	BLANK 91027-25
FINAL WT.	0.00	140.00
INT. WT.	136.40	139.90
NET WT.	-136.40	0.10 mg
BLK. CORR	0.00	
FINAL WT.	-136.40 mg	

TOTAL WEIGHTS (mg) = 112.83
TOTAL WEIGHTS (g) = 0.11

(1) DO NOT APPLY ANY WEIGHT LOSS CORRECTION FOR LIQUID BLANKS.

*BLANK CORR. WT. = FINAL USED WT. / INITIAL BLANK WT * NET CHANGE IN BLANK
*ACE. CORR. WT. = RINSE LIQ. / BLANK LIQ. * BLANK LIQ. GAIN IN WT.

SWANSON ENVIRONMENTAL, INC.

TABLE 4

PLANT: MI SUGAR
LOCATION: CARROLLTON
DATE: 11-14-89

PARTICULATE EMISSION RATE

		EMISSION CONC.		EMISSION		
		RATE		RATE		
TEST	TEST	STACK GAS	GRAIN	LBS/1000	LBS/1000	
No.	DATE	FLOW RATE	PER	LBS	LBS DRY	LBS
		(DSCFM)	DSCF	DRY-GAS	50%E A*	HOURL
=====						

P-1	11-14-89	33672	0.0643	0.084	0.251	18.56
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P-2	11-14-89	37871	0.0462	0.064	0.225	14.98
-----	----------	-------	--------	-------	-------	-------

P-3	11-14-89	38795	0.0703	0.100	0.363	23.39
-----	----------	-------	--------	-------	-------	-------

AVERAGE		36779.46	0.06	0.083	0.280	18.98
---------	--	----------	------	-------	-------	-------

* E A = EXCESS AIR

T. 807211a
F 91027-04

SWANSON ENVIRONMENTAL INC

PITOT TRAVERSE DATA

SOURCE

MICH SUGAR -- Carrolton

DATE

TIME

PITOT
NUMBER

STACK DIMENSION

11/14/89 8:30 4 96"

BAROMETRIC(P_a)

STATIC(P_s)

OS

STACK TEMP. T_s

C_p

STACK AREA A_s

WB TEMP. T_{wb}

BWD

29.33 04 828 50.265

SAMPLING
POINT

PITOT P₂₃

STACK
TEMP

SAMPLING
POINT

PITOT P₂₃

STACK
TEMP

	3	0.5	173
	2	0.7	173
	1	0.6	172
W	3	0.2	173
	2	0.3	175
	1	0.3	174
	3	0.3	174
	2	0.4	178
	1	0.4	170
	3	0.4	171
	2	0.5	168
	1	0.5	165

	14	
	18	
	16	
	11	
	12	
	13	
	15	
	16	
	14	
	13	
	13	
	11	



$$V_s = 2.9 C_p \sqrt{\frac{P_s}{T_s} \cdot \frac{1}{P_a} \cdot \frac{29.92}{T_s}}$$

$$Q_s = V_s \cdot A_s$$

$$Q_{scfm} = Q_s \cdot \frac{530}{T_s} \cdot \frac{P_s}{29.92}$$

FIELD DATA SHEET

Molar H_2 1.7824 m. 4.80629

Meter 140 1.12254
Kiss 1549,19578 Y, 1.0050

Assumed Moisture, % WY_____

Probe Length, in. _____

Nozzle Diameter, in. 0Stack Diameter, in. 96"Stack Pressure, in. H_2O 0.3

Sampling train
LEAK TEST Initial 0.005 @ 1
0.00 2

WET BULB TEMPERATURE _____

Volume of Liquid Water Collected	Impinger Volume ml				Sieve Gel Weight
	1	2	3	4	
Final					
Initial					
Liquid Collected					

$V_{1/2}$ Total

Meter Box No. 501-5500-Nil.		LEAK TEST		Initial 0.00		Final 0.02 25.		V _h Total	
SAMPLING POINT	TIME	PITOT ΔP _s	ORIFICE ΔH	DRY GAS METER V _m T _m	METER TEMP. °F	VACUUM T _g	STACK TEMP. °F	FILTER TEMP.	IMPINGER TEMP.
A	2	1040	21	25327	58	45	185		
	2	1045	11	25576	59	30	189	7 min	
	1	1050	18	25768	60	15	188		
S	3	1105	10	25984	62	40	185		
	2	1110	11	26153	64	30	186		
	1	1115	09	26338	65	40	180		
U	3	1122	12	26504	66	60	182		
	2	1127	10	26688	67	40	168		
	1	1132	10	26868	68	12	166		
W	3	1140	14	27052	68	15	175		
	2	1145	18	27240	68	15	169		
	1	1150	11	27466	69	14	165		
		1155		27656					

Orsal Measurement					
Test	Time	CO ₂	O ₂	CO	N ₂
1					
2					
3					
4					

Filter No. 80729-13 COMMENTS: Sampling train

Filter No. 91027-05

PITOT TUBE Initial 0.0
LEAK TEST Final 0.0

$$\Delta H = K_{iso} C_p^2 D^4 \left(1 - \frac{WV}{100}\right)^2 \frac{C_m}{G_s} \frac{P_s}{P_m} \frac{T_m}{T_s} \Delta P_s$$

SWANSON ENVIRONMENTAL INC

FIELD DATA SHEET

Plant MI Sugar Ambient Temperature 29.30 Meter ΔH 4.8029
 Date 11/14/89 Barometric Pressure P_b 29.30 K_{iso} Yd
 Location Canolter Assumed Moisture, % WY 30 WET BULB TEMPERATURE _____
 Operator Andy Probe Length, in. 48"
 Stack No. Drier Nozzle Diameter, in. .310
 Run No. PART. NO P-3 Stack Diameter, in. 96"
 PITOT TUBE NO. 4 C_p 0.828 Stack Pressure, in. H_2O _____
 Meter Box No. SGI-5500-Nick Sampling train LEAK TEST Initial O_2 00.215
 Final O_2 0.28

Volume of Liquid Water Collected	Impinger Volume ml					Sliver Gel Weight
	1	2	3	4	5	
Final						
Initial						
Liquid Collected						

SAMPLING POINT	TIME	PITOT ΔP	ORIFICE ΔH	DRY GAS METER V_m	METER TEMP T_m	VACUUM	STACK TEMP T_s	FILTER TEMP.	IMPINGER TEMP.	V_{ic} Total	
3		110	394	30142							
2		112	449	30317	61	30	175				
1		112	622	30503	58	30	206				
OFF				30722	59	55	211				
3		113	567	30936	60	50	188				
2		126	886	31195	61	50	209				
1		112	450	31390	62	65	214				
OFF											
3		117	646	31618	62	50	200				
2		111	703	31855	62	50	214				
1		115	569	32068	63	65	209				
OFF											
3		112	456	32263	63	50	202				4.0
2		110	374	32436	62	40	211				
1		110	377	32610	62	50	206				

Orsat Measurement					
Test	Time	CO ₂	O ₂	CO	N ₂
1					
2					
3					
4					

Filter No. _____

COMMENTS: Sampling train -

Filter No. _____

PITOT TUBE Initial O_2 0
 LEAK TEST Final O_2 0

$$\Delta H = K_{iso} C_p^2 D^4 \left(1 - \frac{WV}{100}\right)^2 \frac{C_m}{G_s} \frac{P_b}{P_m} \frac{T_m}{T_s} \Delta P_s$$

DATE 11/15/89

Include
in Ring
FINAL W

[illegible]

NAME 111 SUGAR

DATE 11-13-89

SOURCE

IMPINGER DATA

	INITIAL		FINAL		Δ	
	Vol(ml)	WT(gm)	Vol(ml)	WT(gm)	Vol(ml)	WT(gm)
1- #3						
#1	100 ML	DI	349		249	
#2	100 ML	DI	200		100	
#3			1		1	
#4	805.3 g		817.7		12.7	
#5					362.7	
2- #1						
#1	100 ML	DI	400		300	310.4
#2	100 ML	DI	37		-6.3	6
#3			1		1	
#4	787.8 g		792.2		9.4	304
#5					304.1	
2- #2						
#1	100 ML	DI	355		255	
#2	100 ML	DI	112		12	
#3			1		1	
#4	841.1 g		851.5		10.4	
#5					278.4	

NOTES -

LOCATION Mt. Sugar Corral

BEI JOB • MA-5490

[illegible]

SWANSON ENVIRONMENTAL, INC.

PITOT TRAVERSE DATA

PLANT:	MI SUGAR	PITOT No.	4.00	STACK PRES. In. H2O	0.00
DATE:	11-16-89	STACK DIA.	96.00	STACK TEMP. F.	175.00
TIME:	9:30 AM	B.P. In.Hg.	28.85	STACK AREA Sq.Ft.	50.27
WB. TEMP	0.00	DB. TEMP.	0.00	SAMPLE POINTS	12.00
		Cp :	0.83	Ps:	28.85

SAMPLE POINTS	PITOT SQRT	PITOT DELTA	STACK TEMP
1	1.00	1.00	201.00
2	0.97	0.95	196.00
3	0.89	0.80	194.00
4	1.05	1.10	186.00
5	1.26	1.60	189.00
6	1.22	1.50	188.00
7	0.95	0.90	185.00
8	1.05	1.10	180.00
9	1.00	1.00	185.00
10	1.07	1.15	208.00
11	1.18	1.40	208.00
12	0.35	0.13	208.00

AVERAGES: 1.00 194.00

1). Vs= 3756.16

2). Qs= 188804.99

3). Qscfm= 147535.25

$V_s = 2.9 \text{ Cp } 60 \text{ SQRT}(T_s \cdot \text{DELTA} - P) \cdot \text{SQRT}(29.92 / P_s \cdot 1 / G_s)$

$Q_s = V_s \cdot A_s \text{ AND } Q_{scfm} = Q_s \cdot 530 / (T_s + 460) \cdot P_s / 29.92$

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SWANSON ENVIRONMENTAL INC.

TEST No.: P-1

PLANT: MI SUGAR PITOT No: 4.00 CALIBRATION PITOT: 0.8280
 DATE: 11-16-89 METER BOX: NUTECH NOZ. DIA. Inches : 0.310
 LOCATION: CARROLLTON AMB TEMP F. 34.00 STACK DIA. Inches : 96.00
 OPERATOR: D. LARIN B.P. In.Hg. 28.85 STACK PRESS In. H2O: 4.20
 SOURCE: PULP DRIER ASSUMED %M: 30.0 H2O VOL. Ml. : 107.800
 LEAK TST: 0.01 METER DEL-H 1.78 METER f: 4.806
 Hg INT.: 15.00 Kiso: 1549.196 Yd: 1.005
 LEAK TST: 0.00 PROBE LEN: 48.00 SAMPLE PTS: 12
 Hg FIN.: 10.00 W.B.TEMP F. 135.00 TOT.TIME: 60.00

SAMPLE POINTS	PITOT SQRT	ORIFICE No.	DRY GAS	METER TEMP F	STACK TEMP F	PITOT DELTA
1	0.40	0.32	339.42	44.00	193.00	0.16
2	0.48	0.87	341.00	42.00	176.00	0.23
3	0.28	0.30	343.25	45.00	188.00	0.08
4	0.33	0.41	344.81	44.00	193.00	0.11
5	0.32	0.37	346.82	48.00	198.00	0.10
6	0.30	0.34	348.41	51.00	185.00	0.09
7	0.40	0.59	350.01	52.00	197.00	0.16
8	0.37	0.53	352.31	54.00	195.00	0.14
9	0.37	0.53	354.14	56.00	196.00	0.14
10	0.39	0.59	356.67	58.00	173.00	0.15
11	0.44	0.72	358.57	59.00	200.00	0.19
12	0.36	0.50	361.13	62.00	197.00	0.13
OFF			362.16			

FINAL # 0.37 0.51 23.29 51.25 190.92

SWANSON ENVIRONMENTAL INC.

TEST No.: P-2

PLANT: MI SUGAR PITOT No: 4.00 CALIBRATION PITOT: 0.8280
 DATE: 11-16-89 METER BOX: NUTECH NOZ. DIA. Inches : 0.310
 LOCATION: CARROLLTON AMB TEMP F. 32.00 STACK DIA. Inches : 96.00
 OPERATOR: D. LARIN B.P. In.Hg. 28.85 STACK PRESS In. H2O: 4.20
 SOURCE: PULP DRIER ASSUMED %M: 30.0 H2O VOL. Ml. : 293.300
 LEAK TST: 0.01 METER DEL-H 1.78 METER f: 4.806
 Hg INT.: 15.00 Kiso: 1549.196 Yd: 1.005
 LEAK TST: 0.00 PROBE LEN: 48.00 SAMPLE PTS: 12
 Hg FIN.: 13.00 W.B.TEMP F. 135.00 TOT. TIME: 60.00

SAMPLE POINTS	PITOT SQRT	ORIFICE No:	DRY GAS	METER TEMP	STACK TEMP	PITOT DELTA
1	0.35	0.45	362.50	49.00	192.00	0.12
2	0.46	0.78	364.45	48.00	195.00	0.21
3	0.33	0.42	366.56	51.00	188.00	0.11
4	0.33	0.42	368.41	54.00	192.00	0.11
5	0.36	0.49	370.11	56.00	196.00	0.13
6	0.30	0.34	371.72	57.00	190.00	0.09
7	0.39	0.57	373.53	57.00	195.00	0.15
8	0.41	0.65	375.51	57.00	189.00	0.17
9	0.33	0.43	377.91	58.00	184.00	0.11
10	0.47	0.85	379.96	59.00	186.00	0.22
11	0.42	0.68	381.35	59.00	198.00	0.18
12	0.33	0.42	384.53	61.00	193.00	0.11
OFF			386.58			

FINAL # 0.37 0.54 24.17 55.50 191.50

SWANSON ENVIRONMENTAL INC.

TEST No.: P-3

PLANT: MI SUGAR PITOT No: 4.00 CALIBRATION PITOT: 0.8280
 DATE: 11-16-89 METER BOX: NUTECH NOZ. DIA. Inches : 0.310
 LOCATION: CARROLLTON AMB TEMP F. 37.00 STACK DIA. Inches : 96.00
 OPERATOR: D. LARIN B.P. In.Hg. 28.85 STACK PRESS In. H2O: 4.20
 SOURCE: PULP DRIER ASSUMED %M: 30.0 H2O VOL. Ml. : 202.700
 LEAK TST: 0.00 METER DEL-H 1.78 METER f: 4.806
 Hg INT.: 15.00 Kiso: 1549.196 Yd: 1.005
 LEAK TST: 0.00 PROBE LEN: 48.00 SAMPLE PTS: 12
 Hg FIN.: 10.00 W.B.TEMP F. 135.00 TOT. TIME: 60.00

SAMPLE POINTS	PITOT SQRT	ORIFICE No.	DRY GAS	METER TEMP	STACK TEMP	PITOT DELTA
1	0.33	0.43	387.45	54.00	180.00	0.11
2	0.33	0.42	389.20	55.00	194.00	0.11
3	0.37	0.54	390.94	57.00	188.00	0.14
4	0.33	0.42	393.38	53.00	180.00	0.11
5	0.35	0.45	395.31	49.00	193.00	0.12
6	0.30	0.34	396.87	50.00	195.00	0.09
7	0.33	0.42	398.31	50.00	183.00	0.11
8	0.45	0.73	400.16	51.00	210.00	0.20
9	0.33	0.41	402.38	52.00	201.00	0.11
10	0.42	0.66	404.22	51.00	210.00	0.18
11	0.42	0.67	406.21	53.00	207.00	0.18
12	0.44	0.71	408.78	55.00	201.00	0.19
OFF			410.61			

FINAL # 0.37 0.52 24.68 52.50 195.17

SWANSON ENVIRONMENTAL, INC.
PARTICULATE SAMPLING DATA AND CALCULATIONS

PLANT: MI SUGAR
DATE: 11-16-89

SOURCE: PULP DRIER

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	CLOCK TIME:	60.00	60.00	60.00
1.00 NUMBER		P-1	P-2	P-3
B. STACK DIAMETER, In		96.00	96.00	96.00
C. STACK AREA, Sq.Ft		50.27	50.27	50.27
D. No. SAMPLE POINTS		12.00	12.00	12.00
E. TOTAL SAMPLE TIME, MIN.		60.00	60.00	60.00
F. NOZZLE DIAMETER, In.		0.310	0.310	0.310
G. NOZZLE AREA, Sq.Ft.		0.00052	0.00052	0.00052
H. CALIBRATION FACTORS:				
PITOT TUBE, Cp		0.828	0.828	0.828
GAS METER, y		1.005	1.005	1.005
I. BAROMETRIC PRESSURE,		28.85	28.85	28.85
In.Hg.				
J. STACK STATIC PRESSURE		4.20	4.20	4.20
In.H2O				
K. STACK GAS TEMP.		190.92	191.50	195.17
L. AVG. Sq. Rt. VEL. HEAD		0.37	0.37	0.37
M. AVG. METER TEMP.		51.25	55.50	52.50
N. AVG. METER PRESS., H2O		0.51	0.54	0.52
O. METER VOL., ACTUAL				
Cu. Ft.		23.29	24.17	24.68
P. METER VOL., @STP		23.43	24.11	24.77
Q. LIQUID VOL., H2O COND.,		107.80	293.30	202.70
Ml.				
R. VAPOR VOL., H2O COND.,		5.11	13.90	9.61
@STP, Cu.Ft.				
S. TOTAL GAS SAMPLED,		28.54	38.02	34.37
@ STP, Cu.Ft.				
T. %MOISTURE IN EXHAUST GAS				
1) AT TEST LOCATION		17.91	36.57	27.95
2) BEFORE COLLECTOR		0.00	0.00	0.00
U. DRY GAS COMP. %O2		16.7	15.8	14.2
%CO2		2.0	3.3	3.5
%CO		0.0	0.0	0.0
%N2		81.3	81.0	82.7
V. DENSITY & MOL. Wt. -STACK GAS				
1) DRY, @ STP, Lbs/Cu.Ft.		0.0749	0.0754	0.0755
2) WET, @ STP, Lbs/Cu.Ft.		0.0698	0.0648	0.0674
3) WET @ STACK, Lbs/Cu.Ft.		0.0548	0.0508	0.0526
4) MOL.Wt., @ STP, Lb/MOLE		28.99	29.17	29.22
W. WEIGHT OF GAS SAMPLED:				
1) DRY GAS, Lbs		1.76	1.82	1.87
2) WET GAS, Lbs		1.99	2.46	2.32
X. TOTAL PARTICULATE COLLECTED		0.0624	0.0748	0.0896

	(GRAMS)			
Y. AVERAGE GAS VELOCITY, FPM	1434.72	1504.07	1454.58	
Z. STACK GAS FLOW RATE				
1)AT STACK, Qa, ACFM	72117	75603	73115	
2)AT Std., Qstd, SCFM	56620	59304	57032	
3)Std. DRY, Qdg, SCFM	46482	37617	41090	
AA. PERCENT EXCESS AIR	345.36	280.21	184.49	
BB. CONCENTRATION CONVERSION FACTORS:				
1)50% E.A., AFTER COLLECTOR	2.44	1.81	1.63	
2)50% E.A., BEFORE COLLECTOR	3.45	3.43	2.39	
3)MOISTURE BEFORE COLLECTOR	1.14	1.36	1.24	
CC. PARTICULATE CONCENTRATION:				
1)Lbs/1000 Lbs., ACTUAL	0.069	0.067	0.085	
2)Lbs/1000 Lbs., DRY	0.078	0.091	0.106	
3)Lbs/1000 Lbs., WET @ 50%E.A	0.169	0.121	0.139	
4)Lbs/1000 Lbs., DRY @ 50%E.A	0.238	0.230	0.203	
5)GRAINS / DSCF	0.0411	0.0478	0.0558	
6)POUNDS / HOUR	16.37	15.42	19.65	
DD. PERCENT ISOKINETIC	79.70	101.38	95.31	

SWANSON ENVIRONMENTAL, INC.

TABLE 4

PLANT: MI SUGAR
LOCATION: CARROLLTON
DATE: 11-16-89

PARTICULATE EMISSION RATE

TEST No.	TEST DATE	STACK GAS FLOW RATE (DSCFM)	EMISSION CONC. RATE		EMISSION RATE	
			GRAIN PER DSCF	LBS/1000 LBS GAS	LBS/1000 LBS DRY 50%E A*	LBS HOUR
P-1	11-16-89	46482	0.0411	0.069	0.238	16.37
P-2	11-16-89	37617	0.0478	0.067	0.230	15.42
P-3	11-16-89	41090	0.0558	0.085	0.203	19.65
AVERAGE		41729.76	0.05	0.074	0.224	17.15

* E A = EXCESS AIR

FRACTION A ACETONE RINSES FRACTION A TOTAL WTS (mg) = 37.50

	ACE. RINSE	ACE BLANK	CONT. BLANK	5A FILTER RINS
LIQUID VL	168.00	154.00		0.00
CONT. No.	91031-88	91031-91	91031-92	0
FIN. WTS.	1608.80	1558.20	1557.90	0.00
INT. WTS.	1570.30	1557.80	1556.90	0.00
NET WTS.	38.50	0.40	1.00 mg	0.00
CONT CORR	1.00	1.00		1.00
NET WTS.	37.50	0.00 mg		-1.00
ACE CORR.	0.00			0.00
FINAL WTS	37.50 mg			mg 0.00

FRACTION B FRONT FILTER FRACTION B TOTAL WTS (mg) = 40.59

	TEST FILTER	BLANK FILTER
FILTER No	80729-21	80418-22
FINAL WT.	56676.90	50075.00
INT. WT.	56637.10	50075.70
NET WT.	39.80	-0.70 mg
BLK. CORR	-0.79	
FINAL WT.	40.59 mg	

FRACTION C BACK UP FILTER FRACTION C TOTAL WTS (mg) = -15.65

	FILTER No	BLANK	
	91027-08	91027-09	
FINAL WT.	125.40	143.70	
INT. WT.	140.70	143.30	
NET WT.	-15.30	0.40 mg	
BLK. CORR	0.35		
FINAL WT.	-15.65 mg		

TOTAL WEIGHTS (mg) = 62.44
TOTAL WEIGHTS (g) = 0.06

(1) DO NOT APPLY ANY WEIGHT LOSS CORRECTION FOR
LIQUID BLANKS.

*BLANK CORR. WT.= FINAL USED WT./INITIAL BLANK WT * NET CHANGE IN BLANK
*ACE. CORR. WT.= RINSE LIQ./BLANK LIQ. * BLANK LIQ. GAIN IN WT.

FRACTION A ACETONE RINSES FRACTION A TOTAL WTS (mg) = 32.3

	ACE. RINSE	ACE BLANK	CONT. BLANK	5A FILTER RINSE
LIQUID VL	167.00	154.00		0.00
CONT. No.	91031-89	91031-91	91031-92	0
FIN. WTS.	1586.70	1558.20	1557.90	0.00
INT. WTS.	1553.40	1557.80	1556.90	0.00
NET WTS.	33.30	0.40	1.00 mg	0.00
CONT CORR	1.00	1.00		1.00
NET WTS.	32.30	0.00 mg		-1.00
ACE CORR.	0.00			0.00
FINAL WTS	32.30 mg			mg 0.00

FRACTION B FRONT FILTER FRACTION B TOTAL WTS (mg) = 48.28

	TEST FILTER	BLANK FILTER
FILTER No	80729-17	80418-22
FINAL WT.	55820.80	50075.00
INT. WT.	55773.30	50075.70
NET WT.	47.50	-0.70 mg
BLK. CORR	-0.78	
FINAL WT.	48.28 mg	

FRACTION C BACK UP FILTER FRACTION C TOTAL WTS (mg) = -5.77

	FILTER No 91027-12	BLANK 91027-09
FINAL WT.	133.40	143.70
INT. WT.	138.80	143.30
NET WT.	-5.40	0.40 mg
BLK. CORR	0.37	
FINAL WT.	-5.77 mg	

TOTAL WEIGHTS (mg) = 74.81
TOTAL WEIGHTS (g) = 0.07

(1) DO NOT APPLY ANY WEIGHT LOSS CORRECTION FOR
LIQUID BLANKS.

*BLANK CORR. WT.= FINAL USED WT./INITIAL BLANK WT * NET CHANGE IN BLANK
*ACE. CORR. WT.= RINSE LIQ./BLANK LIQ. * BLANK LIQ. GAIN IN WT.

FRACTION A ACETONE RINSES FRACTION A TOTAL WTS (mg) = 86.6

	ACE. RINSE	ACE BLANK	CONT. BLANK	5A FILTER RINS
LIQUID VL	174.00	154.00		0.00
CONT. No.	91031-90	91031-91	91031-92	0
FIN. WTS.	1641.40	1558.20	1557.90	0.00
INT. WTS.	1553.80	1557.80	1556.90	0.00
NET WTS.	87.60	0.40	1.00 mg	0.00
CONT CORR	1.00	1.00		1.00
NET WTS.	86.60	0.00 mg		-1.00
ACE CORR.	0.00			0.00
FINAL WTS	86.60 mg			mg 0.00

FRACTION B FRONT FILTER FRACTION B TOTAL WTS (mg) = 23.67

	TEST FILTER	BLANK FILTER
FILTER No	80418-21	80418-22
FINAL WT.	55006.70	50075.00
INT. WT.	54983.80	50075.70
NET WT.	22.90	-0.70 mg
BLK. CORR	-0.77	
FINAL WT.	23.67 mg	

FRACTION C BACK UP FILTER FRACTION C TOTAL WTS (mg) = -20.64

	FILTER No	BLANK	
	91027-19	91027-09	
FINAL WT.	121.40	143.70	
INT. WT.	141.70	143.30	
NET WT.	-20.30	0.40 mg	
BLK. CORR	0.34		
FINAL WT.	-20.64 mg		

TOTAL WEIGHTS (mg) = 89.63
TOTAL WEIGHTS (g) = 0.09

(1) DO NOT APPLY ANY WEIGHT LOSS CORRECTION FOR
LIQUID BLANKS.

*BLANK CORR. WT.= FINAL USED WT./INITIAL BLANK WT * NET CHANGE IN BLANK
*ACE. CORR. WT.= RINSE LIQ./BLANK LIQ. * BLANK LIQ. GAIN IN WT.

M	I	C	H	S	U	G	A	R	-	C	a	r	r	o	l	t	o	n
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TIME

**PITOT
NUMBER**

STACK DIMENSION

NUMBER										STACK DIMENSION		
11	16	88	820					4			96	"

BAROMETRIC

STATIC(P)

03

STACK TEMP. T.

C

STACK AREA

WB TEMP.

B wq

STATION					STATION TEMP.					STATION AREA					WG TEMP.		DWG	
			2885		24					828	50	27						

**SAMPLING
POINT**

PITOT (4)

STACN
TEMP

SAMPLING

PITOT (b)

STACK
TEMP

[illegible]

$$V_s \approx 2.9 C_p 60 \sqrt{T_s' a_p} \sqrt{\frac{29.92}{P_s} \cdot \frac{1}{O_s}}$$

$$Q_2 = V_2 \cdot A_2$$

• 000532

[illegible]

$$Q_{acfm} = Q_p \cdot \frac{530}{T_p} \cdot \frac{P_s}{29.92}$$

SWANSON ENVIRONMENTAL INC

FIELD DATA SHEET

Plant CARROLLTON Ambient Temperature 34 Meter $\pm H_0$ 1.7824 M_1 480628
 Date 11-16-89 Barometric Pressure P_b H_g 28.85 K_{iso} 1549.79584 1.0050
 Location _____ Assumed Moisture, % WY 30 WET BULB TEMPERATURE _____
 Operator DJL Probe Length, in. _____
 Stack No. 1 Nozzle Diameter, in. D .000532
 Run No. PART. NO T-1 Stack Diameter, in. 96
 PITOT TUBE NO. C, D. 828 Stack Pressure, in. H_2O 4.2
 Meter Box No. 501-5300- Nutech Sampling train LEAK TEST Initial Q_0 0.006 @ 15
 Final Q_0 0.001 @ 10

Volume of Liquid Water Collected	Impinger Volume ml				Silica Gel Weight
	1	2	3	4	
Final					
Initial					
Liquid Collected					

	SAMPLING POINT	TIME	PITOT ΔP_s	ORIFICE ΔH	DRY GAS METER V_m	METER TEMP. T_m	VACUUM	STACK TEMP. T_s	FILTER TEMP.	IMPINGER TEMP.	V_{ic} Total	
u	3	11 11	08	32	33942	44	20	183				
	2	11 16	23	87	34100	42	50	176				
	1	11 21	08	30	34325	45	40	188				
					34481							
N	3	11 35	11	408	34481	44	60	193				
	2	11 40	10	57	34682	48	100	198				
	1	11 45	09	34	34841	51	90	185				
					35001							
S	3	11 53	16	59	35001	52	10	197				
	2	11 58	14	579	35231	54	90	195				
	1	12 03	14	529	35494	56	70	190				
					35667							
2	3	12 10	15	590	35667	58	20	173				
	2	12 15	19	798	35857	59	50	200				
	1	12 20	13	494	36113	62	40	197				
					36216							

Orsat Measurement					
Test	Time	CO ₂	O ₂	CO	N ₂
1					
2					
3					
4					

Filter No. 80729-21 COMMENTS: Sampling train -

Filter No. 91027-08

PITOT TUBE LEAK TEST Initial Q_0 0 Final Q_0 0

$$\frac{1}{15} \times MF \times DP$$

$$\Delta H = K_{iso} C_p^2 D^4 \left(1 - \frac{WV}{100}\right)^2 \frac{C_m}{G_s} \frac{P_s}{P_m} \frac{T_m}{T_s} \Delta P_s$$

SWANSON ENVIRONMENTAL INC.

FIELD DATA SHEET

Plant Carrollton Ambient Temperature 32 Meter ΔH 1.7824 M 4.80628
 Date 11/16/89 Barometric Pressure P_b Hg K_{100} 1549.19528 Y 1.0050
 Location Carrollton Assumed Moisture, % WY WET BULB TEMPERATURE _____
 Operator DJL Probe Length, in. _____
 Stack No. 1 Nozzle Diameter, in. D _____
 Run No. PART. NO P-2 Stack Diameter, in. 94 _____
 PITOT TUBE NO. C, 0.828 Stack Pressure, in. H_2O 4.2 _____
 Meter Box No. 501-5500 Sampling train LEAK TEST Initial 0.005 @ 15"
notech Final 0.002 @ 13"

Volume of Liquid Water Collected	Impinger Volume ml				Sieve Gr. Weight
	1	2	3	4	
Final					
Initial					
Liquid Collected					

SAMPLING POINT		TIME	PITOT	ORIFICE	DRY GAS	METER	VACUUM	STACK	FILTER	IMPINGER	V _g Total	
		0	ΔP_s	ΔH	METER	TEMP		TEMP	TEMP	TEMP		
W	3	147	12	450	36250	49	20	192				
	2	152	21	782	36445	48	40	195				
	1	159	11	417	36656	51	70	188				
					36841	57						
	3	202	11	416	36841	54	80	192				
	2	207	13	491	37011	56	40	196				
	1	212	09	344	37172	57	90	190				
					37353							
	3	221	15	570	37353	58	90	195				
	2	226	17	651	37551	57	100	189				
	1	231	11	425	37791	58	100	184				
					37996	59						
	3	237	22	850	37996	59	180	186				
	2	242	18	682	38135	59	70	198				
	1	249	11	422	38453	61	50	193				
					38658							

Orsat Measurement					
Test	Time	CO ₂	O ₂	CO	N ₂
1					
2					
3					
4					

Filter No. 00729-17 COMMENTS: Sampling train —

Filter No. 91021-12

PITOT TUBE Initial 0
 LEAK TEST Final 0

$$\Delta H = K_{100} C_p^2 D^4 \left(1 - \frac{WV}{100}\right)^2 \frac{G_m}{G_s} \frac{P_s}{P_m} \frac{T_m}{T_s} \Delta P_s$$

SWANSON ENVIRONMENTAL INC.

FIELD DATA SHEET

Plant M1 Sugar - Carrollton Ambient Temperature 83.7 Meter ΔH 1.7824 M 4.80628
 Date 11-16-89 Barometric Pressure P_b 28.85 K 1549.9528 Y 1.0050
 Location Carrollton Assumed Moisture, % WY 30 WET BULB TEMPERATURE _____
 Operator DJL Probe Length, in. _____
 Stack No. 1 Nozzle Diameter, in. 5/16
 Run No. PART. NO P-3 Stack Diameter, in. 94
 PITOT TUBE NO. 4 C, 0.828 Stack Pressure, in. H_2O 4.2
 Meter Box No. SGI-5500- Sampling train LEAK TEST Initial Q_c 0.001 @ 15" Final 0.001 @

Volume of Liquid Water Collected	Impinger Volume ml				Silica Gel Weight
	1	2	3	4	
Final					
Initial					
Liquid Collected					

SAMPLING POINT		TIME	PITOT	ORIFICE	DRY GAS	METER	VACUUM	STACK	FILTER	IMPINGER	V _g Total	
		θ	ΔP_s	ΔH	METER	V_{ml/m^3}	T_m	T_s	TEMP.	TEMP.		
	3	329	11	425	38745	54	30	180				
	2	334	11	416	38920	55	30	194				
	1	339	14	537	39094	57	40	188				
					37338							
	3	625	11	424	39338	58	70	180				
	2	630	12	450	39531	49	60	193				
	1	635	09	337	39687	50	80	195				
					39831							
	3	642	11	419	39831	50	80	183				
	2	647	20	733	40016	51	180	210				
	1	652	11	409	40238	52	56	201				
					40422							
	3	701	18	660	40422	51	80	210				
	2	704	18	665	40621	53	180	207				
	1	711	19	706	40878	55	70	201				
					41061							

Orsat Measurement					
Test	Time	CO ₂	O ₂	CO	N ₂
1					
2					
3					
4					

Filter No. -21 COMMENTS: Sampling train -
 Filter No. -19

PITOT TUBE Initial Q_c @
 LEAK TEST Final Q_c @

$$\Delta H = K_{100} C_p^2 D^4 \left(\frac{1-WY}{100} \right)^2 \frac{C_m}{Q_s} \frac{P_s}{P_m} \frac{T_m}{T_s} \Delta P_s$$

M.F.

2nd Asp

Thimbles & Filters.

pertains to sampling on 11/16/89
C. Corbett, ME

DATE 11-15-89

SOURCE Carrollton

IMPINGER
DATAINITIAL
Vol(ml) WT(gm)FINAL
Vol(ml) WT(gm) Δ
Vol(ml) WT(gm)

S-1

#1 100 ml

218.0 ml

118 g

#2 100 ml

87.0 ml

- 13 g

#3

#4 816.8 g

819.6 g

2.8 g

#5 ~~816.8~~

107.8

S-2

#1 100 ml

450.0 ml

350.0 g

#2 100 ml

38.0 ml

- 62 g

#3

#4 797.2 g

802.5 g

5.3 g

#5

293.3

S-3

#1 100 ml

358 ml

258 g

#2 100 ml

40.0 ml

- 60 g

#3

#4 851.5

856.2 g

4.7 g

#5

202.7

NOTES -

LOCATION

Carrollan MSC

11/16/89

over 1000
undigested

~~SEE JOB~~

71A-5490

RESULTS

[illegible]

Michigan Sugar Company**GENERAL OFFICES**

4800 Fashion Square Boulevard

P. O. Box 1348

Saginaw, Michigan 48605

Telephone (517) 799-7300

FAX (517) 799-1836

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MESSAGE:

per your Request

Joe

CARROLLTON FACTORY

NO. DAYS SLICED 48
BEGINNING 7:00 A.M.

TUE DATE 11/14/89

DIFFUSER DATA

TEMPERATURE										DIFFUSER WATER		DIFFUSION JUICE			SUGAR			WEIGHTOMETER		KNIFE CHANGE		REMARKS				
DRUM										TEMP.	FL.	PH	B1	MR.	PM	PRESS WATER	COGS	INTG.	TONS	TIME	SUCER					
1	2	3	4	5	6	7	8	9	10	IN	OUT	1	2	3	4	5	6	7	8	9	10	1				
47	75	72	70	70	68	91	65	75	50	54	30	77	235	14.6	93.1	16.9	81	130	7810	130	10:30	2				
47	73	71	70	69	64	87	66	74	81	84	80	97	235			17.2	80	164	7510	130	1:45	1				
47	74	71	70	70	70	88	66	74	82	81	82	97	235	14.5	92.4	17.0	82	159	8070	130						
47	75	71	70	71	71	85	67	73	82	85	81	97	235	14.4	91.3	17.2	81	130	8290	130						
47	74	72	70	70	71	86	67	73	81	85	81	96	235				82	135	8460	130						
47	74	72	70	71	71	87	67	73	82	85	82	97	235	14.0	92.1		82	138	8540	130						
47	75	72	71	71	71	88	67	74	81	84	81	96	235	14.7	91.2	16.6	81	112	8720	130						
47	75	72	70	70	70	90	67	74	82	84	81	97	235	14.9	91.9	16.6	80	179	8980	130	7:35	#2				
47	75	72	70	70	70	90	67	74	82	84	80	96	235			16.8	78	177	9110	130						
47	75	71	70	70	70	95	66	74	80	84	81	97	235	14.3	89.5		79	169	9340	130						
47	75	71	70	70	70	95	67	74	82	84	80	97	235	14.3	89.5	17.2	80	169	9370	130						
47	75	72	70	70	70	95	67	74	82	84	81	97	235	14.1	91.2	16.8	82	169	9630	130						
47	75	72	70	70	70	95	67	74	82	84	80	97	235				78	166	9760	130						
47	75	72	70	70	69	84	64	75	80	85	80	96	235	14.4	91.0	16.6	78	172	9890	130	1:15	#1				
47	74	71	70	70	69	86	64	75	80	85	80	96	235	14.2	90.8		79	172	0020	130	3:30	#2				
47	74	71	70	70	69	83	67	75	81	86	81	96	235	14.7	91.2		78	159	0150	130	5:55	#2				
47	74	71	70	70	70	84	64	75	81	85	81	96	235			17.5	78	161	0280	130						
47	74	71	70	70	70	85	64	75	81	86	81	96	235	14.3	90.6	16.7	81	151	0410	130						
47	74	71	70	70	70	85	65	75	80	85	80	96	235				80	146	0540	130						
47	74	71	70	70	70	84	66	75	80	85	80	96	235	14.6	90.4	17.0	81	153	0670	130						
47	74	71	70	70	70	85	68	73	80	84	81	97	235				81	153	0789	125						
																						500 TANK	12:30			
																							1024			

SHIFT I: TONS SLICED
AYR

SHIFT II: TONS SLICED
DELAYS:

SHIFT III: TONS SLICED
DELAYS:

HOUR	LINE CAGE			LINE SEWER % SUGAR	MILK OF LIME Be	LIMED JUICE % CaO per 100 ml	KILN GAS % CO ₂	MOLASSES PRODUCED		APP. PURITY	BH	BWP.
	1ST % SUGAR	2ND % SUGAR	3RD % SUGAR COMPOSITE					BRUX	POL.			
7 AM	.01		.01			.80	1.3	3.00	82.9	52.40	63.2	8.50
8 AM						1.00	1.30		83.7	50.40	60.7	8.40
9 AM							1.50					
10 AM						.80	1.80					
11 AM							1.30					
12 PM						.90	1.50					
1 PM							1.50					
2 PM							1.50					
1ST AVG.	.01		.01			.83	1.32	3.00	83.30	51.40	61.95	8.50
3 PM	.04	.06				.80	1.50	2.80	82.1	51.00	62.1	8.30
4 PM							1.60		86.2	51.40	59.6	8.30
5 PM						.80	1.50					
6 PM							1.50					
7 PM						1.00	1.60					
8 PM							1.60					
9 PM						.80	1.40					
10 PM							1.50					
2ND AVG.	.04	.06				.85	1.53	2.80	84.20	51.20	60.85	8.30
11 PM	.08	1.40				.80	1.40		82.9	51.00	61.5	8.30
12 AM	.02						1.20		82.9	50.60	61.0	8.10
1 AM						.70	1.40					
2 AM							.90					
3 AM						.50	1.00					
4 AM							1.00					
5 AM						.50	1.30					
6 AM							1.30					
3RD AVG.	.06	1.40				.58	1.19		82.90	50.80	61.25	8.20
24HR AVG.	.04	.73	.01			.75	1.34	2.90	83.50	51.13	61.35	8.30

HOUR	MOLASSES PRODUCED		WET % MOIST.	PRESS % MOIST.	RUP % MOIST.	DRY % SUGAR	FILLET		CONDENSED WATER		SEN. TANK % SUGAR
	TRUE PURITY	% CO ₂					% MOIST.	% SUGAR	BOILER FEED	HOUSE HOT	
7 AM				77.00	11.22		10.54	5.60			
8 AM				78.00	10.78		9.60	4.80			
9 AM											
10 AM											
11 AM											
12 PM											
1 PM											
2 PM											
1ST AVG.				77.50	11.00		10.07	5.20			
3 PM				75.00	9.05		9.60	4.80			
4 PM				74.00	11.22		11.62	5.60			
5 PM											
6 PM											
7 PM											
8 PM											
9 PM											
10 PM											
2ND AVG.				74.50	10.14		10.61	5.20			
11 PM				76.00	9.88		10.90	4.20			
12 AM				74.00	8.27		9.40	4.00			
1 AM											
2 AM											
3 AM											
4 AM											
5 AM											
6 AM											
3RD AVG.				75.00	9.05		10.15	4.10			
24HR AVG.				75.67	10.05		10.28	4.83			

CARROLLTON FACTORY

DIFFUSER DATA

NO. DAYS SLICING 50
BEGINNING 7:00 A.M.
DEER DATE 11/16/89

Thru 2 Nov

3:55

TEMPERATURE										DIFFUSER WATER		DIFFUSER JUICE		SUGAR		WEIGHTOMETER		KNIFE CHANGE		REMARKS									
DRUM										SPIRAL HEATER		CIRL. JUI.		FL		PH		PRESS WATER			CORES		INTRO.		TONS		TIME		SUCR
1	2	3	4	5	6	7	8	9	10	OUT	IN	OUT	IN	TEMP.	PH	PH	PH	WATER	WATER	WATER	WATER	INTRO.	TONS	TIME	SUCR	TIME	SUCR		
17	74	71	70	71	71	70	70	71	71	72	84	80	97	225	15.6	92.2	16.6	82	135	4034	125	1105	2	50	2	8:00 A.M.			
17	74	71	70	70	70	70	70	70	70	72	80	84	97	220	15.6	92.2	16.6	82	140	4154	125								
17	74	71	70	70	70	70	70	70	70	72	81	84	97	225	15.0	92.7	17.6	81	144	4284	125								
47	74	71	70	70	70	70	70	70	70	72	80	84	97	225	14.5	91.3	17.6	83	099	4509	130						1015		
47	74	71	70	70	70	70	70	70	70	72	80	84	97	225	14.6	92.4		82	092	4669	130								
47	74	71	70	69	70	87	66	72	72	80	84	90	96	225	14.6	92.4		82	127	4799	125								
47	74	71	70	70	70	90	65	78	80	84	81	96	96	225	14.5	91.7	17.0	81	109	4924	125								
47	74	71	70	70	70	90	64	71	81	84	81	96	96	225	14.5	91.7	17.0	81	164	5049	75	3:45	1	6:30	1	DOWN 3:35 TO 5:05			
47	74	71	70	70	70	90	64	71	81	84	81	96	96	225	14.5	91.7	17.0	81	140	5124	90						ELECTRIC MOTOR FAILED		
47	74	71	70	70	70	90	64	71	81	84	81	96	96	225	14.5	91.7	17.0	81	135		90						WALINE PLUG BEAT TO		
47	74	71	70	68	68	67	64	59	73	82	84	81	97	225	13.7	90.5	16.8	67	125	5314	111						down		
47	73	69	66	65	63	85	58	72	81	84	81	96	96	225	13.7	90.5	16.8	68	130	5325	125								
47	73	68	66	66	66	65	86	61	72	82	84	82	96	225	14.6	90.4	16.2	77	134	5450	125						706		
47	73	68	66	66	66	65	86	63	71	80	84	81	96	225	14.6	90.4	16.2	80	147	5575	120								
47	73	68	66	66	66	66	92	63	72	82	84	82	97	225	14.2	89.4	15.4	78	156	5695	120								
47	72	68	67	67	67	67	67	63	73	82	84	82	97	225	14.2	89.4	15.4	77	143	5815	125	11:50	12						
47	73	69	67	67	67	67	67	63	73	80	84	81	97	225	14.0	90.0	16.6	77	143	5940	125								
47	73	69	67	67	67	67	67	67	73	82	85	82	97	225	14.0	90.0	16.6	77	135	6190	125								
47	73	69	67	67	67	67	67	67	73	82	85	82	97	225	14.4	89.2	16.9	75	153	6190	123								
47	73	69	67	67	67	67	67	67	73	82	85	82	97	220	14.4	89.2	16.9	75	172	6313	123								
47	73	69	67	67	67	67	67	67	73	81	84	81	97	220	14.6	91.9	17.8	79	185	6436	123								
47	73	69	67	67	67	67	67	67	72	81	85	81	97	220	14.6	91.9	17.8	79	174	6559	123								
47	73	69	67	67	67	67	67	67	73	82	85	81	97	220	17.4	17.9	17.9	177	6682	123									

SHIFT I: TONS SLICED

DELAYS:

SHIFT II: TONS SLICED

DELAYS:

SHIFT III: TONS SLICED

DELAYS:

2771

142806

2856

SHEET NO. 3 MASSES CAVILLON FACTORY NOVEMBER 16, 1989 50 DAY BEGINNING

HOUR	LIME ONE				LIME SEWER % SUGAR	MILK OF LIME Be	LIMED JUICE % CaO CaO per 100 ml	KILN GAS % CO ₂	MASSES PRODUCED		APP. PURITY	PH	RAFF.
	1ST % SUGAR	2ND % SUGAR	3RD % SUGAR	COMPOSITE % SUGAR					BKX	POL.			
7 AM			.10				1.50		82.1	49.80	60.7	7.70	
8 AM							1.50						
9 AM							.60						
10 AM							1.40						
11 AM							1.30	35.00	83.2	51.00	60.9	7.50	
12 PM	.10						1.50						
1 PM							1.40						
2 PM				.23			1.50						
1ST AVG.	.10		.10	.23			.80	35.00	82.70	50.40	60.80	7.80	
3 PM		.80					1.30		82.1	50.20	61.1	7.80	
4 PM							1.60						
5 PM							.50						
6 PM	.40						1.60						
7 PM							.70	23.00	80.8	49.80	60.6	7.60	
8 PM							.90						
9 PM							.60						
10 PM				.90			1.10						
2ND AVG.	.40	.80		.90			.58	23.00	81.50	50.00	60.85	7.80	
11 PM		1.00					.90		82.1	48.80	59.2	7.40	
12 AM	.20						1.10						
1 AM							.60						
2 AM							.90						
3 AM							.80	32.00	81.2	49.00	60.3	7.50	
4 AM							1.50						
5 AM							.90						
6 AM				.10			1.30						
3RD AVG.	.20	1.00		.10			.70	32.00	81.70	48.80	59.75	7.50	
24HR AVG.	.23	.90	.10	.41			.69	30.33	81.90	49.73	60.47	7.60	

HOUR	MASSES PRODUCED			WET % MOIST.	PRESS % MOIST.	HLP		FELLETS % MOIST.	% SUGAR	CONDENSED WATER		SEAL TANK % SUGAR
	TRUE PURITY	SO2	INV. SUGAR			DRY % MOIST.	% SUGAR			BOILER FEED	HOUSE HOT	
7 AM					85.00	13.42		11.98	4.80			
8 AM												
9 AM												
10 AM												
11 AM						11.66		9.80	4.80			
12 PM												
1 PM												
2 PM												
1ST AVG.					85.00	12.54		10.89	4.80			
3 PM						11.22		10.00				
4 PM					78.00				4.80			
5 PM												
6 PM												
7 PM												
8 PM												
9 PM												
10 PM												
2ND AVG.					78.00	11.22		10.00	4.80			
11 PM					76.00				4.00			
12 AM						9.05						
1 AM								9.40				
2 AM												
3 AM												
4 AM												
5 AM												
6 AM												
3RD AVG.					76.00	9.05		9.40	4.00			
24HR AVG.					80.00	11.34		10.30	4.60			

CARROLLTON FACTORY

032

DIFFUSER DATA

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NO. DAYS BLICING
BEGINNING 7:00 A.M.

49.

[illegible]

SHIFT 1: TONS SLICED.

DELAYS:

SHIFT II: TONS SLICED

DELAYS:

SHIFT III: TONS SUCCED

30

DELAYS: today 3120
 total 140035
 one 2858

NY 101-B (REV. 8-87)

NUMBER 101 FEBRUARY 1947

SHEET NO. 3 MCLASSES CARROLLTON FACTORY NOVEMBER 15, 1969 49 DAY BEGINNING

HOUR	LINE ONE				LINE SEWER	MILK OF LINE	LINED JUICE	KILN GAS	MCLASSES PRODUCED			PH	RAFF.
	1ST	2ND	3RD	COMPOSITE					BEHX	RL	APP. PURITY		
7 AM			.10			.90	1.30		86.2	49.60	61.1	8.10	
8 AM							1.40						
9 AM						.90	1.40						
10 AM							1.50	24.00					
11 AM						.80	1.30		86.2	59.20	58.2	8.00	
12 PM	.10						1.50						
1 PM				.33		.50	1.20						
2 PM							1.50						
1ST AVG.	.10		.10	.33		.78	1.39	24.00	86.20	54.40	59.65	8.10	
3 PM	.50					.70	1.40		81.2	48.80	60.1	8.00	
4 PM							1.30						
5 PM						.70	1.50	29.00					
6 PM							1.20						
7 PM		.90				.60	1.20		82.1	49.60	60.4	7.90	
8 PM							1.20						
9 PM				1.00		.60	1.40						
10 PM							1.30						
2ND AVG.	.50	.90		1.00		.65	1.31	29.00	81.70	49.20	60.25	8.00	
11 PM	.40					.70	1.20		85.4	49.80	58.3	7.80	
12 AM							1.30						
1 AM						.70	1.30						
2 AM		1.10					1.20	32.00					
3 AM						.70	1.20		80.4	47.60	59.2	7.70	
4 AM							1.60						
5 AM				.10		.80	1.60						
6 AM							1.60						
3RD AVG.	.40	1.10		.10		.73	1.38	32.00	82.90	48.70	58.75	7.80	
24HR AVG.	.33	1.00	.10	.48		.72	1.36	28.33	83.60	50.77	59.55	7.90	

HOUR	MCLASSES PRODUCED		WET	PRESS	RULP		PILLET	CONDENSED WATER		SEAL
	THE PURITY	SO2	MOIST.	MOIST.	MOIST.	DRY	MOIST.	FEED	HOT	TANK
7 AM										
8 AM										
9 AM				79.00	12.60		11.26	4.80		
10 AM										
11 AM										
12 PM				76.00	12.60		10.90	4.00		
1 PM										
2 PM										
1ST AVG.				77.50	12.60		11.08	4.40		
3 PM										
4 PM				74.00	10.56		9.80	4.80		
5 PM										
6 PM										
7 PM										
8 PM				74.00	7.48		8.70	4.80		
9 PM										
10 PM										
2ND AVG.				74.00	9.08		9.25	4.80		
11 PM										
12 AM				73.00	8.66		10.54	4.00		
1 AM										
2 AM										
3 AM										
4 AM				76.00	12.02		9.80	4.00		
5 AM										
6 AM										
3RD AVG.				74.50	10.34		10.17	4.00		
24HR AVG.				75.33	10.66		10.17	4.40		

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-----SUGAR IN COSSETES-----										-----STEAM ON BEETS-----									
DIFFUSER #1		DIFFUSER #2		-----BEETS SLICED-----		SUGAR		TONS SUGAR		TEMP C		Z STEAM		PRODUCT					
-----SHIFTS-----		-----SHIFTS-----		TOTAL TONS SLICED		Z SUGAR		DAY		BTS COSS		DAY		DAY					
DATE	DAYS	1ST	2ND	3RD	1ST	2ND	3RD	TODATE	AVE.	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY
10/27	30.00	995	1000	997	2992	82440	2748	16.79	15.67	502.36	12914.78	29	26	51	19	15.3	157.3		
10/28	31.00	1025	1029	1120	3174	85614	2762	16.79	15.71	532.91	13447.69	29	26	51	20	16.2	173.3		
10/29	32.00	1050	1055	1015	3120	88734	2773	16.44	15.73	512.93	13960.62	29	25	68	22	21.2	194.7		
10/30	33.00	945	1028	960	2933	91667	2778	16.75	15.77	491.28	14451.90	29	26	51	23	15.0	209.7		
10/31	34.00	970	1035	1016	3021	94688	2785	16.96	15.80	512.36	14964.26	29	23	1.02	25	30.8	240.5		
11/01	35.00	1055	1059	1050	3164	97852	2796	16.84	15.84	532.82	15497.08	25	21	68	27	21.5	262.0		
11/02	36.00	1040	1038	1016	3094	100946	2804	16.99	15.87	525.67	16022.75	22	20	34	27	10.5	272.5		
WK 5					21498		3071	16.79		3610.33									
TD					100946	2804		15.87		16022.75						.27		272.5	
11/03	37.00	960	870	945	2775	103721	2803	16.89	15.90	468.70	16491.45	22	20	34	27	9.4	281.9		
11/04	38.00	883	977	980	2840	106561	2807	15.95	15.93	452.98	16944.43	23	20	34	27	9.7	291.6		
11/05	39.00	960	960	995	2915	109476	2807	16.95	15.93	494.09	17438.52	15	20	85	24	24.8	266.8		
11/06	40.00	1050	1047	1023	3120	112596	2815	17.01	15.96	530.71	17969.23	22	21	17	24	5.3	272.1		
11/07	41.00	900	1000	1035	2935	115531	2818	16.98	15.98	498.36	18467.59	22	19	51	25	15.0	287.1		
11/08	42.00	1040	1035	1033	3108	118639	2825	16.73	16.00	519.97	18987.56	22	20	34	25	10.6	297.7		
11/09	43.00	1040	1034	1040	3114	121753	2831	17.22	16.04	536.23	19523.79	20	19	17	25	5.3	303.0		
WK 6					20807		2972	16.83		3501.04									
TD					121753	2831		16.04		19523.79						.25		303.0	
11/10	44.00	1040	1040	1040	3120	124873	2838	16.94	16.06	528.53	20052.32	22	19	51	26	15.9	318.9		
11/11	45.00	1040	1033	1040	3113	127986	2844	17.13	16.08	533.26	20585.58	24	17	1.19	28	37.0	355.9		
11/12	46.00	1040	1040	988	3068	131054	2849	17.30	16.11	530.76	21116.34	22	18	.68	29	20.9	376.8		
11/13	47.00	737	1016	1004	2757	133811	2847	16.40	16.12	452.15	21568.49	23	22	17	29	4.7	381.5		
11/14	48.00	1040	1040	1024	3104	136915	2852	16.93	16.14	525.51	22094.00	20	20	17	28	5.3	386.8		
11/15	49.00	1040	1040	1040	3120	140935	2858	17.17	16.16	535.70	22629.70	20	19	17	28	5.3	392.1		
11/16	50.00	1015	766	990	2771	142806	2856	16.87	16.17	467.47	23097.17	22	16	1.02	29	28.3	420.4		
WK 7					21053		3008	16.97		3573.38									
TD					142806	2856		16.17		23097.17						.29		420.4	
11/17	51.00	1002	1019	1024	3045	145851	2860	16.82	16.19	512.17	23609.34	17	16	17	29	5.2	425.6		
11/18	52.00	1024	1024	1024	3072	148923	2864	17.11	16.21	525.62	24134.96	21	13	1.36	31	41.8	467.4		
11/19	53.00	1024	1024	1024	3072	151995	2868	16.53	16.21	507.80	24642.76	15	14	1.17	31	5.2	472.6		
11/20	54.00	730	1021	1010	2761	154756	2866	16.46	16.22	454.46	25097.22	18	16	.34	31	9.4	482.0		
11/21	55.00	959	1020	905	2884	157640	2866	16.95	16.23	488.84	25586.06	14	13	17	31	4.9	486.9		
11/22	56.00	956	1017	700	2673	160113	2863	16.92	16.24	452.27	26038.33	15	13	34	31	9.1	496.0		
11/23	57.00	721	978	1001	2700	163013	2860	17.11	16.26	461.97	26500.30	14	13	17	31	4.6	500.6		
WK 8					20207		2887	16.84		3403.13									
TD					163013	2860		16.26		26500.30						.31		500.6	

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DATE	DAYS	DIFFUSION JUICE				DRAFT BY				THICK JUICE				THIN JUICE			
		BRIX	PURITY	BRIX	PURITY	SUGAR	CONTENT	BRIX	PURITY	BRIX	PURITY	BRIX	PURITY	BRIX	PURITY	BRIX	PURITY
		TOTAL	TOTAL	TOTAL	TOTAL	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE
10/27	30.00	14.14	400.41	13.35	90.93	2748.28	91.61	128.17	125.59	59.7	1830.7	61.0	91.60	2769.67	92.32	13.1	365.0
10/28	31.00	14.39	414.80	13.38	90.48	2838.76	91.57	126.73	125.77	59.6	1890.3	61.0	91.50	2861.17	92.30	13.2	378.2
10/29	32.00	14.09	428.89	13.40	91.03	2929.79	91.56	125.60	125.68	61.3	1951.6	61.0	91.17	2952.34	92.26	13.1	391.3
10/30	33.00	14.48	443.37	13.44	90.96	3020.75	91.54	124.74	125.66	61.2	2012.8	61.0	91.33	3043.67	92.23	13.4	404.7
10/31	34.00	14.76	458.13	13.47	92.20	3112.95	91.56	122.49	125.60	62.0	2074.8	61.0	91.76	3135.43	92.22	13.4	418.1
11/01	35.00	14.99	473.12	13.52	91.03	3203.98	91.54	121.29	125.48	61.6	2136.4	61.0	91.83	3227.26	92.21	13.7	431.8
11/02	36.00	15.03	488.15	13.56	90.96	3294.94	91.53	122.23	125.45	62.1	2198.5	61.1	91.61	3318.87	92.19	13.6	445.4
WK 5	14.55				91.08	124.43				61.0			91.54			13.4	
TD			13.56			91.53		125.45		61.1			92.19				12.4
11/03	37.00	14.88	503.03	13.60	90.97	3385.91	91.51	122.71	125.35	61.6	2260.1	61.1	91.73	3410.60	92.18	13.3	458.7
11/04	38.00	14.76	517.79	13.63	90.90	3476.81	91.50	116.64	125.09	61.2	2321.3	61.1	91.47	3502.07	92.16	12.9	471.6
11/05	39.00	14.27	532.06	13.64	91.08	3567.89	91.48	128.64	125.26	61.6	2382.9	61.1	91.73	3593.80	92.15	13.1	484.0
11/06	40.00	14.66	546.72	13.67	92.33	3660.22	91.51	123.60	125.19	60.4	2443.3	61.1	92.31	3686.11	92.15	13.3	498.0
11/07	41.00	14.47	561.19	13.69	91.98	3752.00	91.52	123.47	125.15	62.4	2505.7	61.1	92.85	3778.96	92.17	13.3	511.3
11/08	42.00	14.57	575.76	13.71	91.58	3843.78	91.52	123.21	125.13	61.8	2567.5	61.1	91.60	3870.56	92.16	13.4	524.7
11/09	43.00	14.76	590.52	13.73	91.70	3935.48	91.52	123.01	125.26	60.7	2628.2	61.1	91.38	3961.94	92.14	13.5	538.2
WK 6	14.62				91.51	123.70				61.3			91.87			13.3	
TD			13.73			91.52		125.26		61.1			92.14				12.5
11/10	44.00	14.65	605.17	13.75	91.23	4026.71	91.52	124.50	125.24	61.4	2689.6	61.1	91.97	4053.91	92.13	13.6	551.8
11/11	45.00	14.53	619.70	13.77	91.33	4118.04	91.51	127.05	125.23	60.2	2749.8	61.1	92.05	4145.96	92.13	13.3	565.1
11/12	46.00	14.89	634.59	13.80	91.62	4209.66	91.51	124.61	125.19	61.7	2811.5	61.1	91.80	4237.76	92.13	13.5	578.6
11/13	47.00	14.53	649.12	13.81	91.28	4300.94	91.51	121.24	125.18	60.1	2871.6	61.1	92.99	4330.75	92.14	13.0	591.9
11/14	48.00	14.46	663.58	13.82	90.83	4391.77	91.50	126.77	125.26	59.6	2931.2	61.1	92.63	4423.38	92.15	13.3	604.9
11/15	49.00	14.32	677.90	13.83	92.21	4483.98	91.51	128.14	125.32	60.3	2991.4	61.0	90.76	4514.14	92.13	13.3	618.2
11/16	50.00	14.46	692.36	13.85	91.24	4575.22	91.50	125.44	125.23	60.3	3051.7	61.0	92.24	4606.38	92.13	12.8	631.0
WK 7	14.55				91.39	125.44				60.5			92.06			13.3	
TD			13.85			91.50		125.23		61.0			92.13				12.6
11/17	51.00	14.45	706.81	13.86	90.38	4665.60	91.48	126.80	125.32	61.2	3112.9	61.0	92.42	4698.80	92.13	13.1	644.1
11/18	52.00	14.56	721.37	13.87	91.23	4756.83	91.48	126.78	125.39	61.6	3174.5	61.0	91.28	4790.08	92.12	13.1	657.0
11/19	53.00	13.86	735.23	13.87	89.55	4846.38	91.44	130.93	125.45	61.4	3236.1	61.1	91.29	4881.37	92.10	12.8	670.0
11/20	54.00	14.46	749.69	13.88	90.77	4937.15	91.43	123.27	125.45	61.6	3297.5	61.1	90.88	4972.25	92.08	12.8	682.8
11/21	55.00	14.48	764.17	13.89	91.37	5028.52	91.43	125.85	125.44	60.4	3357.9	61.1	92.38	5064.63	92.08	13.2	696.0
11/22	56.00	14.70	778.87	13.91	90.18	5118.70	91.41	125.67	125.36	62.1	3420.0	61.1	91.65	5156.28	92.08	13.3	709.3
11/23	57.00	14.66	793.53	13.92	91.32	5210.02	91.40	125.49	125.44	60.6	3480.6	61.1	91.41	5247.69	92.06	13.0	722.3
WK 8	14.45				90.69	126.37				61.2			91.62			13.0	
TD			13.92			91.40		125.44		61.1			92.06				12.7

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LIME ROCK BURNED				COKE BURNED				CAO INTRODUCED				LIME CAKE				SUGAR LOST IN CAKE				SUGAR LOST, SEWER			
---TONS---		ZON BEETS		---TONS---		ZON BEETS		---TONS---		ZON BEETS		---TONS---		ZON BEETS		---TONS---		ZON BEETS		---TONS---		ZON BEETS	
DAY	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	TD
10/27	30	131	3617	4.38	4.39	10	345	7.63	9.54	65.5	1845.0	2.19	2.24	2.24	356.0	9795.2	4.27	72.98	14.09	33			
10/28	31	124	3741	3.91	4.37	11	356	8.87	9.52	62.0	1907.0	1.95	2.23	2.23	338.8	10134.0	2.88	75.86	09.09	28			
10/29	32	128	3869	4.10	4.36	10	366	7.81	9.46	64.0	1971.0	2.05	2.22	2.22	336.8	10470.8	2.90	78.76	09.09	31			
10/30	33	123	3992	4.19	4.35	10	376	8.13	9.42	61.5	2032.5	2.10	2.20	2.20	399.4	10870.2	3.16	81.92	11.09	30			
10/31	34	123	4088	3.18	4.32	14	380	4.17	9.30	48.0	2080.5	1.59	2.20	2.20	260.9	11131.1	1.10	83.02	04.09	26			
11/01	35	135	4223	4.27	4.32	11	391	8.15	9.26	67.5	2148.0	2.13	2.20	2.20	355.3	11486.4	1.31	84.33	04.09	29			
11/02	36	126	4349	4.07	4.31	14	405	11.11	9.31	63.0	2211.0	2.04	2.19	2.19	331.6	11818.0	2.06	86.39	07.09	32			
WK 5	863		4.01			70	8.11				17.68												
TD		4349		4.31		405			9.31								86.39		.09				
11/03	37	108	4457	3.89	4.30	9	414	8.33	9.29	54.0	2265.0	1.95	2.18	2.18	275.5	12093.5	2.09	88.48	08.09	31			
11/04	38	106	4563	4.08	4.28	9	423	8.49	9.27	53.0	2318.0	1.87	2.17	2.17	280.4	12373.9	2.55	91.03	09.09	29			
11/05	39	119	4682	3.94	4.27	10	433	8.40	9.25	59.5	2377.5	2.04	2.17	2.17	318.2	13015.8	2.26	93.29	08.09	31			
11/06	40	123	4805	3.96	4.27	10	443	7.81	9.22	61.5	2439.0	1.97	2.17	2.17	323.6	13347.4	1.06	95.46	07.08	31			
11/07	41	128	4933	3.96	4.26	11	453	8.94	9.18	61.5	2503.0	2.18	2.16	2.16	331.6	13676.3	1.55	96.52	04.08	34			
11/08	42	123	5056	3.76	4.25	9	464	7.69	9.14	58.5	2564.5	1.98	2.15	2.15	328.9	13982.6	2.14	98.07	05.08	31			
11/09	43	117	5173	3.96	4.25	9	473	8.25			2623.0	1.88	2.15	2.15	306.3	13982.6	13.82	100.21	07.08	31			
WK 6	824		3.96			68	8.25																
TD		5173		4.25		473			9.14								100.21		.08				
11/10	44	115	5288	3.69	4.23	9	482	7.83	9.11	57.5	2680.5	1.84	2.15	2.15	304.2	14286.8	1.76	101.97	06.08	31			
11/11	45	102	5390	3.28	4.21	8	490	7.84	9.09	51.0	2731.5	1.64	2.13	2.13	274.2	14561.0	2.14	104.11	07.08	30			
11/12	46	118	5508	3.85	4.20	9	499	7.63	9.06	59.0	2790.5	1.92	2.13	2.13	312.5	14873.2	1.28	105.39	08.08	31			
11/13	47	120	5628	4.35	4.21	10	509	8.33	9.04	55.5	2850.5	2.18	2.12	2.12	312.5	15185.7	1.23	107.52	08.08	29			
11/14	48	111	5739	3.58	4.19	10	519	9.01	9.04	55.5	2906.0	1.79	2.12	2.12	292.1	15477.8	1.52	109.04	05.08	30			
11/15	49	118	5857	3.78	4.18	9	528	7.63	9.01	59.0	2965.0	1.89	2.12	2.12	315.5	15793.3	1.51	110.55	05.08	28			
11/16	50	104	5961	3.75	4.17	8	536	7.69	8.99	52.0	3017.0	1.88	2.11	2.11	272.3	16065.6	1.12	111.67	04.08	30			
WK 7	788		3.74			63	7.99										11.46		.05				
TD		5961		4.17		536			8.99								111.67		.08				
11/17	51	136	6097	4.47	4.18	11	547	8.09	8.97	68.0	3085.0	2.23	2.12	2.12	352.3	16417.9	3.56	115.23	12.08	32			
11/18	52	103	6210	3.68	4.17	10	557	8.85	8.97	56.5	3141.5	1.84	2.11	2.11	297.4	16715.3	.83	116.06	03.08	31			
11/19	53	116	6316	3.45	4.16	8	565	7.55	8.95	53.0	3194.5	1.73	2.10	2.10	283.4	16998.7	.43	116.49	01.08	29			
11/20	54	119	6435	4.31	4.16	10	575	8.40	8.94	59.5	3254.0	2.16	2.11	2.11	319.9	17318.6	1.18	117.67	04.08	31			
11/21	55	147	6582	5.10	4.18	12	587	8.16	8.92	73.5	3327.5	2.55	2.12	2.12	378.9	17705.4	2.24	119.91	08.08	26			
11/22	56	144	6726	5.39	4.20	12	599	8.33	8.91	72.0	3399.5	2.69	2.12	2.12	378.9	18084.3	3.37	123.28	13.08	21			
11/23	57	128	6854	4.74	4.20	10	609	7.81	8.89	64.0	3463.5	2.37	2.12	2.12	335.1	18419.4	1.41	124.69	05.08	28			
WK 8	893		4.42			73	8.17										13.02		.06				
TD		6854		4.20		609			8.89								124.69		.08				

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PULP PRODUCED				PRESSED PULP				DRY PULP				PELLET PULP				SUGAR IN PRESSED PULP			
DATE	DAY	TONS	ON BEETS	AVE	DAY	MOISTURE	TOTAL	DAY	MOISTURE	TOTAL	TODATE	DAY	MOISTURE	TOTAL	TODATE	DAY	MOISTURE	TOTAL	TODATE
10/27	30	180	4962	6.02	6.02	165	76.00	2295.44	76.51	10.85	360.04	12.00	10.95	341.96	11.40	.31	31	341.96	11.40
10/28	31	190	5152	5.99	6.02	166	75.33	2370.77	76.48	10.20	370.24	11.94	9.73	351.69	11.34	.30	30	351.69	11.34
10/29	32	187	5339	5.99	6.02	167	76.00	2446.77	76.46	12.32	382.56	11.96	11.08	362.77	11.34	.33	33	362.77	11.34
10/30	33	176	5515	6.00	6.02	167	76.17	2522.94	76.45	11.54	394.10	11.94	10.94	373.71	11.32	.31	31	373.71	11.32
10/31	34	182	5697	6.02	6.02	168	75.50	2598.44	76.42	10.74	404.84	11.91	10.75	384.46	11.31	.29	31	384.46	11.31
11/01	35	189	5886	5.97	6.02	168	75.50	2673.94	76.40	10.35	415.19	11.86	10.04	394.50	11.27	.29	31	394.50	11.27
11/02	36	186	6072	6.01	6.02	169	77.50	2751.44	76.43	11.65	426.84	11.86	10.86	405.36	11.26	.28	30	405.36	11.26
WK 5	1290		6.00		76.00		11.09						10.62			.30			
TD	6072		6.02		76.43		11.86								11.26		.30		307.12
11/03	37	167	6239	6.02	6.02	169	77.25	2828.69	76.45	8.84	435.68	11.78	9.79	415.15	11.22	.28	30	415.15	11.22
11/04	38	170	6409	5.99	6.01	169	75.50	2904.19	76.43	11.37	447.05	11.76	10.82	425.97	11.21	.30	30	425.97	11.21
11/05	39	175	6584	6.00	6.01	169	74.50	2978.69	76.36	12.12	458.10	11.75	10.55	436.52	11.19	.23	30	436.52	11.19
11/06	40	188	6372	6.00	5.66	159	75.60	3054.29	76.34	11.67	470.22	11.75	11.50	448.02	11.20	.28	30	448.02	11.20
11/07	41	176	6548	5.98	5.67	160	75.75	3130.04	76.34	11.57	481.89	11.75	11.17	459.19	11.20	.28	30	459.19	11.20
11/08	42	186	6734	5.98	5.68	160	75.17	3205.21	76.31	11.30	493.19	11.74	10.51	469.70	11.18	.29	30	469.70	11.18
11/09	43	186	6920	5.97	5.68	161	75.00	3280.21	76.28	10.70	503.89	11.72	10.15	479.85	11.16	.30	30	479.85	11.16
WK 6	1248		6.00		75.54		11.01						10.64			.28			58.30
TD	6920		5.68		76.28		11.72								11.16		.30		365.42
11/10	44	187	7107	5.99	5.69	162	74.00	3354.21	76.23	10.77	514.66	11.70	10.35	490.20	11.14	.30	30	490.20	11.14
11/11	45	187	7294	6.01	5.70	162	75.00	3429.21	76.20	10.44	525.10	11.67	10.77	500.97	11.13	.27	30	500.97	11.13
11/12	46	187	7481	6.10	5.71	163	77.00	3506.21	76.22	10.86	535.96	11.65	10.51	511.48	11.12	.30	30	511.48	11.12
11/13	47	185	7646	5.98	5.71	163	77.00	3583.21	76.24	11.24	547.20	11.64	10.94	522.42	11.12	.32	30	522.42	11.12
11/14	48	186	7832	5.99	5.72	163	75.67	3658.88	76.23	10.06	557.26	11.61	10.28	532.70	11.10	.28	30	532.70	11.10
11/15	49	187	8019	5.99	5.73	164	75.33	3734.21	76.21	10.66	567.92	11.59	10.17	542.87	11.08	.25	30	542.87	11.08
11/16	50	166	8185	5.99	5.73	164	80.00	3814.21	76.28	11.34	579.26	11.59	10.30	553.17	11.06	.32	30	553.17	11.06
WK 7	1265		6.01		76.29		10.77						10.47			.29			61.15
TD	8185		5.73		76.28		11.59								11.06		.30		426.57
11/17	51	182	8367	5.98	5.74	164	75.17	3889.38	76.26	10.99	590.25	11.57	11.46	564.63	11.07	.26	30	564.63	11.07
11/18	52	184	8551	5.99	5.74	164	75.17	3964.35	76.24	11.15	601.40	11.57	10.81	575.44	11.07	.27	30	575.44	11.07
11/19	53	184	8735	5.99	5.75	165	77.50	4042.05	76.27	11.62	613.02	11.57	10.42	585.86	11.05	.28	30	585.86	11.05
11/20	54	180	8495	5.80	5.49	157	74.33	4116.38	76.23	10.70	623.72	11.55	10.27	596.13	11.04	.28	30	596.13	11.04
11/21	55	167	8662	5.79	5.49	157	75.50	4191.88	76.22	11.11	634.83	11.54	10.49	606.62	11.03	.30	30	606.62	11.03
11/22	56	155	8817	5.80	5.50	157	74.67	4266.55	76.19	10.88	645.71	11.53	10.35	616.97	11.02	.26	30	616.97	11.02
11/23	57	156	8973	5.78	5.50	157	76.50	4343.05	76.19	11.08	656.79	11.52	10.13	627.10	11.00	.31	30	627.10	11.00
WK 8	1188		5.88		75.55		11.08						10.56			.28			56.51
TD	8973		5.50		76.19		11.52								11.00		.30		483.08

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M O L A S S E S P R O D U C E D

DATE	DAY	TONS DAY	TONS TODATE	Z ON BEETS DAY	Z ON BEETS TD	-Z SUGAR- DAY	-Z SUGAR- TD	TONS DAY	SUGAR TODATE	SUGAR Z BEETS DAY	SUGAR Z BEETS TD	DAY	TOTAL	BRIX TOTAL	TD	DAY	PURITY TOTAL	TODATE	PH
10/27	30	105	2810	3.51	3.41	51.33	52.64	53.90	1479.23	1.80	1.79	81.8	2120.8	81.6	62.77	1678.68	64.56	8.3	
10/28	31	117	2927	3.69	3.42	52.70	52.64	61.66	1540.89	1.94	1.80	84.4	2205.2	81.7	62.45	1741.13	64.49	8.1	
10/29	32	115	3042	3.69	3.43	50.43	52.36	57.99	1598.88	1.86	1.80	82.5	2287.7	81.7	61.18	1802.31	64.37	8.1	
10/30	33	109	3151	3.72	3.44	50.37	52.48	54.90	1653.78	1.78	1.80	83.0	2370.7	81.7	60.67	1862.98	64.24	8.3	
10/31	34	112	3263	3.71	3.45	47.97	52.33	53.73	1707.51	1.78	1.80	80.4	2451.1	81.7	59.68	1922.66	64.09	8.1	
11/01	35	117	3380	3.70	3.45	48.47	52.20	56.71	1764.22	1.79	1.80	80.5	2531.6	81.7	60.18	1982.84	63.96	8.0	
11/02	36	108	3488	3.49	3.46	50.00	52.13	54.00	1818.22	1.75	1.80	82.3	2613.9	81.7	60.78	2043.62	63.86	8.1	
WK 5	783			3.64		392.89						82.1			61.10			8.1	
TD			3488		3.46				1818.22					81.7			63.86		8.5
11/03	37	103	3591	3.71	3.46	49.23	52.04	50.71	1868.93	1.83	1.80	82.1	2696.0	81.7	59.98	2103.60	63.75	8.3	
11/04	38	105	3696	3.70	3.47	47.83	51.93	50.22	1919.15	1.77	1.80	80.3	2776.3	81.7	59.55	2163.15	63.62	8.4	
11/05	39	108	3804	3.69	3.47	48.60	51.83	52.49	1971.64	1.80	1.80	80.0	2856.3	81.6	60.78	2223.93	63.54	8.4	
11/06	40	115	3919	3.69	3.48	50.30	51.76	57.85	2029.49	1.85	1.80	83.6	3022.7	81.7	60.88	2284.71	63.46	8.2	
11/07	41	109	4028	3.71	3.49	50.90	51.69	55.48	2084.97	1.89	1.80	80.4	3203.1	81.7	60.97	2406.56	63.33	8.2	
11/08	42	115	4143	3.70	3.49	49.03	51.65	56.38	2141.35	1.81	1.81	81.7	3103.1	81.7	61.50	2468.06	63.28	8.2	
11/09	43	115	4258	3.69	3.50	50.24	51.65	57.78	2199.13	1.86	1.81	81.6	3184.8	81.7	60.63			8.3	
WK 6	770			3.70		380.91						81.6						8.4	
TD			4258		3.50				2199.13					81.7			63.28		8.4
11/10	44	115	4373	3.69	3.50	50.80	51.62	58.42	2257.55	1.87	1.81	81.9	3266.7	81.7	61.98	2530.04	63.25	8.5	
11/11	45	115	4488	3.69	3.51	50.63	51.60	58.22	2315.77	1.87	1.81	81.4	3348.1	81.7	62.22	2592.26	63.23	8.8	
11/12	46	115	4603	3.75	3.51	50.67	51.58	58.27	2374.04	1.90	1.81	81.0	3429.1	81.6	62.58	2654.84	63.21	8.8	
11/13	47	100	4703	3.63	3.51	51.90	51.57	51.90	2425.94	1.88	1.81	82.5	3511.6	81.7	62.98	2717.82	63.21	8.7	
11/14	48	114	4817	3.67	3.52	51.13	51.57	58.29	2484.23	1.88	1.81	83.3	3595.1	81.7	61.35	2779.17	63.16	8.3	
11/15	49	115	4932	3.69	3.52	50.77	51.55	58.39	2542.62	1.87	1.82	83.6	3678.7	81.7	59.55	2838.72	63.08	7.9	
11/16	50	102	5034	3.68	3.53	49.73	51.52	50.72	2593.34	1.83	1.82	81.9	3760.6	81.8	60.47	2899.19	63.03	7.6	
WK 7	776			3.69		394.21						82.3			61.59			8.4	
TD			5034		3.53				2593.34					81.8			63.03		8.4
11/17	51	112	5146	3.68	3.53	49.40	51.47	55.33	2648.67	1.82	1.82	80.9	3841.5	81.7	61.05	2960.24	62.98	7.6	
11/18	52	114	5260	3.71	3.54	49.23	51.38	56.58	2705.25	1.84	1.82	82.2	3923.7	81.7	60.65	3020.89	62.94	7.8	
11/19	53	114	5374	3.69	3.54	49.87	51.36	56.12	2761.37	1.83	1.82	81.9	4005.6	81.8	60.13	3081.01	62.88	8.0	
11/20	54	102	5476	3.69	3.54	50.53	51.34	54.07	2812.24	1.87	1.82	83.3	4172.0	81.8	60.67	3141.71	62.82	7.6	
11/21	55	100	5583	3.71	3.54	49.70	51.31	49.70	2866.31	1.86	1.82	82.0	4254.0	81.8	60.65	3201.71	62.74	7.6	
11/22	56	100	5683	3.74	3.54	50.07	51.29	50.07	2916.01	1.86	1.82	81.4	4335.4	81.8	61.82	3262.36	62.72	8.0	
11/23	57	100	5783	3.70	3.55	50.07	51.29	50.07	2966.08	1.85	1.82	81.4	4335.4	81.8	61.82	3324.18	62.72	7.8	
WK 8	749			3.71		372.74						82.1			60.71			8.3	
TD			5783		3.55				2966.08					81.8			62.72		8.3

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T E M P E R A T U R E S

DATE	DAY	DIFF FEED WATER	PRESS WATER	RAW JUICE IN	RJ AFTER SPIRAL	TO 1ST CARB	TO 2ND CARB	TO EVAPORATOR	STANDARD LIQUOR																
		DAY TOTAL	DAY TOTAL	DAY TOTAL	DAY TOTAL	DAY TOTAL	DAY TOTAL	DAY TOTAL	DAY TOTAL																
10/27	30	60	1765	59	77	2417	81	76	2379	79	84	2487	83	86	2628	88	96	2861	95	115	3341	111	86	2553	85
10/28	31	58	1823	59	74	2491	80	75	2454	79	84	2571	83	85	2713	88	95	2956	95	115	3456	111	86	2639	85
10/29	32	55	1878	59	64	2555	80	77	2531	79	85	2656	83	88	2801	88	95	3051	95	115	3571	112	86	2725	85
10/30	33	55	1933	59	63	2618	79	76	2607	79	81	2737	83	87	2888	88	95	3139	95	108	3679	111	86	2811	85
10/31	34	58	1991	59	76	2694	79	75	2682	79	84	2821	83	86	2974	87	95	3234	95	110	3789	111	86	2897	85
11/01	35	55	2046	58	80	2774	79	74	2756	79	82	2903	83	85	3059	87	95	3329	95	114	3903	112	88	2985	85
11/02	36	55	2101	58	80	2854	79	74	2830	79	78	2981	83	84	3143	87	93	3422	95	110	4013	111	86	3071	85
WK 5	57				73			75			83		83	86			94			112			86		
TD		58					79			79			83		87			95			111			85	
11/03	37	58	2159	58	80	2934	79	74	2904	78	80	3061	83	85	3228	87	98	3520	95	110	4123	111	86	3157	85
11/04	38	56	2215	58	68	3002	79	87	2991	79	93	3154	83	88	3306	87	95	3615	95	106	4229	111	85	3242	85
11/05	39	52	2267	58	80	3082	79	73	3064	79	82	3236	83	83	3389	87	97	3712	95	110	4339	111	85	3327	85
11/06	40	54	2321	58	85	3167	79	79	3143	79	82	3318	83	85	3474	87	99	3811	95	115	4454	111	86	3413	85
11/07	41	55	2376	58	86	3253	79	73	3216	78	82	3400	83	85	3559	87	95	3906	95	114	4569	111	88	3501	85
11/08	42	55	2431	58	85	3338	79	73	3289	78	82	3482	83	85	3644	87	97	4003	95	114	4683	112	82	3583	85
11/09	43	55	2486	58	82	3420	80	74	3363	78	82	3564	83	82	3726	87	96	4099	95	115	4798	112	85	3668	85
WK 6	55				81			76			83		83	83			97			112			85		
TD		58					80			78			83		87			95			112			85	
11/10	44	55	2541	58	85	3505	80	73	3436	78	82	3646	83	85	3811	87	95	4194	95	113	4911	112	86	3754	85
11/11	45	56	2597	58	82	3587	80	73	3509	78	82	3728	83	86	3893	87	96	4290	95	112	5023	112	86	3840	85
11/12	46	54	2651	58	83	3670	80	74	3583	78	82	3810	83	84	3979	86	94	4386	95	113	5136	112	86	3926	85
11/13	47	56	2707	58	84	3754	80	74	3657	78	84	3894	83	84	4063	86	94	4480	95	115	5251	112	86	4012	85
11/14	48	56	2763	58	84	3838	80	74	3731	78	82	3976	83	85	4147	86	87	4574	95	114	5365	112	88	4098	85
11/15	49	57	2820	58	81	3919	80	73	3804	78	80	4056	83	84	4232	86	96	4661	95	112	5477	112	88	4186	85
11/16	50	64	2884	58	84	4003	80	72	3876	78	80	4136	83	84	4316	86	96	4757	95	110	5587	112	88	4274	85
WK 7	57				83			73			82		83	84			94			113			87		
TD		58					80			78			83		86			95			112			85	
11/17	51	54	2938	58	86	4089	80	72	3948	77	82	4218	83	84	4400	86	95	4852	95	113	5700	112	88	4362	86
11/18	52	55	2993	58	85	4174	80	70	4018	77	78	4296	83	83	4483	86	95	4947	95	113	5813	112	88	4450	86
11/19	53	54	3047	57	87	4261	80	73	4091	77	80	4376	83	84	4567	86	96	5043	95	113	5926	112	86	4536	86
11/20	54	52	3099	57	81	4342	80	70	4161	77	80	4456	82	85	4649	86	94	5142	95	112	6038	112	87	4623	86
11/21	55	48	3147	57	83	4425	80	72	4233	77	80	4536	82	84	4734	86	92	5236	95	114	6152	112	86	4709	86
11/22	56	50	3197	57	81	4506	80	72	4305	77	80	4616	82	84	4818	86	92	5328	95	112	6264	112	86	4795	86
11/23	57	52	3249	57	64	4570	80	66	4371	77	76	4692	82	86	4904	86	96	5424	95	107	6371	112	85	4880	86
WK 8	52				81			71			79		82	84			95			112			87		
TD		57					80			77			82		86			95			112			86	

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STANDARD LIQUOR										WHITE PAN										HIGH GREEN										HIGH WASH													
BRIX					PURITY					BRIX					PURITY					BRIX					PURITY					BRIX					PURITY								
DATE	DAY	TOTAL	TD	NO.	DAY	TOTAL	TD	DAY	TD	DAY	TOTAL	TD	DAY	TD	DAY	TOTAL	TD	DAY	TD	DAY	TOTAL	TD	DAY	TD	DAY	TOTAL	TD																
10/27	30	65.8	2000.7	66.6	92.9	29	91.3	2614.5	90.2	92.7	2708.9	93.4	8.8	77.6	84.4	2504.5	86.4	74.3	91.0	2707.7	93.4	10/28	31	66.6	2067.3	66.6	93.0	30	91.1	2705.6	90.2	92.9	2801.8	93.4	8.9	78.0	84.1	2588.6	86.3	74.2	92.0	2799.7	93.3
10/29	32	67.2	2134.5	66.7	92.6	31	91.6	2797.2	90.2	92.4	2894.2	93.4	8.6	77.7	83.0	2671.6	86.2	74.8	90.7	2890.4	93.2	10/30	33	66.6	2201.8	66.7	93.1	32	91.1	2888.3	90.3	92.5	2986.7	93.3	8.8	78.8	84.5	2755.0	86.1	73.9	91.3	2981.7	93.2
10/31	34	67.7	2268.8	66.7	93.3	33	91.9	2980.2	90.3	92.5	3079.2	93.3	8.8	78.2	84.8	2839.8	86.1	74.1	92.3	3074.0	93.2	11/01	35	68.2	2337.0	66.7	92.8	34	91.0	3071.2	90.3	92.7	3171.9	93.3	8.9	78.2	84.5	2924.3	86.0	74.5	91.9	3165.1	93.1
11/02	36	68.7	2405.7	66.8	92.7	35	91.4	3162.6	90.4	91.9	3263.8	93.3	8.9	79.1	84.6	3008.9	86.0	74.4	90.9	3256.0	93.0	WK 5	67.3																				
11/03	37	68.8	2474.5	66.8	91.9	36	91.4	3254.0	90.4	92.0	3355.8	93.2	8.9	79.0	83.8	3092.7	85.9	74.1	90.8	3346.8	93.0	11/04	38	66.7	2541.2	66.8	92.9	37	91.0	3345.0	90.4	91.7	3447.5	93.2	8.9	77.6	84.3	3177.0	85.9	73.0	90.5	3438.3	92.9
11/05	39	67.8	2609.0	66.9	92.8	38	91.4	3436.4	90.5	92.6	3540.1	93.1	8.7	77.7	84.6	3261.6	85.8	74.5	90.7	3529.0	92.8	11/06	40	67.6	2675.6	66.9	92.7	39	91.4	3527.8	90.5	92.5	3632.6	93.1	8.8	78.1	85.0	3346.6	85.8	74.9	90.3	3619.5	92.8
11/07	41	68.8	2745.4	66.9	93.1	40	91.6	3619.4	90.5	93.0	3725.6	93.1	8.8	78.8	84.5	3431.8	85.8	74.6	90.3	3709.8	92.7	11/08	42	67.3	2812.7	66.9	93.7	41	91.7	3711.1	90.5	92.5	3818.1	93.1	9.0	78.9	84.7	3515.8	85.8	74.6	91.0	3800.8	92.7
11/09	43	66.7	2879.4	66.9	93.7	42	91.0	3802.1	90.5	92.6	3910.7	93.1	9.2	78.2	84.7	3600.5	85.7	73.9	91.0	3891.8	92.7	WK 6	67.7																				
11/10	44	67.4	2946.8	66.9	93.3	43	91.4	3893.5	90.5	93.0	4003.7	93.1	9.3	79.2	84.7	3685.2	85.7	74.5	90.8	3982.6	92.6	11/11	45	65.8	3012.6	66.9	93.8	44	90.7	3984.2	90.6	91.2	4095.9	93.1	9.0	78.2	85.5	3770.7	85.7	73.9	91.3	4073.9	92.5
11/12	46	67.5	3080.3	66.9	93.4	45	91.7	4075.3	90.6	91.5	4187.4	93.0	8.7	78.9	85.4	3856.1	85.7	75.1	90.5	4164.4	92.5	11/13	47	67.7	3147.8	66.9	93.3	46	90.7	4166.0	90.6	92.3	4279.7	93.0	8.5	78.8	85.6	3941.7	85.7	74.8	90.7	4346.1	92.5
11/14	48	67.6	3215.4	66.9	93.1	47	91.0	4257.0	90.6	92.4	4373.1	93.0	8.4	79.4	85.6	4027.3	85.7	75.3	89.3	4436.1	92.4	11/15	49	67.8	3282.2	67.0	93.7	48	90.4	4347.4	90.6	92.1	4465.2	93.0	8.5	78.9	85.2	4111.1	85.6	74.9	91.0	4436.1	92.4
11/16	50	67.8	3350.2	67.0	93.7	49	91.0	4438.4	90.6	92.5	4557.7	93.0	8.5	78.9	85.2	4196.3	85.6	74.9	91.0	4527.1	92.4	WK 7	67.3																				
11/17	51	67.8	3418.0	67.0	92.9	50	91.0	4529.4	90.6	92.0	4649.7	93.0	8.8	78.6	84.9	4281.2	85.6	73.2	90.7	4617.8	92.4	11/18	52	68.1	3486.1	67.0	92.2	51	91.0	4620.4	90.6	91.8	4741.5	93.0	8.6	79.0	84.6	4365.8	85.6	74.8	91.1	4708.9	92.3
11/19	53	67.7	3553.8	67.0	92.7	52	91.3	4711.7	90.6	92.0	4833.5	93.0	8.3	79.1	84.1	4449.9	85.6	75.8	90.1	4799.0	92.3	11/20	54	67.5	3621.3	67.0	92.7	53	91.1	4802.8	90.6	92.8	4926.3	92.9	8.6	78.9	85.3	4535.2	85.6	75.5	90.3	4980.3	92.2
11/21	55	67.9	3689.2	67.1	92.5	54	91.1	4893.8	90.6	92.4	5018.7	92.9	8.6	79.5	84.5	4620.2	85.5	75.9	90.6	5070.9	92.2	11/22	56	69.0	3758.2	67.1	92.5	55	91.1	4984.9	90.6	92.4	5111.1	92.9	8.6	79.5	84.5	4705.2	85.5	75.9	90.6	5161.9	92.2
11/23	57	66.7	3824.9	67.1	92.7	56	91.3	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/24	58	67.8	3824.9	67.1	92.7	57	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/25	59	67.8	3824.9	67.1	92.7	58	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/26	60	67.8	3824.9	67.1	92.7	59	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/27	61	67.8	3824.9	67.1	92.7	60	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/28	62	67.8	3824.9	67.1	92.7	61	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/29	63	67.8	3824.9	67.1	92.7	62	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/30	64	67.8	3824.9	67.1	92.7	63	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
11/31	65	67.8	3824.9	67.1	92.7	64	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
12/01	66	67.8	3824.9	67.1	92.7	65	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
12/02	67	67.8	3824.9	67.1	92.7	66	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
12/03	68	67.8	3824.9	67.1	92.7	67	91.1	5076.2	90.6	92.1	5203.2	92.9	8.2	79.6	84.4	4789.6	85.5	75.0	91.0	5161.9	92.2	WK 8	67.8																				
12/04	69	67.8	3824.9	67.1	92.7	68	91.1</																																				

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INTERMEDIATE (HIGH RAW) PAN										INTERMEDIATE SYRUP										LOW RAW PAN									
DATE	DAY	DAY	BRIX	TD	DAY	PURITY	TD	PH	DAY	BRIX	DAY	DAY	PURITY	TD	NO.	DAY	BRIX	TD	DAY	PURITY	TD	DAY	BRIX	TD	DAY	PURITY	TD	PH	
			TOTAL			TOTAL				TOTAL			TOTAL				TOTAL			TOTAL			TOTAL			TOTAL			
10/27	29	92.6	2677.0	92.3	83.5	2466.4	85.0	8.6	84.2	71.6	2178.1	75.1	28	94.5	2633.1	94.0	72.70	2092.35	74.73	8.3									
10/28	30	93.4	2770.4	92.3	82.5	2548.9	85.0	8.7	84.0	71.5	2249.6	75.0	29	94.9	2728.0	94.1	69.95	2162.30	74.56	8.4									
10/29	31	93.7	2864.1	92.4	81.5	2630.4	84.9	8.5	84.5	69.7	2319.3	74.8	30	93.3	2821.7	94.1	71.80	2234.10	74.47	8.6									
10/30	32	94.0	2958.1	92.4	81.8	2712.2	84.8	8.5	85.4	70.3	2389.5	74.7	31	95.1	2916.8	94.1	68.93	2303.03	74.29	8.3									
10/31	33	94.4	3051.5	92.5	83.8	2796.7	84.7	8.6	83.8	71.3	2460.9	74.6	32	95.3	3012.1	94.1	71.08	2374.11	74.19	8.4									
11/01	34	93.1	3144.6	92.5	83.7	2879.7	84.7	8.7	82.5	72.6	2533.5	74.5	33	94.1	3106.2	94.1	74.10	2448.21	74.19	8.4									
11/02	35	93.4	3238.0	92.5	83.5	2963.2	84.7	8.7	83.4	72.8	2606.3	74.5	34	95.1	3201.3	94.2	72.73	2520.94	74.15	8.6									
WK 5	93.4	82.9	8.6	84.0	71.4	94.7	71.61	8.4																					
TD			92.5			84.7					74.5				94.2					74.15									
11/03	36	93.5	3331.5	92.5	82.1	3045.3	84.6	8.8	81.7	72.4	2678.7	74.4	35	94.6	3295.9	94.2	71.55	2592.49	74.07	8.7									
11/04	37	93.8	3425.3	92.6	82.4	3127.7	84.5	8.8	81.0	70.6	2749.3	74.3	36	94.1	3390.0	94.2	71.93	2664.42	74.01	8.4									
11/05	38	93.6	3518.9	92.6	83.0	3210.7	84.5	8.5	82.5	72.1	2821.4	74.2	37	94.7	3484.7	94.2	71.62	2736.04	73.95	8.6									
11/06	39	94.2	3613.1	92.6	82.8	3293.5	84.4	8.4	83.2	72.8	2894.2	74.2	38	94.5	3579.2	94.2	72.53	2808.57	73.91	8.3									
11/07	40	94.0	3707.1	92.7	83.2	3376.7	84.4	8.7	83.9	71.6	2965.8	74.1	39	94.9	3674.1	94.2	72.70	2881.27	73.88	8.5									
11/08	41	93.5	3800.6	92.7	83.3	3460.0	84.4	8.9	84.8	72.5	3038.3	74.1	40	94.4	3768.5	94.2	72.60	2953.87	73.85	8.5									
11/09	42	93.2	3893.8	92.7	84.8	3544.8	84.4	9.1	81.9	74.6	3112.9	74.1	41	94.0	3862.5	94.2	73.53	3027.40	73.84	8.8									
WK 6	93.7	83.1	8.7	82.7	72.4	94.5	72.35	8.5																					
TD			92.7			84.4					74.1				94.2					73.84									
11/10	43	93.3	3987.1	92.7	81.2	3626.0	84.3	9.0	81.9	73.9	3186.8	74.1	42	93.8	3956.3	94.2	72.33	3099.73	73.80	9.0									
11/11	44	93.0	4080.1	92.7	83.6	3709.6	84.3	9.0	81.4	73.8	3260.6	74.1	43	94.1	4050.4	94.2	73.33	3173.06	73.79	9.0									
11/12	45	93.6	4173.7	92.7	83.3	3792.9	84.3	8.7	81.8	72.8	3333.4	74.0	44	94.4	4144.8	94.2	73.23	3246.29	73.78	8.8									
11/13	46	93.0	4266.7	92.8	84.2	3877.1	84.3	8.4	82.4	72.8	3406.2	74.0	45	93.8	4238.6	94.2	73.10	3319.39	73.76	8.4									
11/14	47	93.2	4359.9	92.8	84.0	3961.1	84.3	8.1	83.1	72.9	3479.1	74.0	46	94.0	4332.6	94.2	73.83	3393.22	73.77	8.1									
11/15	48	92.8	4452.7	92.8	82.3	4043.4	84.2	8.1	83.0	71.9	3551.0	74.0	47	93.6	4426.2	94.2	71.06	3464.28	73.71	8.0									
11/16	49	93.0	4545.7	92.8	84.1	4127.5	84.2	8.4	82.8	72.1	3623.1	73.9	48	93.8	4520.0	94.2	72.33	3536.61	73.68	8.0									
WK 7	93.1	83.2	8.5	82.3	72.9	93.9	72.74	8.5																					
TD			92.8			84.2					73.9				94.2					73.68									
11/17	50	93.4	4639.1	92.8	82.8	4210.3	84.2	8.5	83.4	70.7	3693.8	73.9	49	94.2	4614.2	94.2	71.35	3607.96	73.63	8.2									
11/18	51	93.4	4732.5	92.8	82.9	4293.2	84.1	8.2	83.1	71.3	3765.1	73.8	50	92.7	4706.9	94.1	72.43	3680.39	73.61	8.1									
11/19	52	93.4	4825.9	92.8	82.7	4375.6	84.1	7.9	81.7	73.6	3838.7	73.8	51	93.8	4800.7	94.1	71.56	3751.95	73.57	8.1									
11/20	53	94.1	4920.0	92.8	82.4	4458.3	84.1	8.3	81.4	73.2	3911.9	73.8	52	94.2	4894.9	94.1	71.43	3823.38	73.53	7.9									
11/21	54	92.8	5012.8	92.8	84.8	4543.1	84.1	8.4	83.2	73.2	3985.1	73.8	53	93.8	4988.7	94.1	73.65	3897.03	73.52	8.1									
11/22	55	93.4	5106.2	92.8	84.0	4627.1	84.1	8.4	83.7	71.8	4056.9	73.7	54	95.2	5083.9	94.1	73.20	3970.23	73.52	8.2									
11/23	56	93.8	5200.0	92.9	83.6	4710.7	84.1	8.0	81.5	72.4	4129.3	73.7	55	94.2	5178.1	94.1	72.15	4042.38	73.50	7.9									
WK 8	93.5	83.3	8.3	82.6	72.3	94.0	72.25	8.1																					
TD			92.9			84.1					73.7				94.1					73.50									

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WHITE PANS										INTERMEDIATE PANS										LOW RAW PANS									
DATE	NO PANS DAY	C/F MASSECUITE DAY	BAGS C/F DAY	C/F T.B. DAY	NO PANS TD	C/F MASSECUITE DAY	C/F T.B. TD	NO PANS DAY	C/F MASSECUITE DAY	C/F T.B. TD	NO PANS DAY	C/F MASSECUITE DAY	C/F T.B. TD	NO PANS DAY	C/F MASSECUITE DAY	C/F T.B. TD	NO PANS DAY	C/F MASSECUITE DAY	C/F T.B. TD										
10/27	16	434 23290	622129	38.5	32.7	7.8	7.5	6	155	8221	206590	2.7	2.5	3	103	1800	61117	6	7										
10/28	18	452 26026	648155	35.2	32.8	8.2	7.6	6	161	8143	214733	2.6	2.5	4	107	2717	63834	7	7										
10/29	15	467 22272	670427	37.2	32.9	7.1	7.6	6	167	8443	223176	2.7	2.5	4	111	2320	66154	7	7										
10/30	17	484 25497	695924	33.8	33.0	8.7	7.6	5	172	6905	230081	2.4	2.5	4	115	2319	68473	8	7										
10/31	15	499 22564	718488	38.3	33.1	7.5	7.6	6	178	8042	238123	2.7	2.5	4	119	2707	71180	9	8										
11/01	17	516 25527	744015	35.5	33.2	8.1	7.6	6	184	8159	246282	2.6	2.5	4	123	2362	73542	7	8										
11/02	17	533 25590	769605	37.1	33.3	8.3	7.6	6	190	8173	254455	2.6	2.5	4	127	2360	75902	8	8										
WK 5	115	170766	36.4	7.9	41	56086	2.6	4	16585	.8																			
TD	533	769605	33.3	7.6	190	254455	2.5	127	75902	.8																			
11/03	15	548 22592	792197	37.7	33.5	8.1	7.6	5	195	6793	261248	2.4	2.5	4	131	2744	78646	1.0	8										
11/04	14	562 20954	813151	36.8	33.5	7.4	7.6	5	200	6659	267907	2.3	2.5	3	134	1851	80497	1.7	8										
11/05	15	577 22486	835637	38.2	33.7	7.7	7.6	6	206	8130	276037	2.8	2.5	5	139	2820	83317	1.0	8										
11/06	16	593 24109	859746	38.4	33.8	7.7	7.6	5	211	6788	282825	2.2	2.5	4	143	2773	86090	7	8										
11/07	16	609 23901	883647	38.3	33.9	8.1	7.6	6	217	8151	290976	2.8	2.5	4	147	1965	88055	7	8										
11/08	16	625 24034	907681	36.2	34.0	7.7	7.7	6	223	8137	299113	2.6	2.5	4	151	2345	90400	8	8										
11/09	16	641 24184	931865	37.1	34.1	7.8	7.7	5	228	6736	305849	2.2	2.5	4	155	2775	93175	9	8										
WK 6	108	162260	37.5	7.8	38	51394	2.5	4	17273	.8																			
TD	641	931865	34.1	7.7	228	305849	2.5	155	93175	.8																			
11/10	16	657 24095	955960	38.2	34.2	7.7	7.7	6	234	8131	313980	2.6	2.5	4	159	2352	95527	8	8										
11/11	16	673 24022	979982	37.3	34.2	7.7	7.7	5	239	6777	320757	2.2	2.5	3	162	1867	97394	6	8										
11/12	15	688 20903	1000885	43.2	34.4	6.8	7.6	6	245	8137	328894	2.7	2.5	4	166	2349	99743	8	8										
11/13	16	704 23563	1024448	34.2	34.4	8.5	7.7	6	251	8098	336992	2.9	2.5	4	170	2780	102523	1.0	8										
11/14	16	720 24177	1048625	38.5	34.5	7.8	7.7	7	258	9422	346414	3.0	2.5	4	174	2345	104868	8	8										
11/15	17	737 25495	1074120	35.3	34.5	8.2	7.7	6	264	8136	354550	2.6	2.5	5	179	3264	108132	1.0	8										
11/16	15	752 22336	1096456	37.8	34.6	8.1	7.7	6	270	8083	362633	2.9	2.5	3	182	1871	110003	7	8										
WK 7	111	164591	37.7	7.8	42	56784	2.7	4	16828	.8																			
TD	752	1096456	34.6	7.7	270	362633	2.5	182	110003	.8																			
11/17	16	768 23999	1120455	36.8	34.7	7.9	7.7	6	276	8161	370794	2.7	2.5	4	186	2340	112343	8	8										
11/18	15	783 22398	1142853	38.1	34.7	7.3	7.7	6	282	8149	378943	2.7	2.5	3	189	1870	114213	6	8										
11/19	16	799 23853	1166706	35.3	34.7	7.8	7.7	6	288	8129	387072	2.6	2.5	5	194	3250	114263	1.1	8										
11/20	15	814 22138	1188844	32.8	34.7	8.0	7.7	6	294	8136	395208	2.8	2.5	4	198	2346	119809	8	8										
11/21	16	830 23910	1212754	36.2	34.7	8.3	7.7	6	300	8131	403339	2.9	2.6	4	202	1920	121729	7	8										
11/22	16	846 23546	1236300	33.5	34.7	8.8	7.7	6	306	8150	411489	3.0	2.6	3	205	1870	123599	7	8										
11/23	15	861 22181	1258481	35.4	34.7	8.2	7.7	6	312	8082	419571	3.0	2.6	4	209	2776	126375	1.0	8										
WK 8	109	162025	35.5	8.0	42	56938	2.8	4	16372	.8																			
TD	861	1258481	34.7	7.7	312	419571	2.6	209	126375	.8																			

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SUGAR SACKED				GROSS EXTRACTION				LAST YEARS SUGAR INTRODUCED				NET EXTRACTION			
DATE	DAY	CWTS.	TODATE	Z ON	BEETS	Z ON	SUGAR	Z ON	BEETS	Z ON	SUGAR	Z ON	BEETS	Z ON	SUGAR
				DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE
10/27	30	8956	203301	14.97	12.33	89.14	78.69	.00	.06	.00	.39	14.97	12.27	89.14	78.30
10/28	31	9150	212451	14.41	12.41	85.85	78.98	.00	.06	.00	.37	14.41	12.35	85.85	78.61
10/29	32	8283	220734	13.27	12.44	80.74	79.07	.00	.06	.00	.36	13.27	12.38	80.74	78.71
10/30	33	8621	229355	14.70	12.51	87.74	79.33	.26	.06	1.53	.40	14.44	12.45	86.21	78.93
10/31	34	8650	238005	14.32	12.57	84.41	79.54	.17	.07	.98	.42	14.15	12.50	83.44	79.13
11/01	35	9056	247061	14.31	12.62	84.98	79.70	.16	.07	.94	.44	14.15	12.56	84.04	79.26
11/02	36	9483	256544	15.32	12.71	90.20	80.07	.48	.08	2.85	.51	14.84	12.63	87.35	79.55
WK 5		62199					65000								
TD		256544					165000								
11/03	37	8525	265069	15.36	12.78	90.94	80.36	.00	.08	.00	.50	15.36	12.70	90.94	79.86
11/04	38	7710	272779	13.57	12.80	85.10	80.50	.00	.08	.00	.49	13.57	12.72	85.10	80.01
11/05	39	8587	281366	14.73	12.85	86.90	80.67	.00	.08	.00	.47	14.73	12.78	86.90	80.20
11/06	40	9258	290624	14.84	12.91	87.22	80.86	.24	.08	1.41	.50	14.60	12.83	85.81	80.36
11/07	41	9150	299774	15.59	12.97	91.80	81.19	.17	.08	1.00	.51	15.42	12.89	90.80	80.67
11/08	42	8699	308473	13.99	13.00	83.65	81.25	.20	.09	1.20	.53	13.79	12.92	82.45	80.72
11/09	43	8976	317449	14.41	13.04	83.70	81.28	.36	.09	2.10	.58	14.05	12.94	81.60	80.70
WK 6		60905					60000								
TD		317449					225000								
11/10	44	9210	326659	14.76	13.08	87.13	81.44	.40	.10	2.37	.62	14.36	12.98	84.76	80.82
11/11	45	8970	335629	14.41	13.11	84.11	81.54	.00	.10	.00	.61	14.41	13.01	84.11	80.93
11/12	46	9024	344653	14.71	13.15	85.01	81.62	.00	.10	.00	.59	14.06	13.07	85.01	81.03
11/13	47	8050	352703	14.60	13.18	89.02	81.76	.54	.10	3.32	.65	14.65	13.11	86.55	81.11
11/14	48	9297	362000	14.98	13.22	88.46	81.91	.32	.11	1.90	.68	14.00	13.13	86.55	81.23
11/15	49	8989	370989	14.41	13.25	83.90	81.97	.40	.12	2.33	.72	14.80	13.16	81.57	81.25
11/16	50	8454	379443	15.25	13.29	90.42	82.16	.45	.12	2.67	.76			87.75	81.40
WK 7		61994					125000								
TD		379443					350000								
11/17	51	8838	388281	14.51	13.31	86.28	82.22	.67	.13	3.95	.83	13.85	13.18	82.33	81.39
11/18	52	8529	396810	13.88	13.32	81.13	82.19	.65	.14	3.81	.89	13.23	13.18	77.33	81.30
11/19	53	8429	405239	13.72	13.33	79.83	82.24	.00	.14	.00	.87	13.22	13.19	83.00	81.36
11/20	54	7256	412495	13.14	13.33	83.00	82.17	.72	.15	4.40	.94	12.42	13.18	75.43	81.23
11/21	55	8652	421147	15.00	13.36	88.50	82.30	.69	.16	4.09	1.00	14.31	13.20	84.40	81.31
11/22	56	7899	429046	14.78	13.38	87.33	82.40	.75	.17	4.42	1.06	14.03	13.21	82.90	81.34
11/23	57	7856	436902	14.55	13.40	85.03	82.42	.37	.17	2.16	1.08	14.18	13.23	82.86	81.34
WK 8		57459					220500								
TD		436902					570500								

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PULP DRIER GAS				PULP DRIER OIL				GAS + OIL			
DATE	DAY	---CUBIC FEET--- TODAY	---TONS 10K--- TODAY	---GALLONS--- TODAY	---TONS 10K--- TODAY	---TONS 10K--- TODAY	---TONS 10K--- TODAY	---TONS 10K--- TODAY	---TONS 10K--- TODAY	---ON BEETS--- TODAY	---ON BEETS--- TODAY
10/27	30	1274.0	39469.5	63.70	1972.89	0	0	63.70	1972.89	2.13	2.39
10/28	31	1319.5	40789.0	66.00	2038.89	0	0	66.00	2038.89	2.08	2.38
10/29	32	1330.0	42119.0	66.50	2105.39	0	0	66.50	2105.39	2.13	2.37
10/30	33	1344.0	43463.0	67.20	2172.59	0	0	67.20	2172.59	2.29	2.37
10/31	34	1277.5	44740.5	63.88	2236.47	0	0	63.88	2236.47	2.11	2.36
11/01	35	1319.5	46060.0	65.98	2302.45	0	0	65.98	2302.45	2.09	2.35
11/02	36	1436.4	47496.4	71.82	2374.27	0	0	71.82	2374.27	2.32	2.35
WK 5		9300.9	465.08	0	0	0	0	465.08	0	2.16	
TD		47496.4	2374.27	0	0	0	0	2374.27	0	2.35	
11/03	37	1369.7	48866.1	68.48	2442.75	0	0	68.48	2442.75	2.47	2.36
11/04	38	1232.0	50098.1	61.60	2504.35	0	0	61.60	2504.35	2.17	2.35
11/05	39	1193.5	51291.6	59.67	2564.02	0	0	59.67	2564.02	2.05	2.34
11/06	40	1376.7	52668.3	68.84	2632.86	0	0	68.84	2632.86	2.21	2.34
11/07	41	1408.4	54076.7	70.42	2703.28	0	0	70.42	2703.28	2.40	2.34
11/08	42	1313.3	55390.0	65.67	2768.95	0	0	65.67	2768.95	2.11	2.33
11/09	43	1376.7	56766.7	68.84	2837.79	0	0	68.84	2837.79	2.21	2.33
WK 6		9270.3	463.52	0	0	0	0	463.52	0	2.23	
TD		56766.7	2837.79	0	0	0	0	2837.79	0	2.33	
11/10	44	1380.2	58146.9	69.01	2906.80	0	0	69.01	2906.80	2.21	2.33
11/11	45	1253.0	59399.9	62.65	2969.45	0	0	62.65	2969.45	2.01	2.32
11/12	46	1316.8	60716.7	65.84	3035.29	0	0	65.84	3035.29	2.15	2.32
11/13	47	1225.3	61942.0	61.26	3096.55	0	0	61.26	3096.55	2.22	2.31
11/14	48	1291.5	63233.5	64.67	3161.22	0	0	64.67	3161.22	2.08	2.31
11/15	49	1330.9	64564.4	66.55	3227.77	0	0	66.55	3227.77	2.13	2.30
11/16	50	1320.4	65884.8	66.02	3293.79	0	0	66.02	3293.79	2.38	2.31
WK 7		9118.1	456.00	0	0	0	0	456.00	0	2.17	
TD		65884.8	3293.79	0	0	0	0	3293.79	0	2.31	
11/17	51	1288.7	67173.5	64.43	3358.22	0	0	64.43	3358.22	2.12	2.30
11/18	52	1215.0	68388.5	60.75	3418.97	0	0	60.75	3418.97	1.98	2.30
11/19	53	1215.0	69603.5	60.75	3479.72	0	0	60.75	3479.72	1.98	2.29
11/20	54	1126.7	70730.2	56.34	3536.06	0	0	56.34	3536.06	2.04	2.28
11/21	55	1154.9	71885.1	57.74	3593.80	0	0	57.74	3593.80	2.00	2.28
11/22	56	1165.5	73050.6	58.27	3652.07	0	0	58.27	3652.07	2.18	2.28
11/23	57	1185.4	74236.0	59.27	3711.34	0	0	59.27	3711.34	2.20	2.28
WK 8		8351.2	417.55	0	0	0	0	417.55	0	2.07	
TD		74236.0	3711.34	0	0	0	0	3711.34	0	2.28	

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ALL BOILERS									
BOILER OIL					BOILER GAS				
DATE	DAY	GALLONS	---TONS 10K---	CUBIC FEET	---TONS 10K---	---TONS 10K---	---TONS 10K---	---TONS 10K---	---TONS 10K---
		DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE
10/27	30	0	0	99040.6	167.13	4962.07	0	0	0
10/28	31	0	0	102572.1	176.56	5138.63	0	0	0
10/29	32	0	0	106019.6	172.37	5311.00	0	0	0
10/30	33	0	0	109386.6	168.35	5479.35	0	0	0
10/31	34	0	0	112683.6	164.85	5644.20	0	0	0
11/01	35	0	0	116239.6	177.80	5822.00	0	0	0
11/02	36	0	0	119737.6	174.90	5996.90	0	0	0
WK 5				1201.96				1201.96	5.59
TD						5996.90			5.94
11/03	37	0	0	123029.7	164.61	6161.51	0	0	0
11/04	38	0	0	126281.2	159.76	6321.27	0	0	0
11/05	39	0	0	129634.2	132.99	6454.26	0	0	0
11/06	40	0	0	133130.6	174.82	6629.08	0	0	0
11/07	41	0	0	136574.1	172.18	6801.26	0	0	0
11/08	42	0	0	140045.8	173.59	6974.85	0	0	0
11/09	43	0	0	143475.2	171.47	7146.32	0	0	0
WK 6				1149.42				1149.42	5.52
TD						7146.32			5.87
11/10	44	0	0	146985.6	175.52	7321.84	0	0	0
11/11	45	0	0	150436.6	172.55	7494.39	0	0	0
11/12	46	0	0	153911.8	173.76	7668.15	0	0	0
11/13	47	0	0	157239.1	166.37	7834.52	0	0	0
11/14	48	0	0	160679.6	177.02	8011.54	0	0	0
11/15	49	0	0	164207.6	176.40	8187.94	0	0	0
11/16	50	0	0	167390.6	159.15	8347.09	0	0	0
WK 7				1200.77				1200.77	5.70
TD						8347.09			5.85
11/17	51	0	0	170725.0	166.72	8513.81	0	0	0
11/18	52	0	0	174183.0	172.90	8686.71	0	0	0
11/19	53	0	0	177658.2	173.76	8860.47	0	0	0
11/20	54	0	0	181094.7	171.82	9032.29	0	0	0
11/21	55	0	0	184569.9	173.76	9206.05	0	0	0
11/22	56	0	0	187869.1	164.96	9371.01	0	0	0
11/23	57	0	0	191259.9	169.54	9540.55	0	0	0
WK 8				1193.46				1193.46	5.91
TD						9540.55			5.85

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Project/Acct. No. 4602-03 Date/Time 12/9/94

Project Title SUGAR BEET PROCESSING - AP-42

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Meeting Notes ☐

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CARROLLTON, MICHIGAN FACILITY

TEST DATES: 11/14/89 and 11/16/89

TEST No. Time

11/14/89

TOTAL DRY PULP PRODUCED = 186 tons

P-1

10:40 - 11:55

7.75 tons/hr. AVERAGE

P-2

NA (not available)

P-3

NA (not available)

11/16/89

TOTAL DRY PULP PRODUCED = 166 tons

P-1

11:11 - 12:20

6.92 tons/hr. AVERAGE

P-2

1:47 - 2:49

P-3

3:29 - 7:11

AVERAGE OVER TEST RUN

<u>TEST No.</u>	<u>SLICE RATE</u> (tons/hr.)	<u>PRESSED PULP</u> <u>MOISTURE (%)</u>	<u>DRIED PULP</u> <u>MOISTURE (%)</u>
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11/14/89

P-1

130

77.5

11.0

P-2

130

77.5 (est.)

11.0 (est.)

P-3

130

74.5 (est.)

10.1 (est.)

11/16/89

P-1

130

86.0

12.5

P-2

125

86.0

12.5

P-3

111

78.0

11.2

% Solids = $\frac{\text{Dry Pulp Produced} - \text{Dry Pulp Moisture} \times \text{Pulp Produced}}{\text{Beets Sliced}}$

11/14/89:

P-1:

% Solids = $\frac{7.75 - (0.11 \times 7.75)}{130} = \frac{6.90}{130} \times 100 = 5.3\%$

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P-2: % Solids = $\frac{7.75 - (0.11 \times 7.75)}{130} = \frac{6.90}{130} \times 100 = 5.3\%$

P-3: % Solids = $\frac{7.75 - (0.101 \times 7.75)}{130} = \frac{6.97}{130} \times 100 = 5.4\%$

11/16/89:

P-1: % Solids = $\frac{6.92 - (0.125 \times 6.92)}{130} = \frac{6.05}{130} \times 100 = 4.7\%$

P-2: % Solids = $\frac{6.92 - (0.125 \times 6.92)}{125} = \frac{6.05}{125} \times 100 = 4.8\%$

P-3: % Solids = $\frac{6.92 - (0.112 \times 6.92)}{111} = \frac{6.14}{111} \times 100 = 5.5\%$

Process Rate = $\frac{\text{Beets Sliced} \times \% \text{ Solids}}{1 - \left(\frac{\text{wet pulp moisture}(\%)}{100} \right)}$
(tons/hr)

11/14/89

P-1: Rate = $\frac{130 \times 0.053}{1 - \left(\frac{77.5}{100} \right)} = \frac{6.89}{0.225} = 30.6 \text{ tons/hr.}$

P-2: Rate = $\frac{130 \times 0.053}{1 - \left(\frac{77.5}{100} \right)} = \frac{6.89}{0.225} = 30.6 \text{ tons/hr.}$

P-3: Rate = $\frac{130 \times 0.054}{1 - \left(\frac{78.5}{100} \right)} = \frac{7.02}{0.255} = 27.5 \text{ tons/hr.}$

11/16/89

P-1: Rate = $\frac{130 \times 0.047}{1 - \left(\frac{86.0}{100} \right)} = \frac{6.11}{0.14} = 43.6 \text{ tons/hr.}$

P-2: Rate = $\frac{125 \times 0.048}{1 - \left(\frac{86.0}{100} \right)} = \frac{6.00}{0.14} = 42.9 \text{ tons/hr.}$

P-3: Rate = $\frac{111 \times 0.055}{1 - \left(\frac{78.0}{100} \right)} = \frac{6.11}{0.22} = 27.8 \text{ tons/hr.}$