

**PLAINTIFF'S
EXHIBIT**

CEL-6

CELANESE CHEMICAL COMPANY
Chemcel Plant
Bishop, Texas

To: Dr. R. R. Graham

From: G. D. Boyd

GDB-131-81

August 10, 1981

Laboratory Department Summary
July, 1981

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AUG 10 81

CELANESE CHEMICAL COMPANY
Chemcel Plant
Bishop, Texas

To: Dr. R. R. Graham

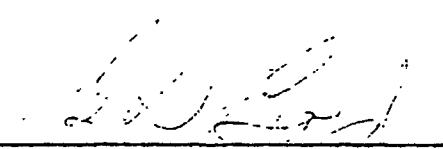
From: G. D. Boyd

GDB-131-81

August 10, 1981

Laboratory Department Summary
July, 1981

A summary of each group's monthly report is attached. Section I contains a summary of the Quality Assurance and Analytical Group activities with tables of analytical statistics, shipments, quality waivers, quality complaints and sample shipping statistics. Section II describes the status of Special Problems Groups and Staff Chemist projects by chemist assignment. A table listing the priorities, justifications, and estimated completion dates of current Special Problems projects is also included in Section II.



G. D. Boyd

GDB:jr

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HIGHLIGHTS

- ° The Hooker Chemical Co. (North Tonawanda, N.Y.) formaldehyde color problem is due to high levels of filterable iron. This problem appears unrelated to MO product color excursions.
- ° Recent positive fecal coliform tests indicate that chlorination of the BOD outfall should continue.
- ° Polyol and VCI waste treatability studies are underway.
- ° Redox potentials of groundwater monitor wells 3,4 and 6 showed negative values from -200 mv to -510 mv. Negative redox potential is indicative of anaerobic bioactivity.

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I. ANALYTICAL GROUP

Methanol Oxidation (MO)

Analytical support was provided for a rate run on MO units II and III. The samples were analyzed for methanol, water and formaldehyde content. The purpose was to establish rates and efficiencies with the crude methanol feed and to identify production bottlenecks. Process Engineering will publish a report.

Utilities and BOD

The Laboratory has begun routine determination of fecal coliform bacteria count in the Plant 101 outfall on a weekly basis. The purpose of this work is to monitor the effectiveness of the chlorination system and to determine when and if chlorination can be discontinued.

A study is underway to determine the 5 day BOD reduction across the anaerobic filter. This is to provide information to the Dallas Aerobic Marketing group.

Special Analytical Assignments

MO Formaldehyde Impurities and Color (F. R. Dow, B. W. Wise) - Formaldehyde from MO II and III had APHA colors from 5 to 15 during July. GC Capillary Column and LC analysis was performed on several series of samples in an effort to determine differences between units. The investigation is still underway, but the following observations have been determined:

1. Formaldehyde product has more impurities than expected not necessarily related to crude MeOH feed.
2. MO II and III have more impurities than MO IV.
3. The full adverse effect of T-185 OH and T-240 OH addition to MO II and III is not known.
4. LC and wet chemical analysis confirm the presence of unsaturates in streams around MO II and III.
5. Formaldehyde product (T-185 Res.) from the weak formaldehyde recovery system may cause UV absorbance problems associated with PE.
6. 2-Ethyl-2-hexenal (impurity from TMP) was present in MO III product during the July 10, 1981 formaldehyde color problem.

This investigation is still in progress. A report will be issued detailing the final results.

Customer Complaints

1. 7-81 - Hooker Chemical Co. - N. Tonawanda, N.Y. - has complained of 6 more 50% HCHO tank cars arriving with a "yellow" color (est. 25-40). With

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the one Acme Resin and two previous Hooker color complaints, listed in the June report, this brings the recent color build complaints of external customers to nine. Returned samples are in route.

2. 7-24-81 - Argo Terminal-Chicago, Illinois - Complained of a tankcar of 37.7 HCHO arriving with a color of 35. This is the first instance of a lower blend, or inhibited, color complaint. It is not known if the complaints are related. A sample is being returned for evaluation.

Quality Waivers

1. 6-30-81 - Para F-Powder - 40,000 lbs. to Du Pont (export), iron 2.6 ppm vs. max. spec. of 2.0-SQD.

2. 6-30-81 - Para C-Powder - 45,000 lbs. to Davis Mud and Chemicals, Great Bend, Kansas, iron 2.4 ppm vs. max. spec. of 2.0-SQD.

3. 7-1, 7-2, 7-9-81 - n-Butyl Acetate - 589,730 lbs. to Celanese Bayport Terminal - Iso-Butyl Acetate content at 0.12 to 0.19 wt.% vs. max. spec. of 0.10-QD.

4. 7-7, 7-8-81 n-Butyl Acetate - 595,050 lbs. to Celanese Bayport Terminal, Iso-Butyl Acetate content at 0.12 to 0.19 wt.% vs. max. spec. of 0.10-QD.

5. 7-21-81 - n-Propyl Acetate - 7,120 lbs. to Delta Solvents, Dallas, Texas - Water content at 0.18 wt.% vs. max. spec. of 0.10-SQD.

<u>Product</u>	<u>% QD¹</u> <u>Month</u>	<u>% QD</u> <u>YTD</u>	<u>% SQD²</u> <u>Month</u>	<u>% SQD</u> <u>YTD</u>
Para F-Powder	0	1.4	15.0	3.5
Para C-Powder	0	0	52.9	8.0
Diacetone Alcohol	0	0.6	0	0
Formaldehyde	0	0.2	0	0
n-Butyl Acetate	33.7	6.1	0	2.0
Sodium Formate	0	0	0	1.5
Pentaerythritol-Tech (Lube Grade as Tech)	0	0	0	1.6
Iso-Butyl Acetate	0	3.9	0	0
n-Propyl Acetate	0	0	1.3	<0.1

¹ Lbs. of product shipped out of Manufacturing Control Specification vs. total lbs. of that product shipped for Month and YTD.

² Lbs. of product shipped out of Sales Specification vs. total lbs. of that product shipped for Month and YTD.

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Analytical Statistics

	<u>July</u>	<u>July YTD</u>	<u>Previous YTD</u>
<u>Sample Count</u>			
Chemical Section	3966	31811	33123
Instrument Section	<u>3018</u>	<u>18876</u>	<u>17001</u>
Total	6984	50687	50124
 <u>Technician Overtime</u>			
Chemical Section	28	460	539
Instrument Section	<u>46</u>	<u>260</u>	<u>239</u>
Total	74	720	778
 <u>Sample Shipping</u>			
Domestic	75	438	475
Export	6	36	16
Plastics	2	9	55
Others	<u>7</u>	<u>66</u>	<u>50</u>
Total	90	549	596
 <u>QA Statistics</u>			
Shipments	597	4604	5543
Waivers (QD)	5	15	7
Waivers (SQD)	3	8	4
Complaints	4	9	23

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II. SPECIAL PROBLEMS GROUP

Process Technology B. C. Kerr

WMSTF Work - Minor support work continued in support of Process Engineering cursory design work. A sample of Pond 10 & 11E was sent to De Leval for centrifuge studies.

A trip was made to Austin to review monitor well analytical data and agronomy studies with URM, Inc. personnel. URM, Inc., believes it is important to continue the sampling and analytical program for monitor wells for the remainder of 1981.

Process Technology Manual Revision - Draft revisions for approximately one-half of the manual have been completed and Mrs. Ralston is essentially current on typing the drafts for approval.

A target date of November 18th has been selected for completion of this project.

Formaldehyde Color Problems - MS Unit data are being examined to determine if there is any correlation with MO Unit color problems.

Methanol Oxidation, Formaldehyde Blending
T. A. Jasek, D. T. Biernacki, J. F. Glenister, J. D. Presley

Formaldehyde Color (Jasek, Glenister) - Work continues in an attempt to identify the source(s) of color in the formaldehyde product.

There is some indication that a color precursor may exist in the methanol feed to the MO units. A series of distillations are currently being conducted to concentrate the various impurities present in the feed methanol. T-185 OH the Weak Formaldehyde methanol recovery stream is also being analyzed. A sample of T-185 OH has been sent to CCCTC for GC/Mass Spec analysis. Also sent for analysis is a methylene chloride extract of formaldehyde which had a color of 13. A status report on this color problem is being written.

MO Color Development Testing (Presley) - Recent customer complaints (Hooker Chemical Co) of highly colored HCHO (20-35 Pt-Co color units) led to an examination of possible storage problems at Bishop. Color development samples were set up in a 155°F oven using HCHO from the Blending Unit (V-619, V-2305, and V-2484), MO IV (V-692 and V-1745) and MO III (V-1701). The Blending Unit tanks represent HCHO that has been treated by the anion beds to remove acid and has had metalose added. The MO III and MO IV tanks are raw unit products.

Samples from all of these tanks have been taken at various intervals over a three week period. The colors are read on the samples initially and at three day intervals for a total of 21 days. To date, none of the

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samples have shown significant color build. Only early V-619 samples went off spec. (spec. is 10 Pt-Co units) colors which started at 6-8 and rose to 13-15. At this indication, V-619 was emptied and cleaned. Recent samples (since the clean-out) are still being evaluated, however, the early samples still have stable color at 13-15.

Additionally, color development tests have been set up to study various samples taken around the Blending Unit and the Tank Car Cleaning Racks. Under evaluation are both soaps, (Electrosol and Spillclean) used at the Cleaning Racks. No color was developed in Blending Unit HCHO containing ~1500 ppm of these soaps after 4 days at 155°F. Also tested were anion resins taken from the back-wash shaker, and three resin and sand samples and one wall scraping taken from V-619 when it was cleaned. Samples containing resin (1500 ppm) experienced a slight color rise from <5 to 7 after 4 days at 155°F.

Plans are to determine color build with tank car lining material. Testing will begin when treated coupons are available.

HCHO Customer Complaints (Presley) - A complaint of off color HCHO (37% HCHO/7% MeOH) was received from the Argo Terminal in Chicago. The HCHO at Argo (CELX 1523) was originally reported to be a 35 color. Much of this color was determined to be haze. A sample returned to Bishop had a color of 12. It was found that the color could be reduced to <5 by filtration through a 0.45 micron filter. The material on the filter was analyzed to be mostly a particulate iron compound. Total iron in the sample was determined by AA to be 0.22 ppm (0.17 ppm was filterable).

High color HCHO (50%) complaints have continued from Hooker Chemical Co. Two tank car samples sent back from Hooker contained high levels of iron (by AA). CELX 13203 had 5.4 ppm iron and CELX 13209 10.6 ppm iron. Levels of other metals are currently being checked. Using a combined filter system (a 5 micron and 0.45 micron), the color can be significantly reduced in the samples. CELX 12203 went from unreadable to a 6 color and CELX 13209 went from unreadable to an 18 color. Work continues.

Crude Methanol (Jasek, Biernacki, Glenister) - The Laboratory continues to provide Operations with methanol losses out the absorber vent.

Laboratory MO Micro Unit (Jasek, Biernacki) - After some initial problems with the unit efficiency, the microunit is operating well. Several new silver catalyst samples have been evaluated to establish a base case. Work is just beginning on the effects of ultrasonically cleaned silver catalyst. No conclusions can be drawn yet.

Formaldehyde Stabilizer Study II (Day) - A letter is under review which documents some of the follow-up work from a set of stabilized HCHO samples made up on January 21, 1981. (RLD-21-81)

The study done in January is referred to here as Study I. The follow-up work is Study II.

These conclusions can be drawn based on the set of stabilized HCHO samples of Study II prepared on June 19, 1981:

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1. The polyvinyl alcohol (PVOH)/metalose stabilizer mix is as good as the metalose stabilizer alone, but not better. Higher concentrations of the stabilizers than in Study I were tested, as well as different concentration and ratios of PVOH:metalose, but the stabilizer mix still did not have synergistic effects on stabilizing HCHO.
2. The optimum level of metalose stabilizer for HCHO shipments is probably 12-14 ppm. The average level of metalose in HCHO shipments in 1980 was 12.7 ppm.
3. At the optimum stabilizer concentration for HCHO shipments (12-14 ppm), a reduction in stability of the HCHO samples in Study II was seen as compared to the previous set of samples in Study I. This reduction in stability was most probably due to differences in the HCHO itself. The known differences between the HCHO used for Study I and Study II, were that, for Study II, the HCHO was colored (10 Pt-Co Units) and had been produced during the current run to feed crude methanol to the MO Units.

Future work involves determining the reason for the current reduction in HCHO stability. In Study I it was found that HCHO directly off the finishing column, T-272, in MO IV had longer stability times than HCHO which had passed through the ion exchange resin bed. Possible reasons are sodium contamination from the resin bed, acid concentration differences, and age differences of the HCHO.

Both the additional follow-up work and future work planned will be done on a part-time, low priority basis.

MO Unit Support (Glenister, Jasek) - The Laboratory conducted analytical AMR's at MO II "A" train on July 30, 1981:

<u>Indicated</u>	<u>AMR</u>	<u>Analytical</u>
		<u>Startup</u>
.85-.93		1.83
.85-.93		1.47*
.80-.85		1.29
		<u>Rate Up</u>
.83-.87		0.91

* Increased flow rate to WTM.

Dow XFS-43223 Evaluation (Glenister) - The Laboratory evaluated the total capacity of Dow SFS-43223 as a replacement for SFS-4048 in the Blending Unit. In an abbreviated method, the total capacity was determined to be 1.43 meq acid/ml resin versus the manufacturers stated value of 1.5 meq/ml resin. Operations will request information from Dow about "color throw" and bulk density of the SFS-43223 compared to SFS-4048.

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BOD, Utilities
P. W. Young, D. R. Akin

BOD II Support (Young) - Continued support was provided to BOD II Operations. The cause of high outfall COD (≈ 240 -250 ppm) is being investigated.

Fecal Coliform in 101 Outfall (Young) - The 101 outfall continues to be chlorinated to maintain fecal coliform less than 200 count/100 ml. Weekly sample of 7-6 showed 200 count/100 ml in 101 outfall before Cl_2 . The sample of 7-13 showed not only 200 count/100 ml before Cl_2 but 100 after Cl_2 .

Polyol Treatability in BOD II (Young) - A Laboratory anaerobic-aerobic system is currently being fed a feed in which 4% by volume (23% COD) is polyol steady state effluent. Operation is at current BOD II organic loading of 0.2 lbs COD/ft /day. Outfall COD is 250 ppm at an aerobic detention time of 3.5 days. The concentration of polyol waste will be further increased.

Polyol unsteady waste streams are being sampled and analyzed. These data will be used to formulate a treatability study of the unsteady state streams. A report documenting previous laboratory studies of polyol treatability is being written.

VCI Waste Treatability (Young) - VCI waste is being fed to a laboratory anaerobic-aerobic system at a feed concentration of 4% by volume (10% of COD). At an OL = 0.2 and detention time of 3.5 days, the outfall COD is 120 ppm. The concentration of VCI waste will be increased to simulate what would occur if the waste were fed to BOD II.

BOD II Aerobic Optimization (Young) - Three aerobic systems are being operated to find the optimum sludge age for the BOD II aeration basins.

Sludge Disposal - Aerobic Digestion (Young) - Two aerobic digestors are being operated in conjunction with Environmental Dynamics, Inc. to support evaluation of sludge disposal alternatives.

TPP and TPPO (and P_4O_{10}) Emissions from the Waste Liquid Boiler (Akin) - A procedure to extract TPP and TPPO from the acid scrubber solution (after neutralization) with an organic solvent has been developed. By concentrating the organic extractant and analyzing on a gas chromatograph equipped with a thermionic specific detector one can detect TPP and TPPO concentrations of 1 ppm or greater in the stack gas. This GC method has also been developed. CCCTC will analyze the acid scrubber solution for total phosphorus by atomic absorption. By taking the total phosphorus level and the total TPP and TPPO levels one can determine the P_4O_{10} level by difference. The waste liquid boiler is currently being studied to determine the best possible sampling location.

Reoccurrence of GE-60 in Plant Nitrogen Lines (Akin) - The liquid found in the Plant nitrogen lines on July 6th was determined to be a dilute mixture of GE 60 in water. Since this date no further contamination has occurred.

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High Silica Levels in the Boilers (Akin) - Silica levels in the 240 lb. steam boiler have been higher (>35 ppm) than recommended operating concentrations. The Laboratory has been monitoring the silica levels from the demineralizer to determine why the levels have been higher than usual in the boiler. Work will continue.

WMSTF Support (Akin) - A study is underway to determine if sludge to be landfilled in the future will be a hazardous solid waste. This study encompasses the toxicity and corrosivity of the landfilled sludge. This study will continue.

Methanol Synthesis
J. C. Bustabad

Reprocessing of Contaminated MeOH in V-645 and V-650 - Laboratory distillations were completed on crude methanol for base case data and crude methanol blended with contaminated MeOH from V-650 in the ratio of 14.9/1. Plans are to complete the analyses of the different streams and issue a letter next month.

Preparation for Plant Trial of Sodium Metavanadate as a MEA Corrosion Inhibitor - A Plant trial using sodium metavanadate (NaVO_3) as a MEA corrosion inhibitor was planned at a July 7th meeting of Process Engineering, Plant Engineering, Operations, and Laboratory. Laboratory evaluation of a sodium metavanadate method to be used for monitoring inhibitor concentrations during the Plant trial showed an accuracy of $\pm 3\%$ of the concentration number for ranges of 500-1000 ppm NaVO_3 . Less accuracy was encountered with a 100 ppm NaVO_3 in MEA sample. Work will continue with lower NaVO_3 concentrations (50-250 ppm.)

Monitoring of H_2S in Recycled CO_2 - July 16th and July 31st checks by Dräger showed undetectable levels of H_2S in 5MM Girdler, 2MM Girdler, and Shift recycled CO_2 streams.

Evaluation of Solids from HE-2552 - Solids seeping from HE-2552 (MUG interstage trim cooler) were identified as predominately iron, indicating corrosion associated with the heat exchanger.

Oxo Butanol
J. D. Presley

Reactor Stability Accountability - Fluctuations of TPP concentration are still being experienced. The problem seems to be partially related to the GC method. Some improvements have been made to stabilize readings. Average monthly accountability is still excellent, 89%.

Rhodium Accountability - July rhodium accounting is still good for Run VII, 88% by analysis. It is believed actual accountability would be higher if a static reactor level could be measured. Rhodium loss out T-210 Res. RTD is 6.06 pounds.

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Studies are in progress to determine the feasibility of obtaining a PE with a high di-PE content through screening of Tech-grade PE. Results will be published in a letter with Operations in August.

Formation of Formals in the HCHO Stripper Column (Smith) - The formation of additional formals in the PE HCHO stripper column (T-286) is being investigated.

Minimizing UV Absorbance of Pure PE at 220 nm (Huelle) - The Pierce Chemical Company method of sugar detection was not useful in determining sugar precursors. The GC method does not separate C₁ to C₄ compounds. George Blay from the Analytical Section of the Tech Center has suggested an alternative method. I am currently working on a revision of the alternative method and trying to identify peaks detected. The Pure PE run now in progress has consistently produced low UV absorbing product, making it difficult to correlate HCHO GC peaks to high UV absorbance. Work will continue.

Trimethylolpropane
R. L. Day, S. G. Smith

T-312 Extractor Optimization - Base Case Data (Day) - A letter is under review documenting base case data gathered on the TMP T-312 extractor in July and December, 1980.

Future work involves Plant trials to evaluate changing the temperature(s) of the feed(s) to the extractor to reduce the ethyl acetate and TMP losses in the residue. Data indicate that increasing the temperature of the ethyl acetate solvent feed will reduce both the TMP and ethyl acetate losses in the residue.

A meeting with Production, Process, and the Laboratory will be held to discuss future work.

TMP Reactor Scale Buildup (Day) - At the request of J. Thomas, CCCTC, samples (1 lb.) of the TMP tubular reactor scale were collected during the TMP Unit shutdown and sent to the Tech Center on July 14, 1981.

Every time the TMP Unit is down, the scale buildup is soaked in ethyl acetate then water blasted from the reactors.

This scale buildup was the worst on the top two or three rows of the reactors, where it was $\approx 1/2$ " thick. The scale has a rubbery texture. The side facing the walls of the reactor is different in appearance from the side facing the reactor core.

Analysis in the Bishop Laboratory showed the scale to be roughly 5% inorganics.

The Tech Center is working on a method to remove the reactor scale buildup that may be superior to the current method.

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Improved Rhodium Recovery - The 20% phosphoric acid (H_3PO_4) treatment followed by two water washes has been confirmed in successfully treating Run VI MEA contaminated Oxo catalyst. The acid treatment causes a slight volume loss of the catalyst being treated with a corresponding increase of rhodium. This loss of volume is presumed to be dissolved water in the catalyst going to the H_3PO_4 phase. As a check, rhodiums in the acid phase and the two water washes were determined and found to be 16-18 ppm, 2-3 ppm and 0.5-1.0 ppm, respectively.

Confirmation of the catalytic activity after acid treatment and 1:10 (catalyst:solvent) extraction with propylene was also made. Previously, the catalytic activity was shown to 0.91 liters/mole-sec. The confirmation testing yielded 0.89 liters/mole-sec.

Foaming tests were attempted as with previous samples, however, results were still inconclusive. Plans are to send samples of treated and untreated Run VI catalyst to CCCTC for Micro Unit rousing tests.

Work Continues.

Acetates, Paraform, Formcel[®] Products
J. E. Russell

Unit Support - None provided.

1,3-Butylene Glycol
J. E. Russell

V-778 Residue Burning - A letter was published (JER-29-81) documenting the results of V-778 residue analysis. The average of the 13 samples taken during May and June showed an ash content of 3.29%. This should be a representative value of the ash content for V-778 Residue over a period of time.

Pentaerythritol
L. M. Harvey, B. K. Huelle, S. G. Smith

Recovery of PE From VCI Extraction Waste Stream (Harvey) - VCI began operation of their bench-scale extraction unit on July 27 to investigate the effect of various solvent ratios on extractor efficiency. The organic extract from their 3-day study has been obtained for Bishop Laboratory studies to recover PE. Work is in progress.

Determine Potential of PE Dust for Use as Lube-grade PE (Harvey) - Characterization of PE Dust (collected in Hopper #4 over a three-month period) by composition, particle size, ash and moisture has been completed. Di-PE content of the dust varied from 18-31 wt.%. The ash and moisture content exceed the specifications set for Tech-grade PE (0.01 wt.% max. ash, 0.30 wt.% max. moisture). A report is being written with Operations.

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Methanolysis of TMP 747 Residue (Day) - A recent economic evaluation of the methanolysis of TMP 747 Residue scheme proved unfavorable. A review of the original Laboratory work showed that only a 2.5:1 molar ratio of methanol to bis TMP mono linear formal was utilized. If this ratio can be dropped (i.e., 2:1) and still maintain a comparable conversion to TMP, then this would improve the economics considerably.

After the methanolysis step in the original scheme, the methanolysis product was extracted with T-312 residue.

The result was a two-phased system. The organic stream was to be burned. However, later economic evaluation showed this stream to be too high in salt content. If the amount of methanol used can be dropped enough, it is possible that the salt content of this organic layer will also drop.

The water layer resulting from the extraction step was to be sent to T-202 to remove the excess methanol. However, if the methanol usage is lowered so that minimal excess of methanol exists, then it may be possible to return this stream directly to the T-312 extractor. According to the original Laboratory work, this stream would have a composition comparable to the stream that currently feeds the extractor (except for the methanol).

Work is currently underway to determine if lowering the molar ratio of methanol to bis TMP mono linear formal is feasible.

Formation of Formals in the TMP HCHO Stripper Column (Smith) - The formal content of TMP HCHO stripper column (T-202) residue was compared to that of T-202 feed stripped of HCHO under "mild" conditions in the Laboratory. No difference was observed between the feed and residue.

Miscellaneous

J. E. Russell, D. R. Akin

Redox Potential of Monitor Wells - The redox potential of the liquid in monitor wells 3, 4, and 6 was measured in response to a request from CCCTC. The wells had a nitrogen purge to exclude oxygen from contacting and dissolving in the liquid. The potentials ranged from -200 mv to -510 mv in depths from 2 ft. to 17.5 ft.

Samples of the nitrogen blanket were analyzed for methane. The nitrogen from monitor wells 3 and 4 showed methane was present (0.2-0.3%). No methane was detectable in the atmosphere above MW6.

Environmental Health

C. E. Gary, K. V. Parker

The follow-up personal formaldehyde exposure sampling is ~90% complete. (KVP)

The use of infrared analysis to test for asbestos in insulation was demonstrated and compared to wet chemical spot testing. (CEG, KVP)

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A personal carbon monoxide exposure survey was completed in the MS and Oxo units. No problem eight hour TWA exposure was found. (CEG-53-81).

The reaction at ambient temperature between formaldehyde (5-250 ppm) and ammonium salts (1%) and/or ammonium hydroxide (0.3-3.0%) is not quantitative and can not be used to determine formaldehyde exposures. (CEG-52-81)

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Current Special Problems Projects

Project	Chemist	Priority	Justification	Estimated Completion Date
Run VI Catalyst Cleanup and Reactivation	Presley	1	Raw Materials Savings	September 1, 1981
MO Catalyst Screening	Jasek	1	To establish alternate catalyst	Continuing
Formaldehyde Product Color	Jasek Glenister	1	MOB	September, 1981
GC Methanol Oxidation Reactor Optimization	Jasek	2	Catalyst Evaluation for Possible Efficiency Improvements	November, 1981
Modified Silver Catalyst		1	Catalyst Efficiency Improvements	January 1, 1982
Silver Rewashing Improvements		1	Efficiency Improvements and Raw Material Savings	September 1, 1981
Sinter Test Evaluation	Glenister	1	Establish Alternate Suppliers	September 1, 1981
TPP, P ₂ O ₅ Emissions	Alkin	2	Emissions Quantification	October 1, 1981
Vacuum Truck Characterization		1	WMSTF Support	September 1, 1981
Sulfur Adsorbents for Methane Feed	Bustabad	1	Reduce Sulfur Contamination of Reformer Catalyst.	September 1, 1981
Ni(CO) ₄ Method Evaluation		2	Determination of Method's Accuracy	September 1, 1981

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Current Special Problems Projects

Project	Chemist	Priority	Justification	Estimated Completion Date
WMSTF Support	B. C. Kerr	1	MOB	January 1, 1982
Revision of Process Technology Manual	↓	2	MOB	November 18, 1981
TMP - Extractor Optimization	Day	1	Raw Material Savings	October, 1981
New Formaldehyde Stabilizer System	↓	1	MOB	September, 1981
OSHA Monitoring	Gary	1	Insure Employee Health and Safety - OSHA Compliance	Continuing
Eliminate or Reduce the Salt Content on V-778 (1,3-BG heavy ends) to Allow it to be Burned without Excessive Particulate Emissions	Russell	1	Solve Environmental Problems and Recover Energy by Burning Stream	September, 1981
Develop a way to Monitor Conversion in the PE Reaction System	Huelle	1	MOB (Quality) and Raw Materials	September, 1981
Determine the Potential of PE Dust for Use as Lube Grade PE - Assist Production Personnel as Needed.	Harvey	1	Supply Growing Market for PE	October, 1981
Recover PE from VCI Extraction Process Organic Stream	↓	1	Raw Materials Savings	November, 1981
Determine if Additional Formalds are Produced in the TMP and PE HCHO Stripper Column	Smith	1	Raw Materials Savings	September, 1981
Screen Available Filter Materials for Improved PE Filtration	↓	2	Raw Material Savings	November, 1981

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To: Dr. R. R. Graham

From: G. D. Boyd

GDB-135-81

September 4, 1981

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August, 1981

Distribution

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D. D. Siemonsma
W. L. Sharp
K. R. Stelts
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Plastics

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A. C. Abshier
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E. J. Heinz

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W. T. McNair
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J. E. Sanborn, Bayport
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