GW - 001

GENERAL CORRESPONDENCE

2007 - 1982
9 of 11

ARTHUR ANDERSEN & CO.

717-17TH STREET, SUITE 1900
DENVER, COLORADO 80202
(303) 295-1900

July 11, 1986

Mr. David J. Younggren
Vice President of Finance/
Administration
Gary Energy Corporation
115 Inverness Drive, East
Englewood, Colorado 80112-5116

Dear Mr. Younggren:

We understand from our prior discussions that the Environmental Protection Agency ("EPA") has asked that you provide a letter from us regarding Gary Energy Corporation's ("GEC") financial ability to cover the cost of certain "site closure activity." You have also indicated that you believe this cost will be approximately $290,950.

In this regard, we have performed an examination of the December 31, 1985 financial statements of Gary Energy Corporation and Bloomfield Refining Company. Our report on this examination was dated April 4, 1986. The consolidated balance sheet included in that report as of December 31, 1985, indicated that current assets including cash, temporary investments, accounts receivable, inventories, etc., totaled $29,800,907 and current liabilities including accounts payable, bank debt, and other, totaled $17,195,460. Thus, the consolidated balance sheet showed working capital of $12,605,447 of which $5,193,494 represented pledged cash under the Company's bank loan agreement. We have not performed an examination of any financial statements subsequent to December 31, 1985. Consequently, we can express no opinion on any financial statements as of a more recent date.

We have, however, read the unaudited consolidated balance sheet for the respective entities as of March 31, 1986, and noted that current assets totaled $25,999,021, and current liabilities totaled $15,160,061 with resultant working capital of $10,838,960 of which $5,323,575 represented pledged cash under the Company's bank loan agreement as of that date. These amounts are unaudited and were not examined by us. Consequently, we can express no opinion on these amounts.

Thus, with regard to the Company's financial ability to cover an expenditure of $290,950, we cannot specifically express an opinion; however, we believe that the magnitude of the consolidated working capital is certainly a factor that should be considered.

It should be understood that we make no representations as to the sufficiency for your purposes of the procedures enumerated above in the preceding paragraph; also, those procedures would not necessarily reveal any change in the working capital since March 31, 1986. Further, we have addressed ourselves solely to the foregoing data as set forth in the Companies' audited financial statements.

This letter is solely for the information of, and assistance to, the Company in connection with the EPA investigation referred to above and is not to be used, circulated, quoted or otherwise referred to within or without the Company for any other purpose.

Very truly yours,

Arthur Andersen & Co.

das/3279a

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

June 30, 1986

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. L. Stamets
Director
Energy & Minerals Department
Oil Conservation Division
State of New Mexico
State Land Office Building
P. O. Box 208
Santa Fe, NM 87501

Dear Mr. Stamets:

Enclosed is a Remedial Action Plan for Bloomfield Refinery prepared by our consultant, Engineering Science. You will note this provides for initiation of recovery activities by October 1, 1986, as requested in your letter of March 4, 1986.

Sincerely yours,

David J. Younggren
Vice President Finance
and Administration

enclosure

DJY:dam

115 Inverness Drive East • Englewood, Colorado 80112-5116 • 303/799-3800 • TWX 910-935-0791

ENGINEERING-SCIENCE

2901 NORTH INTERREGIONAL • AUSTIN, TEXAS 78722 • 512/477-9901

CABLE ADDRESS: ENGINSCI
TELEX: 77-6442

June 26, 1986

Mr. David J. Younggren
Vice President of Finance/Administration
Gary Energy Corporation
115 Inverness Drive East
Englewood, CO 80112-5116

Dear Mr. Younggren:

Enclosed find two copies of a remedial action plan for the Bloomfield, New Mexico, refinery. The plan was prepared by Engineering-Science, Inc. (ES) pursuant to meeting requirements as set forth in a letter to Bloomfield Refining from New Mexico OCD dated March 4, 1986. This plan is due for receipt by R.L. Stamets, Director OCD, no later than July 1, 1986. Thank you for your attention to this matter.

Sincerely,

James E. Rumbo, P.E.
Project Engineer

Enclosures

dg

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

June 2, 1986

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. L. Stamets
Director
Energy & Minerals Department
Oil Conservation Division
State of New Mexico
State Land Office Building
P. O. Box 2088
Santa Fe, NM 87501

Dear Mr. Stamets:

In response to your letter of March 4, 1986, to Mr. Chris Hawley, we have had our consultant, Engineering Science, prepare the enclosed "Report on Subsurface Hydrocarbon Data at the Bloomfield Refinery" for OCD's review. Also enclosed are final analytical results for the April 22, 1986, Hammond Ditch samples (taken within 24 hours of the start of the irrigation season), and a subsequent set of Hammond Ditch samples taken on April 28, 1986. You will note that the results for the second set of samples show that the small amounts of hydrocarbons found in the initial samples are no longer present.

We are using this information to develop a plan for installation of recovery wells. As requested in your letter, this plan will be submitted to OCD no later than July 1, 1986.

Sincerely,

David J. Younggren
Vice President Finance
and Administration

enclosures

DJY:dam

115 Inverness Drive East • Englewood, Colorado 80112-5116 • 303/799-3800 • TWX 910-935-0791

United States Department of the Interior
BUREAU OF RECLAMATION
UPPER COLORADO REGION
DURANGO PROJECTS OFFICE
P.O. BOX 640
DURANGO, COLORADO 81302-0640

IN REPLY
REFER TO: 430
520.

APR - 4 1986

Mr. David G. Boyer
Environmental Bureau Chief
Oil Conservation Division
Energy and Minerals Department
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

We appreciate the recent information provided to us by your March 12, 1986 letter concerning the oil leakage into the Hammond Main Canal by the Bloomfield Refinery. We would very much appreciate being kept informed of the progress between the refinery and your office on this matter.

If we can be of any assistance, please contact Mr. Pat Schumacher in our office at telephone number 303-247-0247.

Sincerely yours,

Rick L. Gold

Rick L. Gold
Projects Manager

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

March 12, 1986

Mr. Pat Schumacher
U.S. Bureau of Reclamation
P. O. Box 640
Durango, Colorado 81301

Dear Mr. Schumacher:

Enclosed, as recently discussed by telephone, are copies of recent correspondence between this agency and Bloomfield Refinery regarding oil leakage into Hammond Ditch, and copies of recent EPA orders regarding required subsurface investigation at their facility.

If you would like further information, please contact me at 827-5812.

Sincerely,

David G. Boyer

DAVID G. BOYER, Geologist
Environmental Bureau Chief

DGB:dp

Enclosures

cc: OCD - ~~Hobbs~~ Aztec

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

March 12, 1986

Officer Joe Shupla
San Juan County Sheriff's Office
105 South Oliver
Aztec, New Mexico 87410

Dear Officer Shupla:

Enclosed, as recently discussed by telephone, are copies of recent correspondence between this agency and Bloomfield Refinery regarding oil leakage into Hammond Ditch, and copies of recent EPA orders regarding required subsurface investigation at their facility.

If you would like further information, please contact me at 827-5812.

Sincerely,

David G Boyer

DAVID G. BOYER, Geologist
Environmental Bureau Chief

DGB:dp

Enclosures

cc: OCD - ~~Hobbs~~ Aztec

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

March 12, 1986

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. Earl Hickam
276 County Road #5500
Bloomfield, N.M. 87413

Dear Mr. Hickam:

Enclosed, as recently discussed by telephone, are copies of recent correspondence between this agency and Bloomfield Refinery regarding oil leakage into Hammond Ditch, and copies of recent EPA orders regarding required subsurface investigation at their facility.

If you would like further information, please contact me at 827-5812.

Sincerely,

David G. Boyer

DAVID G. BOYER, Geologist
Environmental Bureau Chief

DGB:dp

Enclosures

cc: OCD - ~~Hobbs~~ Aztec

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal | Time 3:30PM | Date 3/10/86

Originating Party	Other Parties
DAVE BOYER - OCD	Will Focht US EPA Dallas ENV. Eng (214) 767-9884

Subject: Bloomfield Refinery

Discussion: I called to get a copy of the latest 3013 order regarding the required investigation at the site, and to see if EPA received the 3/4/86 letter from OCD to BR requiring cleanup along Hammond Ditch at Sullivan Road. After some discussion about the 3013 order, Focht informed me that after the 3013 study is done, EPA is going to issue a 3008(H) compliance order. The 3008(H) paragraph was added as a result of the Nov 84 RCRA amendments and allows EPA to require cleanup of hazardous constituents as well as hazardous waste from any RCRA facility subject to a permit. This includes crude oil, gasoline or any other liquid or solid with a hazardous constituent listed in 40 CFR 261 Appendix VIII. He further informed me that I OCD should have discussed our letter with EPA prior to sending since EPA is going to exert jurisdiction over this same cleanup in the future. This is the first I have heard of this 3008(H) amendment and will follow up on this.

~~Conclusions or Agreements~~

Distribution: BR File, Director

Signed: Dave Boyer

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS
1935 - 1985

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

March 4, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Chris Hawley
Environmental Engineer
Bloomfield Refining Company
P. O. Box 159
Bloomfield, New Mexico 87413

Dear Mr. Hawley:

Over the past several months, Mr. David Boyer of my staff has discussed with you the necessity of designing and installing an oil recovery system to contain and recover crude oil and/or refined product hydrocarbons in the subsurface along Hammond Ditch in the vicinity of Sullivan Road. Field visits by Mr. Boyer on January 28, 1986, and by other members of my staff on February 28, revealed increased seepage of hydrocarbons into Hammond Ditch on either side of the road crossing. Although the ditch is blocked during the winter season, and the company is committed to capture drainage into the ditch, the volume and amount of oil moving into the ditch, as observed by OCD staff, appears to be of greater volume than was observed the previous winter. OCD sampling of fluids in 1985 from shallow holes 18 to 24 inches deep dug in soil, near the ditch and Sullivan Road show some aromatic hydrocarbon concentrations exceeding existing or proposed state ground water standards and proposed EPA drinking water standards.

The discharge plan currently in effect for the Bloomfield Refinery commits the company to "effective detection and clean-up of accidental spill of hydrocarbon substances or other refinery chemicals" (p. vi, plan "Summary" in Discharge Plan document dated March, 1984.) Additional commitments provided under "Contingency Plans" on pages 31-32 of the document, include a commitment to carry out additional studies if ground or surface water contamination is found which exceeds the applicable regulatory concentrations, and to propose appropriate remedial and preventative measures to rectify the problem.

In accordance with the Discharge Plan, Bloomfield Refining Company is hereby directed to take action to delineate the extent the hyrdocarbon contamination in the Jackson Lake Terrace cobble beds on the west side of the refinery in the vicinity of Hammond Ditch and Sullivan Road. Such investigation shall commence immediately and be completed no later than June 2, 1986, and the result reported to OCD for review. The investigation shall determine the lateral extent of the floating

hydrocarbon zone, the extent of the dissolved hydrocarbon contamination of ground water in the cobble beds in that area, and the direction and rate of movement of both the liquid hydrocarbon and dissolved contaminant phase. Since current information indicates contamination has left the property to the southwest and west, the study should include investigation to the south of Sullivan Road and to the west of Hammond Ditch between the ditch and NM Highway 44.

The Division further directs that, based on the results of the above study, the company prepare an appropriate remedial plan for Division review and approval. The plan is to be submitted no later than July 1, 1986, and will cover placement and design of recovery wells (or trenches), a schedule for operation, and fluid treatment/disposal plans. The Division is aware that Bloomfield Refinery has been performing subsurface investigations as a result of an EPA 3013-RCRA order. The recently completed monitoring wells should provide valuable data that will assist in the design of such a system. The OCD will provide comments on the remedial plan within 30 days of receipt. Recovery activities pursuant to the approved remedial plan shall commence on or before October 1, 1986.

If you have any questions in this matter, please contact David Boyer at 827-5812.

Sincerely,

R. L. STAMETS
Director

RLS:DB:dp

cc: D. G. Boyer ✓
OCD District Office, Aztec
EID Hazardous Waste Section
EID Surface Water Section
EPA Hazardous Material Research, Region VI, Dallas

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone ☒ Personal | Time 1:30 | Date 2/28/86

Originating Party	Other Parties
Jami Bailey	Chris Hawley, David Johnson - Gary Energy Refinery; Chas. Gholson, Roger Anderson - OCD

Subject

Dumping of cement in irrigation ditch west of Refinery.

Discussion

Waste cement had been dumped into ditch by cement co. against Gary Energy's directions. Cement co. was in process of removing cement from ditch during time of inspection. Damage was minimal. Oil seeps were observed along ditch, which was dammed to prevent movement down ditch. Six monitor wells have been drilled, + 4 more are scheduled to be completed. 6" stainless pipe + screens will be set through the perched water zone.

Conclusions or Agreements

Distribution file

Signed Jami Bailey

PUBLIC NOTICE

Proposal to Grant a PSD Permit Extension to
Bloomfield Refinery Company
(Formerly Plateau, Inc.)

Bloomfield Refinery Company, P. O. Box 159 Bloomfield, New Mexico 87413, has submitted a request for an additional extension of the expiration date of the Prevention of Significant Deterioration (PSD) permit, PSD-NM-422. This permit was issued to Plateau, Incorporated by the Environmental Protection Agency (EPA) on June 11, 1983. This refinery is now owned by the Bloomfield Refinery Company. The permit authorizes the expansion of the capacity of the existing refinery located on Sullivan Road, approximately one mile southeast of Bloomfield, San Juan County, New Mexico. Construction has not begun on this project due to the prevailing economic climate in the oil refining industry. Therefore, the company requested an extension which EPA granted on December 7, 1983, to a new expiration date of June 11, 1985. Since the conditions that resulted in the first extension have not been resolved, Bloomfield Refinery Company has requested an additional extension to a new expiration date of December 11, 1986.

The New Mexico Environmental Improvement Division (NMEID) reviewed this extension request of Bloomfield Refinery Company, since they have been delegated the technical review authority for PSD In the State of New Mexico.

The NMEID recommends approval of the additional extension and EPA accepts that recommendation. Therefore, EPA proposes to grant the requested extension of the expiration date of Permit PSD-NM-422 to December 11, 1986. Because of the potential public interest in this permit extension request, EPA is accepting comments on the merits of the company's request for a period of thirty days following publication of this notice. Since this permit expired on June 11, 1985, EPA is granting an interim extension until March 11, 1986, to preserve the status quo during the comment period.

Comments should be addressed to Mrs. Donna Ascenzi, Air Enforcement Branch, Air, Pesticides and Toxics Division, U.S. Environmental Protection Agency, Region 6, 1201 Elm Street, Dallas, Texas 75270. Documents relevant to the company's request are available during normal duty hours at the Air, Pesticides and Toxics Division, address above, and at the offices of the New Mexico Environmental Improvement Division, 725 St. Michaels Drive, Santa Fe, New Mexico 87504-0968.

Rcvd. EMD Office
2/21/86

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

[X] Telephone [ ] Personal	Time 3:30	Date 1/3/86

Originating Party	Other Parties
Charles Gholson	Jami Bailey

Subject: Leak at Plateau Refinery

Discussion: On routine inspection of area, Charlie discovered oil seeping into irrigation ditch on the North + West sides of ditch in 4 or 5 locations. The ditch is off + progm on top, but a skim of HC's are apparent on the surface. Several times during the winter, the ditch will be opened to fill cisterns. Charlie suspects a leaking tank + will return to site today to take photographs.

Conclusions or Agreements

Message was left for Charlie to call Dave Boyer 1st thing Monday morning, 1/6/86

Distribution: File

Signed: Jami Bailey

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

August 5, 1985

Mr. William H. Taylor, Jr.
Chief, Enforcement Section (5A-HE)
Region VI, U.S. Environmental Protection Agency
1201 Elm Street
Dallas, TX 75270

Dear Mr. Taylor:

Attached is our modified detailed workplan for monitoring, testing, analysis and reporting at the Bloomfield Refinery as required per 3013 Administrative Order, Docket No. RCRA-3013-00-185. The plan was prepared for us by our consultant, Engineering-Science, Inc. to incorporate the revisions specified in your letter of July 5, 1985. I trust this will now meet with your approval.

If you or any of your staff have any questions regarding this proposal, they should be addressed to Mr. Harry F. Mason, Turner, Mason and Company, 400 N. Olive - L.B. 264, Dallas, Texas 75201, or Mr. Joseph F. Guida, Gardere & Wynne, 1500 Diamond Shamrock Tower, Dallas, Texas 75201. Mr. Mason can be reached at (214) 754-0898 and Mr. Guida at (214) 748-7211.

Very truly yours,

BLOOMFIELD REFINING COMPANY

A. Joe Warr
Vice President Supply,
Refining and Marketing

attachment

✓cc: Mr. Peter Pache, Manager
Hazardous Waste Section
Groundwater and Hazardous Waste Bureau
Environmental Improvement Division
New Mexico Health and Environmental Department
P. O. Box 968
Santa Fe, NM 87504-0968

RECEIVED
AUG 0 9 1985
HAZARDOUS WASTE SECTION

AJW:dam

A WORK PLAN FOR MONITORING, TESTING, ANALYSIS, AND REPORTING AT THE BLOOMFIELD REFINERY

Prepared by

Engineering-Science, Inc.
2901 North Interregional
Austin, Texas 78722

July 1985

SECTION 1

INTRODUCTION

This workplan for monitoring, testing, analysis, and reporting of the subsurface hydrocarbons at the Bloomfield Refining Company, Inc. refinery in Bloomfield, New Mexico has been prepared to address the Administrative Order issued to Gary Energy Corporation and Bloomfield Refining Company, Inc., pursuant to Section 3013 of the Resource Conservations and Recovery Act (RCRA), 42 U.S.C. §6934 (Docket No. RCRA-3013-00-185). Background information on the refinery, including the environmental setting, a comprehensive summary of the geohydrology of the site, and a summary and evaluation of past investigative efforts at the site has been previously presented to the State of New Mexico Environmental Improvement Division and EPA in a January 1985 report entitled "A Review of Subsurface Petroleum Hydrocarbons at the Bloomfield Refinery." This report is presented with the workplan as Exhibit 1.

The workplan consists of three sections, including this introduction. Following the introduction is a description of the proposed field investigation in Section 2, including groundwater and surface water sampling and analysis, determination of water level measurements, and an electrical resistivity survey, as well as quality assurance/quality control and health and safety considerations. The project schedule is presented as Section 3.

SECTION 2

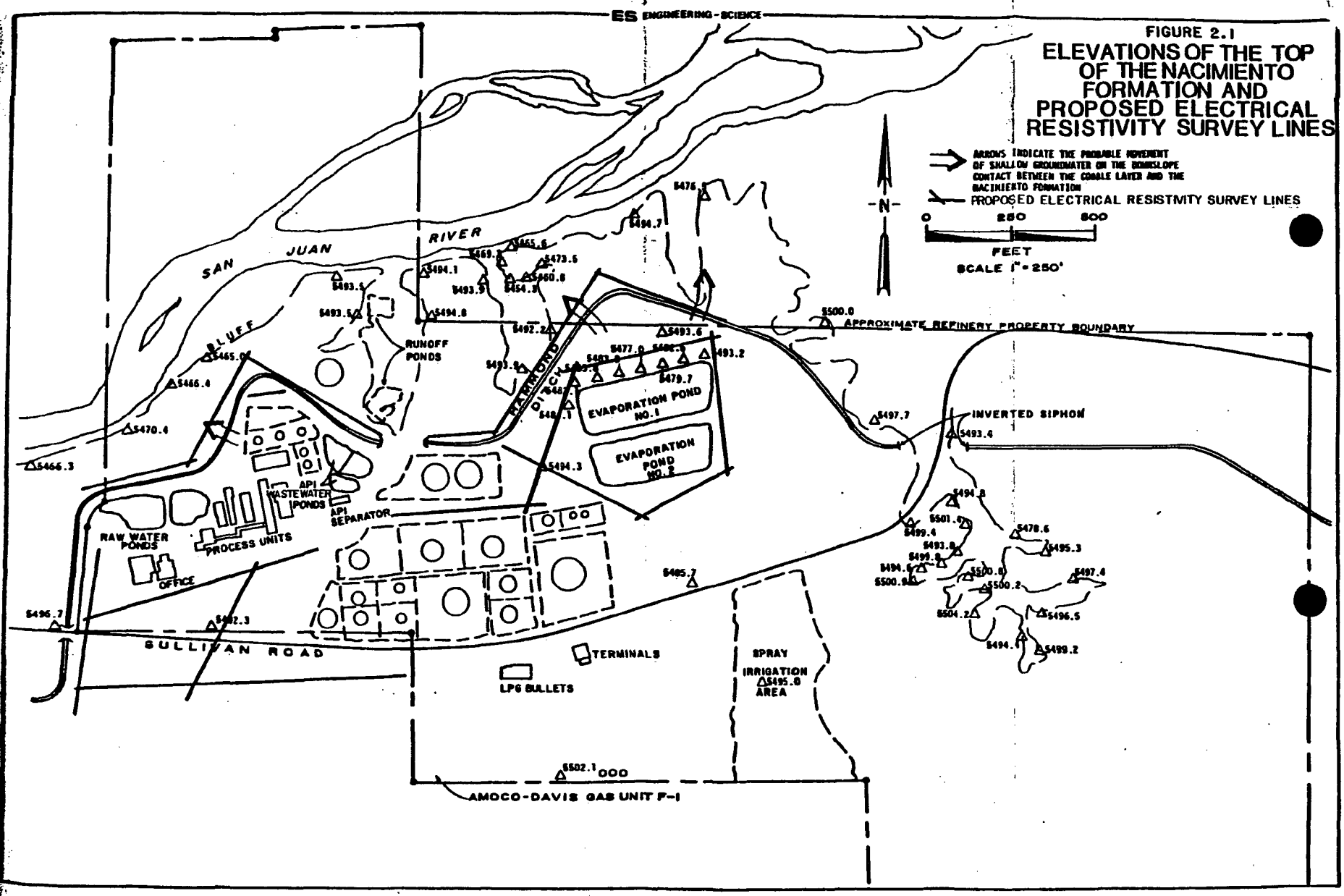
PROPOSED FIELD INVESTIGATION

The proposed field investigation at the Bloomfield Refinery consists of the following elements: 1) an electrical resistivity survey of potentially contaminated areas of the refinery; 2) additional groundwater monitoring and water level measurements; and 3) additional sampling and analysis of surface waters. These elements, as well as health and safety considerations and procedures which well be followed to ensure data integrity, are described in more detail in the following paragraphs.

ELECTRICAL RESISTIVITY SURVEY

An electrical resistivity survey is proposed for those areas of the refinery which are potentially impacted by subsurface petroleum hydrocarbons. The survey will be conducted with a Bison Model 2350B Electrical Resistivity Meter or equivalent instrument which is capable of obtaining measurements of the earth's resistivity at various depths. This survey is expected to be useful in several areas. First, considering the probable major differences in resistivity between the upper alluvial cobble layer and the massively-bedded Nacimiento Formation, the top of the Nacimiento Formation should be easily determined in most areas. This information will be used to determine the subsurface slope or dip of the Nacimiento Formation and the probable directions of petroleum hydrocarbon movement along the contact between the two formations. In particular, the resistivity measurements are expected to be useful in determining whether an east-west trending depression exists along the Nacimiento subcrop beneath the refinery. Secondly, the survey should provide information useful in locating any additional groundwater monitoring wells which may be necessary to define the extent of subsurface hydrocarbons.

Approximate locations of the survey lines proposed for the electrical resistivity survey are shown on Figure 2.1. The resistivity survey data will be correlated with existing known elevations of the Nacimiento Formation near monitoring wells and boreholes prior to the examination of other areas, primarily between the Hammond Ditch and the San Juan River, in the


ES ENGINEERING-SCIENCE
FIGURE 2.1
ELEVATIONS OF THE TOP OF THE NACIMIENTO FORMATION AND PROPOSED ELECTRICAL RESISTIVITY SURVEY LINES
ARROWS INDICATE THE PROBABLE MOVEMENT OF SHALLOW GROUNDWATER ON THE BOMBSLOPE CONTACT BETWEEN THE COBBLE LAYER AND THE NACIMIENTO FORMATION
PROPOSED ELECTRICAL RESISTIVITY SURVEY LINES
N
0 250 500
FEET
SCALE 1" = 250'
SAN JUAN RIVER
BLUFF
RUNOFF PONDS
RICHMOND DITCH
EVAPORATION POND NO. 1
EVAPORATION POND NO. 2
APPROXIMATE REFINERY PROPERTY BOUNDARY
INVERTED SIPHON
API WASTEWATER PONDS
API SEPARATOR
RAW WATER PONDS
PROCESS UNITS
OFFICE
SULLIVAN ROAD
TERMINALS
LPG BULLETS
SPRAY IRRIGATION AREA
AMOCO-DAVIS GAS UNIT F-1

central portion of the refinery, and in the vicinity of MW-4. Electrode spacings will vary depending upon the desired information in each area but generally will include the upper alluvial layer. Additional survey points or lines may be included to develop additional information depending on the data developed in the field.

GROUNDWATER MONITORING WELLS

Four additional monitoring wells are proposed to provide information on the extent of petroleum hydrocarbons in the subsurface at the refinery. These proposed wells will be completed in the general areas shown on Figure 2.2.

Well Construction

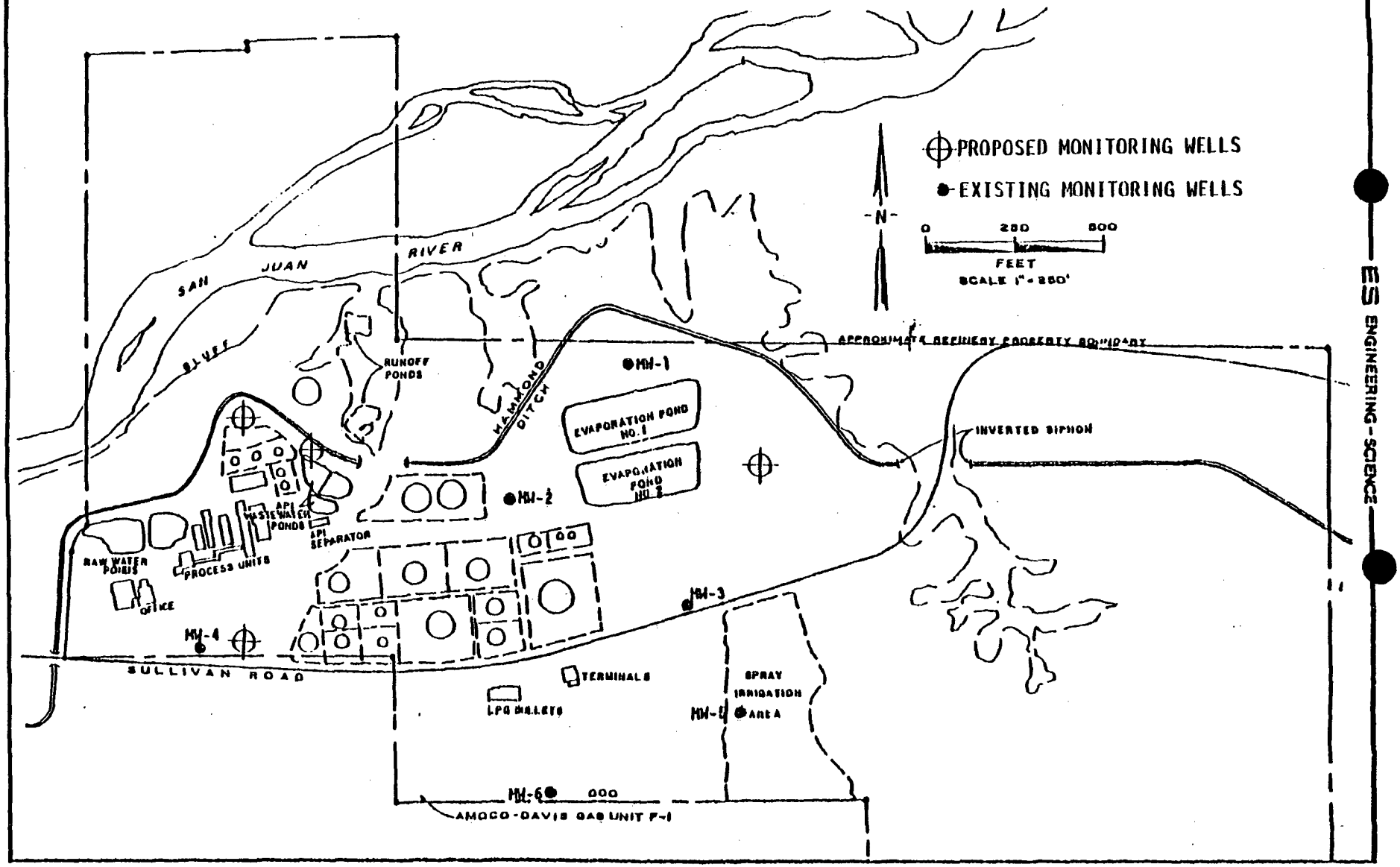
The monitoring wells will be drilled using air rotary methods if possible. Otherwise mud rotary drilling will be employed. The borehole into the Nacimiento Formation will be advanced into the top 15 to 20 feet of the Nacimiento Formation as identified through cuttings. The well will be cased with stainless steel screening in the saturated zone followed by six-inch schedule 40 PVC casing. Sand will then be placed in the well annulus, and the height of the sand will be checked by a tremie pipe. The sand will extend five feet above the top of the screen. A five-foot bentonite seal then will be placed above the screen, and its position will be verified with the tremie pipe. The annulus will then be grouted from the top of the bentonite seal to the surface. This will ensure that any water in the well is from the Nacimiento Formation and not the overlying alluvial cobble layer. The well will be developed by using a bailer to surge the well and break up any well bore mud cake. The well will be considered fully developed when three consecutive conductivity readings are the same. The three remaining wells will be completed in the cobble layer and will be constructed and developed in a similar manner.

Equipment Cleaning and Decontamination

All drilling equipment and materials (i.e., drill bits, subs, drill collars, drill pipe, tremie pipe, portable mud pits, Kelly casing, screens, and caps) shall be cleaned and void of any external oils or grease prior to each use. All hoses, mud pits, drill string, mud pumps, water tanks, etc.

FIGURE 2.2

LOCATIONS OF EXISTING AND PROPOSED MONITORING WELLS



shall be flushed with water before well drilling. All decontamination water and development water will be collected and routed to the refinery wastewater treatment system. All drilling mud and cuttings will be disposed off-site at an approved landfill.

Sampling Equipment and Procedures

Groundwater samples will be collected from each of the six existing wells and the proposed wells on a quarterly basis, using a stainless steel bailer. To minimize the potential for cross-contamination, the wells will be sampled in the order of probable hydrocarbon concentrations, progressing from lowest to highest. The bailer will be cleaned between samples with methanol or acetone, followed by a detergent (Alconox) cleaning, followed by a deionized water final rinse. The samples will be collected after at least two casing volumes have been removed from each well, and pH, conductivity and temperature readings indicate true formation water is being sampled.

Samples from both MW-4 and the proposed wells will be analyzed for the acid and base/neutral priority pollutants, cyanide, phenols, priority pollutant metals, and volatile organic priority pollutants, plus TOC, TDS, chloride, and sulfate. The five remaining wells will be sampled and analyzed for a shorter list of indicator parametars, including the priority pollutant metals, cyanide, phenols, TOC, TDS, chloride, sulfate, benzene, toluene, xylene, and ethylbenzene. All volatile priority pollutant samples will be collected in 40 ml septum vials, and the other samples will be collected in 1/2 gallon clean amber glass containers.

Water Level Measurements

Water levels will be measured in each of the wells on a monthly basis. Due to the complicated hydrogeology resulting from the seasonal impact of the Hammond Ditch, it will be necessary to monitor water levels for at least one full cycle, i.e. one year, to obtain data on the movement of groundwater in the subsurface. All water level measurements will be recorded in a field notebook with the date and time, name of person making the measurement, method of determination, and other observations. This information will be incorporated into a water table contour map and submitted to EPA on a quarterly basis.

Determination of Aquifer Hydraulics

A slug test will be performed on MW-1, MW-2, or MW-4 for the purpose of estimating the hydraulic characteristics of the upper cobble layer. This test is more likely to yield usable data than a pump test given the thin saturated zone in the upper alluvial layer. The test is performed by adding a known volume of liquid to the well and monitoring the change in water level over time. The change in water level can then be related to aquifer characteristics such as the hydraulic conductivity, transmissivity, and storage coefficient using standard mathematical relationships. These data will be used to evaluate possible contamination transport in the subsurface, and will be submitted to EPA for review upon completion of the test.

Documentation

A field logbook will be maintained to document all activities related to ground water monitoring and water level measurement. The following type of information will be recorded as appropriate for each sample collected or measurement made:

1) date and time of logbook entries;
2) date and time of samples collected or measurements made;
3) description of all sampling or measurement activities in chronological order;
4) name of sampler and observers, if any;
5) field conditions (weather, etc.);
6) identification numbers and name of samples collected;
7) any field measurements made, such as temperature, pH, conductivity, etc., referenced to a time and location;
8) identification of any photographs taken; and
9) reference to the sample log sheet

SURFACE WATER SAMPLING

Surface water sampling of the Hammond Ditch and San Juan River is proposed to provide additional information on the potential off-site migration of petroleum hydrocarbons. The sampling will be scheduled to coincide with "worst-case" receiving water conditions: i.e. low flow conditions in

the San Juan River and the beginning of irrigation season for the Hammond Ditch (normally mid-April).

Sampling Equipment and Procedures

The sampling of the San Juan River will be conducted during low flow conditions, at a flow of 300 cfs if possible, or during the last four months of 1985 if low-flow conditions do not occur prior to this time. The flow rate of the river will be determined and documented at the time of sampling by direct measurement or by subtracting the reading at the USGS Animas River Station (09364500) from the reading at Navajo Dam (09365000). Three composite samples, composed of depth-integrated portions collected at three locations across the San Juan River, will be analyzed for base/neutral and acid priority pollutants fractions, priority pollutant metals, cyanide, phenols, TOC, sulfate, and pH. Individual samples which will be composited will be collected approximately two-tenths, one-half, and eight-tenths of the distance across the San Juan River in the vicinity of the Hwy 44 Bridge, at the surface and approximately two-tenths and eight-tenths of the total river depth. These samples will be collected in clean glass containers and composited by volume into a single 1/2 gallon clean amber container. A single sample will be collected in duplicate in 40 ml. septum vials at the water surface, two-tenths of the distance across the San Juan from the refinery. These samples will be analyzed for the volatile priority pollutants and should indicate whether floating hydrocarbons are migrating downstream from the river terrace deposits.

Sampling of the Hammond Ditch will be conducted at the start of the irrigation season (normally in mid-April), when the potential for flushing hydrocarbons downstream is greatest. Immediately prior to the summer irrigation season, when the berms are removed and water begins to flow in the ditch, the potential for downstream impacts is greatest.

The Hammond Ditch samples will be collected at two locations: just downstream of the refinery property south of Sullivan Road, and just downstream of the API wastewater ponds. Composite depth-integrated samples will be collected in clean glass containers from the bank nearest the process area at the surface and two-tenths and eight-tenths of total ditch depth, and will be composited by volume in a 1/2 gallon clean amber glass container. These samples will be analyzed for base/neutral and acid

priority pollutant fractions, priority pollutant metals, pH, cyanide, and phenols. Grab volatile priority pollutant samples will be collected from the surface at the same locations in 40 ml septum vials. These samples will be collected within 24 hours of the initial release of irrigation water to the Hammond Ditch.

Documentation

Notes will be recorded during all sampling activities in a field logbook so that a permanent record of activities can be maintained. The following information will be recorded for each surface water sample collected:

1) date and time of logbook entries;
2) description of all sampling activities in chronological order;
3) name of sampler and observers, if any;
4) field conditions (weather, etc.);
5) date and time of samples collected;
6) identification number and name of samples collected;
7) any field measurements made, such as temperature, pH, flow, etc., referenced to a time and location;
8) identification of any photographs made; and
9) reference to the sample log sheet.

DATA INTEGRITY

The integrity of the data collected will be maintained through the maintenace of adequate chain-of-custody procedures as well as the laboratory quality assurance/quality control program.

Chain of Custody

All samples will be appropriately preserved and delivered to the laboratory within EPA recommended holding times. The samples will normally be iced and placed in an insulated cooler for shipment. The Chain of Custody Record will serve to document that no unauthorized handling of the samples occurred enroute to the laboratory. It also contains a record of parameters requested for analysis. Relevant information about each sample container will be written on the form. Preservation methods will also be

indicated. The form will be signed and dated by the individual who actually collected the sample. The names of any commercial delivery services used will also appear on the Chain of Custody Record.

Quality Assurance/Quality Control

All samples will be delivered to a qualified laboratory such as the Rocky Mountain Analytical Laboratory in Arvada, Colorado, Assaigai Analytical Laboratories in Albuquerque, New Mexico, or other qualified laboratory for analysis. These laboratories have elaborate quality assurance/quality control procedures to ensure data integrity.

Analytical Techniques

All samples testing will be conducted in accordance with approved methods. The methods commonly utilized by the Rocky Mountain Analytical Laboratory are presented as an example in Exhibit 2.

HEALTH AND SAFETY PLAN

The purpose of this plan is to establish personnel protection standards and mandatory safety practices and procedures, and provide for contingencies that may arise during monitoring well construction and sampling activities at the Bloomfield Refinery. All personnel who engage in investigative activities at this site will be required to be familiar with the plan and comply with its requirements.

Heat Stress Monitoring

Strenuous work and high summer temperatures combined with the requirements for personal protective equipment may create heat stress. It is likely that, given conditions existing at the site during the summer months, heat stress will be the major health hazard. For monitoring the body's recuperative abilities to excess heat, the following techniques will be used. Monitoring of personnel wearing impervious clothing should commence when the ambient temperature is 70 degrees F or above. Monitoring frequency should increase as the ambient temperature increases or as slow recovery rates are observed. When temperatures exceed 85 degrees F, workers would be monitored for heat stress after every work period. Monitoring should be performed by a person who is trained to recognize the symptoms of heat stress.

1) Heart rate (HR) should be measured by the radial pulse for 30 seconds as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes (or 33 percent), while the length of the rest period stays the same. If the pulse rate is 100 beats per minute or higher at the beginning of the next rest period, the following work cycle should be shortened by 33 percent.

2) Good hygienic standards must be maintained by frequent change of clothing and daily showering. Clothing should be permitted to dry during rest periods. Persons who notice skin problems should immediately consult medical personnel.

Contaminant Monitoring

Contaminant monitoring during the drilling and monitoring well construction using direct-reading field instruments will be required for the following purposes:

(1) to detect gases and vapor created by monitoring well installation, and

(2) to measure the total atmosphere vapor/gas concentration to select the appropriate level of personal protection.

Monitoring of potential vapor/gas sources and breathing zone during monitoring well installation will employ a Bachrach TLV Meter organic vapor detector, model number 23-7350, or equivalent instrument for monitoring organic vapors.

Air Monitoring Procedures

Continuous contaminant monitoring using the direct-reading instrument described above will be performed during work operations. The purpose of this monitoring is to detect changes in site conditions which require evacuation of an area or adjustment of level of personal protection. Specifically, monitoring will be required during monitoring well installation. The gas/vapor detection instruments will be used to measure the total gas/vapor concentration in the breathing zone of the work team. A

level of personnel protection will be chosen based on the measured total gas/vapor concentration.

Level D protection has been specified for all site activiites. No respiratory protection is provided by Level D. Likewise, chemical cartridge respirators (Level C) afford adequate respiratory protection only when a number of conditions are met. Therefore, monitoring of the total gas/vapor concentration is required during operations in areas where the potential for air contamination exists. Level C and D protection equipment is listed in Table 2.1. Use of the Bachrach TLV meter for air monitoring only provides measurement of organic vapors and some other gases in the air. Respirable paticulates are not detected by these instruments. Under conditions where the work party is working under dusty conditions in potentially contaminated areas, respirators providing protection from dust will be required.

The following guidelines will be used for selecting the level of protection based on total atmospheric vapor/gas concentrations in the work space:

Background Concentration of Vapor/Gas to 20 ppm Above Background

Level D personnel protection equipment will be required at concentrations of organic vapor of less than 20 ppm above background as measured by the Bachrach TLV meter.

20 ppm Above Background to 50 ppm Above Background

Level C protection, including half-face air purifying masks equipped with an organic vapor cartidge (or a combined organic vapor/particulate cartridge) will be worn. Eye protection (chemical splash goggles) must be worn with half-face respirators. Alternatively, a full-face cartridge respirator may be used.

Greater than 50 ppm Above Background

If the organic vapor concentration in the work space exceeds 50 ppm above background, drilling will cease until the nature of the organic vapor concentration can be determined and evaluated.

TABLE 2.1

LEVEL C AND LEVEL D PROTECTION

Level C Protection

1. Full-face piece, air purifying, canister-equipped respirator or half-face respirators with chemical splash goggles
2. Chemical-resistant clothing, long sleeves, one or two pieces
3. Gloves
4. Steel toe and shank boots
5. Hard hat
6. Options as required
   a. Inner chemical-resistant gloves
   b. Disposal outer boots
   c. Escape mask

Level D Protection

1. Coveralls
2. Leather or chemical-resistant boots or shoes, steel toe and shank
3. Hard hat
4. Options as required
   a. Gloves
   b. Disposable outer boots
   c. Safety glasses or chemical splash goggles
   d. Escape mask or respirator

Area Monitoring

The site inspection activiites are not expected to have a significant effect on off-site air quality. Therefore, area monitorig of off-site air quality will not be required.

Cleanup

Cleanup of personnel and equipment is necessary to prevent potentially harmful materials from being transferred from work areas to other areas. Cleanup procedures must be appropriate for the types of compounds present, the personal protective equipment being used, and the operations taking place in the work area. A work zone will be set up to provide for personnel and equipment cleanup. Heavy equipment will be cleaned in a specially designated area within the work zone.

Emergency Procedures

In general, while at the refinery, the procedures outlined in the Bloomfield Contingency Plan and Emergency Procedures will be in effect. However, in the event that an emergency develops on site, the procedures delineated herein are to be followed immediately. Emergency conditions are considered to exist if:

(1) any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on-site; or

(2) a condition is discovered that suggests the existence of a situation more hazardous than anticipated.

Personal Injury

In case of personal injury at the site, the following procedures should be followed:

(a) An on-site employee trained in first aid should administer immediate treatment to an ill or injured worker and decide if the worker can be moved.

(b) The injured worker should be taken immediately to a medical facility for follow-up care and observation. The staff at the medical

facility should be advised that the patient's clothing and skin might be contaminated with chemicals.

(c) In the event that an accident occurs, the Facility Coordinator is to complete an Accident Report Form for submittal to the EPA project officer, and should assure that follow-up action is taken to correct the situation that caused the accident.

Chemical Exposure

If a member of the field crew is exposed to chemicals, the procedures outlined below should be followed:

(a) Another team member (buddy) should remove the individual from the immediate area of contamination.

(b) Precautions should be taken to avoid exposure of other individuals to the chemical.

(c) If the chemical is on the individuals clothing, the clothing should be removed if it is safe to do so.

(d) If the chemical has contacted the skin, the skin should be washed with copious amounts of water, preferably under a shower.

(e) In case of eye contact, an emergency eye wash should be used. Eyes should be washed for at least 15 minutes.

Fire or Explosion

A hazard of fire or explosion exists when flammable materials are being used or handled, when there is the possibility that a combustible atmosphere may be generated by operations such as excavation in areas contaminted with combustible materials. Under these conditions, the following precautions must be taken:

(a) Continuous monitoring of work areas with a combustible gas detector will be conducted if the potential for fire or explosion exists.

(b) If monitoring indicates the existence of a combustible atmosphere (25 percent of the lower explosive limit), there area will be evacuated immediately and emergency personnel will be contacted.

Re-entry will not take place until it can be determined that it can be done safely.

During operations involving a high hazard of fire or explosion, fire fighting and other emergency personnel will be on hand while the operation is taking place.

Emergency Contacts

Should any situation or unplanned occurrence require outside assistance or support services, the appropriate contact from the following list should be made:

EMERGENCY PHONE NUMBERS

Bloomfield Fire Department	632-8011
Bloomfield Police Department	632-8011
San Juan County Sheriff	334-6107
State Police	325-7547
Ambulance (dispatched through Farmington Fire)	325-3501
County Fire Department (dispatched through Farmington Fire)	325-3501
Poison Control	1-800-432-6866
Bomb Personnel (State Police Office)	325-7547
ETHYL CORP (T.E.L. Emergencies)	504-344-7147
CHEMTREC (Chemical Emergencies)	1-800-424-9300
City of Farmington (Electric Utility)	327-7701
Kay-Ray	312-259-5600
E.I.D. Radiation Protection Bureau	505-984-0020
Mobile Inspection (Radiography Assistance	327-9473
Contact of New Mexico (Call out Assistance)	327-4666

EQUIPMENT RESOURCES

Water Tankers & Vacuum Trucks	
Chief Transport	325-2396
C & J Trucking	325-7770
Dawn Trucking Co.	327-0416
Delgarno	327-0461 or 327-6871
Triple F	334-6193
Sunco Trucking	327-0416
Earth Moving Equipment	
Adobe Construction (Ernie Motto)	334-6696
Rosenbaum	325-6367
Coffey Construction	632-3663
Atchison Construction	327-6276
Gas Co. of New Mexico	325-2889
W & C Contractors	325-1991

Welding & Cutting	
Henry Vigil	632-3045
Willie Soloman	632-3797
Justis Supply	325-3551
Wrecker or Rig Up Trucks	
Sandia Detroit	325-5071
Drake Well Service	327-7301 or 327-6847
ODECO Inc.	632-3392
Dawn Trucking	327-6316
Aerial Ladder or Basket	
City of Farmington Utility	327-7701
Farmington Fire	325-3501
Foam Supplies	
Seagull Roosevelt Refinery	801-722-5128
Thunderbird Sales	505-881-6222
Boots & Coots Fire Protection	713-999-0276

Training

On-site work personnel will have formal or prior on-the-job training for the tasks they are assigned to perform. Special training will be required for operations such as monitoring well installation. Personnel responsible for air monitoring and site safety will be qualified for these responsibilities.

On-Site Orientation

An on-site orientation session will be required for all on-site personnel and will include the following:

(1) Health effects and hazards of the chemical identified or suspected to be on-site.

(2) Personnel protection including the use, care, and fitting of personnel protective equipment, and the necessity for personnel protection, effectiveness, and limitations of equipment.

(3) Decontamination procedures.

(4) Prohibitions in areas and zones including:
   (a) site layout,
   (b) procedures for entry and exit of areas and zones, and
   (c) standard safe work practices.

(5) Emergency procedures.

(6) Medical requirements.

SECTION 3

PROJECT SCHEDULE

Due to the complex hydrogeology at the site as influenced by the Hammond Ditch, it is totally unrealistic to complete a thorough investigation of the subsurface petroleum hydrocarbons at the refinery in the four-month time frame referenced in the Administrative Order. Since the subsurface groundwater movement in the area south of the ditch appears to be dependent on the seasonal use of the ditch for irrigation, any findings in this area on the direction and rate of groundwater movement would be totally dependent on whether or not the ditch was being used to transport irrigation water. Furthermore, the "worst case" conditions of the receiving waters (the Hammond Ditch and the San Juan River) would in all likelihood not occur during this time period. It seems most prudent to proceed with the investigation of the refinery in a manner which will reflect the greatest potential for off-site impacts and allow the seasonal changes in groundwater movement to be quantified. Therefore, a more realistic time schedule of twelve months has been proposed to complete the elements of the workplan, with an additional month to complete a final, comprehensive project report.

A schedule for individual project workplan tasks is presented on Figure 3.1. As shown, the proposed electrical resistivity survey would be conducted during the initial month of the project. Following the survey, the proposed groundwater monitoring well and any other necessary wells will be completed during the next month. Groundwater monitoring of all wells will commence after completion of the well(s), and will be conducted quarterly. However, water level measurements will be made on a monthly basis. A surface water sampling schedule cannot be determined in terms of project months since it will depend on low flow conditions in the San Juan River and the startup of irrigation season for sampling in the Hammond Ditch. However, all sampling and measurements will be completed in a twelve month period. As shown on Figure 3.1, the final project report will be prepared during the thirteenth month.

FIGURE 3.1

PROPOSED PROJECT SCHEDULE

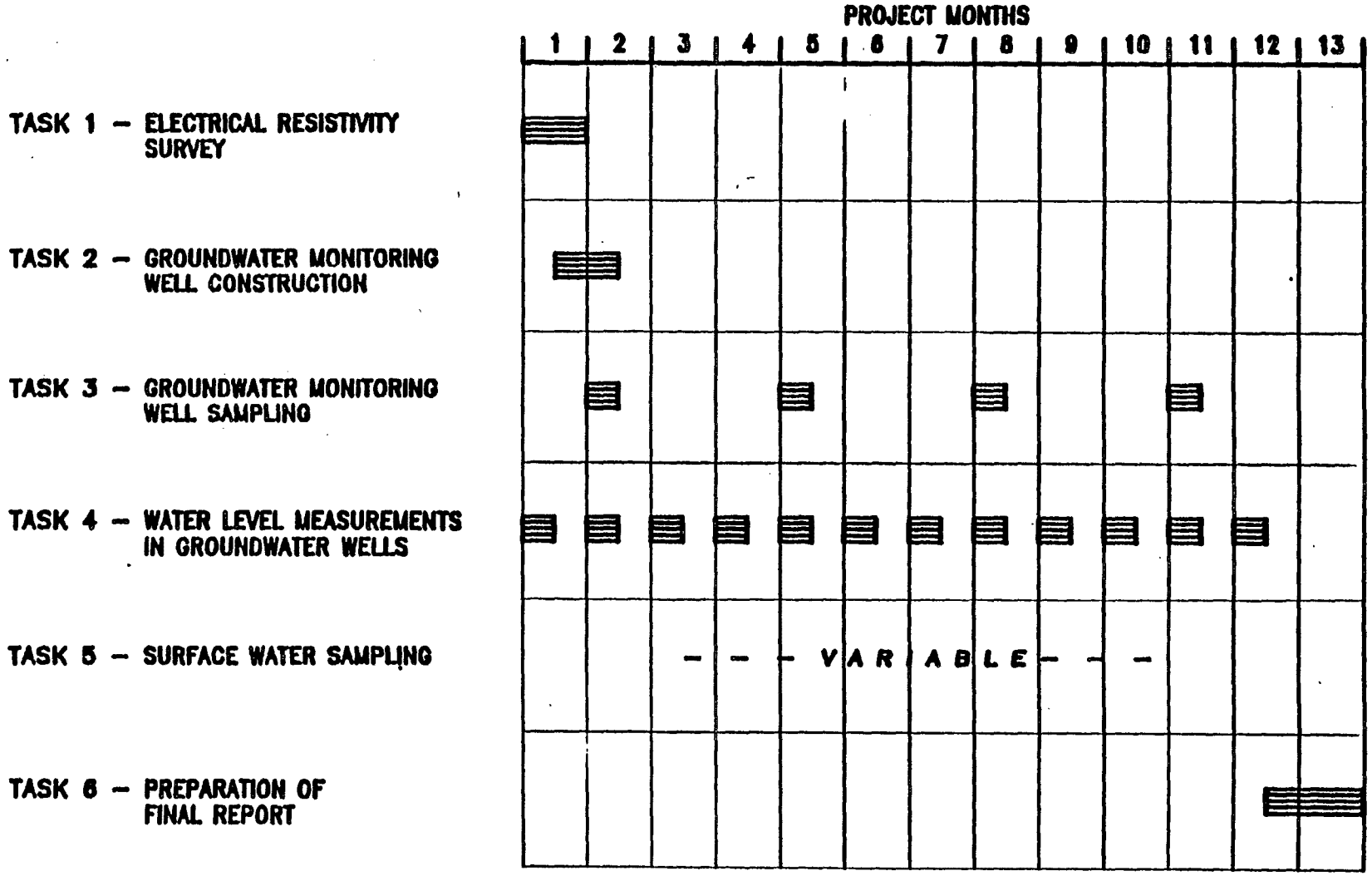


Exhibit 1

A REVIEW OF SUBSURFACE PETROLEUM HYDROCARBONS AT THE BLOOMFIELD REFINERY

Prepared for

BLOOMFIELD REFINING COMPANY

by

Engineering-Science, Inc.
2901 North Interregional
Austin, Texas 78722

January 1985

PLATEAU FILE

INDEX TO ITS CONTENTS

The attached pages summarize the contents of the Plateau file, as of 27 May 1985.

Each title (e.g. "Manifests") refers to a specific manila folder or two-ring binder which is so labeled.

Items are filed chronologically within each category. The index goes from oldest to most recent. In the folder, the oldest items are at the back, the most recent on top.

Note that anything generated after 10/31/84 may be filed under Bloomfield Refinery. This is especially true of ground-water information (e.g. the 3013).

Following are the categories of the Plateau file:

General Correspondence

Meetings

Notification/Part A/Biennieal Report

Inspections

"Plateau Refinery '84" -- March 84 Inspection (separately bound)

Manifests

Ground Water

EPA Region Vi Enforcement

EID Enforcement

Bureau of Reclamation; Hammond Conservancy District

Oil Conservation Division

NPDES Permit

They is a slew of sample analyses from various inspections in the bottom drawer of the middle file cabinet.

5/85

PLATEAU FILE

GENERAL CORRESPONDENCE

05/21/82	Plateau's delisting petition
09/30/83	Lttr from Dwight Stockham to Gerald Fontenot Notifying that Plateau intends to clean out API separator sludge and will transport it to a Class I facility
03/12/84	Lttrfrom Raymond Sisneros to Anthony Leonard Denying ground-water waiver
04/03/84	Notes by Greg Mello Summarizing contents of the Plateau file, with comments
04/19/84	Lttr from Tony Drypolcher to Virginia Molino Stating that EID analyses not available yet
05/20/84	Albq. Jornal article Refinery might be shut down
06/06/84	Lttr from Tony Drypolcher to Will Focht Requesting that a copy of data supplied to Plateau be provided to the Water Quality Control Commision
06/29/84	Lttr from Peter pache to Virginia Molino Requesting that anything submitted to EPA be submitted also to EID
undated	Plateau sampling plan map
10/31/84	Record of communication btw Ann Claassen & Graham Harris Radian doing a risk assessment on Plateau for liability insurance
03/04/85	Lttr from Randall Brown to Peter Pache Status of Plateau's delisting petition
05/15/85	Memo from Rich Holland to Steve Reynolds Summarizing water-related issues at Bloomfield Refinery

PLATEAU FILE

MEETINGS

05/04/84	Lttr from Bill Taylor to Virginia Molino Tentatively scheduling a meeting May 21
06/04/84	Lttr from Jim Turner to Virginia Molino Confirming meeting date of June 13. Requests that Plateau designate a spokesperson
06/13/84	List of attendees at meeting
06/13/84	Jack Ellvinger's notes on the meeting
09/26/84	List of attendees
09/26/84	Jack Ellvinger's notes on meeting

PLATEAU FILE

NOTIFICATION/PART A/BIENNIAL REPORT

11/09/80	Original Part A
04/16/82	Revised Part A
04/16/82	Lttr from Dwight Stockham to Scott Nicholson Transmitting Revised Part A and stating Plateau's feeling that they are generator only.
12/21/82	Lttr from Dwight Stockham to Scott Nicholson Justifying that Plateau is a small-quantity generator
02/20/84	Memo to File from Jack Ellvinger re: call from Dwight Stockham that Plateau ti to be sold to Thriftway
03/12/84	Lttr from Raymond Sisneros to Anthony Leonard Clarifying that their revised Part A is not valid, that they still have interim status as a TSD, and that financial assurance will have to be provided before the refinery can be sold
04/18/84	Lttr from Dwight Stockham to Peter Pache Enclosing 1983 Hazardous Waste Generator Report
11/02/84	Lttr to Denise Fort from Dwight Stockham Notification that Bloomfield Refinery was sold to Gary-Willimas Energy on 10/31/84

PLATEAU FILE

INSPECTIONS

06/15/83	Inspection Report by Mike Michaud for 6/7-8/83 inspection Includes Part A info and sampling results.
08/08/83	Lttr from Dwight Stockham to Gerald Fontenot Requesting copy of inspection report and sample analyses from June 6/7 inspection
08/10/83	Lttr from Pat Hull to Dwight Stockham Enclosing inspection report and sample anaylses from E&E inspection on May 11/12 1983.
08/10/83	Lttr from Gerald Fontenot to Raymond Sisneros Enclosing sample results from FIT contractor (E&E) and NEIC contractor
08/19/83	Lttr to Dwight Stockham from Pat Hull Enclosing inspection report from June 6-7 1983 inspection. Analyses to be sent when received. Request that Mike Michaud's film be returned.
11/23/83	Lttr from Pat Hull to Dwight Stockham Enclsoing sample analyses from June 6-7 1983 inspection
03/19/84	Information regarding the inspection on this date is contained in a separately bound volume titled "Plateau '84"

PLATEAU FILE

"PLATEAU REFINERY '84" -- MARCH 84 INSPECTION

Inspection Report by Jack Ellvinger

Attachment 1. Part A
Attachment 2. Sampling Plan by Steve Schwartz & Bill Taylor
Attachment 3. E&E Report with sample results
Attachment 4. Compliance checklist (Jack's)
thru 10.
Attachment s 11 & 12 missing
Attachment 13. Field notes by Ann Claassen and Greg Mello

Waste Analysis Plan

Aerial Photo

Lttr from Steve Schwartz to Raymond Sisneros
Enclosing Sampling Plan

Jack Ellvinger's field notes

Summary of analytical results from various inspections

Preliminary results phoned by Will Focht to Ann Claassen

PLATEAU FILE

MANIFESTS

04/11/84	Letter from Dwight Stockham to Jack Ellvinger Enclosing manifests from shipment of API separator sludge to Chemical Waste Management

PLATEAU FILE

GROUND WATER

See also the Oil Conservation Division file

10/08/81	Lttr from Dwight Stockham to Zoe Schultz (EPA) Encloses copy of Plateau's 1977 Discharge Plan as documentaion for a ground-water monitoring waiver
03/08/84	Memo from Ann Claassen to Plateau File Rationale for denying Plateau's gwm waiver
03/12/84	Lttr from Raymond Sisneros to Anthony Leonard Re: Part A status. Generators do not need a waiver, but Plateau appears to be a TSD
03/12/84	Lttr from aymond Sisneros to Anthony Leonard Denying gwm waiver and requiring that Plateau implement gwm
04/10/84	Lttr from Virginia Molino to Raymond Sisneros Response to the two 3/12 letters. Claims Plateau is not a TSD and not subject to gwm. But if they are determined to be a TSD, request decision on waiver await sample results from 3/19 inspection
04/13/84	Memo from Ann Claassen to Peter Pache Response to Molino's response. TSD isse should be resolved asap. No amount of new info could justify a waiver
05/08/84	Data transmitted by phone from Steve Schwartz to Ann Claassen Analyses for Charactersitics on 3/19 inspection samples
05/08/84	Data transmitted by phone from Will Focht to Ann Claassen Organics results from 3/19 inspection samples
06/15/84	Lttr from Dwight Stockham to Will Focht Transmitting sampleresults from Plateau's wells and air H2S results
07/05/84	Lttr from Ann Claassen to Will Focht and Steve Schwartz Review of Plateau's 1984 Discharge Plan with suggestions for further hydrologic study
07/23/84	Lttr from Virginia Molino to Charlie Nylander Response re: need for an NPDES permit. Discusses hydrology at Plateau. (See NPDES Permit File)
05/15/85	Memo from Richard Holland to Steve Reynolds Outlining water-related issues at Bloomfield Refinery

PLATEAU FILE

EPA REGION VI ENFORCEMENT

11/03/82	Lttr from Scott Nicholson to Plateau (Kenneth Sinks) Enclosing copy of inspection report and stating that it appears Plateau is eligible for small-quantity generator status
03/16/84	Lttr from Wm Rhea to Tony Drypolcher Plans for enforcement at Plateau -- inspection to be done March 19. Encloses letters to the Bureau of Reclamation regarding possible enforcement at Plateau and that no modification of Hammond Ditch will be required
05/04/84	Lttr from Bill Taylor to Virginia Molino Analytical results not available yet. Would like to schedule a meeting in Santa Fe for week of May 21
06/15/84	Lttr from Allyn Davis to B.G. Dixon, Plateau Invitation to confer with EPA prior to enforcement of violations of the New Source Performance Standards (Clean Air Act)
07/02/84	Lttr from Peter Pache to Wm Taylor Enclosing memo regarding violations at Plateau. EID and EPA pursuing joint enforcement, EPA lead, EID as co-complainant
09/14/84	Lttr from Jim Turner to Bill Anderson Enclosing results of EP Toxicity tests and regulatory interpretation lttr re: sulfide & cyanide reactivity. Addresses a couple other questions about analyses and definition of K051 (whether it can be in pond following separator)
09/17/84	Lttr from Bill Anderson to Jim Turner Arguing that wastes at Plateau are hazardous, except for spent caustic.
11/07/84	Lttr from Allyn Davis to Bobby Dixon 3007, asking about addition of listed wastes (solvents) to API separator and about generation of K049 and K050
12/04/84	Lttr from Virginia Molino to Bill Taylor Response to 3007. Argues that no listed wastes have been added to API separator. TCA has been used, but Molino outlines a loophole which would exclude this TCA from haz. waste status. No K049 generated. K050 may have been generated and left at site of cleaning.
12/07/84	Draft 3013 with a note from Ann to Jack that comments were given to Steve Schwartz
03/04/85	Lttr from Wm Rhea to Tony Drypolcher Enclosing draft 3008 and requesting comments within ten days

PLATEAU FILE -- EPA REGION VI ENFORCEMENT (cont.)

03/21/85	Lttr from Tony Drypolcher to Wm Rhea Comments on the 3008
03/29/85	Final 3008 issued to Plateau, Suburbane Propane, Bloomfield Refinery and Gary Energy
05/01/85	Plateau's response to 3008, requesting hearing
05/01/85	Suburbane Propane's response to 3008, requesting hearing. They deny being an owner/operator of Plateau eve though they own all the stock
05/20/85	Transmittal from Elizabeth Rose to Ann Claassen Region VIII policy regarding API separator sludge

PLATEAU FILE

EID ENFORCEMENT

12/22/82	Lttr from Jack Ellvinger to Scott Nicholson Re: dumping of sludge at Platea and OCD samples showing high lead levels. Invites EPA along on a sampling trip in January.
04/01/83	Memo from Jack Ellvinger to Raymond Sisneros Re: violations of the haz. waste regs at Plateau -- unmanifested waste to Utah, API separator sludge in the oily ponds.
04/04/83	Memo from Jack Ellvinger to file Re: conversation with Oscar Simpson that API separator not properly operated; some waste from ponds, highly contaminated with lead, buried on site
05/06/83	Lttr from Jack Ellvinger to Scott Nicholson Re: unmanisfested waste shipment to Utah and waste buried on site. Requests EPA investigation
03/12/84	Letter from Raymond Sisneros to Anthony Leonard Clarifying that Plateau is a TSD under interim status, that the revised Part A was not valid, and that financial assurances must be provided before the refinery can be sold
03/12/84	Letter from Raymond Sisneros to Anthony Leonard Denying ground-water monitoring waiver and requiring installation of monitoring
03/12/84	C&E log re: ground water waiver
03/19/83	C&E log re: inspection; states that EPA will take enforcement
03/20/84	Lttr from Joe Gmuca to Paul Seals Requesting that communication regarding enforcement at Plateau be done via the lawyers
04/10/84	Lttr from Virgina Molino to Raymond Sisneros (original and a notated copy) Response to both 3/12 letters. Argues that Plateau is not a TSD and not subject to ground-water monitoring requirements
04/13/84	Memo to Peter Pache from Ann Claassen Re: Plateau's response to our denial of their waiver. True that the basic issue is TSD status. If they ar a TSD, no amount of information could justify a waiver

PLATEAU FILE -- EID ENFORCEMENT (cont.)

04/18/84	Lttr from Virginia Molino to Tony DrypolcherEncloses the 3/12 letters and Plateau's response. Requests copies of the analytical data and requests a meeting
04/27/84	Lttr from Joe Gmuca to Virginia Molino Reply to 4/18 letter. Suggests contacing EPA for sample results. Requests that future communication go through him rather than technical staff
06/11/84	Memo to Tony Drypolcher from Jack Ellvinger, Greg Mello and Ann Claassen Points of violation at Plateau and how we can enforce
07/02/84	Lttr from Peter Pache to Wm Taylor Transmitting above memo and stating our understanding of enforcement (EPA lead, EID as co-complainant)
11/09/84	Lttr from Tony Drypolcher to Wm Taylor Asking what EPA is doing about enforcement at Plateau and stating that if nothing is heard by 11/16, EID will take its own enforcemen action
05/15/85	Memo from Rich Holland to Steve Reynolds Water related issues at Bloomfield Refinery

PLATEAU FILE

BUREAU OF RECLAMATION; HAMMOND CONSERVANCY DISTRICT

08/19/77 Lttr from Jim Babrook to Plateau
Advising Plateau to avoid further enchroachment upon the Federal right-of-way for Hammond distch and to rectify the current situation

02/03/78 Lttr from Harl Noble to Robert Anderson
Requiring correction of problems in Hammond Ditch due to construction activities at Plateau. Mentions oily discharge to the canal

03/15/78 Report from San Juan Tesing Lab to Chrales Keller (HCD)
Qulaitative exam of residue from Hammond Ditch -- gasoline type hydrocarbons mixed with soil and water

01/14/81 Ltter from John Brown (USBR) to Kenneth Sinks (Plateau)
Impacts of Plateau (encroachment, oil seeps) are detrimental to Hammond Ditch. Requests a meeting faciltiate resolving the problems

10/06/83 Lttr from Pat Hull to Harold Sersland (USBR)
Discussing possible enforcement action at Plateau

12/15/83 Lttr from Clifford Barrett to Dwight Stockham
Encloses water service contract for 200 AF from Navajo Reservoir. Conditions that Plateau comply with Fed & State water qaulity and haz. waste regulations

12/22/83 Lttr from Steve Reynoldss to Joe Ramey
Transmitting the USBR Water Service contract

02/23/84 Lttr from Clifford Barrett to Dick Whittington
Enclosing correspondence re: Hammond Ditch at Plateau
-1/17/84 memo from Rex Edwards to Files summarizing the history of problems with the ditch at Plateau; discussing potential piping of the ditch through Plateau property
- 3/28/83 memo from Rex Edwards to Files discussing sloughing of the canal sides and seepage from Plateau units
-2/1/81 article from the Farmington Daily Times discussing problems at Plateau, esp. spills of product

03/05/84 Lttr from Allyn Davis to Clifford Barrett
Re: EPA actions at Plateau and that no modification to Hammond Ditch will be required

PLATEAU FILE

OIL CONSERVATION DIVISION

12/10/82	Memo from Jack Ellvinger to Raymond Sisneros Re: phone conversation with Oscar Simpson. GW in Plateau area exceeds WQCC standards for lead, especially near an area that recently was used to dispose of waste from the oily water ponds
04/04/83	Mmeo from Jack Ellvinger to Plateau File Re: phone conversation with Oscar Simpson; API separator not functioning properly. Not all waste from the ponds went to Utah, some buried on site
04/27/83	Lttr from Raymond Sisneros to Joe Ramey Requesting presnece of Jeff Edminister at upcoming meeting with EPA investigator re: cleaning and shipment of wastes from Plateau's pits
06/30/83	Technical Review of Plateau's upsated discharge plan by Oscar Simpson
03/30/84	Lttr from Steve Schwartz to Greg Mello Transmitting Oscar"s Technical Review
05/08/84	Minutes of the WQCC Meeting Includes discussin of Plateau's discarge plan and the decision to have an Assurance of Discontinuance
05/08/84	Assurance of Discontinuance btw Plateau and WQCC Allows Plateau to spray irrigate although Discharge Plan not yet reviewed

PLATEAU FILE

NPDES PERMIT

05/15/84	Lttr from Charlie Nylander to wight Stockham Enclosing application from for NPDES permit for discharges to Hammond Ditch and San Juan River
07/26/84	Lttr from Virginia Molino to Charlie Nylander Response that Plateau does not need an NPDES permit
10/31/84	Lttr from Jayne Watson (EPA) to Dwight Stockham Enclosing application for NPDES permit
05/16/85	Lttr from Jayne Watson to Paul Liscom Second request for an NPDES application, or an explanation of why one is not needed

PLATEAU FILE

STATE OF UTAH; EPA REGION VIII

03/25/83	Lttr from Dale Parker, Utah, to Peter Pache Re: shipment of pit sludge, which Utah claims is K051, from Plateau to Overthrust Tools in Vernal, Utah. Utah has requested enforcement action from EPA Region VIII
04/01/83	Memo from Jack Ellvinger to Raymond Sisneros Attaches letter from Utah. Claims Plateau is in violation of the basic regs and requests enforceent action
04/01/83	Memo from Raymond Sisneros to Charlie Nylander Transmitting a copy of the Utah letter
05/04/83	Lttr from Lee S. Woodside to EPA Region VIII Stating that Plateau will remove the material sent to Vernal and send it either to Plateau in Roosevelt, Utah for storgae and rerefining, or to Toole, Utah for disposal
07/15/83	Memo from JH Lowry to Kirby O'Neal (EPA NEIC) Enclosing results of samples from Plateau material at Vernal Utah. Not characteristic for ignitibility, corrosivity, or EP-Toxicity. Sulfide levels, as high as 1060 ppm, may make it Reactive waste

RECEIVED

MAY 28 1985

SURFACE WATER QUALITY BUREAU

ENVIRONMENTAL IMPROVEMENT DIVISION

MEMORANDUM OF COMPLAINT

Farmington FIELD OFFICE

COMPLAINANT NAME: Jim Hardee TELEPHONE: _____

ADDRESS: _____ CITY: _____

SOURCE(RESPONSIBLE PARTY): NAME: Bloomfield Refining TELEPHONE: _____

ADDRESS: _____ CITY: _____

PROGRAM * AIR QUALITY____; FOOD/MILK____; VECTOR_____; *HAZARDOUS WASTE_____;

LIQUID WASTE____; *NOISE_____; *OHS____; *RADIATION_____; SOLID WASTE_____; SWIMMING POOL____;

*WATER POLLUTION ✓; WATER SUPPLY_____.

NATURE OF COMPLAINT: several locations of seeps at side of cliffs and banks. appears to be some type of oil. Flowing into San Juan River at about 5 gpm

LOCATION: Complainant was rafting down San Juan River and ~~saw~~ noticed oil flowing into the river

COMPLAINT TAKEN BY: David Tompkins DATE: 5-21-85

(Referred to Santa Fe, Surface Water Bureau, Glenn Saums for referral to EPA)

INVESTIGATION REPORT: _____

BY: _____ DATE: _____

ACTION TAKEN: _____

BY: _____ DATE: _____

FOLLOW UP: _____

SATISFACTORY CORRECTION OF PROBLEM VERIFIED BY: _____ DATE: _____

*Contact appropriate Central Office personnel for specific instructions prior to investigating the complaint.

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

May 22, 1985

Mr. David G. Boyer
Environmental Bureau
Energy and Minerals Department
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Dear Dave:

Please accept my thanks to you and Dick Stamets for your May 17 memorandum providing a prompt and very useful response to my questions about the status of the Bloomfield (Plateau) Refinery water quality problems.

With warm personal regards,

Sincerely,

S. E. Reynolds
State Engineer

SER:ir

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

50 YEARS
1935 - 1985

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

MEMORANDUM

TO: STEVE REYNOLDS, STATE ENGINEER,
STATE ENGINEER OFFICE

FROM: DAVID G. BOYER, ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

SUBJECT: STATUS OF BLOOMFIELD (PLATEAU) REFINERY

DATE: MAY 17, 1985

At the request of Dick Stamets, I have copied some recent correspondence related to my evaluation of the situation at the Bloomfield Refinery. Briefly, this is the status of the discharge plan and chronology of recent events:

1. Discharge plan approval on June 5, 1978 for five years.

2. Updated and renewal application submitted June 2, 1982.

3. Thirty-day assurance of discontinuance approved by WQCC May 8, 1984.

4. Updated discharge plan approved with conditions on June 7, 1984 (approval letter attached).

5. At the request of EMD Secretary, Paul Biderman, I reviewed the plan on February 7, 1985, and expressed some concerns to him about possible off-property contamination to the west of the plant in the cobble bed and San Juan River alluvium. Under WQCC regulations, seepage on company property to the river is authorized as long as stream standards are not violated. The question of whether seepage to the river or Hammond Ditch requires an NPDES permit is an EPA determination.

6. At about the same time I wrote the company and informed them that changes in the monitoring program needed to be made to adequately determine current ground water quality at the plant and to provide a base line for future comparison. I also proposed waiting a short period until EPA issued two compliance orders and then coordinate OCD information needs with EID and EPA needs.

7. EPA issued its orders on March 29 and April 1. The §3008 order addressed alleged hazardous waste violations (including off-site waste shipment), and the §3013 directed that a work plan for additional hydrologic investigations be submitted within 30 days.

8. On-site monitoring was conducted by OCD and the company on March 21. Refined product (gasoline) was discovered during sampling of Monitor Well #4 at the western edge of the property. I dug into the side of the dry Hammond ditch off property several hundred yards from Well No. 4 down the topographic gradient to the west and also found product. Laboratory analyses showed benzene levels of 21.5 mg/l and 10.2 mg/l, respectively, for the two sites (WQCC standard 0.01 mg/l).

9. EID received the company's work plan on April 25. OCD has also requested a copy.

Situation Summary

Bloomfield Refinery is in compliance with the approved discharge plan although additional monitoring will be required. Confirmation of refined petroleum product off-site to the west means that contingency plan commitments made by Bloomfield will need to be initiated. If the EPA required study is initiated shortly, action taken by the company concurrently with the EPA required investigation would be the most efficient way to proceed.

In my opinion, the situation does not pose an imminent threat to any drinking water wells and is not an emergency. However, the company will be directed by OCD to move expeditiously to define the extent of contamination and undertake remedial action including product recovery. To date, Bloomfield Refining Company, the parent company, Gary Refining, and their staff, have

HEALTH ENVIRONMENT department

STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT DIVISION
P.O. Box 968, Santa Fe, New Mexico 87504-0968
(505) 984-0020

TONEY ANAYA
GOVERNOR

DENISE D. FORT
DIRECTOR

MEMORANDUM

TO: STEVE REYNOLDS, STATE ENGINEER

FROM: RICHARD HOLLAND, DEPUTY DIRECTOR
ENVIRONMENTAL IMPROVEMENT DIVISION RH

DATE: 15 MAY 1985

RE: WATER-RELATED ISSUES AT BLOOMFIELD REFINERY

Overview

The Bloomfield Refinery (formerly Plateau) sits atop a bluff over the San Juan River. Beneath the site is the relatively impermeable Nacimiento formation. This is overlain by a cobble bed, which is in turn overlain by loess. Ground water exists within the cobble bed. Probably none of this water is natural, but is instead due to infiltration from the Hammond Ditch and from the refinery's raw water and effluent ponds. Past practices have clearly contributed contaminants to the ground water. This is evidenced by the presence of hydrocarbons in seeps along the bluff beneath the refinery and in water that seeps into the Hammond Ditch after the irrigation season.

Water Supply; Bureau of Reclamation

Bloomfield Refining obtains its process water from the San Juan River. The water is purchased from the Bureau of Reclamation Navajo Project. Since October 1982, USBR has conditioned their water sales contracts with the refinery to require cooperation with EPA and the State (OCD and EID). The latest contract, for 340 acre-ft, was made on February 14, 1985. It is a one-year contract with quarterly review and gives USBR the right to terminate upon two-week notice. USBR has participated in recent meetings between EPA and the refinery regarding compliance with RCRA. They feel it is their responsibility under NEPA to be sure that

the refinery is in compliance with EPA and State environmental requirements, and they are concerned about the pollution which has occurred.

CONTACT: Thomas Scoville, Bureau of Reclamation, Salt Lake City, 801-524-6097

Discharge Plan; Oil Conservation Division

Since 1978, the refinery has had a Discharge Plan in conformance with Part III of the WQCC Regulations. An application for renewal and an updated Discharge Plan were submitted to OCD on June 2, 1982; these were approved, with conditions, on June 7, 1984. The Plan is for a discharge of 50 gpm from the API separator. The effluent goes into two lined "oily water" ponds, then into two lined "surface evaporation" ponds, and is then sprayed onto a plot of land. There is evidence of seepage from the evaporation ponds.

The Discharge Plan includes monitoring of three wells placed around the property. One of these wells clearly has free-floating hydrocarbon product in it.

Currently, the refinery is in compliance with their Discharge Plan. OCD is working with the refinery to upgrade the Plan (new wells, additional sample parameters). OCD is awaiting the outcome of hydrologic investigations done in response to EPA enforcement (see below) before defining and implementing these modifications to the Discharge Plan.

CONTACT: Dave Boyer, Oil Conservation Division, 827-5812

Hammond Ditch; Hammond Conservancy District

Hammond Ditch runs along the northern edge of the refinery. After the irrigation season, hydrocarbon-contaminated water seeps back into the ditch. About three years ago, this oily water seeped into the irrigation system of the downstream Sanchez Subdivision. In response to complaints by the subdivision residents, the Hammond Conservancy District requested remedial action. In response, the refinery has, for the past two seasons, put dikes across the ditch (after the irrigation season) to contain the oily seepage. They then pump out the oil.

CONTACT: Harry Hotter, Hammond Conservancy District, 632-3043

Hazardous Waste Management; EPA and EID

In 1980, Plateau notified EPA that they were a treatment/storage/disposal (TSD) facility for the management of hazardous waste. This meant that they were subject to regulation under RCRA, including ground-water monitoring. Later, Plateau informed EPA that they were in fact a generator only (i.e. not a TSD), in which case they are not subject to ground-water monitoring. Also, in case they were a TSD,

Plateau submitted documentation to support their contention that they should have a waiver of ground-water monitoring requirements.

In October 1983, New Mexico received Interim Authorization to administer the RCRA program via the Hazardous Waste Management Regulations (HWMR-2). In January 1985, we received Final Authorization from EPA.

In March 1984, EID denied Plateau's right to a waiver and required that they install ground-water monitoring. Plateau responded that they were not a TSD and so not subject to the ground-water monitoring requirements. As EPA was planning to take enforcement action, EID decided to defer further action until EPA's issues were resolved.

Later in March of 1984, EPA and EID conducted a joint inspection (EPA lead) at the refinery. A large number of samples were taken by EPA. The purpose of the sampling was to determine whether any treatment, storage, or dispoal units at the refinery contained hazardous waste. Units that might be hazardous waste management units (and thus subject to ground-water monitoring requirements) included the oily water ponds, the surface evaporation ponds, the spray irrigation area, and the landfill.

On 29 March 1985, EPA issued a 3008 Order against Plateau and Bloomfield Refining (Gary Energy). 3008 is that section of RCRA which gives EPA authority to order compliance with RCRA regulations and to fine facilities for violations. The 3008 assumed the refinery to be a TSD and cited both Plateau and Bloomfield Refining for a number of violations of regulations applying to TSD facilities, including failure to implement ground-water monitoring. The 3008 also cites Plateau for illegally shipping a load of hazardous waste off-site to an unpermitted facility. A fine of nearly $200,000 is proposed. Plateau has responded with a request for a hearing to contest the 3008. They contend that the refinery is not, and never was, a TSD.

Also on 29 March 1985, a 3013 Order was issued to Bloomfield Refining. 3013 is a section of RCRA under which EPA may require a facility to conduct investigations of the nature and extent of hazardous wastes which have been released from a TSD. The 3013 cited sampling evidence of hazardous constituents in the ground water, in the oily water ponds, and in Hammond Ditch, and the potential for these contaminants to affect downstream users of Hammond Ditch and of the San Juan River. The 3013 orders Bloomfiled Refining to characterize the geohydrology at their site, to determine the extent and rate of migration of hazardous constituents, and to determine the impact of those constituents on Hammond Ditch and San Juan water.

Bloomfield Refining protested EPA's right to issue them the 3013. However, they chose, in a spirit of cooperation, to submit a plan that would substantially meet the requirements of the 3013. This plan is under EPA and EID review.

These two enforcement actions (3008 and 3013) were initiated by EPA even though New Mexico now has the program, because EPA had initiated action prior to us receiving authorization. The State does, however, have the authority to issue our own enforcement action if we so choose.

To summarize: the compliance status of the refinery rests on the determination of whether or not they are a TSD. If yes, then the facility is in violation of major requirements of RCRA and HWMR-2. Ground-water monitoring must be installed, and the results of such monitoring will probably lead to a extensive remedial action program for ground water at the site. If no, then EPA and EID have little leverage under these regulations to require clean-up of the ground water or surface water at the site. Future action by OCD and USBR will be correlated with the outcome of enforcement under RCRA/HWMR-2.

EID CONTACTS: Ann Claassen, Jack Ellvinger, 984-0020 ext. 340

EPA CONTACTS: Jim Turner, Attorney, 214-767-6552
Steve Schwartz, Hazardous Waste Enforcement, 214-767-9729

NPDES Permit; EPA

At the recommendation of the Surface Water Bureau of EID, EPA notified Plateau that they should file an application for an NPDES permit. The discharge to be permitted is hydrocarbon-contaminated water which seeps out along the bluff beneath the refinery. According to EPA, no response was received from the refinery, so that EPA plans to soon send another letter requiring a response.

CONTACT: Rob Franke, EPA Region VI, 214-767-9817

The above information is provided in response to your phone request. If you have further questions, please call.

RH

RH:AC:ac

xc: Dave Boyer, Oil Conservation Division
Jim Turner, EPA Region VI

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

February 7, 1985

MEMORANDUM

TO: PAUL BIDERMAN, SECRETARY,
ENERGY AND MINERALS DEPARTMENT

THRU: R. L. STAMETS, DIRECTOR,
OIL CONSERVATION DIVISION

FROM: D. G. BOYER, OCD ENVIRONMENTAL BUREAU D.G.B.

SUBJECT: BLOOMFIELD (PLATEAU) REFINERY DISCHARGE PLAN

At your request, I have reviewed the above approved discharge plan and present the following comments and conclusions based on that review.

1) The perched ground water in the cobble beds (whose source is Hammond (irrigation) ditch leakage) is badly contaminated under the refinery from refinery activities. The greatest part of that water drains north and discharges in seeps at the cliffs which face or overlook the San Juan River. Ground water in the valley fill (alluvium) at the base of the cliffs is also contaminated. This property is owned by Plateau and there is no potential for present or future use of the ground water.

2) Ground water in the valley fill is recharged by the San Juan River especially during high flows. At lower flows, water in bank storage is discharged via seepage back to the river. NM WQCC Regulations allow such contaminated seepage to discharge as long as NM stream standards are not violated. Due to the large flow in the river and the opportunity for dilution, the standards cannot be exceeded through seepage alone.

3) Although the discharge plan has demonstrated that most contaminated ground water moves to seeps on the cliffs, down to the river fill, and into the river via seepage not exceeding standards, I still have some concerns regarding shallow ground water to the west of the plant in the cobble bed and in the valley fill along the river. Major movement of ground water is into and out of the ditch and river perpendicular to the ditch and river channel. However, there is likely to be a component of flow moving down valley in the direction of the topographic gradient which is generally westerly. There should be additional efforts made by the company to investigate and delineate the extent of this ground water, velocity and direction of movement, contamination (if any), and the potential for future use and contamination of such water.

4) I also have some concerns about seepage into the Nacimiento formation (beneath the cobble beds) since the formation contains sandstone lenses of unknown thickness and lateral extent. These formation characteristics were not addressed in the discharge plan and the potential for downward movement of contamination and the effect on Nacimiento ground water is unknown.

5) I believe the present discharge plan monitoring arrangements to be inadequate and have so notified the company (letter attached). OCD and the company are working toward agreement on a revised program that will provide more frequent and meaningful data.

6) EPA Region VI RCRA staff are preparing an order pursuant to RCRA Section 3013 that will state the need for additional monitoring, analysis and testing to determine the presence or extent of hazardous waste at the refinery. The refinery will be required to respond to the order and perform additional site hydrogeologic studies to answer EPA concerns. The information generated will be useful to OCD in answering some of the concerns listed above and in evaluating what discharge plan changes may be needed to protect ground water.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

February 5, 1985

CERTIFIED MAIL - RETURN
RECEIPT REQUESTED

Mr. Chris Hawley
Environmental Engineer
Bloomfield Refining Company
c/o Gary Refining Company
Gary Community Rural Station
Fruita, Colorado 81521

Dear Mr. Hawley:

This letter is in response to the information submitted in your monitoring reports of December 3, 1984, and January 23, 1985, and your letter of December 7, 1984. I agree with the statement in your December 3 letter that existing water quality in the refinery area has not been established. Because of the seasonal nature of water flow in nearby Hammond Ditch, the direction and velocity of ground water movement beneath the refinery may vary seasonally. Concentrations of water quality constituents similarly may vary due to cyclic water movement, or from biochemical changes in the subsurface (eg. availability of oxygen, oxidation-reduction chemical reactions). For whatever reason(s), concentrations of several constituents greatly exceed standards in both of the monitoring wells. In lieu of your proposal to use just Water Quality Control Commission (WQCC) standards in determining background, we propose that more frequent monitoring with an abbreviated WQCC list be initiated, that samples also be analyzed for cation/anion indicators of general water quality, that monitoring well #5 (land application area) be added to the sampling schedule and that water levels in all monitoring wells be measured at frequent intervals.

I understand that EPA Region VI RCRA staff will issue a "3013" order within 30 days and that the order will require you to perform additional monitoring, analysis and testing of the subsurface. Since placement of additional ground water monitoring wells, and more frequent sampling will likely be required as a result of the order, it seems reasonable to

delay any changes in the discharge plan monitoring program until the specifics of a "3013" monitoring program are known. I understand that these must be presented to EPA within 30 days of order issuance. At that time, or shortly thereafter, I suggest a meeting between OCD and Bloomfield Refining to discuss changes in the discharge plan monitoring program.

In the meantime, the OCD wishes to be notified several weeks in advance of the March sampling so that a joint sampling of the wells can be scheduled. We desire to perform sampling of the wells and also Hammond Ditch before the ditch is reopened for irrigation use.

If you have any questions, please contact me at the above address and telephone.

Sincerely,

David G Boyer

DAVID G. BOYER
Geologist

DGB/dr

cc: Ann Claussen, NMEID

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

February 5, 1985

CERTIFIED MAIL - RETURN
RECEIPT REQUESTED

Mr. Chris Hawley
Environmental Engineer
Bloomfield Refining Company
c/o Gary Refining Company
Gary Community Rural Station
Fruita, Colorado 81521

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If you have any questions, please contact me at the above address and telephone.

Sincerely,

David G Boyer

DAVID G. BOYER
Geologist

DGB/dr

cc: Ann Claussen, NMEID

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

January 31, 1985

Mr. James L. Turner, Esq.
Attorney
Office of Regional Council
Region 6
U.S. Environmental Protection Agency
1201 Elm Street
Dallas, TX. 75270

RECEIVED
FEB 05 1985
HAZARDOUS WASTE SECTION

Re: Bloomfield Refining Company, Inc.
(60RC), Bloomfield, New Mexico

Dear Mr. Turner:

As outlined in our letter to you of November 14, 1984, Bloomfield Refining Company has been proceeding with an effort to define the hydrogeological framework at the refinery site (Task I). As previously agreed, we selected an environmental engineering firm, Engineering Science of Austin, Texas, to assist us in analysing the available information. Representatives from Engineering Science and Turner, Mason & Company met with representatives of the New Mexico Environmental Improvement Division on December 19, 1984, in Santa Fe, New Mexico. They also met with Mr. Steven Schwartz of the U.S. Environmental Protection Agency in Dallas, Texas, on December 27, 1984. These meetings were very helpful to us in obtaining input from both agencies regarding their perception of the environmental situation at the refinery. We are hopeful that the spirit of cooperation evidenced in these meetings will be maintained, leading to an expeditious solution of any environmental problems which may be identified.

Following an on-site visit to the refinery and an extensive review of all available information, Engineering Science has completed a formal report documenting the current status of the refinery site. Two copies of the Engineering Science report are enclosed for your consideration. We have also provided two copies to NMEID under separate cover. We would like to point out that this report is being submitted to you in accordance with the timing set out in our letter of November 14, 1984.

You will note that the Engineering Science report concludes that subsurface petroleum hydrocarbons are wide spread at the refinery. This petroleum appears to be the cumulative result of many past spills and leaks. Fortunately, this petroleum has been essentially confined to the refinery site. Further, Engineering Science's review of the data indicate that no measurable impacts appear to have occurred in either the San Juan River, or the Hammond Ditch. While we are relieved at these conclusions, nevertheless Bloomfield Refining Company is committed to working with the U.S. EPA to insure that no future contamination of these important water resources will occur.

You will also note that Engineering Science recommends that an additional well be completed at the refinery site to verify that contamination is not prevalent in the underlying Nacimiento formation. Also, an earth resistivity survey is recommended to more accurately define the elevations of the Nacimiento formation under the refinery. They also recommend continuing monitoring of existing wells at the refinery and

additional sampling of the San Juan River. Bloomfield Refining Company plans to implement these recommendations in an expeditious manner. We would like to meet with EPA and NMEID to discuss the Engineering Science report and their recommendations in early February in Santa Fe, New Mexico. We suggest February 11, or February 20, 21 or 22 as possible dates. Please contact Mr. Harry Mason at Turner, Mason & Company (214/754-0898) with your choice of meeting times and he will coordinate the necessary meeting arrangements for Bloomfield Refining Company representatives.

Again let me reiterate that we appreciate the courtesies shown us by both U.S. EPA and NMEID personnel and express our sincere desire to continue to address the environmental issues at the Bloomfield Refinery in a constructive and technically sound manner.

Very truly yours,

BLOOMFIELD REFINING COMPANY

A. Joe Warr

A. Joe Warr
Vice President Refining

AJW:ct

cc: Mr. Peter H. Pache
State of New Mexico Environmental
Improvement Division
725 St. Michael's Drive
Crown Building
P.O. Box 968
Santa Fe, New Mexico 87504-0968

EXHIBIT A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 7 1984

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Region VIII Policy for the Permitting of Refinery Oily Wastewater Treatment Ponds

FROM: John H. Skinner, Director
Office of Solid Waste (WH-562)

TO: Robert L. Duprey, Director
Region 8
Air and Waste Management Division (8AW-WM)

We have reviewed the proposed Region VIII position discussed in your memos dated May 1 and October 12, 1984 that define permitting coverage of refinery wastewater treatment ponds. As your staff may have informed you, there have been several meetings between my staff and yours to discuss this problem. We have also met with Chevron, Phillips, Tosco and API and, separately, with Region IX to discuss the issue. We share your concern about the threat posed to ground and surface waters by some of the unlined wastewater ponds that treat or store oily wastewaters. However, we believe that the similarity of downstream unit sludges (in terms of lead and chromium levels) to those found in the API Separator are not a sufficient basis for defining the material in the downstream units as API Separator Sludge. In fact, the similarity of these sludges was a significant factor in our decision to move forward on an expanded listing to regulate these pond sludges.

Specifically, we are planning in a forthcoming listing to regulate oil/water/solids separation sludges generated in the wastewater treatment system prior to biological treatment. This listing was originally proposed in November of 1980. We expect to issue a notice identifying all of the available data in support of the listing and to provide some clarifications in response to previous comments. Current plans are to promulgate that listing by late summer.

While the listing revision should cover most sludges generated in these ponds, we realize that does not address your short term problem. We do have some suggestions in this regard. Section 206 of the Hazardous and Solid Waste Amendments of 1984 provides

that persons obtaining RCRA permits must undertake corrective action for all releases of hazardous constituents from any solid waste management unit as a condition of obtaining the RCRA permit. Thus, if a refinery pond is releasing hazardous constituents and the refinery seeks a RCRA permit for any unit at that facility, the refinery would have to undertake corrective action for the releases from the pond. (This could be done either through the permit, or pursuant to an interim status compliance order.) This principle applies even if the pond is not considered to hold a hazardous waste, since Section 206 applies to releases of hazardous constituents from solid waste management units.

A second option for addressing these pond sludges is to regulate the wastes as hazardous based on their exhibiting one or more of the characteristics of hazardous waste (see 40 CFR §261.21 -24). You mentioned this option in your recent letter with respect to EP Toxicity. However, your staff seems to have overlooked corrosivity (high pH has been found in some COD ponds) and reactivity (§261.23(a)(5)). It is likely that some refinery pond sludges will contain excessive levels of reactive sulfides.

The final option that could be used to deal with downstream impoundments and basins is applicability of the mixture rule. It is imperative, however, that your staff understand the proper framework for the application of the mixture rule. To maintain that a pond is regulated because an API Separator is an inherently inefficient unit and allows sludge to be carried through to a pond, is inaccurate. Likewise, downstream oxidation ponds are not regulated simply because they sometimes receive flow that has bypassed the API Separator. In both cases, the listed API Separator Sludge has not yet been generated. Rather, API Separator Sludge is generated when it is deposited in the bottom of an API Separator. The mixture rule is relevant only in those cases where previously deposited sludge is scoured, resuspended, and then carried out of the unit with the wastewater. If the Region can make a case for scouring from a separator, the mixture rule is applicable and the wastewater becomes a hazardous waste until delisted or discharged to a stream subject to regulation under the Clean Water Act.

The burden of proof in the demonstration of scouring is upon the Agency. Such an argument, although technically complex, can be made based on well established hydrodynamic principles. Realizing that there are limited resources and capability for developing such an argument by the Regions, we have (at the request of your staff) taken an active role in the development of guidance for the application of this argument. Attached to this memo is a preliminary list of factors that may be required to establish the occurrence of scouring from a given separator. These points are being provided at this time to facilitate the initiation of information gathering in the more serious cases.

We have also requested that the Office of Waste Programs Enforcement (OWPE) develop more thorough guidance. That effort is being conducted by their contractor (Metcalf & Eddy). We anticipate that your staff will be contacted by them in the near future The contractor should be able to provide some direct assistance to your staff in some specific cases, thereby serving the dual purpose of training and resolution of specific factors of concern. Mike Barclay (FTS: 475-8727) of OWPE is the Headquarters lead on that project and should be contacted for any further information. Ben Smith of my staff (FTS: 475-8551) is our technical expert in this matter and the lead on our study of petroleum refineries and their wastes. Do not hesitate to contact him if additional questions arise pertaining to this or other matters.

cc: RA's Region I-X
Mike Barclay (OWPE)
Steve Silverman (OGC)
Susan Manganello (ORC, Region VIII)

Factors To Be Evaluated In Determining The Potential For Separator Sludge Scouring

- Sludge Accumulation Practices - Continuous sludge removal from the separator rules out the occurrence of scouring. At the other end of the spectrum are facilities that allow sludge to accumulate to considerable depth. Accumulation to a depth greater than 50% of the flow depth makes scouring probable. Intermediate ranges of accumulation will probably depend more heavily on other factors.

- Flow Variability - Unless overloaded, units with maximum-to-minimum, flow ratios at the separator effluent of less than 2 and inlet flow ratios of less than 4 are probably not experiencing much resuspension of sludge.

- Poor Separator Design Or Operation - Factors contributing to scour conditions include: excessive, inlet or outlet zone turbulence; nominal horizontal velocities greater than 30 feet per minute; nominal overflow rates (flow/surface area) greater than 10,000 gallons per day/square foot of basin; basins less than 30 feet in length; operation under pressure (e.g., with a backwater at the inlet of a separator with a frozen surface), settling zone turbulence (sometimes seen as bubbling with solids entrainment).

- Separator Effluent Characteristics - Excessive weir loadings (e.g., operation with a suppressed weir, flow depth greater than a foot) facilitate carryover of resuspended particles. Visible, large (diameter greater than 1/4 inch) sludge particles in the separator effluent are strong evidence of scouring associated with microbial degradation of deposited sludge.

- Sludge Characteristics - Particle size distribution as measured by wet sieve and hydrometer analyses is necessary information to define scour conditions. The presence of coke fines in the wastewater influent is also important because that size of particle (<.1mm) is non-cohesive and highly susceptible to resuspension.

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

December 7, 1984

Mr. David G. Boyer
State of New Mexico
Oil Conservation Division
P.O. Box 2088, Land Office Building
Sante Fe, NM 87501

Dear Mr. Boyer:

Re: Bloomfield Refinery Discharge Plan - GRW-1-A

As per our discussion this week, I formally propose that we change the sampling schedule for the first year from August, November, February, and May to September, December, March, and June for our wells P1 and P4. The transfer of ownership of the refinery has required some manpower changes and this schedule would enable us to better prepare for the requirements of the plan.

Thank you for your consideration in this matter. Please feel free to call me at (303) 858-9811 or Paul Liscon at (505) 632-8013.

Very truly yours,

Chris Hawley
Environmental Engineer

:bka

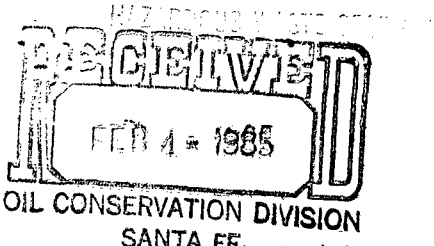
cc: Jim Everson
Paul Liscom

November 14, 1984

RECEIVED

NOV 19 1984

James Turner, Esq.
Office of Regional Counsel
Region VI
U.S. Environmental Protection Agency
1201 Elm Street
Dallas, TX 75270



Re: Docket No. RCRA-3013-09-84

Dear Mr. Turner:

I am writing in response to your request for comments on the draft Administrative Order requiring submission and implementation of a Proposal for Monitoring, Testing, Analysis and Reporting. The draft Administrative Order is directed to the Bloomfield Refinery (Refinery) which was owned and operated by Plateau, Inc., a subsidiary of Suburban Propane (Suburban). The Refinery was recently acquired by Bloomfield Refining Company (BRC).

The Administrative Order seeks to impose certain binding obligations on Plateau to design and implement a monitoring program for the purpose of identifying the possible migration of hazardous wastes from the Refinery and related operations. BRC, the present owner of the Refinery, appreciates being given the opportunity to comment on this draft. As the new owner, we are looking forward to cooperating with EPA for the purpose of investigating environmental conditions at this site.

BRC finalized its purchase of the Refinery approximately two weeks ago, on October 31, 1984. In the latter stages of our negotiations for the purchase of the Refinery, we were made aware of certain environmental issues which exist at the facility and were given notice of the draft Administrative Order being addressed here.

In connection with that responsibility, BRC retained Turner, Mason & Associates (TM&A), a Dallas-based consulting engineering firm, to assist in the analysis of the technical and regulatory issues raised in the draft Order. On October 22, BRC and TM&A representatives met with Suburban and environmental consultants in Cincinnati to discuss the Section 3013 work elements. Additional meetings with environmental consultants were held November 12, 1984. We also met with EPA Region VI and New Mexico Environmental Improvement Division (NMEID) personnel on October 23 and November 9, 1984, respectively, in an effort to gain a better understanding of the issues involved.

In the brief time that we have had to address the issues involved, we seem to have raised more questions than we have answered. Accordingly, we are unable to outline a considered position on the subject at this time. We can, however, commit to a cooperative effort at arriving at technically sound, cost-effective resolutions to the issues which are determined to exist at the site. Therefore, without addressing the specific allega-

tions contained in the draft Order at this time, and without waiving any right to address these in detail at a later date, we have chosen to outline a course of action which BRC would commit to commence immediately. Based on our composite understanding of the concerns raised in the draft and the additional information received in our meetings with Region VI and the NMEID, we believe that this course of action is responsive to the concerns of these agencies.

Following is the course of action, including a schedule proposed by BRC. This schedule assumes timely approval of this proposal by EPA.

Task I - Define Hydrogeological Framework

Gary believes that a considerable amount of work has been done towards this end already. Some of this information has been provided to the New Mexico Oil Conservation Division (OCD) as part of the water discharge plan. We would propose to review and analyze the geotechnical data developed by Dr. William Turner of American Ground Water Consultants, Inc. (AGW) in the discharge plan permitting process. We would also review data developed during the drilling of the six underground monitoring wells which were completed in February, 1984. BRC has interviewed various environmental engineering firms to assist with this effort and solicited written proposals from these firms. We plan to make a selection by November 30, and prepare a formal report to be submitted to Region VI and NMEID by January 31, 1985. Following EPA and NMEID review of the report, a joint meeting will be held, at the convenience of EPA, NMEID and BRC, to identify any additional geotechnical data which may be required.

Task II - Placement and Completion of Additional Monitoring Wells as May Be Required

After the subsurface features of the site are described in sufficient detail to identify potential routes of waste migration or collection, the number and location of any additional monitoring wells which are necessary will be established. BRC, with the assistance of its environmental consultant, will provide data concerning well location and construction as requested in the work elements section of the 3013 draft Order. Completion of monitoring wells will be performed by an outside contractor and should be done within six weeks after agreeing upon the number and location of any additional wells required.

Task III - Sampling and Analysis of Monitoring Wells

Following completion of any necessary wells, BRC and its consultants will develop a detailed groundwater monitoring plan. Sampling procedures will be reviewed with Region VI and NMEID, as will a list of indicator and confirmation parameters for analysis. In view of the seasonal effects that the Hammond ditch appears to play in the recharging and discharging of the cobblestone layer, we believe that it is important to structure the analytical cycle to account for these seasonal variations. On this basis, we would propose four sets of data be taken during and after the irrigation season.

Task IV - Data Analysis and Remedial Action

The data will be analyzed and a report prepared summarizing all of the sample data generated. BRC will then propose remedial action if necessary and schedule a joint meeting to review such proposal(s). This task should be completed within 30 days of completion of the sampling and analysis outlined in Task III.

We would like to reiterate that BRC, as the new owner of the site, looks forward to having an opportunity to work with the EPA and the State of New Mexico toward their mutual goal of environmental protection. We would be happy to discuss the specifics of the proposed course of action with EPA to the extent you may have questions or suggestions.

In the meantime, I would appreciate your contacting Mr. Harry Mason or Mike Leger at TM&A as to when a meeting can be scheduled between our technical representatives. Again, we want to thank you for giving us the opportunity to review the draft Order. If you have any questions at this time, please feel free to contact us.

Very truly yours,

BLOOMFIELD REFINING COMPANY

A. Joe Warr

A. Joe Warr
Vice President Refining

AJW:gcd

cc: Peter H. Pache
State of New Mexico Environmental Improvement Division
725 St. Michael's Drive
Crown Building
P.O. Box 968
Santa Fe, NM 87504-0968

PLATEAU, INC.

P.O. BOX 26251
ALBUQUERQUE, N.M. 87125-6251
PHONE 505/262-2221

November 2, 1984

Mr. Joe Ramey
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
State and Office Building
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Please find attached Plateau's monthly report for water discharged to the Solar Evaporation Ponds.

Plateau Inc's Bloomfield Refinery was recently sold to Gary-Williams Energy on October 31, 1983. All future correspondence should be directed to:

Mr. Paul W. Liscom
Bloomfield Refining Company
P. O. Box 159
Bloomfield, New Mexico 87413
(505) 632-8013

Sincerely,

Dwight J. Stockham

Dwight J. Stockham
Assoc. Environmental Engineer

DJS/rl

Attachment:

cc: B. G. Dixon
P. W. Liscom
File - DJS(2)

Farmington
DAILY TIMES
8 NOV 1 1983
New Mexico Press Clipping Bureau
Albuquerque, N. M.

Plateau Refinery Sold

183

By Rex Graham
Daily Times Staff

Gary-Williams Oil Producer announced today from its Denver headquarters that it has purchased the Plateau refinery in Bloomfield from its previous owner, Suburban Propane Gas Corp. The sale price was not made public.

Sally Allen, a Gary-Williams spokeswoman, said as part of the deal, Gary-Williams also purchased the refinery's inventory of refined fuel and crude oil as well as Plateau's one-third interest in a crude oil pipeline linking the 16,000-barrel-per-day refinery to a major pipeline on the West Coast.

Ms. Allen said as part of the closing sale agreement signed Wednesday at Suburban Propane headquarters in Morristown, N.J., the approximately 50 Plateau gasoline stations were sold to Thrift-Way Marketing President and former Farmington City Councilman Jerry Clayton.

The Denver company signed an agreement in July to buy the refinery and related transportation facilities. A closing was expected before Sept. 30, but Ms. Allen said the complexity of the sale and necessary approval of federal agencies held up the transaction.

Paul Liscom, the manager of the refinery for Plateau, said Wednesday he will continue to run the plant for Gary-Williams. Liscom said that few, if any, refinery workers will lose their jobs as a result of the change in ownership.

Gary-Williams officials said, however, that truck drivers who had been on the Plateau payroll will now work under contract as independent businessmen.

Liscom said the Bloomfield refinery has been operating at about 50 percent of its capacity, and while short-term prospects for gasoline sales are uncertain, Gary-Williams said last summer that the long-term outlook is bright.

The refinery is to be operated by the Bloomfield Refining Co., a subsidiary of Gary Energy Corp., which is the parent company of Gary-Williams. The Bloomfield facility produces leaded and unleaded gasoline, kerosene, No. 1 and No. 2 diesel fuel and L.P. (liquid petroleum) liquids.

Gary-Williams President Ron Williams said earlier that the local refinery would complement operations with the company's similar-sized refinery in Fruita, Colo., operated by Gary Refining Co., a subsidiary of Gary Energy.

A Gary-Williams statement said a hydrocracker recently had been installed at its Fruita refinery "to make possible the refining of shale oil and the production of unleaded gasoline and jet fuel."

Gary Williams Oil Producer Buys Bloomfield Refinery

Gary Williams Oil Producer of Denver announced on Wednesday its purchase of a 16,000-barrel-per-day refinery in Bloomfield, N.M., from Plateau Inc.

Gary Williams owns and operates, through its subsidiary, Gary Refining Company, a 17,000-barrel-per-day refinery in Fruita on Colorado's Western Slope.

The Bloomfield facility near Farmington produces gasoline (leaded and unleaded), kerosene, No. 1 and No. 2 diesel fuel and liquid petroleum.

As part of the all-cash agreement, Gary also acquired various inventories and an interest in a crude oil pipeline.

Gary has operated its Fruita refinery since 1973 and has maintained an ongoing modernization program. Most recently, a hydrocracker was constructed to make possible the refining of shale oil and the production of unleaded gasoline and jet fuel.

Gary Williams Oil Producer is a Denver-based independent with more than 500 employees.

Plateau is a division of Suburban Propane, which is a division of National Distiller.

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

September 24, 1984

Mr. Richard L. Stamets
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Re: Plateau, Inc.

Dear Mr. Stamets:

Enclosed as you have requested are copies of two letters which demonstrate Plateau, Inc.'s compliance with restriction Number 4 on the June 7, 1984, discharge plan approval for Plateau's Bloomfield, New Mexico refinery, Approval GRW-1-A.

Please feel free to contact me if you have any further questions on Plateau's compliance with the approved plan.

Sincerely,

Bruce S. Garber

BSG/dm

cc: V.L. Molino
D.J. Stockham

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

August 27, 1984

Mr. David Boyer
Hydrogeologist
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

Re: Plateau Inc. approved Discharge Plan GRW-1-A

Dear David:

As we discussed in our telephone conversation earlier this morning, Plateau will not be able to accomplish the required monitoring of wells P1 and P4 until mid-September. As you know, this monitoring was scheduled for August. We hope that this short delay will not cause you any inconvenience.

Sincerely,

Bruce S. Garber

BSG/dm

cc: V.L. Molino
D.J. Stockham

HEALTH ENVIRONMENT department

STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT DIVISION
P.O. Box 968, Santa Fe, New Mexico 87504-0968
(505) 984-0020
STEVEN ASHER, Director

TONEY ANAYA
GOVERNOR

JOSEPH GOLDBERG
SECRETARY

TED GUAMBANA
DEPUTY SECRETARY

JOSEPH F. JOHNSON
DEPUTY SECRETARY

5 July 1984

Will Focht and Steve Schwartz
US EPA, Region VI
InterFirst Two Building
1201 Elm Street
Dallas, Texas 75270

Dear Will and Steve:

At Will's request, I have reviewed Plateau's Discharge Plan, prepared in March 1984 by American Ground Water Consultants (AGC). Following are my comments on the hydrological aspects of Plateau as pertains to RCRA and the NM Hazardous Waste Management Regulations (HWMR-2).

1. The basic issue still is: Is Plateau a TSD? If so, they must have ground-water monitoring in compliance with RCRA/HWMR-2. Whether or not the uppermost aquifer is "natural", it exists and is capable of carrying hazardous waste constituents into Hammond Ditch and the San Juan River, both of which supply domestic and agricultural water to downstream users.

2. At this point, I believe AGC may be correct that there is little or no natural ground water in the cobble bed. This is based on literature review, discussions with New Mexican ground-water experts, and a quick-and-dirty calculation I performed, utilizing Bureau of Reclamation estimates of seepage from Hammond Ditch.

   However, I am not absolutely convinced that there is no natural ground water. The dry well could easily have been drilled into a "bump" of Nacimiento. If it is important to determine whether there is natural ground water in the cobble bed, Plateau should do some or all of the following:

   a. Drill wells east, west and south of P-6 and see if they also are dry.

   b. Survey the elevation of the Hammond Ditch in the summer to see if the head is indeed at 5502 msl.

   c. Take water levels while the ditch is flowing to determine whether the gradient truly turns to the south.

   d. Perform a detailed evaluation of ditch seepage, cobble bed porosity, and flow rate of all seeps. Then do a mass balance to determine what water levels would be, based only on seepage, and compare to actually measured levels.

3. Plateau claims that the similarity of river water above and below the refinery indicates that no detectable levels of contaminants are entering the river from the refinery. However, the samples were taken during relatively high flow conditions. It is conceivable that under such conditions, water flows from the river into the flood-plain aquifer; any contaminants which happen to diffuse into the river are greatly diluted. Under low-flow conditions, the water may flow out of bank storage, carrying significant concentrations of contaminants. Above and below samples should be taken during a low-flow period (probably in December, Bureau of Reclamation can provide information on release schedules).

4. The characterization of the Nacimiento as impermeable and containing no water needs further substantiation. No permeability tests have been performed and no boreholes have been drilled into the Nacimiento to verify a lack of water-yielding zones.

   The six monitoring wells are described as being drilled to the top of the Nacimiento. While AGC characterizes the Nacimiento as consisting of unctious clay, none of the well logs describe the last drilling segment as consisting of pure clay. Rather, they speak of cobbles, pebbles, clayey sandstone, sandy claystone, and so forth. As was observed at the the site in March, significant lenses of sandstone exist within the Nacimiento. All this leads to the suspicion that the Nacimiento may indeed be permeable enough for water (carrying contaminants) to infiltrate into that formation. Even if it is true that the cobble bed will never be utilized for water supply (a debatable point), it is possible that water could be recovered from the Nacimiento if the well is screened over a sufficient interval.

   AGC argues that any aquifer within the Nacimieto would be artesian, and therefore would resist downward migration of contaminants. This is substantiated only by reference to a personal communication, and the context suggests that the communication may have referred to a deep, regional aquifer, as opposed to a localized, relatively shallow aquifer within the Nacimiento. It is also important to realize that as well as a mechanical hydraulic gradient, there would be a chemical concentration gradient which would drive contaminants into uncontaminated water, even across a hydraulic gradient.

   If Plateau is deemed to be a TSD, this matter warrants further investigation.

5. Elevations for the Nacimiento are given on Plate 1 to the nearest 1/100th of a foot. It is not clear how these elevations were obtained, since the well logs are only to the nearest foot. Incidentally, the description of the Nacimiento acting as a French drain supports the contention that Plateau needs an NPDES permit.

6. The hydrological description in the discharge plan does not take into account the contribution of seepage from the raw water ponds and the evaporation ponds. It also does not address the existence of several ground water expressions that were noted during our March visit -- the pond east of and below the fire practice

area, the sump (Tamarisk area) east of the landfill, the pits along the road west of the refinery, the flow in the arroyo east of the spray irrigation area.

I will be out of town until July 16, and will be happy to further discuss these issues at that time.

Sincerely,

Ann Claassen

Ann Claassen
Water Resource Specialist
Hazardous Waste Section

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

June 7, 1984

Mr. Bruce Garber
Box 8933
Santa Fe, New Mexico 87504

Re: Plateau Bloomfield Refinery
Discharge Plan
Approval - GRW-1-A

Dear Mr. Garber:

The updated discharge plan submitted pursuant to Water Quality Control Commission Regulations for the controlled discharge of waste water and associated fluids from the above referenced refinery located in Section 27, Township 29 North, Range 11 West, San Juan County, New Mexico, is hereby approved with the following restrictions:

1. Monitor wells P1 and P4 shall be sampled during August, November, February, and May during the first year under the updated plan and thereafter in November and May. Samples shall be analyzed for those constituents listed in Section 3-103 A, B, and C of the Water Quality Control Commission Regulations.

2. Any leaks or spills of five barrels or more will be reported indicating the cause, repair and cleanup details.

3. Any movement of hazardous waste will be reported to the appropriate office of the Environmental Improvement Division.

4. Plateau shall immediately contact the Dallas office of the United States Environmental Protection Agency to determine if an NPDES permit is required.

5. Plateau shall immediately install a meter and sampling loop on the discharge line and report monthly to the Oil Conservation Division the amount of effluent discharged to the solar evaporation pits.

The updated discharge plan was submitted as required under Section 3-109 G-4 and is approved on June 7, 1984, and is in effect for five years.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

May 24, 1984

Mr. Joe D. Ramey
Director of Energy and Minerals
Department
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Sampling results for Plateau wells #1 and #4 for the constituents you requested are set forth below. For the most part, the results of Hauser Laboratory and CEP laboratory for these constituents are fairly consistent. All concentrations are in mg/l.

	WELL #1		WELL #4	
	Hauser	CEP	Hauser	CEP
Chloride	1,040	1,000	1,600	1,780
Fluoride	0.62	0.54	0.32	0.33
Molybdenum	<0.5	0.24	0.05	0.005
Nitrate	1.2	0.05	1.3	0.02
Phenols	< 0.015	0.13	0.19	0.05
Sulfate	240	520	< 10.0	< 1.0
TDS	3038	3050	1600	1780

These analysis results should serve to establish the existing concentrations of those constituents for Wells #1 and #4. Any further existing concentration information which might be required to implement the discharge will become available upon the first ground water sampling and analysis by Plateau under the proposed plan.

Thank you for your continuing assistance.

Sincerely,

Bruce S. Garber

Bruce S. Garber

38
2 | 76
6
16

BSG/dm
cc: Gregory S. Smith
Dwight S. Stockham
Paul W. Liscom

RECEIVED
MAY 29 1984
OIL CONSERVATION DIVISION
SANTA FE

HEALTH ENVIRONMENT department

STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT DIVISION
P.O. Box 968, Santa Fe, New Mexico 87504-0968
(505) 827-9945 & 827-8904
STEVEN ASHER, Director

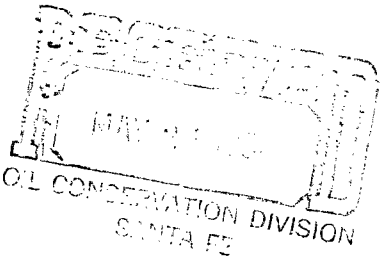
Joseph [illegible]
SECRETARY

Ted Gu[illegible]ana
DEPUTY SECRETARY

JOSEPH F. JOHNSON
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 15, 1984



Mr. Dwight Stockham
Associate Environmental Engineer
Plateau, Inc.
P.O. Box 26251
Albuquerque, New Mexico 87125

Re: Discharge to the Hammond Ditch, and to the San Juan River

Dear Mr. Stockham:

It is my understanding that your company may have a discharge(s) (originating from your refinery in Bloomfield) to the Hammond Ditch and to the San Juan River; if so, your company needs to apply for a federal Clean Water Act National Pollutant Discharge Elimination System (NPDES) permit. I have enclosed the application form. Please submit the completed form to the U.S. Environmental Protection Agency, Issuance Section, 6W-PS, 1201 Elm Street, Dallas, Texas 75270, and a copy of the completed form to the Surface Water Section, address on this letterhead. The NPDES permit system is authorized in Section 402 of the federal Clean Water Act and addresses discharge of pollutants to "Waters of the United States." The San Juan River falls under the category of "Water of the U.S.". The USEPA will determine, after reviewing your application, if an NPDES permit will be issued.

New Mexico has not been delegated authority to implement the NPDES program in this State. Therefore, NPDES permits for sources located in New Mexico are issued by the Environmental Protection Agency's (EPA) Region VI office in Dallas. The State does assist EPA, however in implementing certain NPDES - related activities. The NM Water Quality Control Commission (NMWQCC) has designated the New Mexico Environmental Improvement Division to administer NPDES permit program- related activities in this State. The NMWQCC has delegated responsibility for enforcing certain sections of the NMWQCC regulations to the Oil Conservation Division.

Should you have any questions regarding this letter, please contact Ms. Kathleen Sisneros of my staff.

Sincerely,

Ann M. Young

for Charles Nylander, Chief
Surface Water Quality Bureau

CN:gl

xc: USEPA, Mr. Bob Hanneschlager, 6W-P
NMOCD, Mr. Joe Ramey
NMEID, Mr. Tony Drypolcher, Ground Water & Hazardous Waste
NMEID, Mr. Richard Mitzelfelt, District I, Albuquerque
NMEID, Mr. David Tomko, District I, Farmington.

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

May 15, 1984

Mr. Joe D. Ramey
Director, Energy & Minerals Department
Oil Conservation Division
State Land Office Building
Santa Fe, New Mexico 87501

HAND DELIVERED

Re: Plateau, Inc.

Dear Mr. Ramey:

Enclosed are the U. S. Environmental Protection Agency's analytical results for samples taken the week of March 19, 1984 from monitoring wells 1, 4, and 5 at Plateau, Inc.'s Bloomfield, New Mexico refinery. The location of these wells is indicated on Plate 1 of the March, 1984, Discharge Plan. The wells are designated on that Plate as P 1, P 4 and P 5. As stated in previous correspondence and at meetings between O.C.D. and Plateau representatives, these analytical results should serve to establish existing water quality in the refinery area for purposes of Plateau's Discharge Plan.

Also enclosed is an April 26, 1982 report from Hauser Laboratories. This report contains analytical results for water samples from the North Solar Evaporation Pond. The water discharged to the land application area is taken from the North Solar Evaporation Pond.

Additionally, you have indicated a concern about the frequency of ground water monitoring under the Discharge Plan. Plateau will monitor ground water quarterly for the first year of operations under the plan and semiannually thereafter. I trust that this information is responsive to O.C.D.'s remaining questions on Plateau's Discharge Plan.

Finally, Plateau hereby requests an extension of time to discharge without an approved discharge plan until July 1, 1984. This extension should allow the O.C.D. sufficient time to complete its review of the Discharge Plan.

Thank you for your continuing assistance.

Sincerely yours,

Bruce S. Garber

Bruce S. Garber

BSG/mp
cc: G. S. Smith
D. S. Stockham
P. W. Liscom

EPA ANALYSIS OF [redacted]ATEAU'S BLOOMFIELD REFINERY MO[redacted]ORING WELLS
SAMPLED THE WEEK OF MARCH 19, 1984

	WQCC STANDARDS	WELL #1	WELL #4	WELL #5
INORGANICS (ppm)				
Aluminum	5.0 (C)	11.6	31.8	76.0
Altimony	---	< 0.02	< 0.02	< 0.02
Arsenic	0.1 (A)	< 0.01	0.018	< 0.01
Barium	1.0 (A)	0.2	1.8	0.3
Beryllium	---	< .005	< .005	< .005
Cadmium	0.01 (A)	0.003	< 0.003	< 0.001
Calcium	---	NR	NR	NR
Chromium	0.05 (A)	0.01	< 0.04	0.04
Colbalt	0.05 (C)	0.1	.05	< 0.05
Copper	1.0 (B)	< 0.05	0.05	0.1
Iron	1.0 (B)	20.9	57.7	70.6
Lead	0.05 (A)	< 0.01	.042	.02
Cyanide	0.2 (A)	NR	NR	NR
Magnesium	---	NR	NR	NR
Maganese	0.2 (B)	1.38	7.62	.915
Mercury	0.002 (A)	< 0.0002	0.0004	< 0.002
Nickel	0.2 (C)	0.08	< 0.04	0.04
Potassium	---	NR	NR	NR
Selenium	0.05 (A)	0.003	< 0.002	0.002
Silver	0.05 (A)	< 0.01	< 0.01	< 0.01
Sodium	---	NR	NR	NR
Thallium	---	< 0.01	< 0.01	< 0.01
Tin	---	ND	ND	ND
Vanadium	---	< 0.20	< 0.20	< 0.20
Zinc	10 (B)	0.06	0.18	0.12

NR - Present but below quantification limits
ND - No detection

No
Flouride
Nitrate
Uranium
Chloride
Molybdenum
Sulfates
TDS
Phenols

Note:
Hauser Report in
Anal. Files.
DJB 9/11/84

	WELL #1	WELL #4	WELL #5
ORGANICS			
Acid, Base Neutral			
Benzenedimethyl		98.0	
2-Methyl Napthalene		0.07	
Volatile Organics			
Benzene		9.0	
Ethyl Benzene		LT	
Xylene		10.0	
Cyclohexane Methyl		23.0	
Cyclo Hexane Dimethyl		20.0	
Acid, Base, Neutral			
Napthalene		0.20	
Volatile Organics			
2-Methyl Hexane		10.0	
2-Methyl Heptane		22.0	
Octane		45.0	
Unknown		25.0	
Acid, Base, Neutral			
Pentachlorophenol		LT	
Volatile Organics			
2-Methyl Butane		14.0	
Pentane		12.0	
Cyclohexane		18.0	
Methyl Cyclo Pentane		7.1	
Dimethyl Octanol		18.0	
Ethylmethycyclo Pentane		31.0	
Acid, Base, Neutral			
Cycloheptatriene		0.110	
Octane		0.06	
2-Methyloctane		0.92	
Dimethyl Benzene		0.61	
Unknown		0.22	
Nonane		0.22	
Propylcyclohexane		0.10	
Dimethyl Octane		0.14	
Methylnonane		0.17	
Unknown		0.27	
Trimethyl Benzene		0.15	
Unknown		0.13	
Unknown		0.078	

	WELL #1	WELL #4	WELL #5
Unknown		0.20	
Alkane		0.28	
Alkane or Benzene Derivative		0.25	
Alkane or Benzene Derivative		0.57	
Butyl Cyclo Hexane		0.086	
Unknown		0.180	
Alkane or Benzene Derivative		0.120	
Unknown		0.240	
Methylpropyl Benzene		0.150	
Unknown		0.340	
Unknown		0.069	
Unknown		0.120	
Undecane		0.420	
Unknown		0.088	
Dodecane		0.160	
Dimethylbenzoicacid		0.200	
Dimethylbenzoicacid		0.120	
Volatile Organic			
Dimethyl Cyclohexane		12.0	

LT - Present but below quantification limits

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

May 9, 1984

Mr. W. Perry Pearce
General Counsel
Energy and Minerals Dept.
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. ~~Pearce~~ Perry:

Enclosed for your files is a copy of the Assurance of Discontinuance for Plateau.

Thank you for your assistance.

Sincerely,

Bruce S. Garber

Bruce S. Garber

BSG/cl
Encl.

ASSURANCE OF DISCONTINUANCE

THIS ASSURANCE OF DISCONTINUANCE dated the 8th day of May, 1984, is made between the New Mexico Water Quality Control Commission (the "Commission") and Plateau, Inc. ("Plateau") a New Mexico Corporation.

WHEREAS, Plateau, Inc. owns and operates a refinery located at Bloomfield, New Mexico;

WHEREAS, the Director of the Oil Conservation Division (OCD) approved a discharge plan for discharges from the refinery on June 5, 1978;

WHEREAS, that approved discharge plan expired on June 5, 1983;

WHEREAS, since approval of the original discharge plan the discharge of effluent at the refinery to a land application area of approximately 10 acres on the refinery premises has become necessary and desirable for efficient operation of the refinery;

WHEREAS, Plateau submitted an updated Discharge Plan to OCD, including the land application of effluent, on June 2, 1982;

WHEREAS, Plateau has responded in a diligent and timely manner to all OCD requests for additional information in connection with the Updated Discharge Plan and;

WHEREAS, OCD has determined that the discharge to the land application area is a "new discharge" for the purposes of WQCC Reg. 3-106;

WHEREAS, the 120 days allowed in WQCC Reg. 3-106 for new discharges to discharge without an approved discharge plan have been exhausted;

WHEREAS, discharges at the refinery, other than the land application discharge have continued since June 5, 1983 pursuant to permission granted by the OCD director under WQCC Reg. 3-106;

WHEREAS, Plateau has not discharged to the land application area since October 14, 1983;

WHEREAS, if Plateau is not allowed to discharge to the land application area beginning on or about May 15, 1984, effluent storage and operational difficulties at the refinery are likely to occur and;

WHEREAS, the Commission and Plateau deem it appropriate to enter into this Assurance of Discontinuance to allow Plateau to discharge to the land application area while the discharge plan review process is completed.

Therefore it is agreed as follows:

1. MUTUAL COOPERATION: Plateau and the OCD shall mutually cooperate in accomplishing on a timely basis the completion of the discharge plan review process. Direct communication among Plateau and OCD personnel is encouraged. Plateau will continue to provide information requested by OCD pursuant to the Commission's ground water regulations in a diligent and timely manner.

2. ENFORCEMENT: The Commission shall not undertake enforcement against Plateau for discharges to the land application area, as described in the Updated Discharge Plan, occurring during the pendency of this Assurance without first giving Plateau 15 days prior written notice by the OCD Director that Plateau is in violation of the terms of this Assurance. This paragraph shall not preclude appropriate action by the Director or the Commission under section 74-6-11 N.M.S.A. 1978. Failure by Plateau to comply with any condition of this Assurance of Discontinuance shall be actionable as a violation of the Water Quality Act and of this Assurance under section 74-6-5 and 10 N.M.S.A. 1978, as applicable.

Nothing in this Assurance of Discontinuance shall relieve Plateau from the responsibility for complying with all the provisions of the Water Quality Act, the regulations promulgated thereunder or any other provision of law except as otherwise specifically provided herein.

3. NO ADMISSION: The terms, execution and any conduct in accordance herewith shall not constitute an admission or waiver of any kind by Plateau relating to matters under

the Water Quality Act, Commission regulations, or any other matters relating to health or environment.

4. **TERM:** This assurance shall remain in effect until July 1, 1984 or the date of the final approval or disapproval determination on Plateau's Updated Discharge Plan, which ever comes first; provided that the Chairman of the Commission is hereby authorized to revoke acceptance of this assurance upon receipt of information that indicates the discharge creates an unacceptable risk to the quality of water.

Signed and acknowledged this 8th day of May, 1984.

Bruce S. Gaby
PLATEAU INC.

APPROVED:
WATER QUALITY CONTROL COMMISSION

By Steve Asher
CHAIRMAN

ACKNOWLEDGEMENT

State of New Mexico)
) ss.
County of Santa Fe)

The foregoing instrument was acknowledged before me this 8th day of May, 1984 by Bruce S. Garber, Attorney for and on behalf of Plateau Inc. and by Steve Asher, the Chairman of the Water Quality Control Commission for and on behalf of the Water Quality Control Commission.

Lydia M. Romero
NOTARY PUBLIC

My Commission Expires: August 26, 1984

AMERICAN GROUND WATER CONSULTANTS, INC.

2300 CANDELARIA ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
TELE: (505) 345-9505 CABLE: HYDROCONSULT
TELEX: 66-0422 TELECOPIER: (505) 247-0155

April 20, 1984

Mr. Joe Ramey, Director
N.M. Oil Conservation Division
Post Office Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

By your letter dated April 17, 1984, addressed to Mr. Bruce Garber, you have asked for additional information on the Plateau discharge plan. That information is contained in this letter by reference to the items numbered in your letter.

1. The columns of the water budget have been given letters and explanatory material has been added. This information is given in Attachment 1 hereto.

2. Spent caustic from the refinery has been either shipped to a sawmill in Snowflake, Arizona for use in their process or to an EPA certified disposal facility.

Relevant analyses of the catalysts used at the refinery are given in Attachment 2. The catalyst material is non hazardous and is land filled on refinery property.

3. Attachment 3 lists the EPA recognized priority pollutants.

4. The lined ponds were constructed in the following manner. The pond foundation was covered with clean sand and fill. A one foot deep and one foot wide trench was dug with a ditch witch to accomodate 4-inch PVC drain pipe. After placement of the PVC drain pipe, the ditch was filled with 1/2-inch or larger diameter crushed rock. An additional four inches of crushed rodk was emplaced above the trench and over the pond foundation. The aggregate was then covered with a 100-mil high density polyethylene liner. The entire project was carried out by Permanent Lining Systems of Odessa, Texas.

The PVC drain pipe is sloped such that any seepage which is collected by the pipe will flow to a sump. The effectiveness of the grading was verified by putting water into the pipe and measuring the water which drained into the sump. The PVC drains are 20 feet apart. Attachment 4 is a diagram showing a cross section through the bottom of the lined ponds and a plan view of the leak detection system to which the scale has been added.

The lined-pond leak detection system apparently works well. In the Fall of 1983, the monitoring well associated with the northern lined pond began to show water. Flourescein dye was introduced into the pond and it showed up shortly thereafter in the monitoring well. The pond was taken out of service and the liner seams were resealed. The ponds were subsequently placed back into service and no leaks have been detected since.

5. Several samples of water were collected from the concrete sump box from which outfall from the lined ponds is pumped to the solar evaporation ponds. These samples were collected by the NMOCD. These analyses are presented in Attachment 5 along with the New Mexico standards for each item reported.

6. Analytical results of samples recently collected by the EPA have not yet been received. They will be forwarded to the OCC as soon as they are received by Plateau.

We would be happy to meet with you at your earliest convenience to discuss the discharge plan and respond to any remaining questions you or your staff may have. A representative of Plateau will contact you to schedule a meeting.

Sincerely,

William M. Turner

Dr. William M. Turner
President

cc: Gregory Smith
Paul W. Liscom
Dwight J. Stockham
S. Bruce Garber

ATTACHMENT 1

KEY TO WATER BUDGET TABLE

TABLE COLUMN	
C	Evaporation rate in inches. Average monthly pan evaporation rates for Farmington, NM, 1966-1981 from NOAA Climatological Data, April to September. Remaining rates are from this equation: Evaporation = Radiation (1-% surface albedo) / latent heat of vaporization of water (595 cal/gm). See Table 4 of Updated Discharge Plan for a Refinery Operated by Plateau Inc. for further explanation.
D	Adjusted evaporation rate in inches. Column C, evaporation rate, * 0.7.
E	Effective rainfall in inches near Bloomfield, NM; from Table 14, p. 39, Blaney and Hanson, 1965.
F	Net evaporation in inches = Adjusted evaporation, col D - Effective rainfall, col E.
G	Evaporation from ponds in gallons per month: (7.48 gal/cu ft * 7.45 acres pond area, * 43560 ft sq/acre)/monthly evap in inches, col F,/12 in/ft.
J	Monthly consumptive use factor near Bloomfield, NM. From Table 14, p. 39, Blaney and Hanson, 1965.
K	Monthly consumptive use coefficient for grass-hay, from Table 7, p. 27, Blaney and Hanson, 1965.
L	Monthly consumptive use amount in inches. Amount = consumptive use factor, col J * consumptive use coefficient, col K.
M	Monthly net consumption in inches = Consumptive use col L - effective rainfall, col E.
N	Monthly irrigation requirement in inches = net consumption, Col M/ irrigation efficiency, 0.6. See Appendix C, Blaney and Hanson, 1965, for irrigation efficiency assumptions.
O	Irrigation requirement converted to gallons per month: Irrigation requirement in inches, col N,/12 in/ft * irrigation area, 8 acres * 43560 ft sq/ac

* 7.48 gal/cu ft.

P Refinery effluent in gallons per month based on average plant usage of 50 gpm; 60 gpm in summer, 40 gpm in winter. gallons/month = gpm * 1440 min/day * days/month, col B.

Q Net effluent = Total effluent, col P - irrigation requirement, col O - pond evaporation, col G - seepage (10 gpm * 1440 min/day * days/month, col B).

R Cumulative net effluent to storage in ponds

S Carry over storage from year 1 + cumulative net effluent in year 2.

T Groundwater accretion = 10 gpm seepage + soil moisture accretion from irrigation (0.10 * col O), if irrigation is occuring, i.e. there is enough water in the ponds to irrigate.

U Year 2 accretion = (irrigation, col O, * 0.10) + 10 gpm seepage.

PLATEAU EFFLUENT WATER BUDGET INCLUDING POND EVAPORATION AND LAND DISPOSAL AND GROUND WATER ACCRETION

A	B	C	D	E	F	G	H
MONTH	DAYS	EVAP (IN)	ADJUSTED EVAP (IN)	RAINFALL (IN)	NET EVAP (IN)	POND EVAP (GAL/MO)	MONTH
JAN	31	5.24	3.668	.49	3.18	642908	JAN
FEB	28	6.62	4.634	.64	3.99	807984	FEB
MAR	31	7.65	5.355	.56	4.80	970026	MAR
APR	30	7.01	4.907	.48	4.43	895580	APR
MAY	31	8.74	6.118	.60	5.52	1116288	MAY
JUN	30	10.12	7.084	.31	6.77	1370376	JUN
JUL	31	10.51	7.357	.77	6.59	1332546	JUL
AUG	31	9.33	6.531	1.24	5.29	1070366	AUG
SEP	30	6.85	4.795	.85	3.95	798071	SEP
OCT	31	6.47	4.529	.88	3.65	738191	OCT
NOV	30	5.29	3.703	.42	3.28	664149	NOV
DEC	31	4.78	3.346	.57	2.78	561583	DEC

I	J	K	L	M	N	O	P	Q	R	S	T	U	V
MONTH	CU FACTOR (F)	CU COEF (K)	CU (IN)	NET CU (IN)	IRRIG (IN)	IRRIG (GAL/MO)	TOTAL EFFLUENT (GAL/MO)	NET EFFLUENT (GAL/MO)	YEAR 1 VOLUME IN STORAGE (GAL)	YEAR 2 VOLUME IN STORAGE (GAL)	YEAR 1 GROUND WATER ACCRETION (GPM)	YEAR 2 GROUND WATER ACCRETION (GPM)	MONTH
JAN	1.90	0	0.00	0.00	0.00	0	2678400	1589092	1589092	5655396	10	10	JAN
FEB	2.34	0	0.00	0.00	0.00	0	2419200	1208016	2797108	6863412	10	10	FEB
MAR	3.47	0	0.00	0.00	0.00	0	2678400	1261974	4059083	8125386	10	10	MAR
APR	4.50	.6	2.70	2.22	3.70	303767	1728000	-603347	3655736	7722039	12	12	APR
MAY	5.97	.7	4.18	3.58	5.97	1295803	1785600	-1072891	2582845	6649148	13	13	MAY
JUN	6.95	.8	5.56	5.25	8.75	1900800	1728000	-1975177	607668	4673972	14	14	JUN
JUL	7.60	.9	6.84	6.07	10.12	2197687	1785600	-2191033	0	248293	0	15	JUL
AUG	6.93	.9	6.24	5.00	8.33	1809200	1785600	-1540366	0	942572	0	14	AUG
SEP	5.53	.75	4.15	3.30	5.50	1193884	1728000	-695955	0	246618	0	13	SEP
OCT	4.20	.6	2.52	1.64	2.73	593774	2678400	900036	900036	1144653	11	11	OCT
NOV	3.71	0	0.00	0.00	0.00	0	2592000	1495851	2395887	2642504	10	10	NOV
DEC	3.05	0	0.00	0.00	0.00	0	2678400	1670417	4066303	4312921	10	10	DEC

ATTACHMENT 2

TABLE VII

COMPARISON OF US-260, HEZ-55 AND DA-250

PHYSICAL AND CHEMICAL PROPERTIES

CATALYST:	US-260		HEZ-55		DA-250	
SAMPLE NO:	R-1876-80	1st Qtr. '82	R-265-82F	1st Qtr. '82	R-3228-81	4765-2-13
CHEMICAL ANALYSIS, WT. %						
V^{++}	11.32	11.2	12.6	12.9	5.6	4.9
Al_2O_3	51.67	52.5	60.2	57.6	47.8	45.5
SiO_2	41.78	41.2	34.9	35.1	48.7	47.5
TiO_2	2.19	2.2	2.4	2.4	1.9	1.9
Fe_2O_3	.63	.4	.5	.6	.8	.8
Na_2O	.43	.5	.6	.6	.2	.2
Bulk Density (g/cc)	1.10	1.13	.96	1.00	1.00	.96
Pore Volume (cc/g)	.27	.28	.43	.40	.18	.21
Surface Area (m^2/g)	230	253	355	354	110	99
Attrition Index (%/sec.)	.3	.2	.7	.4	.4	.7
Particle Size Dist.:						
0-20 microns, %	2	4	6	2	5	2
0-40 microns, %	12	12	18	11	13	16
0-60 microns, %	35	34	41	33	30	36
0-80 microns, %	58	54	62	51	50	54
Average, microns	72	74	67	77	79	74

ATTACHMENT 3

PRIORITY POLLUTANTS

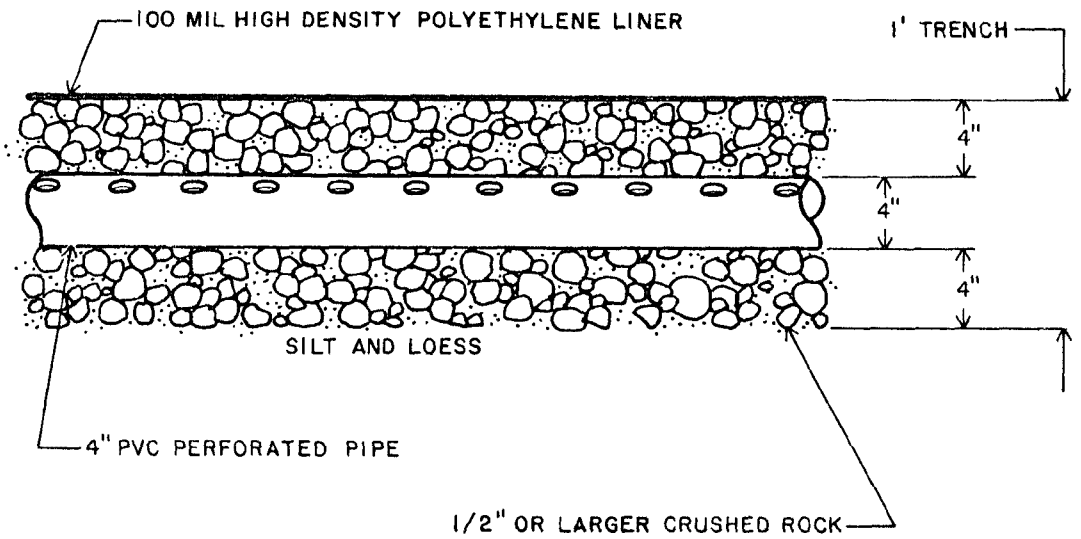
1. acenaphthene
2. acrolein
3. acrylonitrile
4. benzene
5. benzidine
6. carbon tetrachloride (tetrachloromethane)
7. chlorobenzene
8. 1,2,4-trichlorobenzene
9. hexachlorobenzene
10. 1,2-dichloroethane
11. 1,1,1-trichloroethane
12. hexachloroethane
13. 1,1-dichloroethane
14. 1,1,2-trichloroethane
15. 1,1,2,2-tetrachloroethane
16. chloroethane
17. bis(chloromethyl) ether
18. bis(2-chloroethyl) ether
19. 2-chloroethyl vinyl ether (mixed)
20. 2-chloronaphthalene
21. 2,4,6-trichlorophenol
22. parachlorometacresol
23. chloroform (trichloromethane)
24. 2-chlorophenol
25. 1,2-dichlorobenzene
26. 1,3-dichlorobenzene
27. 1,4-dichlorobenzene
28. 3,3'-dichlorobenzidine
29. 1,1-dichloroethylene
30. 1,2-trans-dichloroethylene
31. 2,4-dichlorophenol
32. 1,2-dichloropropane
33. 1,3-dichloropropylene
34. 2,4-dimethylphenol
35. 2,4-dinitrotoluene
36. 2,6-dinitrotoluene
37. 1,2-diphenylhydrazine
38. ethylbenzene
39. fluoranthene
40. 4-chlorophenyl phenyl ether
41. 4-bromophenyl phenyl ether
42. bis(2-chloroisopropyl) ether
43. bis(2-chloroethoxy) methane
44. methylene chloride (dichloromethane)
45. methyl chloride (chloromethane)

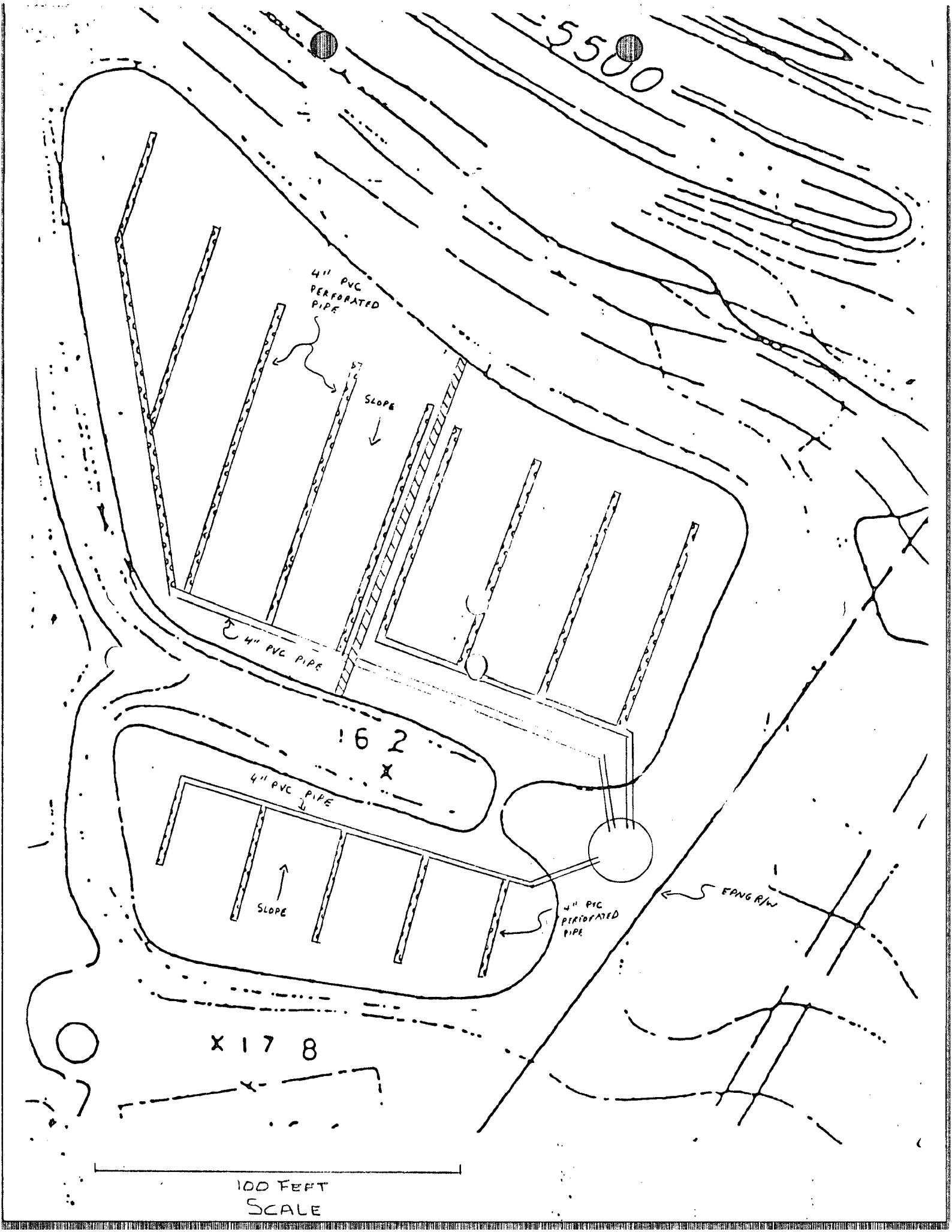
46. methyl bromide
47. bromoform (tribromomethane)
48. dichlorobromomethane
49. trichlorofluoromethane
50. dichlorodifluoromethane
51. chlorodibromomethane
52. hexachlorobutadiene
53. hexachlorocyclopentadiene
54. isophorone
55. naphthalene
56. nitrobenzene
57. 2-nitrophenol
58. 4-nitrophenol
59. 2,4-dinitrophenol
60. 4,6-dinitro-o-cresol
61. N-nitrosodimethylamine
62. N-nitrosodiphenylamine
63. N-nitrosodi-n-propylamine
64. pentachlorophenol
65. phenol (4APP method)
66. bis(2-ethylhexyl) phthalate
67. butyl benzyl phthalate
68. di-n-butyl phthalate
69. di-n-octyl phthalate
70. diethyl phthalate
71. dimethyl phthalate
72. benzo(a)anthracene (1,2 benzanthracene)
73. benzo(a)pyrene (3,4-benzopyrene)
74. 3,4-benzofluoranthene
75. benzo(k)fluoranthene (11,12-benzofluoranthene)
76. chrysene
77. acenaphthylene
78. anthracene
79. benzo(ghi)perylene (1,12-benzoperylene)
80. fluorene
81. phenanthrene
82. dibenzo (a,h) anthracene
83. indeno (1,2,3-cd) pyrene
84. pyrene
85. tetrachloroethylene
86. toluene
87. trichloroethylene
88. vinyl chloride (chloroethylene)
89. aldrin
90. dieldrin
91. chlordane (tech. mixture & metabolites)
92. 4,4' - DDT
93. 4,4' - DDE (p,p' DDX)
94. 4,4' - DDD (p,p'-TDE)
95. alpha-endosulfan

96. beta-endosulfan
97. endosulfan sulfate
98. endrin
99. endrin aldehyde
100. heptachlor
101. heptachlor epoxide
102. alpha-BHC
103. beta-BHC
104. gamma-BHC
105. delta-BHC
106. PCB-1242 (Aroclor 1242)
107. PCB-1254 (Aroclor 1254)
108. PCB-1221 (Aroclor 1221)
109. PCB-1232 (Aroclor 1232)
110. PCB-1248 (Aroclor 1248)
111. PCB-1260 (Aroclor 1260)
112. PCB-1016 (Aroclor 1016)
113. Toxaphene
114. Antimony (total)
115. Arsenic (total)
116. Asbestos (fibrous)
117. Cyanide (total)
118. 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

ATTACHMENT 4

TRENCH AND DRAIN DETAIL




5500
4" PVC PERFORATED PIPE
SLOPE
4" PVC PIPE
162
4" PVC PIPE
SLOPE
4" PVC PERFORATED PIPE
EPNG R/W
178
100 FEET
SCALE

ATTACHMENT 5

CHEMICAL ANALYSES OF WATER SAMPLES COLLECTED AT OUTFALL OF NORTHERN LINED POND

ITEM	WQCC STANDARD	DATE 9-3-81	DATE 7-6-82
FE	1.0	0.4	-
MN	0.2	.10	-
NI	.2	.04	-
MO	1.0	.01	-
CO	0.05	.005	[0.01
AR	.1	.046	-
BA	1.0	.4	-
CD	0.01	.001	-
CR	.05	.009	[0.01
PB	.05	.005	0.07E
HG	.002	.005	-
SE	.05	.005	-
AG	.05	.001	-
ZN	1.0	.10	-
CU	1.0	.061	-
AL	5.0	.10	-
B	0.75	1.20E	[0.01
CL	250	1102.2E	960E
F	1.6	0.45	0.00188
SO4	600	355.2	-
TDS	1000	-	2927E
TOC		-	1.88
LAB		1	2

NOTES: E = WQCC standard exceeded. [= less than.
LAB: 1 = New Mexico State Lab. 2 = Assagai.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

April 17, 1984

Mr. Bruce S. Garber
Box 8933
Santa Fe, New Mexico 87504

Dear Mr. Garber:

Thank you for promptly submitting the information on water balance, Hammond Ditch, flood frequency, solid and hazardous waste handling, etc. which we received at our meeting on April 13, 1984.

We have determined that you still need:

1. Clarification of water balance table
2. Information on FCC catalyst and past disposal practices
3. Listing of the 129 EPA priority pollutants
4. Lined pond specifications
5. Effluent sample
6. EPA sample results

Accordingly, an extension to May 15, 1984, to discharge without an approved plan, is granted to Plateau.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

April 16, 1984

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. Bruce S. Garber
Attorney-at-Law
P. O. Box 8933
Santa Fe, New Mexico 87504

Dear Mr. Garber:

On receipt of your letter of April 16, 1984, I spoke to Joe D. Ramey, who is out of town. He informed me that he felt an extension could be granted and would correspond with you on his return.

It is understood that until this time Plateau will continue operations as allowed under Mr. Ramey's letter of October 14, 1984.

Yours very truly

W. PERRY PEARCE,
General Counsel

WPP/dr

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

April 16, 1984

HAND DELIVERED

APR 16 1984

Mr. Joe Ramey, Director
Oil Conservation Division
P. O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Re: Plateau, Inc., Discharge Plan

Dear Mr. Ramey:

Thank you and Mr. Stamets for meeting with Dwight Stockham, Paul Liscom, William Turner and me on April 13, 1984 to further discuss Plateau's discharge plan. To allow sufficient time for Plateau to address your remaining requests for information and for you to complete your review of the discharge plan, I hereby request, on behalf of Plateau, your permission under WQCC Reg 3-106 A to discharge without an approved discharge plan unitl May 15, 1984. During this time Plateau will continue operations as allowed under your October 14, 1983 letter. Plateau's continuing progress in the discharge plan process demonstrates the company's good faith and establishes good cause to support this request.

Finally, as we discussed at the April 13, 1984 meeting, operation of the refinery much beyond May 15, 1984 without the use of the land application procedures described in the discharge plan will result in operational problems at the facility. Therefore, if it appears that approval of Plateau's discharge plan is not likely before that time we would appreciate as much prior notice as possible so that we may request the Water Quality Control Commission to consider an assurance of discontinuance under Section 74-6-10D. NMSA 1978, to allow land application of certain effluent pending completion of the discharge plan review process. If an assurance of discontinuance is to be considered at the May 8, 1984 regularly scheduled WQCC meeting we will need to take steps to be placed on the agenda and submit a proposed assurance of discontinuance in the next two weeks, since WQCC agenda are generally issued two weeks before regularly scheduled meetings.

Please contact us if we may provide any further information or answer any questions which will assist in your review of our discharge plan. Thank you for your continuing cooperation.

Sincerely yours,

Bruce S. Garber

Bruce S. Garber

BSG/dw
cc: Gregory S. Smith
Paul W. Liscom
Dwight J. Stockham
William M. Turner

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

Hand Delivered

April 13, 1984

Mr. Joe Ramey, Director
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Re: Plateau Inc., Discharge Plan

Dear Mr. Ramey:

Enclosed is the April 11, 1984 letter from Dr. William M. Turner to R.G. Dixon including attachments. This letter is submitted in response to the questions raised by O.C.D. at our March 27, 1984 meeting on Plateau's Discharge Plan.

We look forward to meeting with you this afternoon to discuss this matter further.

Sincerely,

Bruce S. Garber

Bruce S. Garber

BSG/cs

cc: Gregory S. Smith
Dwight Stockham
Paul Liscom

AMERICAN GROUND WATER CONSULTANTS, INC.

2300 CANDELARIA ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
TELE: (505) 345-9505 CABLE: HYDROCONSULT
TELEX: 66-0422 TELECOPIER: (505) 247-0155

April 11, 1984

Mr. R.G. Dixon
Plateau, Inc.
P.O. Box 26251
Albuquerque, NM 87115

Dear Mr. Dixon:

It is our understanding that in your meeting with the New Mexico Oil Conservation Division on March 27, 1984, several matters regarding the Plateau discharge plan require further elucidation. These are dealt with hereunder.

1. Discharge of Hammond Ditch Leakage

All leakage from the Hammond Ditch which takes place through the bed of the Hammond Ditch as the Hammond Ditch traverses Plateau property discharges along the contact between the cobble bed of Quaternary age and the underlying Nacimiento Formation of Tertiary age, where this contact is exposed at the surface east, north, and west of the refinery property. This is demonstrated in several ways.

The first method relies on inspection of water flow directions shown on Plate 1 in the discharge plan. Ground water flows downhill under the influence of gravity. Ground water levels were measured in monitoring wells and observation holes on the same day and water-level elevations were determined and the data contoured. The water flows perpendiculary to the water-level contours. Two major flow lines: one east of the refinery and one west of the refinery are shown. These flow lines converge on the depression in the Nacimiento subcrop surface and then trend to the northwest towards the cliff northwest of the refinery where the water discharges. Water north of the ditch also flows southward to the depression. Indeed some of the water north of the Hammond Ditch emerges as small seeps in the numerous intermittant valleys which exist in the area.

The second method relies upon a water budget of the area in which the rate of water outflow is calculated and compared with observed outflow.

The Plateau refinery is located between the Hammond Ditch on the north, the 5502-foot water-level contour on the south and between the flow lines on the east and west sides of the property all of which are shown on Plate 1. This is an area of

This is an area of about 41.123 acres.

Although the cobble bed underlying the refinery is about 15 feet thick, neutron logs of observation holes north of the northernmost solar-evaporation pond indicate that the seasonal change in water level within the cobble bed in close proximity to the Hammond Ditch is from two to four feet. These data are were collected in February while there was no flow in the Hammond Ditch.

During the non-irrigation season, the water level in the cobble bed may drop as much as four feet near the Hammond Ditch as the water in bank storage drains under the influence of gravity and discharges to the north as indicated by the water-level contour lines mentioned above. At the 5502-foot contour, the fluctuation in water level is likely to be close to zero and no noticeable drainage will appear to occur. The major fluctuation in water level near the Hammond Ditch and the virtual absence of water-level fluctuation near the 5502-foot contour is to be expected. Water levels always fluctuate greatly in proximity to recharge and discharge zones and this is the case in the present situaton.

The volume of the cobble bed which is actually dewatered is, therefore, approximately triangular in cross section rather than rectangular because the cobble bed is tilted to the north and the 5502-foot water-level contour nearly coincides with the base of the cobble bed.

The neutron logs of soil moisture measured in the observation ponds adjacent to the solar-evaporation ponds indicate that the specific yield of the cobble bed is between 13 and 15 percent.

Therefore, the amount of water in bank storage which drains away through seeps north of the refinery during the six months the Hammond Ditch contains no water may be estimated by estimating the volume of dewatering of the cobble bed from the following relationship.

$$Q = (1.24 \times A \times h \times Sy)/2$$

In the present case, $A = 41.123$ acres
$h = 4$ feet
$Sy = 15$ percent

The discharge rate, Q, is 15.29 gallons per minute for the six-month winter period.

Maximum values have been used for the dewatered thickness and the specific yield. If the dewatered thickness is two feet

and the specific yield is 13 percent the discharge rate during the winter months would be about 6.63 gallons per minute. The discharge rate for the summer months will always be higher because of flow from the Hammond Ditch.

Earlier studies presented in monitoring milestone reports have estimated seepage from the solar-evaporation pond of about 10 to 15 gallons per minute. If this is added to drainage of bank storage water, the seepage rate of all seeps north of the refinery will be in the range of about 15 to 30 gallons per minute during the winter. This rate of seepage seems in excess of the amount of seepage estimated by the NMOCD from 10 separate field trips to the area beginning in June 1981. The NMOCD estimates of seepage ranged from 10 to 15 gallons per minute during the winter months. Bearing in mind the amount of available data and the difficulty of estimating the aggregate seepage rate from the numerous seeps, the calculated seepage rate and the observed seepage rate estimates are in remarkably good agreement. It seems, therefore, that there is no major unaccounted for water and that there is no indication that excess water is seeping into the Nacimiento Formaton.

The rate of seepage from seeps north of the refinery will always be higher in the summer months. The NMOCD has estimated the seepage rate at up to 50 gallons per minute based upon numerous visits to the site. It must be borne in mind, however, that regardless of the season, the seepage rate of effluent from the pond and the land application areas will remain about the same or in the 10 to 15 gallon per minute range.

The estimates given above cannot be quantified further without more accurate seepage measurements and water-level data from monitoring wells.

2. Incorrect Location of Irrigation Area on Plate 2

The correct location of the irrigation area on Plate 2 is now shown and new Plates have been included in the discharge plan.

3. Provide Water Balances

Attachment 1 to this letter contains the water balance for the combined solar-evaporation pond and land application area including evaporation and seepage.

4. Can Cobble Bed Accomodate All Seepage

The maximum total volume of water which can be stored by the cobble bed beneath the 41.123 acres of refinery property defined above is about 185.05 acre feet. This assumes the cobble bed is flat lying which it is not. It is actually dipping more or less to the north at between 0.2 and 1.2 degrees. Therefore, much of the cobble bed above an elevation of about 5500 feet will be dry.

During the winter a maximum of about 12.34 acre feet of water will drain from the cobble bed. During summer, infiltration from the solar-evaporation pond and the land application area as well as the Hammond Ditch will percolate into the cobble bed and fill the previously drained volume of the cobble bed. Seepage from the Hammond Ditch will also seep away to the north to contribute to increased seepage there so that the total seepage rate from the Hammond Ditch during the summer will be greater than at least 15 gallons per minute along the reach of the ditch on Plateau property.

As empty void space in the cobble bed is filled by seepage from the solar-evaporation pond and the land application area, seepage from the Hammond Ditch into the cobble bed may decrease to the minimum required to sustain seepage to the north.

It must be pointed out that there is no static storage of water from the solar-evaporation ponds and the land application area. This water is continually undergoing dilution as it mixes with water in bank storage and is continually moving as it migrates towards the seeps north of the refinery. This is a dynamic system which fills with water and drains. The Hammond Ditch, as pointed out in the discharge plan, is a line source of recharge while water flows in the ditch. And, because the Hammond Ditch is so close to the surface exposure of the contact between the cobble beds and the Nacimiento Formation, the area is also a zone of discarge at all times.

5. Flood-Frequency Data

The 100-year flood frequency map used in the discharge plan is included here as Attachment 2.

6. Can Contaminated Water Cross the San Juan River?

The cobble bed of the Jackson Lake Terrace is suspended 40 or 50 feet above alluvium of the San Juan River. That is, there is a physical discontinuity to the ground-water system in the area which absolutely precludes water in the cobble bed from passing directly into alluvium of the San Juan River as ground water.

The San Juan River is underlain by a thin zone of alluvium. This alluvium north of the San Juan River contains ground water which is derived from the San Juan River. The San Juan River is a line source of recharge to the alluvium north of the river. As such, ground-water flow theory dictates that water must move from the river into the alluvium. This flow is a barrier to any ground-water flow from alluvium on the south side of the river to alluvium on the north side of the river. Only if there were a stronger source of ground-water recharge to the alluvium south of the river than the San Juan River could ground water move in the subsurface to the alluvium north of the river. This is not the case, the San Juan River is the master source of recharge in the area.

Finally, in the event water is pumped from wells in alluvium north of the river, this pumpage will only induce inflow from the river as it is the master source of recharge. Pumpage south of the river could not induce ground water to flow from the alluvium south of the river to the well north of the river for the same reason given previously.

7. Rework Last Paragraph of Page 16 of Discharge Plan.

There is no ground water south of the refinery in the cobble bed as indicated by the absence of shallow water in monitoring well p-6. Hence no ground-water flow enters the refinery property from this direction.

8. Describe Solid Waste Handling and Disposal Procedures.

The only solid wastes handled at the refinery are spent FCC catalyst and spent caustic. The spent FCC catalyst is land-filled on refinery property and the spent caustic is transported off site.

9. Describe Hazardous Waste Handling and Disposal Procedures.

The API separator is cleaned out approximately every five (5) years. When the API separator is cleaned out, the sludge is transported via a certified transporter to an EPA certified hazardous-waste disposal facility. When leaded tanks are eventually cleaned out, the leaded tank bottoms will also be transported to an EPA certified disposal facility. All hazardous waste that is shipped off-site will be properly manifested and handled according to EPA regulations.

10. Provide EPA Sampling Results Upstream and Downstream of the Refinery for the San Juan River and Hammond Ditch.

Chemical analyses of water samples collected by the the EPA both upstream and downstream of the refinery in the San Juan River and the Hammond Ditch are given in Attachment 3.

11. Commit to continue Emplacement of Dike across the Hammond Ditch to Capture any Drainage into Ditch.

Plateau will commit to place a dike across the Hammond Ditch following the irrigation season to capture any possible contaminated drainage from the banks of the ditch provided approval can be obtained from the Hammond Conservancy District.

12. Provide "As Built" Plans and Specifications of the Lined Ponds and Leak Detection System.

The as-built pland are included herewith in Attachment 4

13. Provide EPA Lab Results for Water in the Solar Evaporation Ponds.

EPA has not sampled the water in the solar-evaporation ponds.

14. Provide EPA Lab Results for Water Samples from Plateau's New Monitoring Wells.

When the EPA lab results are available Plateau will review them to establish existing concentrations of dissolved solutes. The monitoring wells that were sampled by the EPA will provide data on the existing chemical character of the water in the area.

Should you require additional clarification, please contact us at any time.

Sincerely,

Dr. William M. Turner
President

ATTACHMENT 1

ATTACHEMENT 1

The following water budget assumes that native and rangeland grasses are being grown in the land disposal area. All data regarding consumptive use and irrigation requirements for these grasses are given in State Engineer Technical Report 32. For purposes of calculation, the total surface area of the solar evaporation ponds, the lined ponds and the API separator is taken as 7.45 acres. The total area of the land disposal area is 8 acres. It is assumed that the surface water holding facilities will always have a fully wetted surface from which evaporation can take place; but, when the water budget indicates no storage in the solar-evaporation ponds no seepage from these ponds takes place. Evaporation rates are based upon Class A pan evaporation rates at Bloomfield and upon the R/L solar radiation methods detailed in the original discharge plan. Soil moisture accretion is the sum of seepage from the solar-evaporation ponds plus soil moistrue accretion from irrigation. Because insufficient irrigation water is likely to be available in the summer, the amount of soil moisture accretion is likely to be slightly overstated during the summer months.

PLATEAU EFFLUENT WATER BUDGET INCLUDING POND EVAPORATION AND LAND DISPOSAL AND GROUND WATER ACCRETION

MONTH	DAYS	EVAP (IN)	ADJUSTED EVAP (IN)	RAINFALL (IN)	NET EVAP (IN)	POND EVAP (GAL/MO)	MONTH
JAN	31	5.24	3.668	.49	3.18	642908	JAN
FEB	28	6.62	4.634	.64	3.99	807984	FEB
MAR	31	7.65	5.355	.56	4.80	970026	MAR
APR	30	7.01	4.907	.48	4.43	895580	APR
MAY	31	8.74	6.118	.60	5.52	1116288	MAY
JUN	30	10.12	7.084	.31	6.77	1370376	JUN
JUL	31	10.51	7.357	.77	6.59	1332546	JUL
AUG	31	9.33	6.531	1.24	5.29	1070366	AUG
SEP	30	6.85	4.795	.85	3.95	798071	SEP
OCT	31	6.47	4.529	.88	3.65	738191	OCT
NOV	30	5.29	3.703	.42	3.28	664149	NOV
DEC	31	4.78	3.346	.57	2.78	561583	DEC

Account for leakage 10 gpm

MONTH	CU FACTOR (F)	CU COEF (K)	CU (IN)	NET CU (IN)	IRRIG (IN)	IRRIG (GAL/MO)	TOTAL EFFLUENT (GAL/MO)	NET EFFLUENT (GAL/MO)	YEAR 1 VOLUME IN STORAGE (GAL)	YEAR 2 VOLUME IN STORAGE (GAL)	YEAR 1 GROUND WATER ACCRETION (GPM)	YEAR 2 GROUND WATER ACCRETION (GPM)	MONTH
JAN	1.90	0	0.00	0.00	0.00	0	2678400	1589092	1589092	5655396	10	10	JAN
FEB	2.34	0	0.00	0.00	0.00	0	2419200	1208016	2797108	6863412	10	10	FEB
MAR	3.47	0	0.00	0.00	0.00	0	2678400	1261974	4059083	8125386	10	10	MAR
APR	4.50	.6	2.70	2.22	3.70	803767	1728000	-403347	3655736	7722039	12	12	APR
MAY	5.97	.7	4.18	3.58	5.97	1295803	1785600	-1072891	2582845	6649148	13	13	MAY
JUN	6.95	.8	5.56	5.25	8.75	1900800	1728000	-1975177	607669	4673972	14	14	JUN
JUL	7.60	.9	6.84	6.07	10.12	2197687	1785600	-2191033	0	248293	0	15	JUL
AUG	6.93	.9	6.24	5.00	8.33	1809200	1785600	-1540366	0	942572	0	14	AUG
SEP	5.53	.75	4.15	3.30	5.50	1193884	1728000	-695955	0	246618	0	13	SEP
OCT	4.20	.6	2.52	1.64	2.73	593774	2678400	900036	900036	1146653	11	11	OCT
NOV	2.71	0	0.00	0.00	0.00	0	2592000	1495851	2395887	2642504	10	10	NOV
DEC	2.05	0	0.00	0.00	0.00	0	2678400	1670417	4066303	4312921	10	10	DEC

ATTACHMENT 2

KAO

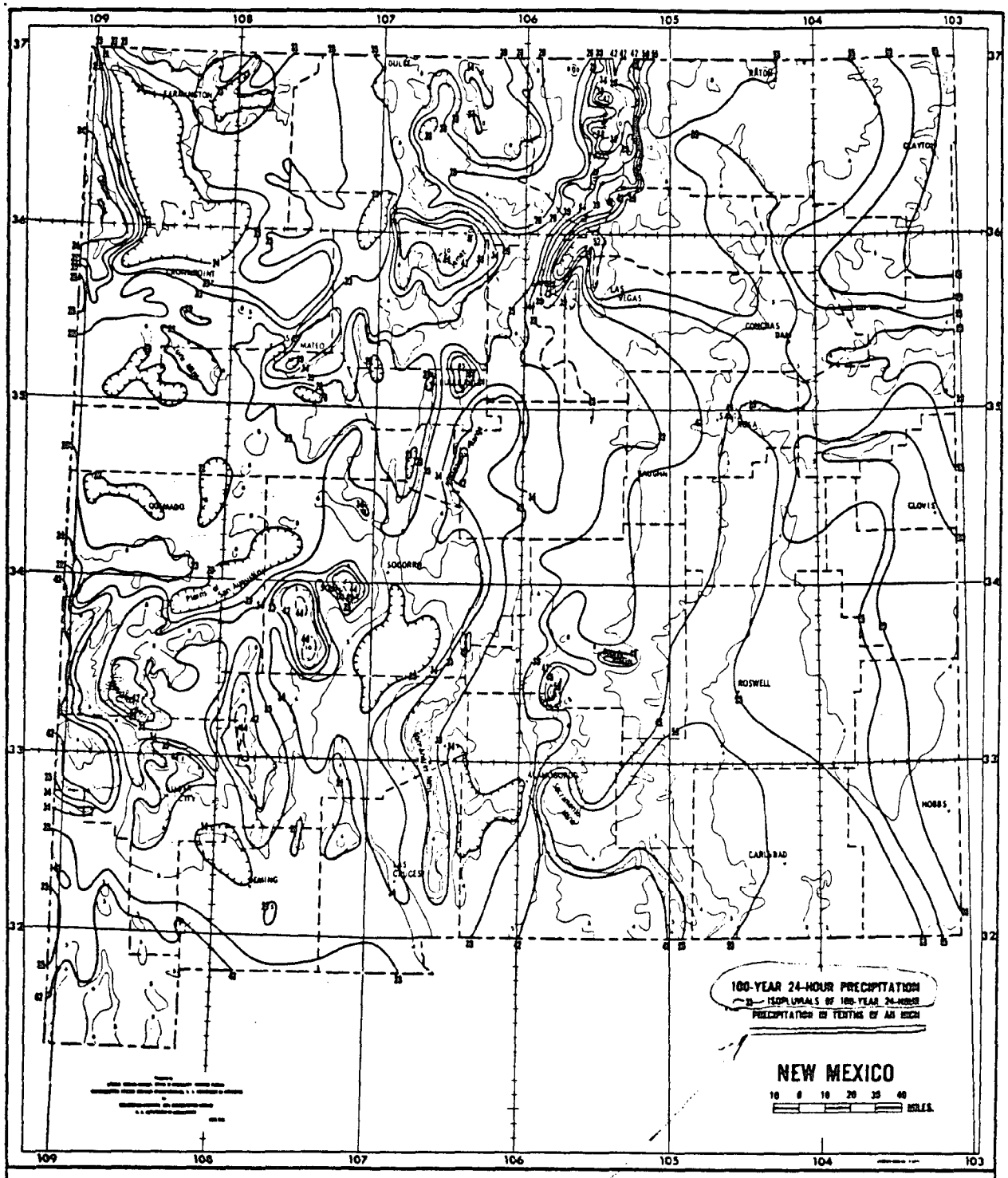
PEAK RATES OF DISCHARGE

FOR SMALL WATERSHEDS

CHAPTER 2
(Revised 10/73 for New Mexico)
ENGINEERING FIELD MANUAL
FOR
CONSERVATION PRACTICES

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

.26 × 0.1 = 2 6/10 inches



The readings are in 0.1 inch

EXHIBIT 2-2

NM-N-0374
12 of 13
Jan 29-71

ATTACHMENT 3

EPA LAB RESULTS UPSTREAM AND DOWNSTREAM OF THE REFINERY FOR THE SAN JUAN RIVER AND HAMMOND DITCH

PARAMETER	DOWNSTREAM SAN JUAN	UPSTREAM SAN JUAN	DOWNSTREAM HAMMOND	UPSTREAM HAMMOND
ALUMINUM	0.206	0.239		0.233
CHROMIUM				
BARIUM				
BERYLLIUM				
COBALT				
COPPER				
IRON	.172	.087	.173	.202
NICKEL				
MANGANESE	.024	.031	.024	.02
ZINC	.014	.013		.011
BORON	.234			.171
VANADIUM				
SILVER				
ARSENIC				
ANTIMONY				
SELENIUM				
THALLIUM				
MERCURY				
TIN				
CADMIUM				
LEAD				
AMMONIA				
CYANIDE				
SULFIDE				
ALKANE		.0075	.008	.009
BENZENE				
DICHLORGETHANE				
TOLUENE				
ACETONE				
XYLENE				
CYCLOHEXANE				
NAPHTHALENE				
PHENOL				
HEXANE				
ETHYL BENZENE				

NOTE: WHERE NO RESULTS ARE GIVEN, THE SUBSTANCE WAS NOT DETECTED.

ATTACHMENT 4

PERMANENT
LINING SYSTEMS
P.O. BOX 10155
2711 WEST HILMONT
ODESSA, TEXAS 79762
(915) 368-9132

September 30, 1982

Plateau, Inc.
P. O. Box 26251
Albuquerque, New Mexico 87125

Attention: Dwight Stockham

Re: Pond Lining
Bloomfield, N.M.
Quote# PLS 102/82

Dear Mr. Stockham,

We are pleased to offer our quote for the lining of your #1 and #2 oily water ponds at your Bloomfield, N. M. refinery.

Permanent Lining Systems, hereinafter known as PLS, offers to perform the following;

1. Supply all materials, equipment and supervisory labor required to complete the lining installation.

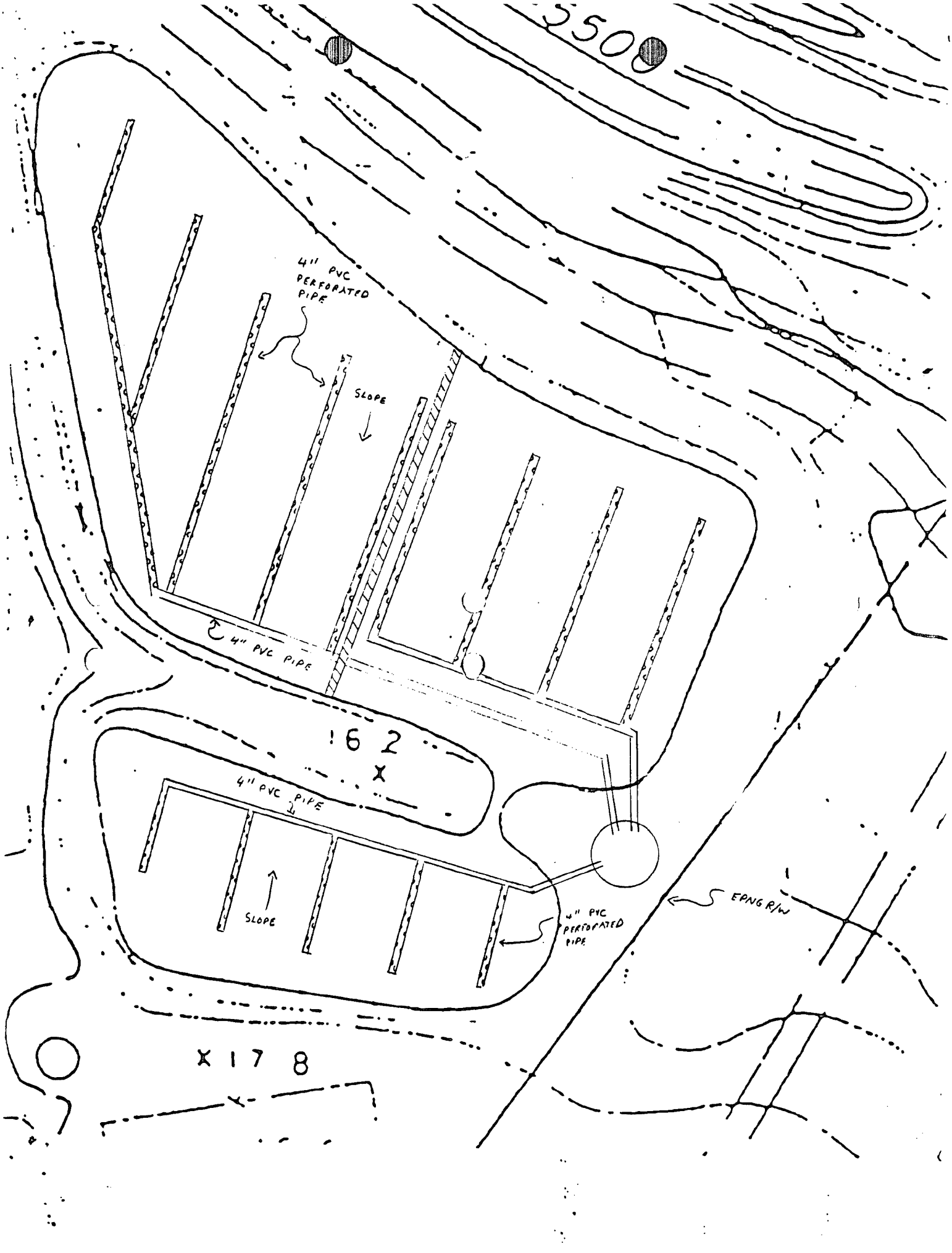
   1.1 Lining material supplied will be high density polyethylene, manufactured by Schlegel Lining Technology.
   1.2 Lining material will be joined together by extrusion welding.
   1.3 All pipe intrusions will be sealed by utilizing polyethylene pipe, neoprene cord and silicone gel.
   1.4 All phases of the lining installation will be under the supervision of the PLS site superintendent.

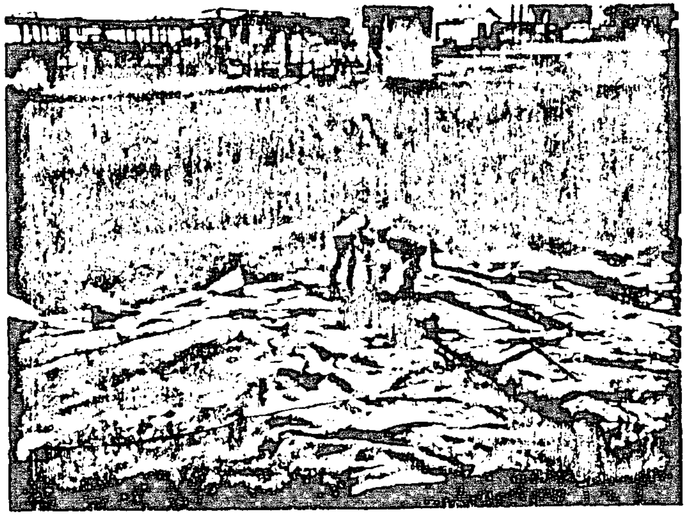
Plateau, Inc., will perform the following:

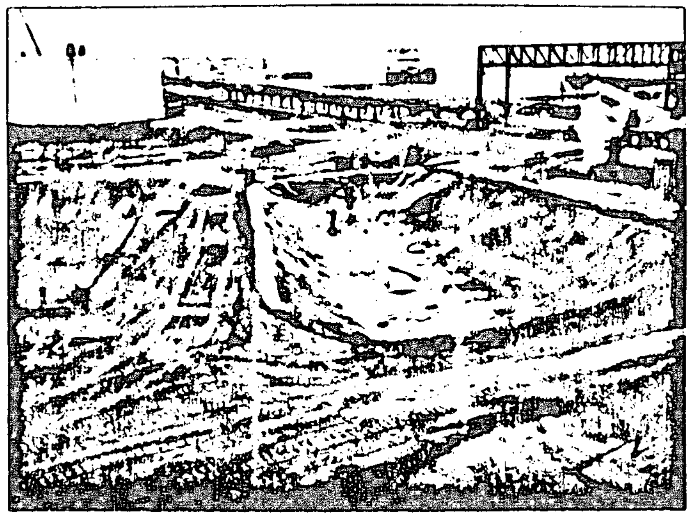
1. Do all dirt work necessary for the acceptance of the liner.
   1.1 Dirt work to be approved by PLS site superintendent.

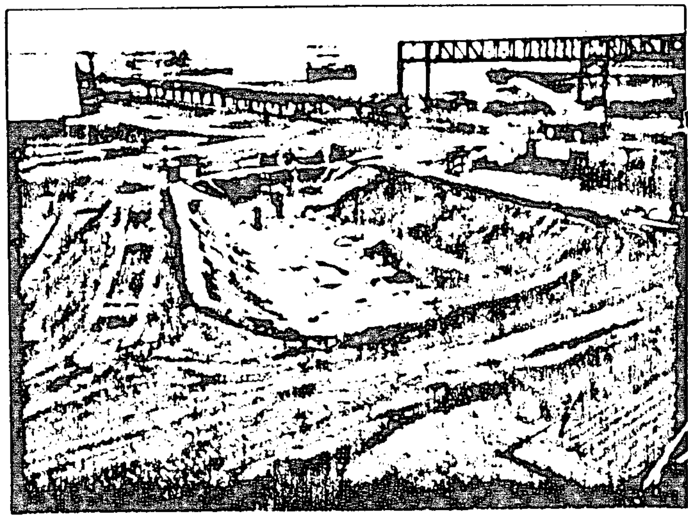
2. Furnish two (2) laborers for ten (10) hour days as needed.
   2.1 Days needed shall not exceed six (6) days, total.

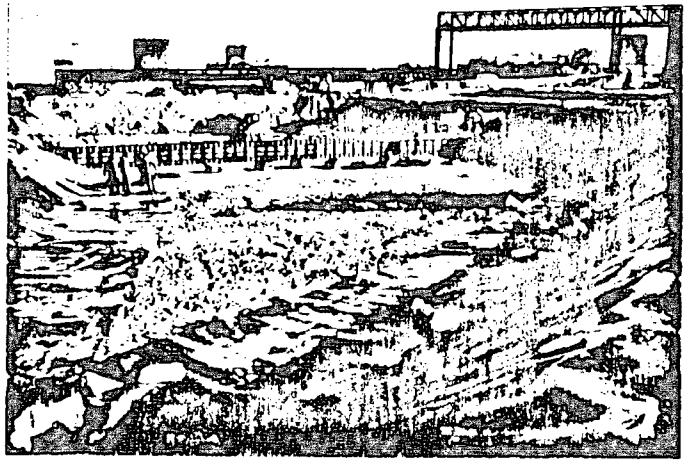
3. Furnish site in close proximity to the ponds for the rolling out and cutting of the lining material.

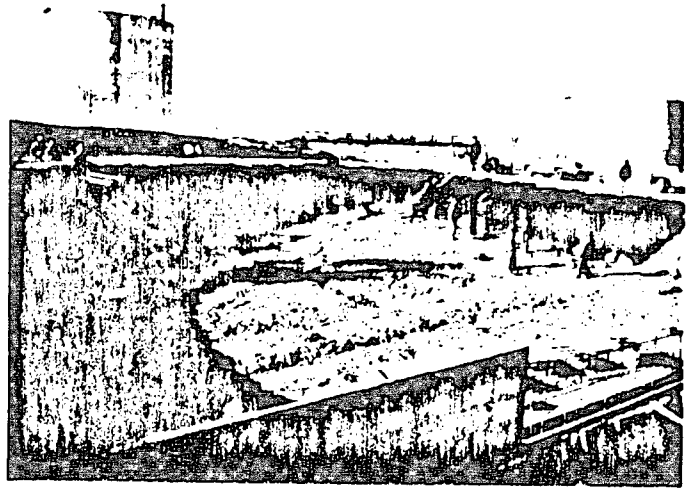

3500
4" PVC PERFORATED PIPE
SLOPE
4" PVC PIPE
162
4" PVC PIPE
SLOPE
4" PVC PERFORATED PIPE
EPNG R/W
178

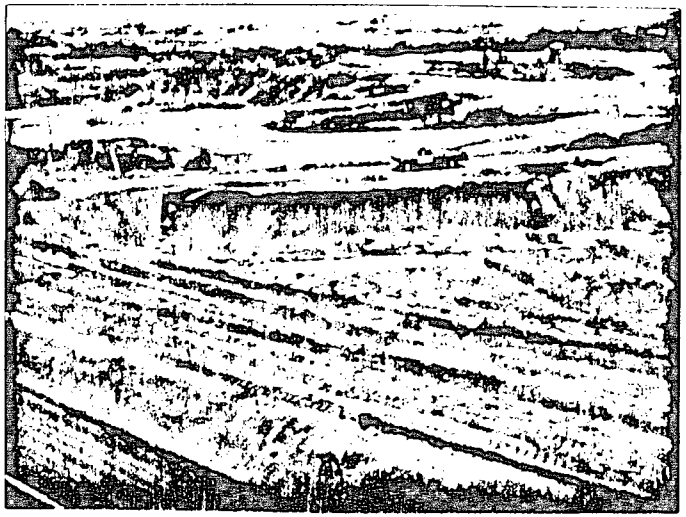


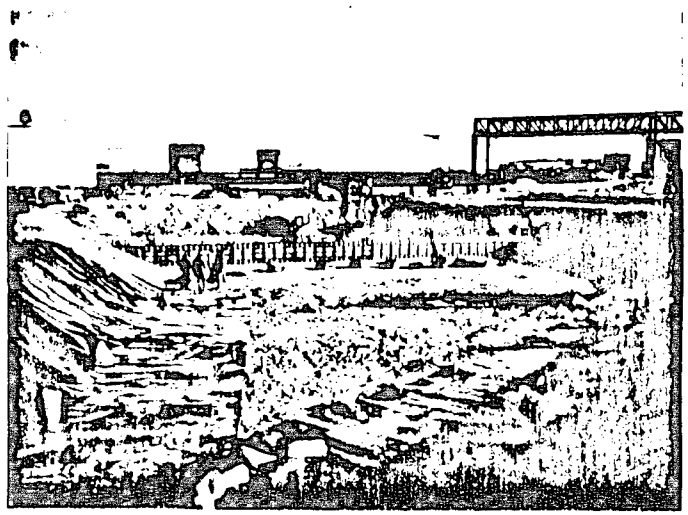


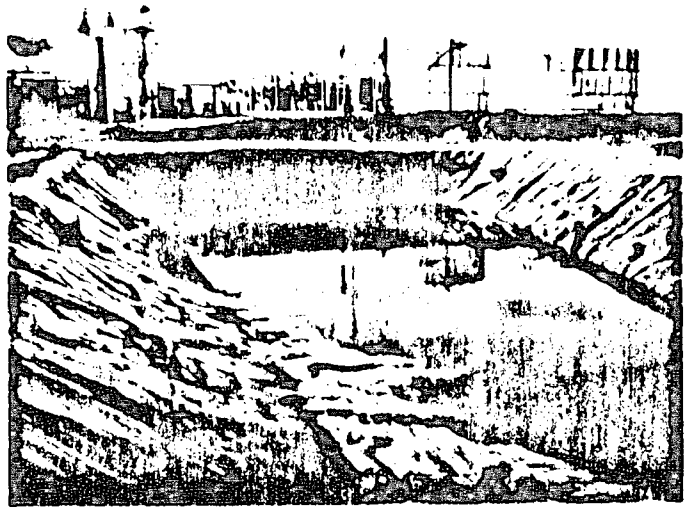


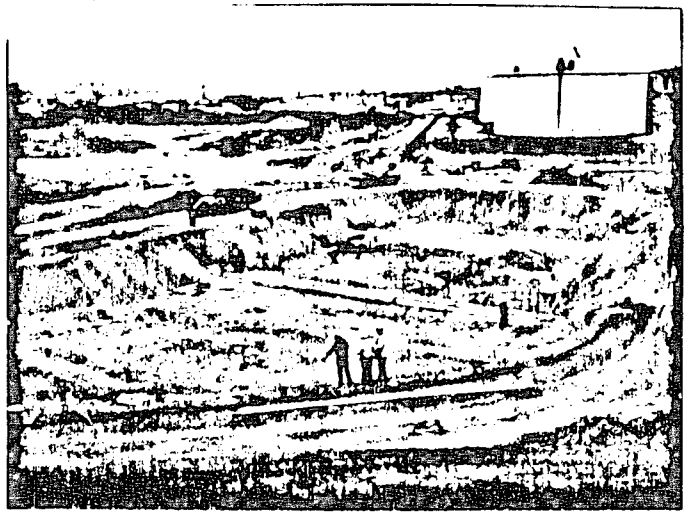


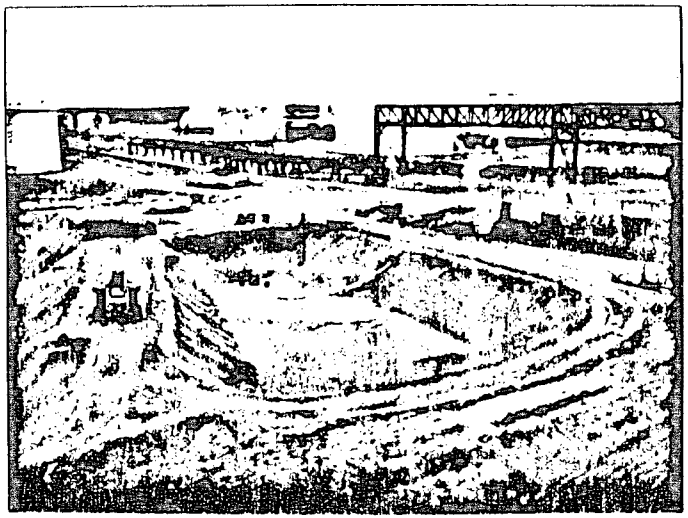


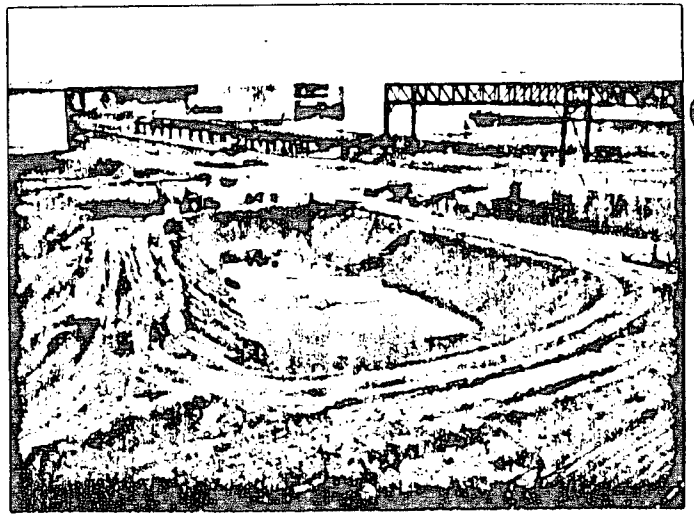


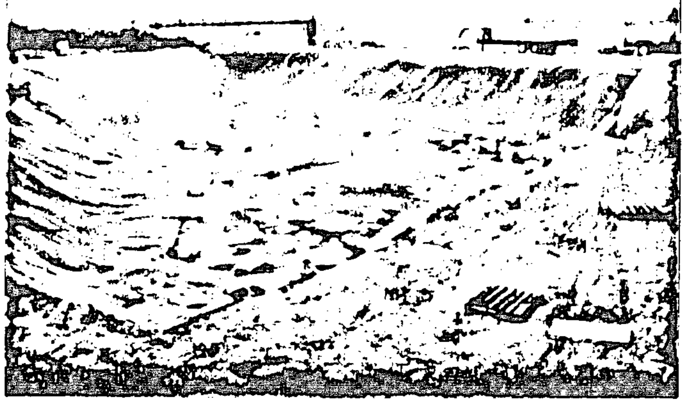
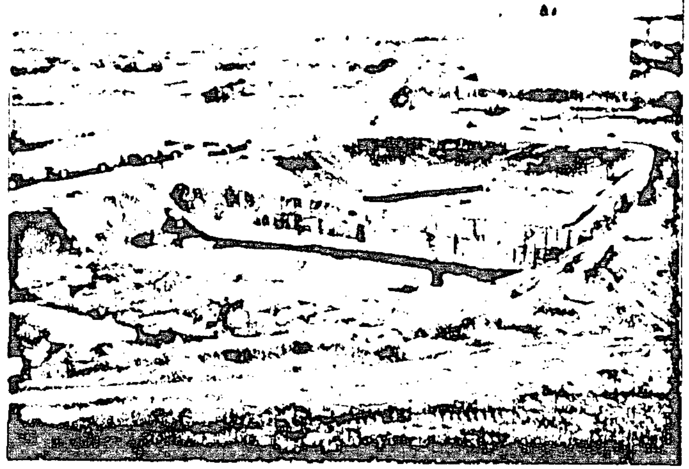
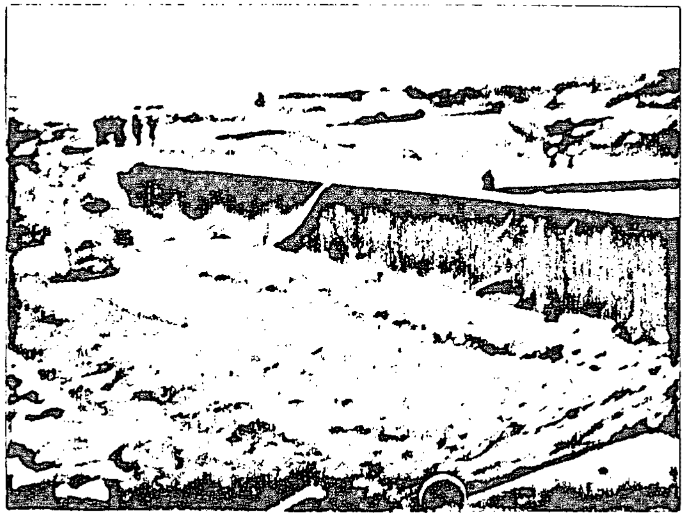
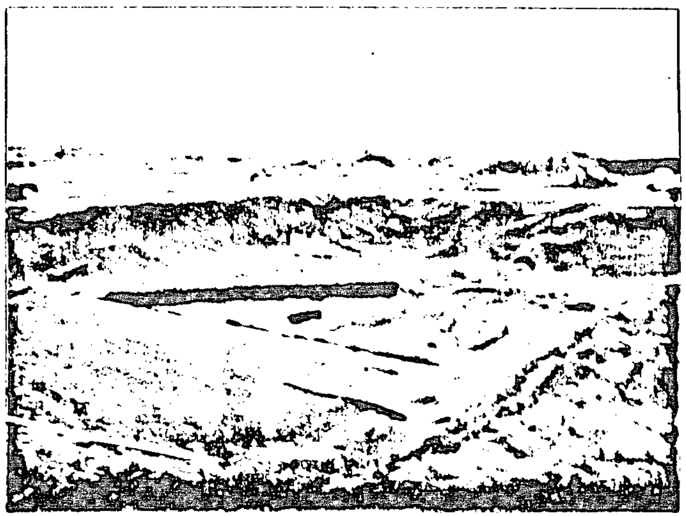










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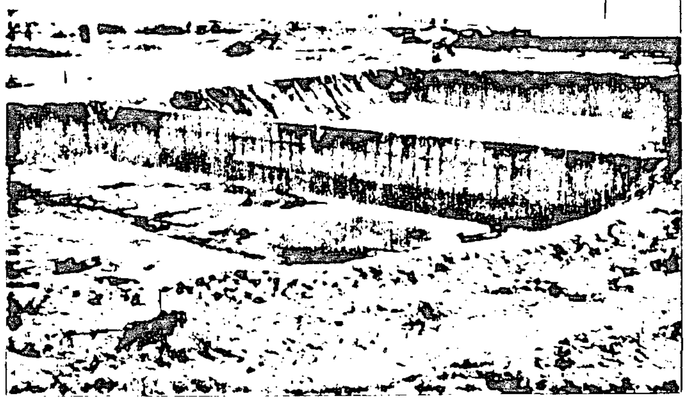

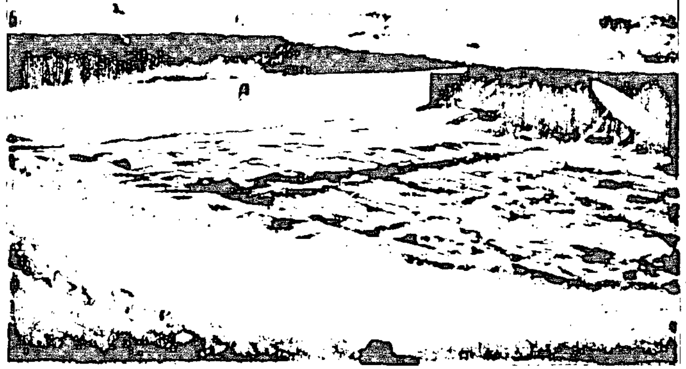

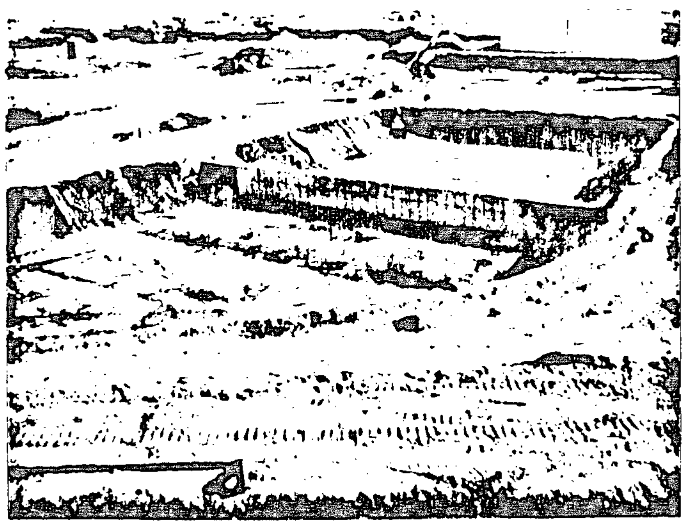

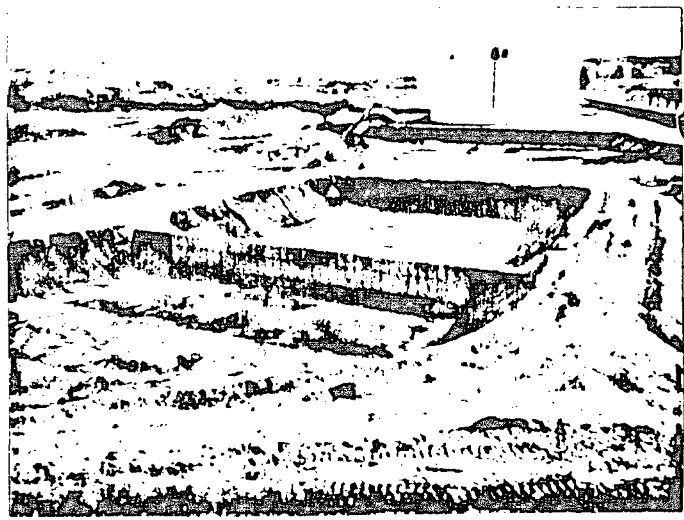

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

March 30, 1984

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. Bruce S. Garber
Attorney-at-Law
P. O. Box 8933
Santa Fe, New Mexico 87504

Dear Mr. Garber:

In response to your letter of March 28, 1984, Plateau Inc. is hereby granted permission to discharge without an approved discharge plan until April 16, 1984.

It is understood that during this time Plateau will continue operations as allowed under my letter of October 14, 1983.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

March 28, 1984

Mr. Joe Ramey, Director
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Re: Plateau Inc., Discharge Plan

Dear Mr. Ramey:

Thank you and your staff for meeting with Paul Liscom, Dwight Stockham and me yesterday, to discuss Plateau's recently submitted discharge plan for the Bloomfield, New Mexico refinery. To allow sufficient time for Plateau to submit the additional information you requested at our meeting, I hereby request on behalf of Plateau, your permission under W.Q.C.C. Reg. 3-106A, to discharge without an approved discharge plan until April 16, 1984. During this time, Plateau will continue operations as allowed under your October 14, 1983 letter. Plateau's significant progress in submitting its discharge plan, demonstrates good faith on behalf of the company and establishes good cause to support this request.

Thank you and your staff again for your continuing cooperation.

Sincerely,

Bruce S. Garber

Bruce S. Garber

BSG/lc

cc: Gregory S. Smith
Dwight Stockham
Paul Liscom

PLATEAU, INC.

4775 INDIAN SCHOOL ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87110
PHONE 505/262-2221

March 26, 1984

Mr. Joe Ramey, Director
Oil Conservation Division
P. O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Please find attached Plateau's Discharge Plan for the Bloomfield Refinery. If you have questions concerning this matter feel free to contact Dwight J. Stockham at this office.

Sincerely,

B. G. Dixon
Vice-President
Administration

BGD/maa

Attachment

cc Dwight J. Stockham
Greg S. Smith

EPA ANALYSIS OF PLATEAU'S BLOOMFIELD REFINERY MONITORING WELLS
SAMPLED THE WEEK OF MARCH 19, 1984

	WQCC STANDARDS	WELL #1	WELL #4	WELL #5
INORGANICS (ppm)				
Aluminum	5.0 (C)	11.6	31.8	76.0
Altimony	---	< 0.02	< 0.02	< 0.02
Arsenic	0.1 (A)	< 0.01	0.018	< 0.01
Barium	1.0 (A)	0.2	1.8	0.3
Beryllium	---	< .005	< .005	< .005
Cadmium	0.01 (A)	0.003	< 0.003	< 0.001
Calcium	---	NR	NR	NR
Chromium	0.05 (A)	0.01	< 0.04	0.04
Colbalt	0.05 (C)	0.1	.05	< 0.05
Copper	1.0 (B)	< 0.05	0.05	0.1
Iron	1.0 (B)	20.9	57.7	70.6
Lead	0.05 (A)	< 0.01	.042	.02
Cyanide	0.2 (A)	NR	NR	NR
Magnesium	---	NR	NR	NR
Maganese	0.2 (B)	1.38	7.62	.915
Mercury	0.002 (A)	< 0.0002	0.0004	< 0.002
Nickel	0.2 (C)	0.08	< 0.04	0.04
Potassium	---	NR	NR	NR
Selenium	0.05 (A)	0.003	< 0.002	0.002
Silver	0.05 (A)	< 0.01	< 0.01	< 0.01
Sodium	---	NR	NR	NR
Thallium	---	< 0.01	< 0.01	< 0.01
Tin	---	ND	ND	ND
Vanadium	---	< 0.20	< 0.20	< 0.20
Zinc	10 (B)	0.06	0.18	0.12

NR - Present but below quantification limits
ND - No detection

No
Flouride
Nitrate
Uranium
Chloride
Molybdenum
Sulfates
TDS
Phenols

	WELL #1	WELL #4	WELL #5
ORGANICS			
Acid, Base Neutral			
Benzenedimethyl		98.0	
2-Methyl Napthalene		0.07	
Volatile Organics			
Benzene		9.0	
Ethyl Benzene		LT	
Xylene		10.0	
Cyclohexane Methyl		23.0	
Cyclo Hexane Dimethyl		20.0	
Acid, Base, Neutral			
Napthalene		0.20	
Volatile Organics			
2-Methyl Hexane		10.0	
2-Methyl Heptane		22.0	
Octane		45.0	
Unknown		25.0	
Acid, Base, Neutral			
Pentachlorophenol		LT	
Volatile Organics			
2-Methyl Butane		14.0	
Pentane		12.0	
Cyclohexane		18.0	
Methyl Cyclo Pentane		7.1	
Dimethyl Octanol		18.0	
Ethylmethycyclo Pentane		31.0	
Acid, Base, Neutral			
Cycloheptatriene		0.110	
Octane		0.06	
2-Methyloctane		0.92	
Dimethyl Benzene		0.61	
Unknown		0.22	
Nonane		0.22	
Propylcyclohexane		0.10	
Dimethyl Octane		0.14	
Methylnonane		0.17	
Unknown		0.27	
Trimethyl Benzene		0.15	
Unknown		0.13	
Unknown		0.078	

	WELL #1	WELL #2	WELL #3
Unknown		0.20	
Alkane		0.28	
Alkane or Benzene Derivative		0.25	
Alkane or Benzene Derivative		0.57	
Butyl Cyclo Hexane		0.086	
Unknown		0.180	
Alkane or Benzene Derivative		0.120	
Unknown		0.240	
Methylpropyl Benzene		0.150	
Unknown		0.340	
Unknown		0.069	
Unknown		0.120	
Undecane		0.420	
Unknown		0.088	
Dodecane		0.160	
Dimethylbenzoicacid		0.200	
Dimethylbenzoicacid		0.120	
Volatile Organic			
Dimethyl Cyclohexane		12.0	

LT - Present but below quantification limits

BRUCE S. GARBER
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933
(505) 983-3233

March 14, 1984

Mr. Joe Ramey, Director
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87501

Re: Plateau, Inc. Discharge Plan

Dear Mr. Ramey,

This letter is Plateau's status report in compliance with condition No. 4 of your October 14, 1983, letter.

Since the February 14, 1983 status report, Plateau and its consultants have completed field measurements of the elevation of the contact of the Nacimiento Formation with the above-lying formations and of the levels of the water perched above the Nacimiento in the vicinity of the refinery. This information is currently being compiled to be included in the discharge plan.

Plateau has also obtained laboratory analysis results for water samples which will be included in the discharge plan to establish background water quality for the twenty-seven constituents listed in my January 19, 1984, letter to you.

We intend to submit the updated discharge plan to you no later than March 23, 1984. Thank you for your continuing cooperation.

Sincerely,

Bruce S. Garber

Bruce S. Garber

BSG/dm

cc: L.S. Woodside
D.J. Stockham
G.S. Smith

DISCHARGE PLAN FOR PLATEAU REFINERY AT BLOOMFIELD, NEW MEXICO

SUBMITTED TO

PLATEAU INC.
ALBUQUERQUE, NEW MEXICO

SUBMITTED BY

AMERICAN GROUND WATER
CONSULTANTS, INC.
ALBUQUERQUE, NEW MEXICO

MARCH 1984

AMERICAN GROUND WATER CONSULTANTS, INC.

2300 CANDELARIA ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
TELE: (505) 345-9505 CABLE: HYDROCONSULT
TELEX: 66-0422 TELECOPIER: (505) 247-0155

March 24, 1984

Mr. Robert Dixon, Vice President
Plateau, Inc.
4775 Indian School Road, NE
Albuquerque, New Mexico 87110

Dear Mr. Dixon:

American Ground Water Consultants is pleased to present herewith our report entitled: Discharge Plan for a Refinery Operated by Plateau, Inc. near Bloomfield, New Mexico.

The present report is submitted to update the previous discharge plan dated September 30, 1977 as is required at five-year intervals.

Respectfully submitted,

AMERICAN GROUND WATER CONSULTANTS, INC.

William M. Turner

Dr. William M. Turner
President

SUMMARY

It is now more than five years since the approval of Plateau's original discharge plan and as required by regulations of the New Mexico Water Quality Control Commission (NMWQCC), a new discharge plan is required. Some of the changes which have occured at the refinery since approval of the first discharge plan include:

1. Slight increase in the amount of waste-water discharge by the plant.

2. Construction of surface-water retention facilities in an arroyo north of the refinery.

3. Application of excess waste-water from the evaporation ponds to a land disposal site and the evertual use of this water for irrigation.

4. Detection of a small amount of seepage from the solar evaporation ponds.

5. Lining of ponds adjacent to the API separator with a a 100-mil high density polyethylene liner and installation of a leak deteection system

To reduce waste-discharge, a program of recycling water in the refinery has been implemented such that total average waste-water discharge is about 50 gallons per minute. This water is sent first to the API separator and adjacent ponds and then to the solar evaporation ponds. Excess water from the solar evaporation ponds will be used for irrigation of natural vegetation on company property.

The ponds which receive effluent from the API separator have been lined to preclude the possibility of any seepage of water into the subsurface.

Any excess irrigation water applied to the irrigated area are retained by low berms which are constructed at necessary locations around the irrigated area. These berms also serve to retain rainfall runoff from the irrigation area.

Any seepage of water from the evaporation ponds or from the irrigated area will drain to the north on the subcrop surface of the Nacimiento Formation and will emerge as seeps at the cliff face north of the refinery or in southward trending arroyos north of the Hammond Ditch.

A depression in the Nacimiento subcrop surface should serve as a master drain for nearly all shallow artificial ground water beneath the refinery property.

There is no naturally occuring ground water in the vicinity of the refinery which could be potentially contaminated by waste-water seepage from refinery waste-water handling facilities and any seepage from these facilities will not cause any violation of the NMCCC regulations

Monitoring methods required by the original discharge plan have served their usefulness and are not now providing any new information. Plateau has implemented a new monitoring methodology and has constructed six new monitoring wells drilled into the Nacimiento Formation from which water level and water quality information may be obtained.

APPROVABILITY

A discharge plan is required if there is a waste-water discharge which may cause contamination of ground water within an aquifer. In the strictest sense, no aquifer can reasonably be defined as existing beneath the Plateau refinery which is subject to contamination. An aquifer must be able to provide water to wells in usable quantities. At the Plateau property, water exists in some places within a shallow cobble bed which overlies the thick impermeable Nacimiento Formation. An aquifer does not reasonably exist because:

1. The water in the cobble bed is derived from the Hammond Ditch and does not occur within the cobble bed at an elevation above the water level in the Hammond Ditch. Therefore, it is difficult to explore for the water.

2. The cobble bed is thin and the saturated zone is of variable thickness varying from about 15 feet thick at the Hammond Ditch to nothing where the bottom of the cobble bed is at an elevation above the level of water in the Hammond Ditch.

3. The saturated thickness within this zone of bank storage fluctuates widely between summer and winter. When water flows in the ditch, the water level in the cobble bed will be at its highest. In the non-irrigation season, there is no water flow in the ditch and the water within the cobble bed drains.

4. Because of the thin character of the saturated zone, where it occurs, pumping of any well will cause a cone of depression to develop which will further decrease the saturated thickness.

5. If the well is inefficient, as most wells are, the pumping water level within the well may drop to the pump intakes.

6. Any water taken from the cobble bed will induce increased leakage from the Hammond Ditch. Without the legal right to take this water, wells in the area will not be approved for withdrawal of water from the cobble bed.

It is concluded that exploration for the water in the cobble bed is difficult, the cobble bed is an unreliable source because of problems of saturated thickness and well construction, and the water may not be legally taken. Therefore, a discharge plan should not be required.

Without waiving any rights to object to the discharge plan requirements, Plateau submits this discharge plan. Even if the shallaow water overlying the Nacimiento Formation is "ground water" under the regulations, this discharge plan should be approved because it is in compliance with the requirements of the regulations of the New Mexico Water Quality Control Commission. Specifically, the portions of the plan and the plan itself should be approved for the following reasons.

1. RAW WATER HOLDING PONDS

The raw-water ponds contain only water diverted from the San Juan River. No industrial waste, industrial by-product, or other possible water contaminants are added to the water in these ponds prior to withdrawal for use in the refinery. The only additive to this water is a polyquaternary ammonium salt which is used to floculate suspended solids. This additive is BETZ 1190 for which Betz has obtained approval of potabitlity from the EPA for concentrations of the additive up to 25 ppm. At Plateau, the additive is used at concentrations not exceeding 25 parts per million and this additive is not covered by the WQCC standards of either sections 1-101(UU) or 3-103. Any leakage of water from these ponds is exempt from the requirements of the discharge plan under WQCC Regulation 3-105A, which exempts "effluent or leachate which conforms to all the listed numerical standards of Section 3-103 and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant." Samples of water from the San Juan River both upstream and downstream of the refinery collected and analysed by the U.S. Environmental Protection Agency (EPA) indicate that uncontaminated river water in the raw-water ponds falls within this exemption. Table 1 contains analyses of water carried out by the EPA.

Even if the exemption is found not to apply, the discharge qualifies for approval under WQCC Regulation 3-109D which allows the discharge of the "weight of water contaminants in water diverted ... provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted." There is no aquifer receiving the seepage from the raw-water ponds because there is no naturally occuring ground water lying on the Nacimiento Formation in the vicinity of th refinery. Even should an interpretation of the regulations hold that there is an aquifer receiving the leakage from the raw-water ponds, the quality of the artificial ground water is no better than that of the San Juan River from whence the raw-water holding pong leakage is derived.

Therefore, the raw-water ponds are exempt from the requirements of the discharge plan or, at the very least, must be approved by the Director.

2. API SEPARATOR AND LINED ADJACENT PONDS

The API separator and adjacent ponds are approvable under WQCC Regulations 3-109(C)(3)(b) and (c). Those subsections require approval of discharge plans for discharges to surface impoundments which seep less than 0.5 acre-feet of water per acre per year and, where there are adequate monitoring provisions. The API separator is constructed of steel-reinforced concrete and leakage is less than 0.5 acre-feet per acre per year. The manufacturers specifications for the 100-mil high density polyethylene pond lining material indicate that seepage will be less than 0.5 acre-feet per acre per year unless the integrity of the liner is breached. The leak detection system constructed at the adjacent ponds has already demonstrated its effectiveness in monitoring for tears and other leaks in the liner. Additionally, Plateau has committed itself to repair any leaks. Therefore, the discharge to the API separator and adjacent ponds should be approved.

3. SOLAR EVAPORATION PONDS AND LAND APPLICATION AREA

Both the solar evaporation ponds and the land application area are subject to some leakage and percolation of refinery waste water. The subsurface flow pattern of the seepage along the subcrop surface of the Nacimiento Formation is the same from both locations. Monitoring wells, already installed by Plateau, down dip from the evaporation ponds and land application area will be monitored periodically to ensure that the allowable contaminant concentrations are not exceeded. Any significant indication from the monitoring program that applicable concentration levels will be exceeded will trigger implementation of contingency plans. The contingency plans will define the extent of contamination and address any problems with appropriate remedial and preventative measures to ensure that applicable limits of WQCC regulations are not exceeded at a place of ground-water withdrawal for present or reasonably foreseeable future use. The discharge plan for the evaporation ponds and land applicaton area comply with the requirements of WQCC Regulaton 3-109 and should be approved.

4. NEGLIGIBLE IMPACT ON SAN JUAN RIVER

Section 3-109(G)(2) of the WQCC Regulations prohibits the approval of discharge plans for discharges "that will cause any stream standard to be violated." The only body of water protected by the WQCC Stream Standards in the vicinity of the proposed discharge locations is the San Juan River. Water quality analyses of samples taken from the San Juan River upstream of the refinery are substantially identical to analyses of water from the San Juan River downstream of the refinery. The samples analysed were collected at a time when discharge from the refinery was substantially as proposed in this discharge plan. There is no demonstrable or reasonable measureable impact on the San Juan River water quality from the proposed operations of the refinery. Neither set of river water samples collected and analysed by the EPA exceeds applicable WQCC Stream Standards. Therefore, impact on the San Juan River is not an impediment to discharge plan approval.

5. ACCIDENTAL SPILLS OR LEAKS

Plateau, by following the provisions of the "Contingency Plan and Emergency Procedures" document, will minimize the release of potential water contaminants by providing effective detection and clean-up of accidental spills of hydrocarbon substances or other refinery chemicals. The impact of such releases on ground-water quality will, therefore, be negligible. Because the "Contingency Plan and Emergency Procedures" document has been incorporated by reference in the discharge plan, the discharge plan effectively protects any artificial ground-water from accidental spills and leaks and any such discharges under the plan are approvable under WQCC Regulator 3-109 because they will not result in contamination of ground water.

6. SURFACE RUNOFF

Surface runoff from natural precipitation in the refinery area is not a source of discharge of any significant amount of potential ground-water contaminants. First, there is not a realistic possibility of flooding and overtopping of waste-water holding ponds or storage tank berms which contain some potential water contaminants. Second, there will not be any significant amount of contaminant material present in other refinery locations where runoff may occur, because the "Contingency Plan and Emergency Procedures" document will be implemented and spills in or near drainage paths will be cleaned up. Natural surface drainage, therefore, will not be a significant source of potential ground-water contamination and should not be an impediment to discharge plan approval.

Additionally, rainwater leachate is exempt in almost all cases under WQCC Reuglations 3-105(H) and (I).

SUMMARY

Any and all discharges from the Bloomfield refinery owned by Plateau, Inc. described in this discharge plan are in compliance with the WQCC Regulations and should be approved. This discharge plan will be amended or modified if required for compliance with any applicable Federal, State, or local requirements, rules, regulations, orders, or statutes.

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INTRODUCTION

Plateau, Inc. operates a refinery near Bloomfield, New Mexico which was reportedly constructed in the late 1950's. The location of the refinery is shown in Figures 1 and 2. The refinery was in operation for about five years prior to its sale to Suburban Propane Corporation, a New Jersey corporation, and prior to the effective date of the New Mexico Water Quality Control Regulations. At the time the refinery was purchased by Suburban, the refinery had been operating without any formal procedures for waste effluent discharge. During this period, hydrocarbon waste entered the subsurface and probably did not migrate any great distance as the evidence indicates there is no naturally occuring ground water in the area. With the construction of the Hammond Ditch in 1960-1964, seepage from the ditch encountered hydrocarbon substances and began moving them towards natural points of discharge along the east-west precipice overlooking the San Juan River north of the refinery. Small hydrocarbon laced seeps also developed along intermittant stream channels which have eroded to the south from the San Juan River towards the refinery. As the lighter hydrocarbon fractions evaporated, the heavier hydrocarbon fractions were left behind as testimony to this situation. Today, the artificially recharged ground water beneath the refinery remains contaminated and the small springs and seeps fed primarily by Hammond Ditch water continue to discharge.

In an effort to better understand this situation, Plateau retained American Ground Water Consultants (AGW) to prepare a

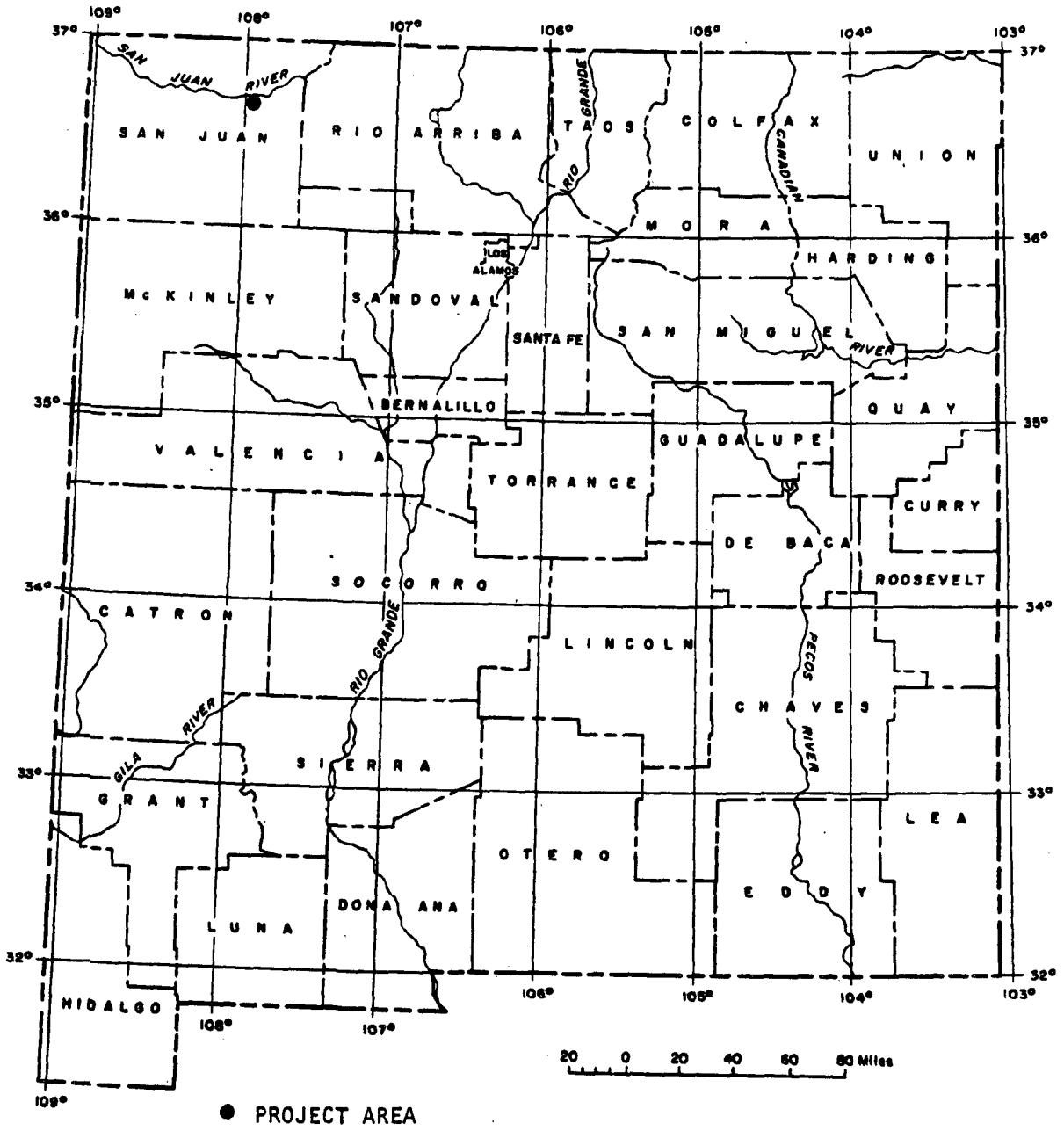

Figure 1. Map of New Mexico showing the location of the project area.

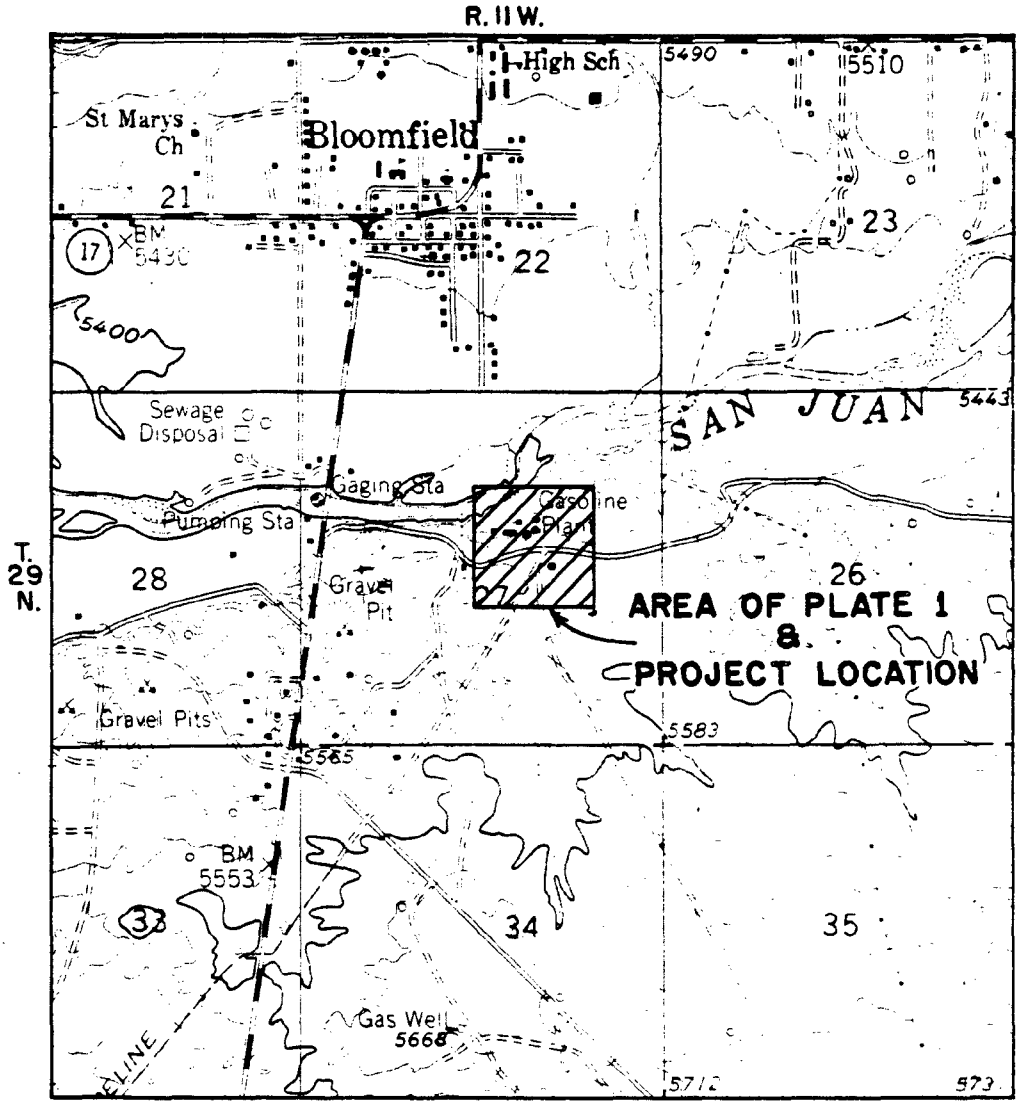

Figure 2. Diagram showing the location of the Plateau Refinery near Bloomfield, New Mexico.

sound discharge plan prior to the promulgation of the New Mexico Water Quality Control Regulations. These early efforts resulted in approval of a waste-water discharge plan for the refinery on June 5, 1977 by the Mexico Oil and Gas Conservation Commission (NMOCC), predecessor to the New Mexico Oil Conservation Division (NMOCD).

Two subsequent reports on the monitoring activities at the refinery have been submitted by Plateau, Inc., to the NMOCD and the New Mexico Environmental Improvement Division (NMEID). These reports are on file with the NMOCD.

Discharge plans are valid for a period of five (5) years and the original plan expired in the summer of 1982. On March 8, 1982 an updated plan was submitted to the NMOCD to bring up to date discharge activities and procedures used at the refinery. After reviewing this plan for 16 months, NMOCD returned the discharge plan to Plateau for additional information.

When the original discharge plan was prepared, significant refinery expansion construction was underway and items such as the expected amount and quality of waste-water discharge were estimated. Since approval of the original discharge plan, the volume of effluent from the refinery has increased from a projected 20.5 gallons per minute to an average of 50 gallons per minute. In addition, several changes have occurred in the handling of waste water from the refinery. This discharge plan sets forth the proposed and actual methods of handling waste-water discharge from the refinery. Plate 1

is an aerial photograph of the refinery. The photograph shows the boundaries of the refinery property in its relation to Township, Range, and Section lines. Plate 1 also shows geology of the area, the subcrop topography of the Nacimeinto Formation beneath the Plateau and nearby adjacent property and hydrographic information for both surface and ground waters. Plate 2 is a detailed topographic drawing of refinery property together with all improvements current as of March 1984. The process description for the refinery is included as Attachment 1.

On May 16, 1983, the EPA collected samples water from the San Juan river upstream and downstream from the refinery for chemical analysis. Analyses of these samples shows that of the 129 priority pollutants there is an alkane identified in the upstream sample at 0.0075 parts per million. In the downstream sample none of the 129 priority pollutants were detected in concentrations which exceeded Federal standards. That is in the reach of the river into which seeps from Plateau property occur, none of the 129 priority pollutants were detected in the San Juan River downstream of the refinery. Of the inorganic solutes, only aluminum, iron, manganese and zinc were detected above EPA levels upstream of the refinery. In the downstream sample, the concentrations of aluminum and manganese had decreased, and zinc remained the same. The downstream sample also contained 0.234 parts per million of boron whereas the upstream sample contained none.

The presence of boron is puzzling. The refinery uses no

boron compounds in any aspect of refinery operations. In general then, the quality of San Juan River water is at least as good as if not better than upstream water with the excection of iron and boron. The presence of iron and boron do not exceed the WQCC stream standards.

REFINERY SETTING

The refinery is located on the Jackson Lake Terrace of the San Juan River (Pastuzak, 1968), about 120 feet above the present river level and about 500 feet from the river. The terrace was formed during the Pleistocene by downcutting of a former valley floor which had been aggraded with cobble and gravel deposits during the last glacial advance. At that time, the San Juan River was swollen with meltwater and carried great quantities of glaciofluvial outwash. In former times, the valley floor was three to five miles wide.

During the last glacial retreat, wind-blown sand and silt from the floodplains settled over the coarse clastics to form structureless loess deposits.

The terrace deposits on which the refinery is situated are comprised of about 15 feet of cobbles and gravels overlying the Nacimiento Formation of Tertiary age. The cobble bed is overlain by about 20 feet of fine-grained, wind-blown silt and sand. South of the refinery, the cobble bed wedges out leaving only loess in overlying contact with the Nacimiento Formation. As far as can be determined, the Pleistocene cobble bed occurs everywhere beneath the refinery. Lithologic logs

for monitoring wells drilled in the vicinity of solar evaporation pond 1 are given in Attachment 3 of the original discharge plan.

As part of the investigations for the discharge plan renewal, six monitoring wells were constructed on the refinery property to obtain water samples and to determine the depth to the top of the Nacimiento Formation. Lithologic logs for these wells are given in Attachment 2 herein.

The Nacimiento Formation is a massively bedded, olive green, unctuous clay. The clay at the outcrop is a tight unfractured rock unit. As measured in nearby oil wells the Nacimiento Formation is about 500 feet thick. A log of the AMOCO DAVIS gas unit F-1 gas well was presented in Attachment 2 of the original discharge plan. At least 100 feet of this rock unit is exposed in the cliff face north of the refinery and adjacent to the San Juan River.

Of particular importance to the present discharge plan is an understanding of the morphology of the contact between the Quaternary cobble and silt of the Jackson Lake Terrace in the vicinity of the refinery and the underlying Nacimiento Formation. The morphology of the Nacimiento subcrop surface will influence control over the direction of ground-water flow.

To define the morphology of the subcrop surface, the contact between the Nacimiento Formation and the overlying Quaternary rocks was staked at numerous locations. The locatons of the stakes are shown by small triangles on Plate 1. The elevation of the contact at each stake was surveyed. In

addition, casing elevations of the neutron probe observation holes and the new monitoring wells were surveyed. Soil moisture records and lithologic logs were then used to determine the depth of the contact in these observation and monitoring wells.

All contact elevations are shown on Plate 1. This data has been contoured and the contours are also shown on Plate 1. The data suggests that there exists an almost east west trending depression in the Nacimiento subcrop surface which trends eastward from the precipice northwest of the refinery property towards the solar evaporation ponds. At the solar evaporation ponds, the depression seems to branch to the north in a much narower depression. Though there is not much control to this surface within the refinery property, the existence of the depression is consistent with the occurrence of seeps along the face of the precipise as though this is the natural discharge zone for most shallow water beneath the refinery and that the depression serves as a master French drain from most of the refinery property. Similarly, the depression which trends northward from the solar evaporation ponds has associated with it several small seeps in one of the southward-trending incised intermittant stream channels.

HYDROLOGIC FEATURES

San Juan River

The San Juan River is the only perennial stream in the vicinity of the refinery. Along the reach of the San Juan River in the vicinity of the refinery, the river is neither a gaining nor a losing stream. Its alluvium-filled channel is incised into the impermeable clay of the Nacimiento Formation. The flow of the San Juan River at Bloomfield is regulated by Navajo Dam and there is no danger of flooding of the refinery site by the San Juan River. The usual regulated flow of the river is 500 cfs.

Intermittant Stream Channels

Trending southward from the San Juan River are numerous intermittant stream channels which are incising their channels headward into the Jackson Lake Terrace. The erosion in these channels has laid bare the contact between the deposits of Quaternary age and the underlying Nacimiento Formation. Where the Quaternary material is saturated small seeps or springs occur. The water feeding the seeps and springs is supplied almost entirely by seepage from the Hammond Ditch and bank storage created by seepage from the Hammond Ditch.

Hammond Ditch

In addition to the San Juan River and the intermittent stream channels which traverse the area of interest, the Hammond Irrigation Ditch passes from east to west through the refinery property between the refinery and the San Juan River. The ditch passes through an inverted siphon beneath Sullivan Road on the east side of the property. The ditch is unlined and is excavated into the Quaternary Jackson Lake Terrace deposits. The course of the ditch through the refinery property and its geological setting are shown in Plate 1.

The Hammond Ditch conveys water only during the irrigation season from mid-April to mid-October. Although attempts have been made by the Hammond Ditch Conservancy District to line the ditch with silt from local borrow pits, leakage from the ditch and into the cobble bed is significant. The valleys of nearly all intermittent stream channels which descend from the Jackson Lake Terrace south of the San Juan River are choked with trees, bullrushes, marsh grass and other vegetation. The source of water which supports the vegetation is leakage through the bed of the Hammond Ditch. Photographs of these valleys are presented in the original discharge plan.

The Hammond Ditch is a man-made, constant-head, line-source of recharge to the cobble bed during the irrigation season. Observation and monitoring wells which have been constructed in the vicinity of the solar evaporation ponds and elsewhere on the property indicate that the cobble bed is saturated only beneath part of the property. Monitoring well

P-6, for example, is completely dry. This Hammond Ditch water flows back into the Hammond Ditch after the flow to the ditch has been turned off in October. When the ditch water is turned off, there is absolutely no water entering the ditch through the inverted siphon near the eastern edge of the refinery property. Observations of the ditch at the western edge of the property during winter show a flow of about two gallons per minute in the ditch. Much of this is return flow of bank storage. This is evident from thawed ice on the south side of the surface of the ditch water during winter. That is, warm water from bank storage enters the ditch from the south. Bank storage on the north side of the ditch flows to the north and not back into the ditch thereby sustaining water seepage into the intermittent valleys north of the ditch.

Ground Water Occurrence

Ground water is defined by Section 1-101(M) of the New Mexico Water Quality Control Regulations as: "... interstitial water which occurs in saturated earth material and which is capable of entering a well in sufficient amounts to be utilized as a water supply." Based upon this definition, there is no ground water in the vicinity of the refinery which could be affected by any discharge from the refinery because water in the cobble bed above the Nacimiento Formation does not fall within the definition. Furthermore, the Nacimiento Formation is impermeable and about 500 feet thick which precludes shallow water from entering the deep Ojo Alamo Sandstone or any other

deeper aquifers as defined by the Regulations.

To verify that the cobble bed is both void of natural ground water and void of any water sufficient to reliably supply water to a well both physically and legally, a stucy of the hydrogeology was made. The contact between the cobble bed and the underlying Nacimiento Formation was staked at numerous points and elevations of the contact were then levelled as mentioned above. Elevations of water levels in observation and monitoring wells and of small seeps of water which occur at the top of the Nacimiento were measured and are also shown in Plate 1.

As mentioned above, a major east-west trencing depression begins at the east end of the northernmost evaporation pond and procedes west. Westward, this depression becomes wider and deeper. This feature is filled with cobble at the precipice northwest of the refinery and will act as a subdrain for any ground water in the area. It will exert local control over the direction of ground-water flow.

Water levels elevations have also been measured at many locations throughout the refinery property. This data is also presented on Plate 1. This water level data indicates that:

1. the cobble bed is not saturated above the water level in the Hammond Ditch; and,

2. water in the cobble bed is presently draining to the north.

The cobble bed on the south side of the Plateau property above the elevation of the Hammond Ditch is dry and a line of zero saturation has been drawn. The elevation of zero saturation is about 5502 feet which is equivalent to the summer water level in the Hammond Ditch. Any natural recharge to the cobble bed south of the refinery property and any bank storage south of the Hammond Ditch will flow to the north and be captured by the east-west depression in the Nacimiento surface. Indeed some bank storage supplied by the Hammond Ditch during summer north of the Nacimiento subcrop depression may also be captured by the zone. All of this water will be led to the west to discharge at the cliff face. Inasmuch as there is virtually no natural ground-water accretion in the vicinity of the Plateau property, leakage water from the Hammond Ditch likely provides the entire impetus for mobilizing any hydrocarbon contaminaton in the soils of the area.

Some water from the Hammond Ditch finds its way into the southward-trending intermittant stream channels west of the evaporation ponds.

In the vicinity of the evaporation ponds, leakage from the evaporation ponds and from the Hammond Ditch may pass to the north along a minor depression in the Nacimiento subcrop. This interpretation is supported by the occurrence of several small seeps on either side of this zone as shown in Plate 1.

In the spring, when irrigation begins and water begins to flow in the Hammond Ditch, the flow direction of shallow water in the cobble bed is reversed as Hammond Ditch water flows into the ground and fills the cobble bed. When the elevation of the water level in the cobble bed rises to the level of water in the Hammond Ditch, further leakage terminates except for leakage needed to replace seepage from the precipice north of the refinery and from the small seeps in the southward-trending intermittant stream channels.

The zone of saturation beneath and in the vicinity of the refinery property varies in thickness from nothing where the cobble bed is above the elevation of the water level in the Hammond Ditch to perhaps 15 feet where the Hammond Ditch directly overlies the cobble bed. Furthermore, the thickness of the zone of saturation fluctuates with the season. During the irrigation season, the water level rises. During the winter season it falls.

Whether or not "ground water", as defined by the regulations, exists, the following must be considered.

1. The zone of saturation is of very limited and irregular areal extent such that ground-water exploration will be difficult.

2. The zone of saturation fluctutes during the year such that water may occur in a well only during part of the year making it an undependable domestic or stock water source.

3. The zone of saturation is very thin such that an inefficient pumping well would cause complete drawdown of the pumping water level inside the well thereby making the well unuseable, unreliable and probably economically infeasible.

4. The zone of saturation is hydraulically connected to the Hammond Ditch such that any ground water withdrawal will deplete the flow of water in the ditch; a situation which would likely not be long tolerated by agricultural users of Hammond Ditch water.

All seeps indicated on Plate 1 were present before the evaporation ponds were filled in 1977. All seeps have been closely observed for a period of almost eight years. The Hammond Ditch has been walked during January from 1978 until the present and in the vicinity of the filled evaporation ponds no detectable seepage has been observed in the Hammond Ditch channel.

It is concluded, that there is no naturally or artificially occurring ground water within the cobble bed capping the Jackson Lake Terrace which could physically and legally yield water to domestic wells. This conclusion is supported by the absence of private dwellings with comestic water wells situated on the Jackson Lake Terrace in the vicinity of the refinery. In addition, there are no stock or irrigaton wells in this area. This conclusion is also

supported by the absence of ground water in the cobble bed above the elevation of the Hammond Ditch.

The Nacimiento Formation is about 500 feet thick and within the upper exposed 100 feet of the formation the only known seeps of water occur at its contact with the overlying Pleistocene cobble bed. The evidence indicates also that there is no ground water within the Nacimiento Formation which could be recovered for any purpose. The impermeability of the Nacimiento Formation supports the conclusion that the Nacimiento Formation does not supply ground water to the San Juan River.

Furthermore, the San Juan River traverses the normal ground-water discharge zone of the San Juan Great Artesian Basin (Lyford, personal communication, 1976). Within ground-water discharge zones in artesian ground-water basins, the hydraulic head increases with depth (Freeze, 1969; Toth, 1963) and it is therefore impossible to cause downward vertical seepage into any water-bearing zone. Even were any potential aquifer at depth beneath the Nacimiento Formation, percolating water would be rejected and it could not recharge the aquifer to ever become a health hazard.

There can be no doubt, however, that there is water in the ground beneath the refinery. All of the ground water migrating northward beneath the refinery itself to points of discharge flows within an area where the ambient conditions were contaminated prior to the promulgation of the New Mexico Water Quality Control Regulations. Only ground water in the vicinity

of the solar evaporation ponds and the planned land disposal site may have been uncontaminated.

STORAGE FACILITIES

Plate 1 shows all existing storage facilities and hydrocarbon handling facilities. Each item is numbered. The numbers on Plate 1 are keyed to Table 1 in which the contents or function of each item is identified.

DISCHARGE

There are at present six potential sources of waste-water discharge. These are:

1. Surface runoff and flooding potential
2. Raw Water Ponds
3. API Separator
4. Lined ponds
5. Evaporation ponds
6. Land application area

Each of these potential sources of contamination is dealt with below.

Surface Runoff and Flooding Potential

The refinery is located on the Jackson Lake Terrace. From the point of view of surface drainage and flooding potential, the following areas are of importance:

1. The area north of the refinery.
2. The area south of the refinery.
3 The on-site area.

Table 1. Key to facilities located on Plate 1.

Number	Description
1	Filtered water
2	Filtered water
3	U.L. Gasoline
4	U.L. Gasoline
5	Reformate
6	
7	
8	API separator slop
9	API separator slop
10	Spent caustic
11	Base gasoline
12	FCCU gasoline
17	FCCU feed
18	Regular #2 diesel
19	Finished diesel
20	FCCU slop
21	FCCU slop
22	Slop terminals
23	Reformate
24	Reformer feed
25	Finished kerosene
26	Finished kerosene
27	Finished HBF
28	Crude
29	Regular gasoline
30	Regular gasoline
31	Crude
41	Crude treating
42	Crude treating
43	Slop water

As the refinery property is situated near the San Juan River, the liklihood of flooding of the San Juan River is analysed. According to the Flood Hazard Boundary Map published by the U.S. Department of Housing and Urban Development (Community Panel No. 350064-0014A) on August 2, 1977, the area which will be affected by the 100-year flood does not include the refinery site. The San Juan River is currently regulated by the Navajo Dam located upstream of the refinery site, and the liklihood of an uncontrolled release of water in the river is rather remote. Inasmuch as the refinery site is approximately 100 feet above the river floodplain, it is unlikely that it will be flooded by any magnitude flood that might occur.

The drainage area south of the refinery site is delineated on Plate 2. The size of the area which contributes runoff at each of the numbered points of concentration is tabulated in tables in Attachment 3. The 100-year return period is generally accepted by most government agencies for flood frequency evaluation. This plan also uses the 100-year return period for flood potential analysis.

The 100-year peak discharge at each of the numbered points of concentration is computed according to the method developed by the U.S. Soil Conservation Service as revised in October 1973 for use in New Mexico. Soil information is obtained from the Soil Survey of San Juan County prepared by the U.S. Soil Conservation Service in 1980. The vegetation cover and contour information were obtained from aerial photography and aerial

mapping furnished by Plateau. The land south of the plant is covered for the most part by native grasses and no flooding has ever been observed in the area. The results of the computed peak discharges are given on Plate 2 and tables in Attachment 3.

Based on Manning's formula, the ditch between the highway and the existing east-west berm is capable of handling the 100-year discharges as shown on Plate 2. Also, as the top of the berm is higher than the elevation of the highway crown, if a flood with a magnitude greater than the 100-year flood were to occur in the area, the flood water is likely to be carried westward along the south side of Sullivan Road instead of overtopping the berm.

All the oil storage and waste-water facilities on the refinery site are bermed to contain any contaminated material and runoff inside these areas is self-contained. As the 100-year 24-hour rainfall for this area is only 2.6 inches, the storm runoff inside the bermed areas will not endanger the integrity of the berms.

Other facility areas on the refinery site are also carefully protected and sumps are provided at key locations to divert any surface runoff to the API separator. Thus, the liklihood of surface runoff from the refinery site to neighboring areas is very remote.

In 1980, Plateau constructed two small catchment ponds in a southward trending arroyo directly north of the ponds adjacent to the API separator and north of the Hammond Ditch.

These ponds were constructed to intercept any spill from the lined ponds adjacent to the API separator or rainfall runoff from the refinery which might drain across the Hammond Ditch via the El Paso Natural Gas Pipeline right-of-way. These catchment basins have served their purpose and have captured runoff. At present, they are full and their fluid level is maintained by seepage from the Hammond Ditch which was noted before the catchment ponds were filled.

These two ponds are not intended as storage ponds for waste water. It is Plateau's intention to keep these ponds pumped out so that they may continue to serve the purpose for which they were built. Water in these ponds is primarily natural Hammond Ditch water and is exempt from discharge plan requirements under WQCC Regulation 3-105(A)

Natural precipitation on the refinery property would essentially pass through undisturbed areas in which no refinery wastes are stored.

Should spills occur which might contaminate rainfall and surface runoff, Plateau is committed through its "Contingency Plan and Emergency Procedures" to clean up the spill so that it will not pose a threat of contamination to any rainfall and attendant runoff.

Consequently, the discharge plan as far as possible contaminated surface runoff is concerned should be approved because of the surface runoff control measures which have been taken at the refinery.

Raw Water Ponds

The refinery obtains its water from the San Juan River. Raw water is pumped directly from the San Juan River to two raw-water holding ponds located on the northwest part of the property. These ponds are labelled on Plate 1. The pumping station is located immediately east of the bridge across the San Juan River on the south side of the river.

The western raw-water pond was in existence at the time Suburban Propane purchased the refinery. Shortly after the purchase of the refinery, the eastern raw-water pond was constructed. At the time of its construction, significant seepage was observed to enter the Hammond Ditch along its southern side adjacent to the raw-water pond. AGW conducted a ZETA-SP survey of the pond bottom to locate the points of leakage. As a result of this survey, a mixture of bentonite, polymer and barite were tremied onto the bottom of the pond. Following this treatment the amount of seepage was drastically reduced.

The present seepage from both raw-water ponds has not been quantified. However, the only chemical added to the water is a polyquaternary ammonium salt flocculant for which EPA has approved its potability. The water in the ponds does not exceed the WQCC standards of 1-101(UU) or 3-103. Moreover, the WQCC standards are not applicable in this instance. There are no industrial wastes or by-products in the ponds.

Consequently, the discharge plan as far as seepage from the raw-water ponds is concerned should be approved because the

water is normal untreated San Juan River water.

API Separator

The API separator at the Plateau refinery is of standard API design. The API separator is constructed of and lined with steel reinforced concrete. The API separator processes process waste water and fluids collected from all sumps located throughout the refinery and the tank farm. Any intermittant spills in the tank farm area are diverted to the sumps associated with most of the tanks. The spilled liquids are then transferred to the API separator for recovery of any hydrocarbon substances.

The discharge plan, as far as possible seepage of contaminated water into any shallow water beneath the separator is concerned, should be approved because the construction of the separator precludes seepage at a rate in excess of 0.5 acre-feet of seepage annually.

Lined Ponds

Until recently, the three ponds immediately north of the API separator were unlined. To provide further assurance, Plateau lined the ponds with 100-mil high density polyethylene liners above a French drain seepage collection system which terminates in an observation well. Shortly after completion of the lining, water was observed in the observation well leading to the conclusion that the liner in one of the ponds was leaking. To confirm this

conclusion, flourescien dye was added to the water in the ponds. Shortly thereafter, the dye was observed in the monitoring well. The ponds were emptied and the seams in the liner were rechecked and repaired. At present, there is no detectable seepage from these ponds and unless the integrity of the liner is impaired, the leakage will be less than 0.5 acre feet of seepage per year. If the liner develops a leak, there is a leak detection system in place and Plateau is committed to repairing the liner.

The specifications for the liner are given in Attachment 4.

Consequently, the discharge plan as far as seepage from the lined ponds adjacent to the API separator is concered should be approved because the seepage is less than 0.5 acre-feet per year.

Evaporation Ponds

Results of monitoring at the refinery suggest that 10 to 20 gallons per minute of seepage from the solar evaporation ponds may be taking place. Observations of seepage in northward draining arroyos and the Hammond Ditch during winter suggest a total seepage including bank storage return of about 10-15 gallons per minute.

Any seepage from any waste-water impoundments or from irrigation on refinery property to the east of the truck-maintenance workshops will move slowly to the north in the down-dip direction of the contact between the cobble bed

and the Nacimiento Formation. Any seepage will, therefore, appear as seeps along the contact between the Nacimiento Formation and the cobble bed where it is exposed at the cliff face north of the refinery and in the southward trending arroyos. These arroyos behave then as collector drains and will intercept and channelize any seepage from the refinery property.

It must also be pointed out that any seepage from the evaporation ponds will also encounter fresh Hammond Ditch water in the shallow subsurface. The Hammond Ditch water will serve to dilute any water seeping from the solar evaporation ponds thereby improving the overall water quality of any seepage.

Land Application

Beginning in December 1981, waste water was applied for the first time through an irrigation system to about 10 acres of company property east of the truck-maintenance facility. This area is shown on Plate 1. Plate 2 also shows the topography of the irrigated land and environs in considerable detail. The irrigated area is bordered by a berm where necessary to prevent surface drainage of irrigated water into nearby arroyos.

Land application will take place primarily from March through October to take advantage of warm temperatures and enhanced evaporation potential from the large area of application and plant evaporation. Plateau has already installed the sprinkle system in the area.

Any seepage from the land application area will percolate downward to meet Hammond Ditch water in the cobble bed. The chemical quality of this water will be substantially improved by mixing with the high quality Hammond Ditch Water. Following mixing and dilution, the water will remain largely beneath the land application area until the non-irrigation season when it will flow to the north and probably be captured by the high transmissivity zone associated with the Nacimiento subcrop channel. The water would then tend to flow towards the west. Some seepage may occur in the immediate vicinity of the land application area also.

In the land application area, there is no natural ground water present. Any water in the deep-lying Ojo Alamo Sandstone beneath the impermeable Nacimiento Formation will be protected from any potential contamination for several reasons. First, the Nacimiento Formation is for all practical purposes impermeable. And, second, the vertical hydraulic gradient is vertically upward and it is not possible for percolation to take place vertically downward.

Consequently, the discharge plan as far as land application is concerned should be approved because the amount of seepage is likely to have no significant impact on ground-water quality. Plateau has constructed a water quality monitoring well in the land application area which will be monitored semi-annually.

BACKGROUND WATER QUALITY

Water samples were collected from the new monitoring wells shown on Plate 1 on February 15, 1984 for the purpose of establishing background-water quality conditions. The samples were submitted to Controls For Environmental Pollution in Santa Fe, New Mexico and Hauser Laboratories in Boulder, Colorado following full chain-of-custody procedures. There were significant inconsistencies between the laboratories such that the reliability of the analyses are in serious question. To achieve reliable background-water quality information, Plateau will review analyses of water samples collected by the EPA during the week of March 19, 1984 when these results become available. Based upon available data, Plateau will propose background-water quality parameters to the NMOCD for approval.

Plateau agrees to protect the quality of the water in the area such that applicable standards or specific solute background concentrations, whichever are higher, are not exceeded. Plateau will continue to sample ground water in the monitoring wells semi-annually.

MONITORING

The results of the monitoring program at the refinery to date have already been detailed in milestone reports which have been submitted to the NMOCD and the NMEID. New monitoring wells shown on Plate 1 were constructed by an Ingersoll Rand TH-60 rig operating a down-the-hole air hammer. Full

construction details and lithologic logs for the monitoring wells are given in Attachment 2.

Plateau has established a daily visual monitoring program for monitoring spills at the refinery. Visual inspection of the small arroyos contiguous to the irrigated area will be made weekly to detect seepage of water applied for irrigation.

Plateau has installed the six new monitoring wells for the purpose of determining the depth to the Nacimiento/cobble bed contact, measuring water levels, and obtaining water samples for the determination of background-water quality. These monitoring wells will permit the acquisition of water quality data on a semi-annual basis.

If the quality of water collected periodically from the monitoring wells exceeds background concentrations or the New Mexico standards, whichever apply, Plateau will implement contingency plans.

WATER SUPPLY AND DISCHARGE

Water used by the Plateau refinery is obtained directly from the San Juan River. It is stored in two fresh-water retention ponds pending use. These ponds are identified on Plate 1. Water for human consumption is purchased from the City of Bloomfield.

The circulation of water through the refinery is shown in figure 3. The flow diagram indicates that 80 gallons per minute discharged to the solar evaporation ponds at the time

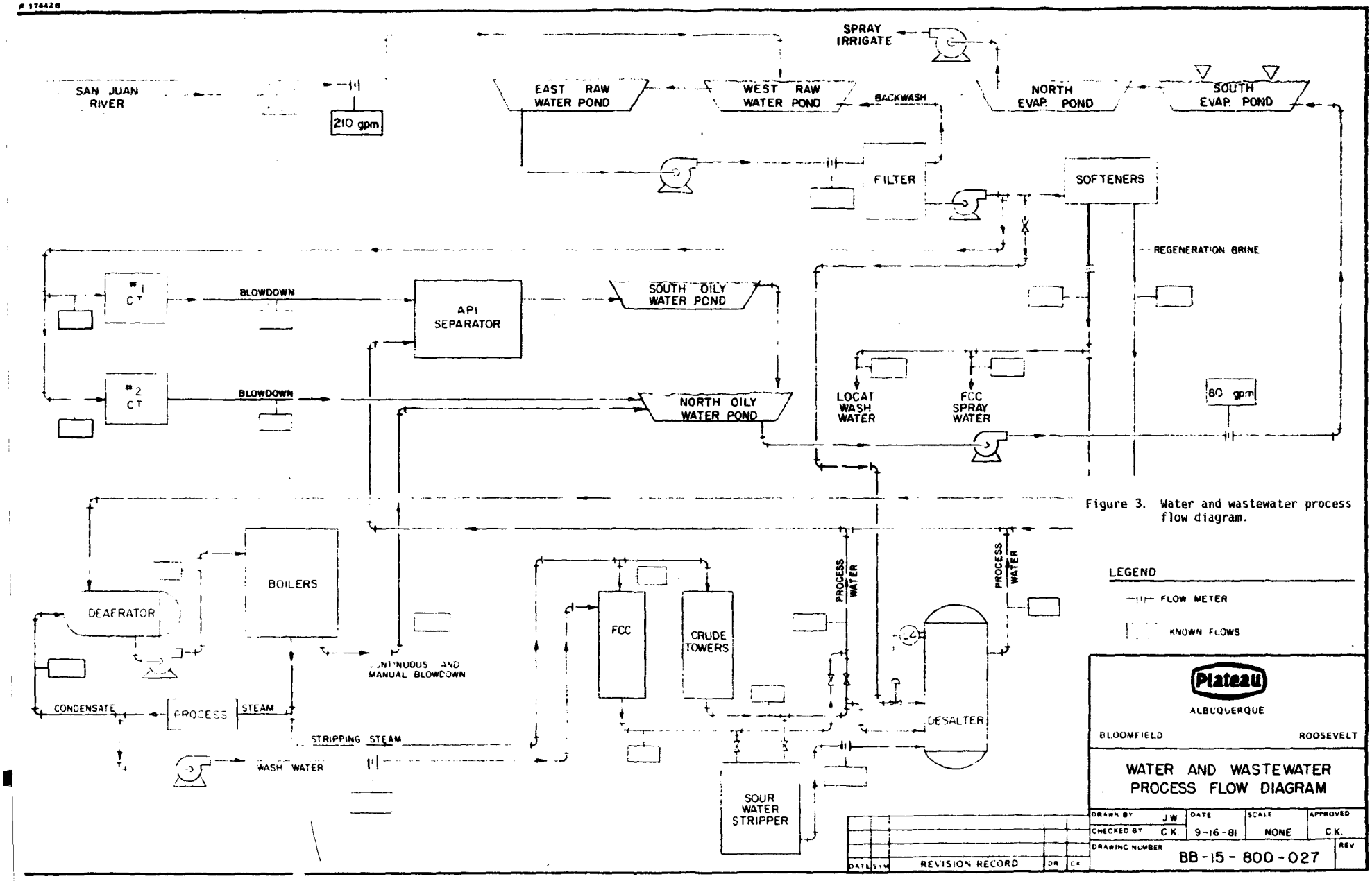

Figure 3. Water and wastewater process flow diagram.

the diagram was produced. This is based upon meter readings. The water is comprised of the following streams:

ITEM	gpm
Cooling tower blowdown	30
Boiler blowdown	12
Desalter effluent	18
Softener effluent	2
Crude process water	8
FCC process water	10

Recently, however, Plateau began recycling 30 gallons per minute within the refinery thereby reducing the average discharge to about 50 gpm (60 gpm in winter and 40 gpm in summer months). The recycling is accomplished as follows:

1. 12 gpm of boiler blowdown is cooled and recycled as makeup to the cooling tower.

2. 8 gpm of crude process water is collected and returned as makeup water to the desalter.

3. 10 gpm of FCC process water is stripped of hydrogen sulphide and ammonia in the sour water stripper and recycled as makeup to the desalter.

PLACE AND PLACES OF FORESEEABLE GROUND-WATER USE

From the direction of ground-water flow within the Quaternary material overlying the impermeable Nacimiento Formation, it is clear that the shallow, artificial ground water discharges as small seeps along the cliff face north of

the refinery and in the small intermittant stream channels. The area in which the ground-water flow occurs and in which discharge takes place is uninhabited. Most of the property belongs to Plateau. Furthermore, there are no private domestic or irrigation wells in the area and there is no farming or cattle grazing permitted in the area. Consequently, there is no present or reasonably foreseeable future impact upon the use of natural ground water by refinery operations.

CONTINGENCY PLANS

Plateau has implemented the following contingency plans.

Problem: Accidental spills of chemicals or any other material including hydrocarbons used in the refining process.

Solution: Plateau has prepared an exhaustive Contingency Plan and Emergency Procedures document as required by the Federal Plan Resource Conservation and Recovery Act (RCRA). This plan is contained in Attachment 5.

Problem: Waste water escaping from refinery property into intermittant stream channels.

Solution: If waste water escapes from refinery property which exceeds the allowable background or WQCC standards, Plateau will investigate to determine if approvable ground-water concentrations are exceeded or may be exceeded, and, if so, propose appropriate solutions.

Problem: New seeps develop.

Solution: Should new seeps develop, they will be

investigated to determine if they are in any way inconsistent with the discharge plan. If so, appropriate remedial or preventative measures will be taken.

Problem: Detection of ground water or San Juan River contamination.

Solution: If, at any time, ground or surface water is found which exceeds the applicable regulatory concentrations, Plateau will carry out additonal studies which may include construction of additional monitoring wells, performance of additional water quality analyses. Based upon these studies, Plateau will propose appropriate remedial and preventative measures to rectify the problem.

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ATTACHMENT 1

DESCRIPTION OF REFINERY PROCESS

PLATEAU, INC.

BLOOMFIELD REFINERY

WATER TREATMENT PROGRAM

AS OF FEBRUARY, 1982

FILTERED WATER

The filter aid for water is 1190, a polyamine. This is a water solution of polyquaternary ammonium chloride and aids in filtration by charge neutralization of the water. The doseage is 1 ppm or 2 quart/day. It is also approved for potable water supplies.

BOILER WATER TREATMENT

The chemical used in boiler water treatment is called APII, a phosphate formulation. The material contained within each drum consists of an aqueous solution of a polystyrene derivative, a polyacrylate type polymer, a polyphosphate, an antifoam agent and caustic soda.

The treatment is a precipitating phosphate treatment containing sludge conditioners which allows the impurities in the boiler water to become insoluble matter at a proper pH range. The doseage is approximately 45 ppm in boiler water or approximately 10 gallon/day. The chemicals are inert and broken down upon blowdown.

The corrogen used in boiler treatment is sodium sulfite in a powder form. Upon contact with oxygen in water, it is reacted to form sodium sulfate, a common water soluble salt. The doseage used is 40 ppm or 30 pound/day.

COOLING TOWER TREATMENT

The cooling treatment consists of the following:

1. 2040, a phosphate compound consisting of an aqueous solution of organic and inorganic phosphates, a triazole derivative and caustic potash. The treatment is a combining reaction with the metal surfaces it is in contact with. The doseage is 30 ppm or approximately 1 gallon/day. These are inert materials naturally broken down to salts and phosphate.

2. 2020 is an aqueous solution of low molecular weight hydroxylated polymer. It is used to disperse calcium phosphate scale from forming. The doseage is 60 ppm or 1½ gallon/day. The material has no effect on the environment.

3. HTH is a calcium hypochlorite used in the cooling treatment. It is used for oxidation of all organic material in water. The doseage is 100 ppm shocked three times per day or 75 pound/day. The HTH breaks down into inorganic salts of calcium and chloride.

4. Slimicide 508 is an organic bromine called DBNPA. It is also used as a biocide and it spontaneously breaks down in water and then loses toxicity.

5. The HTH and slimicide 508 will soon be eliminated and a gaseous chlorine treatment will be used.

PROCESS CHEMICALS

WS66 and OS16 are amines, both mixed neutralizing amines and a heterocyclic amine - amide mixture. The theory of treatment is that they film metal surfaces and neutralize acidity in water. The doseages are 100 ppm for WS66 or 8 gallon/day and 5 ppm for OS16 or 2 gallon/day. The OS16 stays in the hydrocarbon and is not discharged into water.

The EB911 is a demulsifier and is composed of an oxyalkylated phenolic resin and a polyglycol dispersed in heavy aromatic spirits. It functions to break emulsions and form oil free water as discharge after desalting. Our present doseage is 10 ppm or 7 gallon/day. Most of the chemicals are oil soluble and therefore do not exit with water.

The Neutralfilm 463 is an amine and is composed of heterocyclic and high molecular weight straight chain primary filming amines. It is designed to neutralize acidic material and film metal surfaces to protect against corrosion.

AK/kce

2/3/82

ATTACHMENT 2

LITHOLOGIC LOGS AND CONSTRUCTION DETAILS FOR MONITORING WELLS

MONITORING WELLS

Six monitoring wells were drilled by Earl and Sons Inc. of Cedar Crest, New Mexico at the Plateau refinery located at Bloomfield, New Mexico. The wells are numbered in accordance with the numbering system used at the refinery such that the northwestern-most well is P-1. The wells are located on Plate 1. The order of drilling and the drilling dates are shown in Table 1.

Table 1. Monitoring wells at Plateau's Bloomfield refinery shown in order drilled with drilling dates and approximate yields and depth at which water was first encountered.

WELL	DRILLING BEGAN	DRILLING FINISHED	DEPTH TO WATER (ft)	YIELD (gpm)
5	2/6/84	2/6/84	42	1
6	2/7/84	2/7/84	dry	
2	2/7/84	2/8/84	23	3-4
1	2/8/84	2/8/84	18	1
3	2/8/84	2/9/84	35	<1
4	2/9/84	2/9/84	26	2

The wells were drilled with an Ingersol-Rand TH-60 rig with casing hammer using air rotary methods and a down-the-hole air hammer. No drilling mud was used in the drilling process. The hole was drilled to the cobble bed at which point six-inch black steel casing was set. As drilling continued through the cobble bed, the casing was driven simultaneously. Some water was required while drilling through the cobble bed, but the drillers used as little water as possible. The drilling water was obtained from the San Juan River. The drill bits were washed between holes with methanol or acetone. Upgradient wells were drilled first to minimize contamination from one well to the next. That is, the wells were drilled in the order of expected increase in contaminated ground water.

Drilling stopped when certain determination of the Nacimiento Formation was obtained from the drill cuttings. The holes were developed with air. Drill samples were collected every five (5) feet and described at the site. Casing lengths were measured to the nearest tenth (10th) of foot before they went down the hole. The first casing section of approximately 20 feet was slotted every four inches with an oxy-acetylene torch. A slit cut with the torch in the top of the set casing serves as a measuring point for water levels.

Water levels were taken on February 9, 1984 in all holes. These data are presented in Table 2. Well 6 was dry.

Hydrocarbons were encountered during drilling in hole 4, the last hole drilled, as evidenced by smell, oil slicks in water coming up the hole and appearance and smell of the drill cuttings.

Temporary caps were placed on all wells. At the time of this writing permanent locked caps have been placed on all monitoring wells.

Table 2. Depth to water and total well depth in Plateau monitoring wells on February 9, 1984.

WELL	TIME	TOTAL DEPTH (ft)	DEPTH TO WATER (ft)
5	1:00	51.61	42.67
6	1:30	49.63	dry
2	3:43	26.90	19.11
1	4:10	24.65	16.56
3	4:30	39.35	34.06
4	4:50	32.5	24.94

On February 14 and 15, 1984 water levels were again measured in the new monitoring wells and in the neutron-probe holes (NP) holes along the northern evaporation pond. These data are presented in Table 3.

Table 3. Water-level data in neutron-probe holes and monitoring wells.

WELL	DATE	DEPTH TO WATER (ft)
5	2-14-84	43.78
3	2-14-84	34.26
2	2-15-84	19.90
1	2-15-84	17.01
4	2-15-84	24.97
NP-8	2-15-84	23.91*
NP-7	2-15-84	24.44
NP-6	2-15-84	23.71
NP-5	2-15-84	23.19
NP-3	2-15-84	23.09
NP-2	2-15-84	31.00*
NP-1	2-15-84	39.04
NP-9	2-15-84	22.72

* No temperature probe tube. All other NP holes have tubes along their total length. Water levels were measured with the temperature probe tubes in the holes.

The four down-gradient wells (P-1,P-2,P-3,P-4) were sampled on the afternoon of February 15, 1984. Samples were collected with a bailer. Repeated attempts to pump the wells with two different pumps failed because of sand-lock. The wells in which the worst quality water was suspected were sampled last in order to minimize contamination of samples by the bailer in the event the bailer cleaning was ineffective. The sampling order was therefore P-3, P-2, P-1, P-4. The bailer was thoroughly washed with methanol between samples. The samples were collected according to instructions supplied by each of two labs, Hauser Labs of Boulder, Colorado, and Controls for Environmental Pollution of Santa Fe, New Mexico. Each lab was sent a complete sample from each well. The samples were shipped via UPS to the labs and approved chain of custody procedures were followed.

Lithologic logs for each of the monitoring wells drilled by Earl and Sons, Inc. are given hereafter.

WELL NUMBER: 1
DATE: 8 February 1984
LOCATION: 29.11.27.24221

DEPTH IN FEET	DESCRIPTION
0-5	Light brown clayey sand, coarse, poorly sorted, quartzose and slightly calcareous
5-10	Yellowish gray sandy pebbles and cobbles, poorly sorted, rounded to subrounded
10-12	Yellowish gray pebbly sand, very coarse, poorly sorted, feldspathic and noncalcareous
12-22	Dark gray pebbly and sandy cobbles, some quartz pebbles, most are volcanic, subrounded cobbles and pebbles, some clay, a little water at about 16 feet
22-25	Gray-green clayey sand becoming light yellow clayey sandstone and sandy claystone

WELL NUMBER: 2
DATE: 7 February 1984
LOCATION: 29.11.27.24321

DEPTH IN FEET	DESCRIPTION
0-5	Light yellow brown silty sandy clay, very calcareous
5-10	Light yellow brown clayey sand, subrounded to subangular, moderately to poorly sorted, very calcareous
10-15	Light brown pebbly sand, clayey, very calcareous, cobbles at 15 feet
15-20	Gray sandy pebbles, poorly sorted coarse quartzose sand, pebbles are dark gray and volcanic
20-25	Dark gray cobbles, some quartz pebbles, mostly volcanic, some sand
25-26	Yellow gray clayey sandstone and sandy claystone

WELL NUMBER: 3
DATE: 8 February 1984
LOCATION: 29.11.27.24442

DEPTH IN FEET	DESCRIPTION
0-5	Yellow brown sandy silt and clay, very calcareous quartzose
5-10	yellow brown sand, calcareous, silty and clayey, quartzose
10-15	Yellow brown sand, silty and clayey, fine-grained, very calcareous, quartzose
15-27	Light brown clay, sandy, very calcareous, becoming pebbly with depth
27-35	Gray yellow brown cobbly sand, coarse, poorly sorted, silty and clayey, volcanic pebbles small amount of water at about 35 feet
35-40	Gray cobbles, pebbly and sandy, coarse sand, yellow gray clayey sandstone at about 40 feet

WELL NUMBER: 4
DATE: 9 February 1984
LOCATION: 29.11.27.23344

DEPTH IN FEET	DESCRIPTION
0-5	Yellow gray-brown sandy silt and clay, calcareous
5-10	Yellow brown silty sandy clay and clayey silt, very slightly calcareous
10-15	Reddish yellow-brown clayey sandy silt, silty clay, fine-grained quartzose sand, noncalcareous
15-19	Light brown coarse sand with clay and pebbles, calcareous
19-25	Gray pebbly sand, very coarse, poorly sorted, some clay and silt, subrounded to subangular, quartzose, pebbles rounded, slightly calcareous
25-30	Gray cobbles and pebbles, subrounded to rounded, volcanic; at about 28 feet, hydrocarbon smell and color
30-32	Gray cobbly sand, with hydrocarbon smell and color, coarse grained, sand is quartzose and feldspathic, subrounded and subangular quartz grains are clear
32	Yellow gray clayey sandstone

WELL NUMBER: 5
DATE: 6 February 1934
LOCATION: 29.11.26.31112

DEPTH IN FEET	DESCRIPTION
0-5	Pale yellow brown clay, silty, some sand, calcareous
5-10	Pale yellow brown clayey sand and quartzose silt, poorly sorted, calcareous
10-15	Yellow brown sand, subrounded quartzose sand slightly calcareous
15-20	Yellow brown sand, clayey, moderately coarse grained, very slightly calcareous
20-25	Yellow brown sand, clayey, silty, fine to medium grained, moderately sorted, noncalcareous
25-35	Yellow brown sand, silty and slightly clayey, fine-to-medium grained, well sorted, subangular, noncalcareous, becoming more clayey with depth
35-37	Yellow brown pebbly and cobbly sand, clayey, calcareous
37-47	Dark gray sandy and clayey cobbles and pebbles, water at 42 feet
47-50	Dark gray cobbles with greenish clay
50-54	Green-gray pebbly clay

WELL NUMBER: 6
DATE: 7 February 1984
LOCATION: 29.11.27.42144 or 42233

DEPTH IN FEET	DESCRIPTION
0-15	Pale yellow brown sand, clayey and silty, subangular, poorly sorted, quartzose, very calcareous, becoming more clayey with depth
15-20	Pale yellow brown silt, sandy and clayey, silt is coarse, sand is very fine, moderate sorting, quartzose and calcareous
20-25	Pale yellow sand, slightly clayey, subrounded, well sorted, quartzose, noncalcareous
25-35	Pale yellow sand, coarse to medium grained, quartzose, noncalcareous
35-41	Pale yellow sand, clayey, fine grained, silty, quartzose, slightly calcareous
41-49	Gray-black cobbles and pebbles, volcanic
49-52	Gray-green clayey sandstone and sandy claystone

PLATEAU REFINERY Geological Points
2/25/84

Pt #	North	East	Elevation	Description	
LTB	18,162.70	26,802.73	5511 [41]	℄ point	✓
Pt # 1	18,174.15	26,895.27	5494 [8]	Geological Stk	✓
Pt # 2	18,138.81	26,819.68	5501 [4]	" "	✓
Pt # 3	18,087.94	26,890.04	5493 [9]	" "	✓
Pt # 4	17,977.91	26,850.23	6490 [8]	" "	✓
Pt # 5	17,937.44	26,809.72	5494 [6]	" "	✓
Pt # 6	17,928.78	26,739.28	5500 [9]	" "	✓
Pt # 7	17,869.12	27,011.25	5500 [8]	" "	✓
Pt # 8	17,811.89	27,023.00	5500 [2]	" "	✓
Pt # 9	17,763.36	26,972.67	5504 [2]	" "	✓
Pt # 10	17,744.17	27,106.69	5491 [9]	" "	✓
Pt # 11	17,639.21	27,118.93	5495 [1]	" "	✓
Pt # 12	17,608.69	27,205.15	5499 [3]	" "	✓
Pt # 13	17,735.19	27,189.82	5496 [5]	" "	✓
Pt # 14	17,876.37	27,294.36	5497 [4]	" "	✓
Pt # 15	18,001.78	27,291.18	5495 [3]	" "	✓
Pt # 16	18,074.52	27,074.92	5478 [6]	" "	✓
Pt # 17	18,603.88	26,869.23	5493 [1]	" "	✓
Pt # 18	18,639.28	26,423.11	5497 [7]	" "	✓
Pt # 19	19,001.05	26,298.87	5500 [5]	" "	✓
Pt # 20	19,462.10	25,691.29	5496 [5]	" "	✓
Pt # 21	18,126.14	26,700.28	5499 [4]	" "	✓
Manuel Well	18,959.83	26,619.81	5498 [3] (water)	Derrick	✓
Pt # 27C	19,218.30	25,895.15		℄ point	✓
Easiest point DAM	19,401.05	25,718.21	5508 [5]	East End Prop Down	✓
West End Prop Dam	19,372.90	25,560.39	5504 [2]	West end prop Down	✓
Pt # 21-5	19,466.19	25,533.77	5498 [8]	Geological Stk	
Pt 199	18,718.55	25,179.53	5521 [26]	Pannel Point	✓
Well # 1	18,951.59	25,507.39	5515 [69] (Casing)	Water Test well K	✓
Well # 2	18,267.66	24,982.13	5519 [28] (Casing)	" " " K	✓
Well # 3	17,699.60	23,799.10	5524 [30] (Casing)	" " " K	✓
Well # 4	17,852.61	25,666.55	5585 [29] (Casing)	" " " K	✓
Well # 5	17,585.33	26,058.65	5595 [01] (Casing)	" " " K	✓
Well # 6	17,029.99	25,128.98	5551 [13] (Casing)	" " " K	
Seepage Point	18,963.13	25089.23	5483 [5]	Geological Stk	✓
Pt # 28	18,906.43	25,056.10	5492 [2]	" "	✓
Pt # 29	18,873.20	24,917.64	5493 [7]	" "	✓
Pt # 27D	19,284.65	24,987.66	5504 [10]	℄ point	✓
Pt # 22	19,430.58	25,381.01	5494 [1]	Geological Stk	✓
Pt # Seepage	19,241.23	25,114.98	5485 [5]	Seepage point	✓
Pt # 27	19,213.45	25,013.89	5493 [5]	Geological Stk	✓
Pt # 26	19,179.44	24,936.56	5460 [8]	" "	✓
Pt # 25	19170.. 5	24,882.04	5454 [3]	" "	✓
Pt # 24	19,203.93	24,844.23	5464 [3]	" "	✓
Pt # 23	19,264.14	24,835.28	5465 [2]	" "	✓
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Pt #	North	East	Elevation	Description		
Pt # 30	19.142.38	24 736. 88	5493 [1]	Geological	Silt	✓
Pt # 31	19 100. 26	24 585. 42	5495 [1]	"	"	✓
Pt # 32	19 144. 66	24 409. 97	5484 [1]	"	"	✓
Pt # 33	18. 990. 75	24 521. 75	5494 [2]	"	"	✓
Pt # 34	19 213. 16	24 215. 63	5493 [5]	"	"	✓
Pt # 35	19 151. 18	24 144. 94	5493 [3]	"	"	✓
Pt # 36	18 692. 53	23. 541. 53	5465 [2]		"	✓
Pt # 37	18. 636. 18	23 473. 87	5466 [4]	"	"	✓
Pt # 38	18. 463. 82	23. 241. 46	5470 [2]	"	"	✓
Pt # 39	18. 360. 89	23 188. 29	5466 [3]	"	"	✓
Pt # 40	17. 962. 76	22. 632. 60	5463 [6]	"	"	✓
Pt # 375	18. 696. 54	23. 669. 34	5499 [11]	@ Dam		

ATTACHMENT 3

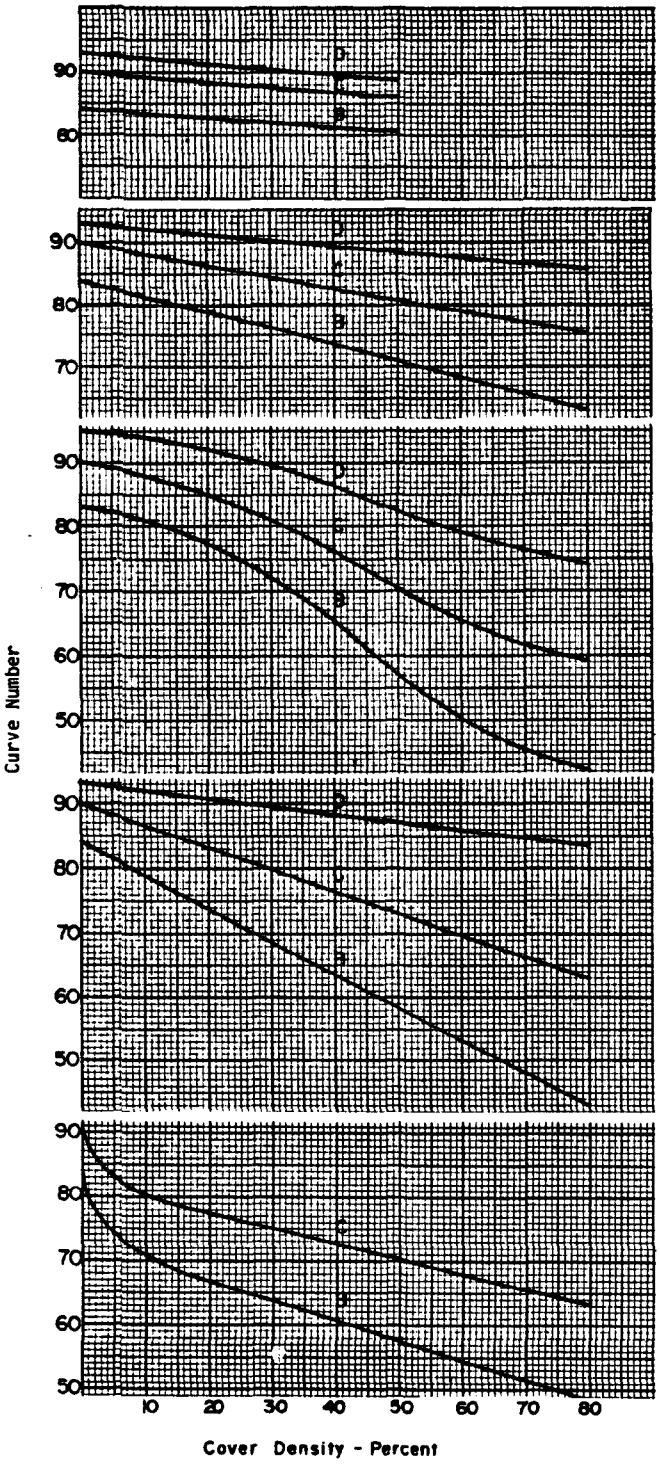
DATA FOR FLOOD POTENTIAL ANALYSIS

TIME OF CONCENTRATION

CONCENTRATION POINT NUMBER	DRAINAGE AREA SIZE (ACRES)	DRAINAGE AREA LENGTH (FEET)	TOP ELEVATION (FEET)	OUTLET ELEVATION (FEET)	DIFFERENCE IN ELEVATION (FEET)	TIME OF CONCENTRATION (HOURS)
1	2.5	1600	5580	5536	44	0.15
2	20.5	2280	5607	5535	72	0.19
3	42.0	2930	5607	5530	77	0.24
4	50.0	3730	5607	5525	82	0.31

RUNOFF COMPUTATION

CONCENTRATION POINT NUMBER	DRAINAGE AREA SIZE (ACRES)	HYDROLOGIC SOIL GROUP (FEET)	VEGETATION COVERTION (FEET)	HYDROLOGIC CONDITION (FEET)	RUNOFF CURVE NUMBER (FEET)	DIRECT RUNOFF (INCHES)	UNIT PEAK DISCHARGE (CFS/AC/IN)	PEAK DISCARGE (CFS)
11	2.5	D600	DESERT BRUSH	POOR	90 44	1.6	1.4	5.6
22	20.5	D280	DESERT BRUSH	POOR	90 72	1.6	1.38	45.3
33	42.0	D930	DESERT BRUSH	POOR	90 77	1.6	1.30	87.4
44	50.0	D730	DESERT BRUSH	POOR	90 82	1.6	1.20	96.0



Desert Brush: Brush-weed and grass mixtures with brush the predominent element. Some typical plants are - Mesquite, Creosote, Yuccas, Sage-brush, Saltbrush, etc. This area is typical of lower elevations of desert and semi-desert areas.

Herbaseous: Grass-weed-brush mixtures with brush the minor element. Some typical plants are - Grama, Tobosa, Broom Snakeweed, Sagebruch, salt-brush, Mesquite, yucca, etc. This area is typical of lower elevations of desert and semi-desert areas.

Mountain Brush: Mountain brush mixtures of Oak, Mountain Mohagany, Apache Plume, Rabbit Brush, Skunk Brush Sumac, Cliff Rose, Snowberry, etc. Mountain Brush is typical of intermediate elevations and generally higher annual rain-fall than Desert Brush and herbaceous areas.

Juniper - Grass: These areas are mixed with varying amounts of juniper, pinon, grass, and cholla cover, or may be predominantly of one species. Grass cover is generally heavier than desert grasses due to higher annual pre-cipitation. Juniper-Grass is typical of mountain slopes and plateaus of intermediate elevations.

Ponderosa Pine: These are forest lands typical of higher elevations where the principal cover is timber.

Figure 2-1
HYDROLOGIC SOIL - COVER COMPLEXES
AND ASSOCIATED CURVE NUMBERS

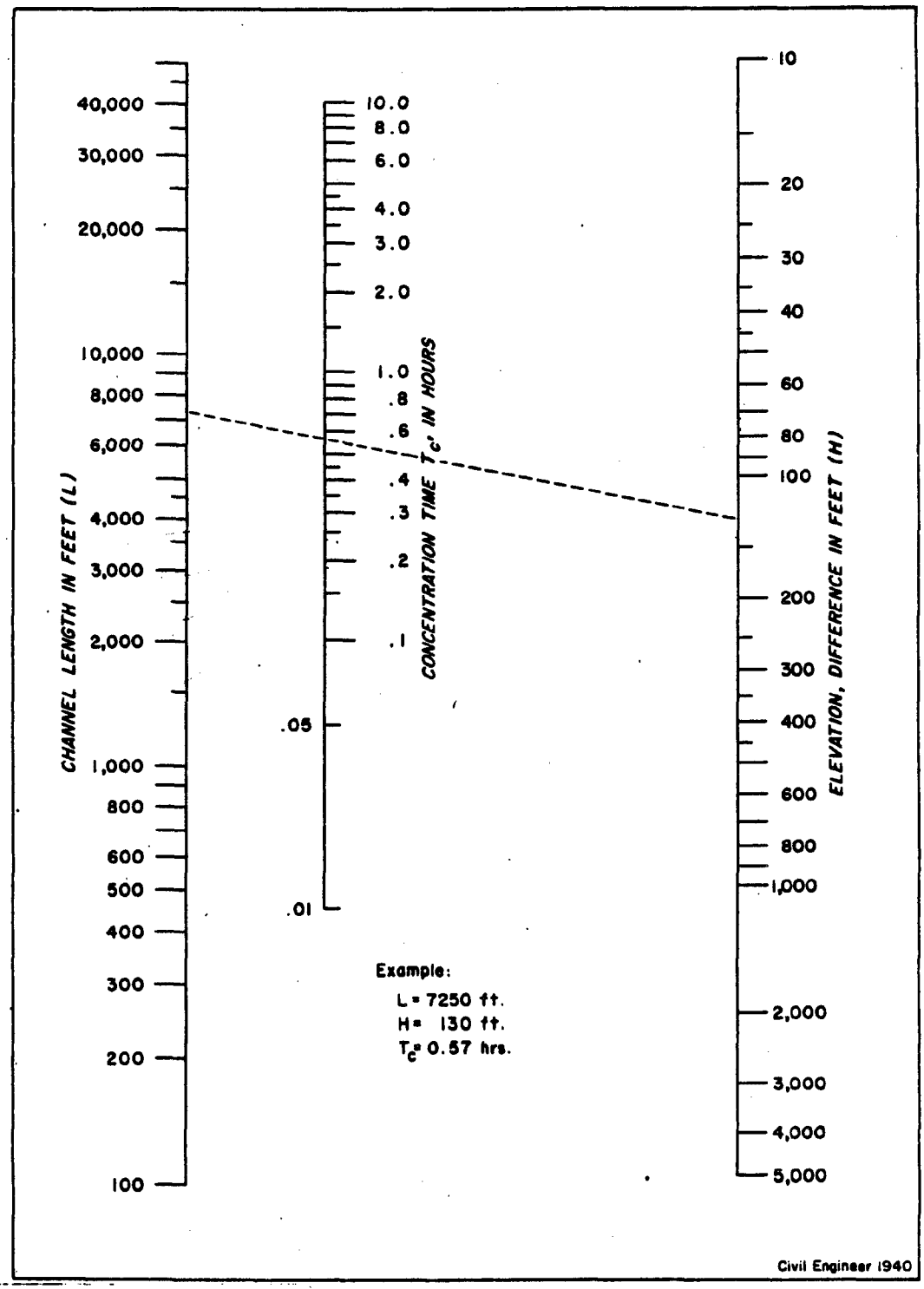


Figure 2-2 --- Nomograph to Determine Time of Concentration

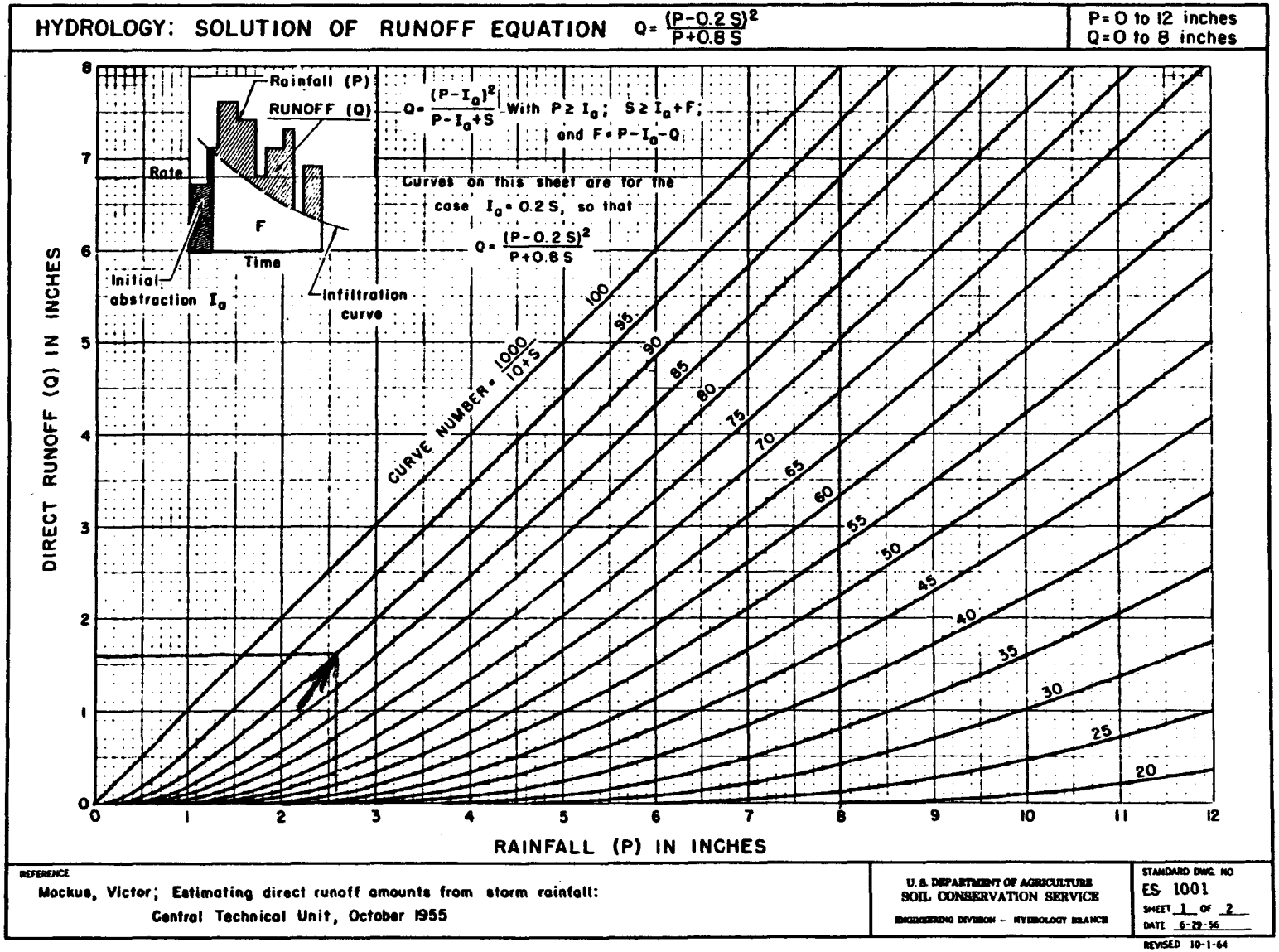

HYDROLOGY: SOLUTION OF RUNOFF EQUATION $Q = \frac{(P-0.2S)^2}{P+0.8S}$
P = 0 to 12 inches
Q = 0 to 8 inches
Rainfall (P)
RUNOFF (Q)
Rate
F
Time
Initial abstraction I_a
Infiltration curve
$Q = \frac{(P-I_a)^2}{P-I_a+S}$ With $P \geq I_a$; $S \geq I_a+F$; and $F = P-I_a-Q$
Curves on this sheet are for the case $I_a = 0.2S$, so that
$Q = \frac{(P-0.2S)^2}{P+0.8S}$
CURVE NUMBER = $\frac{1000}{10+S}$
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
DIRECT RUNOFF (Q) IN INCHES
RAINFALL (P) IN INCHES
0 1 2 3 4 5 6 7 8 9 10 11 12
REFERENCE
Mockus, Victor; Estimating direct runoff amounts from storm rainfall:
Central Technical Unit, October 1955
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ENGINEERING DIVISION - HYDROLOGY BRANCH
STANDARD DWG. NO
ES 1001
SHEET 1 OF 2
DATE 6-29-56
REVISED 10-1-64

Figure 2-4

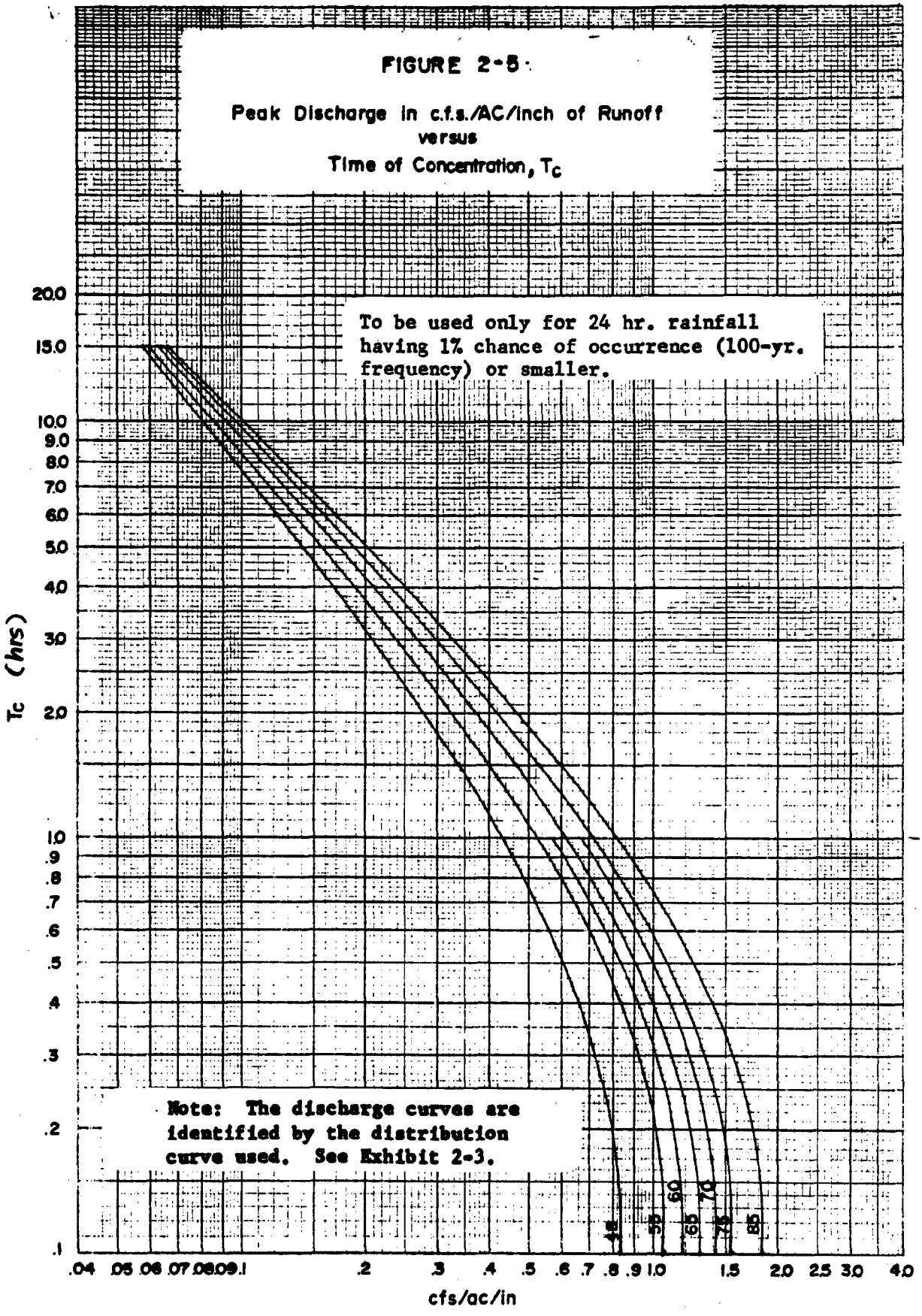


FIGURE 2-5
Peak Discharge in c.f.s./AC/inch of Runoff
versus
Time of Concentration, T_c
To be used only for 24 hr. rainfall having 1% chance of occurrence (100-yr. frequency) or smaller.
Note: The discharge curves are identified by the distribution curve used. See Exhibit 2-3.
Tc (hrs)
20.0
15.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
.04 .05 .06 .07 .08 .09 .1 .2 .3 .4 .5 .6 .7 .8 .9 1.0 1.5 2.0 2.5 3.0 4.0
cfs/ac/in
45
55
60
65
70
75
85

ATTACHMENT 4

POND LINER SPECIFICATIONS

SCHLEGEL LINING TECHNOLOGY, INC.

MINIMUM SPECIFICATIONS FOR SCHLEGEL® SHEET - POLYETHYLENE

PROPERTY	TEST METHOD	VALUE
Density	ASTM D792	0.930 gm/cc
Tensile strength @ yield	ASTM D638	1500 psi
Tensile strength @ break	ASTM D638	1500 psi
Elongation @ yield	ASTM D638	10 %
Elongation @ break	ASTM D638	500 %
Stress crack	ASTM D1693	500 hours
Low temperature	ASTM D746	−40 °C
120 day soil burial	ASTM D3083	±10 % of original tensile
Bonded seam strength	ASTM D3083	90 % of material breaking factor
Dimensional stability	ASTM D1204	±3 %

Chemical Resistance

Chemical Resistance Table.

Shown here are the results of tests reported by the supplier of high density polyethylene granulate used to manufacture Schlegel* sheet. The high density polyethylene is resistant to the chemicals listed. The degree of chemical attack on any material is influenced by a number of variable factors and their interaction, including temperature, pressure, size of area under attack, exposure duration, and the like. Where sheet will be exposed to a mixture of chemicals it is recommended that tests be carried out for sheet resistance to that chemical mixture. Therefore, these ratings are offered as a guide only.

Abbreviations

S = Satisfactory
L = Limited application possible
U = Unsatisfactory
— = Not tested

Concentration
sat. sol. = Saturated aqueous solution, prepared at 20° C (68° F)
sol. = aqueous solution with concentration above 10% but below saturation level
dil. sol. = diluted aqueous solution with concentration below 10%
cust. conc. = customary service concentration

Medium	Concentration	Resistance at 20° C (68 °F)	Resistance at 60° C (140 °F)
A			
Acetic acid	100%	S	L
Acetic acid	10%	S	S
Acetic acid anhydride	100%	S	L
Acetone	100%	L	L
Adipic acid	sat. sol.	S	S
Allyl alcohol	96%	S	S
Aluminum chloride	sat. sol	S	S
Aluminum fluoride	sat. sol.	S	S
Aluminum sulfate	sat. sol.	S	S
Alums	sol.	S	S
Ammonia, aqueous	dil. sol.	S	S
Ammonia, gaseous dry	100%	S	S
Ammonia, liquid	100%	S	S
Ammonium chloride	sat. sol.	S	S
Ammonium fluoride	sol.	S	S
Ammonium nitrate	sat. sol.	S	S
Ammonium sulfate	sat sol.	S	S
Ammonium sulfide	sol.	S	S
Amyl acetate	100%	S	L
Amyl alcohol	100%	S	L
Aniline	100%	S	L
Antimony trichloride	90%	S	S
Arsenic acid	sat. sol.	S	S
Aqua regia	$HCl-HNO_3$ 3/1	U	U
B			
Barium carbonate	sat. sol.	S	S
Barium chloride	sat. sol.	S	S
Barium hydroxide	sat. sol.	S	S
Barium sulfate	sat. sol.	S	S
Barium sulfide	sol.	S	S
Benzaldehyde	100%	S	L
Benzene	—	L	L
Benzoic acid	sat. sol.	S	S
Beer	—	S	S
Borax	sat. sol	S	S
Boric acid	sat. sol	S	S
Bromine, gaseous dry	100%	U	U
Bromine, liquid	100%	U	U
Butane, gaseous	100%	S	S
Butanol	100%	S	S
Butyric acid	100%	S	L
C			
Calcium carbonate	sat. sol.	S	S
Calcium chlorate	sat. sol.	S	S
Calcium chloride	sat. sol.	S	S
Calcium hydroxide	sat. sol.	S	S
Calcium hypochlorite	sol.	S	S
Calcium nitrate	sat. sol	S	S
Calcium sulfate	sat. sol.	S	S
Calcium sulfide	dil. sol.	L	L
Carbon dioxide, gaseous dry	100%	S	S
Carbon disulfide	100%	L	U
Carbon monoxide	100%	S	S
Chloracetic acid	sol.	S	S
Carbon tetrachloride	100%	L	U
Chlorine, aqueous solution	sat. sol.	L	U
Chlorine, gaseous dry	100%	L	U
Chloroform	100%	U	U
Chromic acid	20%	S	L
Chromic acid	50%	S	L
Citric acid	sat sol.	S	S
Copper chloride	sat sol	S	S
Copper nitrate	sat sol.	S	S
Copper sulphate	sat. sol	S	S
Cresylic acid	sat sol	L	—
Cyclohexanol	100%	S	S
Cyclohexanone	100%	S	L
D			
Decahydronaphthalene	100%	S	L
Dextrine	sol.	S	S
Diethyl ether	100%	L	—
Dioctylphthalate	100%	S	L
Dioxane	100%	S	S
E			
Ethane diol	100%	S	S
Ethanol	40%	S	L
Ethyl acetate	100%	S	U
Ethylene trichloride	100%	U	U
F			
Ferric chloride	sat sol	S	S
Ferric nitrate	sol	S	S
Ferric sulfate	sat sol	S	S
Ferrous chloride	sat sol.	S	S
Ferrous sulfate	sat sol	S	S
Fluorine, gaseous	100%	U	U
Fluosilicic acid	40%	S	S
Formaldehyde	40%	S	S
Formic acid	50%	S	S
Formic acid	98-100%	S	S
Furfuryl alcohol	100%	S	L
G			
Gasolene	—	S	L
Glacial acetic acid	96%	S	L
Glucose	sat. sol.	S	S
Glycerine	100%	S	S
Glycol	sol.	S	S
H			
Heptane	100%	S	U
Hydrochloric acid	10%	S	S
Hydrobromic acid	50%	S	S
Hydrobromic acid	100%	S	S
Hydrochloric acid	10%	S	S
Hydrochloric acid	concentrated	S	S
Hydrocyanic acid	10%	S	S
Hydrofluoric acid	60%	S	L
Hydrofluoric acid	4%	S	S
Hydrogen	100%	S	S

Medium	Concentration	Resistance at 20°C (68°F)	Resistance at 60°C (140°F)
Hydrogen peroxide	30%	S	S
Hydrogen peroxide	90%	S	U
Hydrogen sulfide, gaseous	100%	S	S
L			
Lactic acid	100%	S	S
Lead acetate	sat. sol.	S	—
M			
Magnesium carbonate	sat. sol.	S	S
Magnesium chloride	sat. sol.	S	S
Magnesium hydroxide	sat. sol.	S	S
Magnesium nitrate	sat. sol.	S	S
Maleic acid	sat. sol.	S	S
Mercury	100%	S	S
Mercuric chloride	sat. sol.	S	S
Mercuric cyanide	sat. sol.	S	S
Mercuric nitrate	sol.	S	S
Methanol	100%	S	S
Methylene chloride	100%	L	—
Milk	—	S	S
Molasses	cust. conc.	S	S
N			
Nickel chloride	sat. sol.	S	S
Nickel nitrate	sat. sol.	S	S
Nickel sulfate	sat. sol.	S	S
Nicotinic acid	dil. sol.	S	—
Nitric acid	25%	S	S
Nitric acid	50%	S	U
Nitric acid	75%	U	U
Nitric acid	100%	U	U
O			
Oils and Grease	—	S	L
Oleic acid	100%	S	L
Orthophosphoric acid	50%	S	S
Orthophosphoric acid	95%	S	L
Oxalic acid	sat. sol.	S	S
Oxygen	100%	S	L
Ozone	100%	L	U
P			
Petroleum	—	S	L
Phenol	sol	S	S
Phosphorus trichloride	100%	S	L
Photographic developer	cust. conc.	S	S
Picric acid	sat. sol	S	—
Potassium bicarbonate	sat. sol.	S	S
Potassium bisulfate	sat. sol.	S	S
Potassium bisulfide	sol.	S	S
Potassium bromate	sat. sol.	S	S
Potassium bromide	sat. sol.	S	S
Potassium carbonate	sat. sol.	S	S
Potassium chlorate	sat. sol.	S	S
Potassium chloride	sat. sol.	S	S
Potassium chromate	sat. sol.	S	S
Potassium cyanide	sol.	S	S
Potassium dichromate	sat. sol.	S	S
Potassium ferricyandide	sat. sol.	S	S
Potassium ferrocyanide	sat. sol.	S	S
Potassium fluoride	sat. sol.	S	S
Potassium hydroxide	10%	S	S
Potassium hydroxide	sol.	S	S
Potassium hypochloride	sol	S	L
Potassium nitrate	sat. sol.	S	S
Potassium orthophosphate	sat. sol.	S	S
Potassium perchlorate	sat. sol.	S	S
Potassium permanganate	20%	S	S
Potassium persulfate	sat. sol.	S	S
Potassium sulfate	sat. sol.	S	S
Potassium sulfite	sol.	S	S
Propionic acid	50%	S	S
Propionic acid	100%	S	L
Pyridine	100%	S	L
Q			
Quinol (Hydroquinone)	sat. sol.	S	S

Medium	Concentration	Resistance at 20°C (68°F)	Resistance at 60°C (140°F)
S			
Salicylic acid	sat. sol.	S	S
Silver acetate	sat. sol.	S	S
Silver cyanide	sat. sol.	S	S
Silver nitrate	sat. sol.	S	S
Sodium benzoate	sat. sol.	S	S
Sodium bicarbonate	sat. sol.	S	S
Sodium biphosphate	sat. sol.	S	S
Sodium bisulfite	sol.	S	S
Sodium bromide	sat. sol.	S	S
Sodium carbonate	sat. sol.	S	S
Sodium chlorate	sat. sol.	S	S
Sodium chloride	sat. sol.	S	S
Sodium cyanide	sat. sol.	S	S
Sodium ferricyanide	sat. sol.	S	S
Sodium ferrocyanide	sat. sol.	S	S
Sodium fluoride	sat sol	S	S
Sodium fluoride	sat. sol.	S	S
Sodium hydroxide	40%	S	S
Sodium hydroxide	sat. sol.	S	S
Sodium hypochloride	15% active chlorine	S	S
Sodium nitrate	sat. sol.	S	S
Sodium nitrite	sat. sol.	S	S
Sodium orthophosphate	sat. sol.	S	S
Sodium sulfate	sat. sol.	S	S
Sodium sulfide	sat. sol.	S	S
Sulfur dioxide, dry	100%	S	S
Sulfur trioxide	100%	U	U
Sulfuric acid	10%	S	S
Sulfuric acid	50%	S	S
Sulfuric acid	98%	S	U
Sulfuric acid	fuming	U	U
Sulfurous acid	30%	S	S
T			
Tannic acid	sol	S	S
Tartaric acid	sol	S	S
Thionyl chloride	100%	L	U
Toluene	100%	L	U
Triethylamine	sol	S	L
U			
Urea	sol.	S	S
Urine	—	S	S
W			
Water	—	S	S
Wine vinegar	—	S	S
Wines and liquors	—	S	S
X			
Xylene	100%	L	L
Y			
Yeast	sol	S	S
Z			
Zinc carbonate	sat. sol.	S	S
Zinc chloride	sat. sol.	S	S
Zinc (II) chloride	sat. sol.	S	S
Zinc (IV) chloride	sat. sol.	S	S
Zinc oxide	sat. sol.	S	S
Zinc sulfate	sat. sol.	S	S

Specific immersion testing should be undertaken to ascertain the suitability of chemicals not listed above with reference to special requirements.

ATTACHMENT 5

CONTINGENCY PLAN AND EMERGENCY PROCEDURES

BLOOMFIELD CONTINGENCY PLAN AND EMERGENCY PROCEDURES

It sometimes comes as a shock to generators of hazardous waste when they are asked for copies of their RCRA Contingency Plan during a state or federal RCRA inspection. If you look briefly at Part 262 40 CFR, you won't find specifics on the plan. However, if you examine the requirements further and have a good understanding of EPA's requirements for generators, you'll see the requirement outlined in Section 262.34 - Accumulation Time.

What Section 262.34(4) says is that any generator who stores hazardous waste on-site prior to transportation for a period not exceeding 90 days must still comply with the storage requirements of Subpart C and D outlined in Part 265 - "Standards For Owners And Operators Of Treatment, Storage And Disposal Facilities," and the training requirements of 265.16.

What does this mean? It simply means that each regulated generator who stores hazardous waste has the same hazardous waste storage requirements as a "permitted" storage facility and must comply with the same standards in Part 265.

Subpart C outlines the requirements for preparedness and prevention which involve the maintenance and operation of a generator's plant or facility where hazardous waste is being stored prior to treatment, storage or disposal. The requirements detail safety equipment and communications systems needed for each location where hazardous waste is stored and the testing and maintenance of and access to those systems. In addition, Subpart C details requirements for adequate aisle space to enable personnel and equipment to respond to emergency situations as well as the arrangements the owner or operator must make with local authorities. Depending on the type of waste handled at a facility, a generator may be required to make some or all of the following arrangements:

- *Familiarize police, fire departments, and emergency response teams with facility layout, properties of hazardous waste handled there and associated hazards, working locations for company personnel, entrances to roads inside the facility, and possible evacuation routes.*

- *Designate primary emergency authority to a specific police and specific fire department when more than one police and fire department might respond to an emergency at the facility.*

- *Strike agreements with state emergency response teams, emergency response contracts, and equipment suppliers.*

- *Familiarize local hospitals with the properties of hazardous waste handled at the facility and the type of injuries or illnesses which could result from fires, explosions, or releases of hazardous waste (Attachment IV).*

Subpart D

According to Subpart D - Contingency Plans and Emergency Procedures - each generator who stores, treats or disposes of hazardous waste, must develop and implement the RCRA Contingency Plan. If a generator already has prepared a "Spill Prevention, Control and Counter-Measures Plan," he or she need only

amend the SPCC plan to include the hazardous waste management provisions.

Why a contingency plan? Subpart D maintains that such a plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release or hazardous waste or hazardous waste constituents to air, soil, or surface water." Additionally, Subpart D requires that the provisions of the Contingency Plan be implemented immediately in any of the above-listed incidences which could threaten human health or the environment.

The Contingency Plan must include the following information:

- *o Arrangements agreed to by local police and fire departments, hospitals, contractors and state and local emergency response personnel.(Attachment I)*
- *o Names, addresses and phone numbers (office and home) of all qualified personnel who will act as emergency coordinator. If more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates or secondary emergency coordinators. (Attachment II)*
- *o A list of all emergency equipment at the facility and decontamination equipment when this equipment is required. This list must be kept up-to-date.(Attachment III)*
- *o The location and a physical description of each item on the equipment list and a brief outline of its capabilities. (Figure 1)*
- *o An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary.*

A copy of the Contingency Plan and all revisions to it must be maintained at the facility and provided to all local police departments, fire departments, hospitals, state and local emergency response teams that may be called upon to provide emergency service.

The Contingency Plan must be reviewed and amended when necessary if the regulations are revised, the plan fails in an emergency, the facility changes its operation, the list of emergency coordinators changes or the list of emergency equipment changes.

Once the Contingency Plan is complete, each person involved in any activity involving hazardous waste must now be trained on that plan.

Emergency Procedures Are Required

Because hazardous materials and waste could present major problems in an emergency, each company must develop emergency procedures to handle such wastes and materials in an emergency.

For example, an emergency coordinator who has been assigned the responsibility for coordinating all emergency response measures must be at all times either on the facility, at the plant or on call. The coordinator must be thoroughly familiar with all aspects of the facility's Contingency Plan, all operations and activities, the location and characteristics of the hazardous waste handled, the location of all records within the facility and the facility layout. If the company maintains shift operations, secondary or alternate emergency coordinators can assume responsibility in an emergency.

The emergency coordinator must immediately and effectively carry out the required emergency procedures in the event of an emergency involving hazardous waste. He or she must activate internal facility alarms or communications systems to notify all facility personnel and must notify appropriate state or local agencies with the information that will allow them to carry out their designated response roles, if they are needed in the emergency.

Where there is an emergency resulting in a release, fire or explosion, the emergency coordinator must:

1. Identify the character, exact source, amount and the real extent of any released hazardous materials or waste.

2. Assess the possible hazards to human health or the environment, considering both the direct and indirect effects of the release, fire or explosion.

3. Determine whether the release, fire or explosion may require the evacuation of the local areas and if so determined, immediately notify the appropriate local authorities, assisting them in determining which local areas require evacuation.

4. The emergency coordinator must immediately notify the government official designated as the on-scene coordinator or the National Response Center.

The Contingency Plan will provide the information necessary for the emergency coordinator to properly carry out his or her responsibilities during an emergency.

Again, the Contingency Plan must include specific information. It is recommended that as much information as possible be provided, even though not required, to make it more effective, in the event of an emergency. Included would be:

- *The facility or plant information. (Attachment V)*
- *The primary and secondary or alternate emergency coordinators.*
- *While not required, it would make sense to provide a description of the waste handled or stored at the facility or plant.*
- *A list of the federal, state or local emergency response contacts.*

- *The extent of the arrangements with local police and fire departments, hospitals and emergency response services.*
- *A facility inspection check or a record of inspection activities.*
- *Personnel training record availability.*
- *Storage precautions.*
- *Job descriptions for personnel assigned specific responsibilities during an incident or emergency.*
- *A facility diagram with the location of all emergency equipment and a description of its characteristics and capabilities.*
- *Topographical and geographical diagrams or maps outlining the facility's or plant's parameters and characteristics and the evacuation routes, if required.*

A generator, owner or operator of any facility or plant where hazardous wastes are treated, stored or disposed of, may include all information, even though not required, if he or she deems it pertinent to the Contingency Plan.

One last critical point about the Contingency Plan: Section 265.16, personnel training, requires that all facility or plant personnel be trained on the hazardous waste management regulations in 40 CFR and the Contingency Plan, relevant to the jobs in which they are employed. Making sure all facility or plant personnel are knowledgeable of their responsibilities and the hazards of an incident will ensure greater protection for the facility and its personnel.

Duties of Emergency Coordinator

There are additional responsibilities for those who are designated or selected to be the "Emergency Coordinator" at each specific generator location, site, plant or facility that treats, stores or disposes of hazardous waste. According to regulations:

At all times, there must be at least one employee either on the facility premises or on call with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

When there is an emergency, spill or a release of hazardous waste at any location, the emergency coordinator must follow these procedures:

Whenever there is an imminent or actual emergency situation, the emergency coordinator (or designee when the emergency coordinator is on call) must immediately:

Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel and notify appropriate state or local agencies with designated response roles if their help is needed.

Whenever there is a release, fire or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and a real extent of any released materials. He or she may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (i.e., the effects of any toxic, irritating or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).

If the emergency coordinator determines that the facility has had a release, fire or explosion which could threaten human health, or the environment, outside the facility, the findings must be reported as follows:

If an assessment indicates that evacuation of local areas may be advisable, he or she must immediately notify appropriate local authorities. The emergency coordinator must be available to help appropriate officials decide whether local areas should be evacuated; and must immediately notify either the government official designated as the on-scene coordinator for the geographical area (in the applicable regional Contingency Plan under Part 1510 of this Title), or the National Response Center (using their 24-hour toll free number (800) 424-8802). The report must include:

- *Name and telephone number of reporter.*
- *Name and address of facility.*
- *Time and type of incident (i.e., release, fire).*
- *Name and quantity of material(s) involved, to the extent known.*
- *The extent of injuries, if any.*
- *The possible hazards to human health, or the environment, outside the facility.*

During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste and removing or isolating containers.

If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator must provide for treating, storing or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

The emergency coordinator must ensure that, in the affected area(s) of the facility:

1. No waste that may be incompatible with the released material is treated, stored or disposed of until cleanup procedures are completed; and

2. All emergency equipment listed in the Contingency Plan is cleaned and fit for its intended use before operations are resumed.

The owner or operator must notify the regional EPA administrator, and appropriate state and local authorities, that the facility is in compliance with the above two points before operations are resumed in the affected area(s) of the facility.

The owner or operator must note in the operating record the time, date and details of any incident that requires implementing the Contingency Plan. Within 15 days after the incident, he or she must submit a written report on the incident to the regional administrator. The report must include:

- *o Name, address and telephone number of the owner or operator.*
- *o Name, address and telephone number of the facility.*
- *o Date, time and type of incident (i.e., fire, explosion).*
- *o Name and quantity of material(s) involved.*
- *o The extent of injuries, if any.*
- *o An assessment of actual or potential hazard to human health or the environment, where this is applicable.*
- *o Estimated quantity and disposition of recovered material that resulted from the incident.*

The most critical point about the Contingency Plan and Emergency Procedures is that any person or company who is a generator and will only store hazardous waste on site for periods of 90 days, or any person or company that treats, stores or disposes of hazardous waste under a RCRA Permit(interim status or Part B) is required to comply with these regulations.

ATTACHMENT I

EMERGENCY PHONE NUMBERS

EPA Hazardous Waste	1-214-767-9729
State Hazardous Waste	1-894-0020
National Response Center	1-800-424-8802
Bloomfield Fire Department	632-8011
Bloomfield Police Department	632-8011
San Juan County Sheriff	334-6107
State Police	325-7547
Ambulance (dispatched through Farmington Fire)	325-3501
County Fire Departments (dispatched through Farmington Fire)	325-3501
Poison Control	1-800-432-6866
Bomb Personnel (State Police Office)	325-7547
ETHYL CORP. (T.E.L. Emergencies)	1-504-344-7147
CHEMTREC (Chemical Emergencies)	1-800-424-9300
City of Farmington (Electric Utility)	327-7701
Kay-Ray	312-259-5600
E.I.D. Radiation Protection Bureau	505-984-0020
Mobile Inspection (Radiography Assistance)	327-9473
Contact of New Mexico (Call out Assistance)	327-4666

EQUIPMENT RESOURCES

Water Tankers & Vacuum Trucks	
Chief Transport	325-2396
C & J Trucking	325-7770
Delgarno	327-0461 or 327-6871
Sunco Trucking	327-4921 or 325-3862
LAD Tankers	325-1808
Earth Moving Equipment	
Adobe Construction (Ernie Motto)	334-6696
Nowlin Construction	327-2686
Coffey Construction	632-3663
Atchison Construction	327-6276
Gas Co. of New Mexico	325-2889
Welding & Cutting	
Henry Vigil	632-3045
CKS Construction	632-3228

Wrecker or Rig Up Trucks	
Sandia Detroit	*325-5071*
B. F. Walker	*325-4539*
Drake Well Service	*327-7301*
ODECO INC.	*632-3392*
Plateau Transportation	*632-3377*
Aerial Ladder or Basket	
City of Farmington Utility	*327-7701*
Farmington Fire	*325-3501*
Foam Supplies	
Plateau Roosevelt Refinery	*801-722-5128*
Thunderbird Sales	*505-881-6222*
F & M Chemical	*714-983-9551*

ATTACHMENT II

PRIMARY EMERGENCY COORDINATOR

Paul W. Liscom
2301 South Idden Glen
Farmington, NM 87401

505-632-8013 (bus.)
505-325-1135 (res.)

SECONDARY EMERGENCY COORDINATORS

Chad R. King
Route 2, Box 208
LaPlata, NM 87401

505-632-8013 (bus.)
505-325-4718 (res.)

Don Wimsett
P.O. Box 35
Bloomfield, NM 87413

505-632-8013 (bus.)
505-632-8223 (res.)

ATTACHMENT III

1. *Two 2000gpm automatic start diesel fire engines*
   One 1000 gpm manual start diesel fire engine
   One 750 gpm manual start electric fire engine
   One 750 gpm manual start gas fire engine

2. *11,000 feet of 6", 8", 10", and 12" fire line*

3. *16 - fixed fire monitors*

4. *4 - portable fire monitors*

5. *38 - fire hydrants*

6. *98 - hand portable fire extinguishers*

7. *14 - 150# wheeled extinguishers*

8. *1 - twin agent fire truck - 450# purple-K, 100 gal. foam*

9. *H_2O Deluge System in T.E.L. Building*

10. *Automatic foam Deluge System - loading rack*

11. *2 - foam cannons w/110 gal. foam - unloading rack*

12. *Automatic Halon extinguishers in Lab*

13. *1000 gallons AFFF/ATC foam concentrate*

14. *Foam Systems on tanks #11, #12, & #31*

15. *23 sets of fire fighting bunker equipment*

16. *One Fire Entry Suit*

17. *Ten self contained breathing apparatus*

18. *Two air line breathing apparatus*

19. *Two First Aid Kits (large standard)*

20. *Two First Aid Kits (Trauma)*

21. *Two medical oxygen units*

22. *One Clorine cylinder patch kit*

23. *Three stretchers and rescue baskets*

24. *400 ft. of rescue rope & equipment*

25. *7 safety showers - Lab, (2) Treator, Spent Caustic #1 Cooling Tower, & (1) portable, (1) kerosene shower*

26. *Seven fire hose boxes with 400 ft. hose - 3 nozzles & 1 gated wye*

27. *600 ft. of 2½" fire hose*
    800 ft. of 1" fire hose
    Eight nozzles
    Miscellaneous other fire appliances

28. *Assorted respiratory equipment for specific use*

29. *600 lbs. stock Purple-K extinguisher chemical*

30. *8 Acid resistant slicker suits*

ATTACHMENT IV

PROPERTIES OF HAZARDOUS WASTE AT THE BLOOMFIELD REFINERY

API Separator Sludge from the Petroleum Refining Industry (T)

Slop Oil Emulsion Solids from the Petroleum Refining Industry (T)

Heat Exchanger Bundle Cleaning Sludge from the Petroleum Refining Industry (T)

Tank Bottoms (Leaded) from the Petroleum Refining Industry (T)

Waste Streams

The waste streams listed as hazardous are:

- o Primary oil/solids/water separation sludge
- o Slop Oil Emulsion Solids
- o Heat Exchanger Bundle Cleaning Sludge
- o Tank Bottoms (Leaded)

Lead and hexavalent chromium are the constituents of concern in these waste streams. Lead in the waste streams comes predominantly from the use of tetraethyl lead in the blending of leaded products. Chromium in the waste stream comes predominantly from blowdown of cooling towers that use hexavalent chromium compounds as a corrosion inhibitor. It should be noted that the Bloomfield Refinery uses a phosphate based corrosion inhibitor and not a chromium based corrosion inhibitor. Any chromium mentioned in the waste streams is not specific to the Bloomfield Refinery but only to industry as a whole.

Primary oil/solids/water separation sludge - The primary oil/solids/water separator provides for primary refinery wastewater treatment. The separators are usually connected to the oily water plant sewer. As a result, the resultant sludges contain a mixture of all sewered waste, including tank bottoms, boiler blowdown, desalter wastes, and also traces of all chemical elements which enter the refinery process.

Oil that is present in the sludge will most likely be present in the form of heavy tars since the surface oil is skimmed periodically from the primary oil/solids/water separator. Oil content of the sludge is approximately 23% by weight while water and solids constitute approximately 53% and 24%, respectively. Most of the solids content is silt and sand, but a significant amount of heavy metals are also present in the sludge.

This waste stream is listed because it contains significant concentrations of the two metals, chromium (presumably in part hexavalent, since it derives from cooling tower blowdown) and lead. (Table 3 lists the concentration ranges of the constituents of concern in each waste stream.)

Slop Oil Emulsion Solids - The skimmings from the primary oil/solids/water separator generally consist of a three-phase mixture of oil, water and a third emulsified layer. The oil is returned to crude storage, the water discharged to the wastewater treatment system, while the emulsion (oil, water and solids) becomes a process waste stream. A typical combination of the waste stream by weight is 40% water, 43% oil and 12% solids. Among the solids are compounds of the metals chromium (presumably in part hexavalent) and lead, for which the waste is listed.

Heat Exchanger Bundle Cleaning Sludge - Heat exchanger bundles are cleaned during plant shutdown to remove deposits of scale and sludge. Depending upon the characteristics of the deposits, the outside of the tube bundles may be washed, brushed, or sandblasted, while the tube insides can be wiped, brushed, or rodded out. Sludge resulting from the cleaning process has approximately 53% water, 11% oil and 36% solids.

These solids are composed largely of salt precipitated from the water. The metals present are mostly corrosion products or scale deposits from the heat exchanger bundle tubes. Chromium presumably partly in hexavalent form, is present in the waste in substantial concentrations, and the waste is listed due to the presence of this constituent.

Tank Bottoms (Leaded) - The petroleum products (or fractions) after being separated in the distillation column have to be cooled before they are sent out or used for making other by-products. This is done in product storage tanks. As cooling occurs, the water separates from the hydrocarbon phase and is continually drained from the tanks to the refinery water treatment system. Solids formed as products of corrosion and rust in the tanks contain toxic metals, and are periodically removed. This waste is being listed because it contains lead.

In summary, the contaminants in these wastes which caused EPA to identify these wastes as hazardous are as follows:

Primary oil/solids/water separator sludge - hexavalent chromium and lead

Slop Oil Emulsion Solids - hexavalent chromium and lead

Heat Exchanger Bundle Cleaning Sludge - hexavalent chromium
Tank Bottoms (Leaded) - lead

Health Effects of Waste Constituents of Concern

Toxic properties of chromium and lead have been well documented. Hexavalent chromium is toxic to man and lower forms of aquatic life. Lead is also poisonous in all forms. It is one of the most hazardous of the toxic metals because it accumulates in many organisms, and its deleterous effects are numerous and severe. Lead may enter the human system through inhalation, ingestion or skin contact. Improper management of these sludges may lead to ingestion of contaminated drinking water.

The hazards associated with exposure to lead and chromium have been recognized by other regulatory programs. Lead and chromium are listed as priority pollutants in accordance with 5307 of the Clean Water Act of 1977. Under Section 6 of the Occupational Safety and Health Act of 1970, final standards for Occupational Exposure have been established and promulgated in 29 CFR 1910.1000 for lead and chromium. Also, a national ambient air quality standard for lead has been announced by EPA pursuant to the Clean Air Act. In addition, final or proposed regulations of the States of California, Maine, Massachusetts, Minnesota, Missouri, New Mexico, Oklahoma and Oregon define chromium and lead containing compounds as hazardous wastes or components thereof.

ATTACHMENT V

BLOOMFIELD REFINERY
AN OVERVIEW

The Bloomfield Refinery runs a combination of low sulfur crudes which are brought into the refinery by truck and pipeline. The refinery is rated at 13,500 bpd and nominally runs at 8,500-12,000 bpd.

The simplified flow diagram of the Bloomfield Refinery depicts a balanced operation as projected in the June Operations Forecast. The actual refinery operations will vary slightly but all in all should be very near to those shown.

During the month of June, Bloomfield will process 10,500 bpd of crude oil and 700 bpd of natural gasoline. The crude oil is processed in the crude unit which divides the crude into several fractions for further processing. At Bloomfield, there are basically seven fractions from the crude unit: Overhead comprising 2% of the crude and consisting of the lightest hydrocarbons which is taken to the plant fuel gas system; Light Straight Run comprising 17% of the crude and consisting of highly paraffinic and low octane material boiling in the 100-200 deg. F range which is taken to gasoline blending; Reformer Feed comprising 26% of the crude and consisting of naphtha in the 200-400 deg. F range which is taken to the Reformer for

further processing; Heavy Virgin Naphtha comprising 3% of the crude and consisting of the marginal Reformer feed which is taken to gasoline blending; Kerosene comprising 2% of the crude which is either sold or taken to diesel blending depending on the season; Straight Run Diesel comprising 20% of the crude which is taken to diesel blending; and finally, FCC Feed comprising 30% of the crude and consisting of the atmospheric bottoms from the crude unit which is taken to the FCC Unit for further processing.

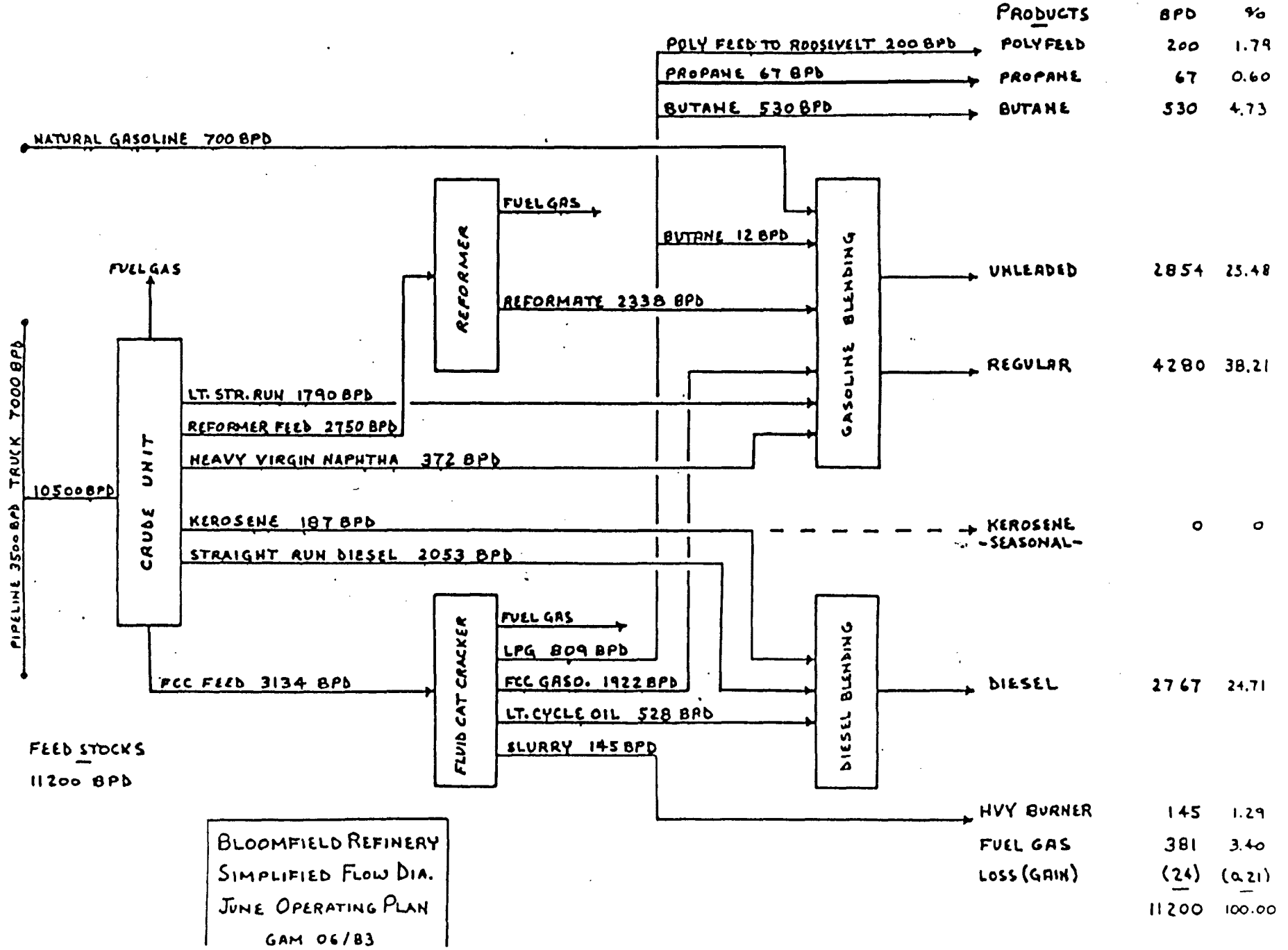
The reformer unit receives approximately 26% of the initial crude unit charge. This unit will process this naphtha under temperature and pressure and in the presence of hydrogen and a fixed bed catalyst to produce a high octane blending stock which is rich in aromatics and is taken to gasoline blending. Most of this stock is used to produce unleaded gasoline.

The Fluid Catalytic Cracking Unit or FCC receives the crude atmospheric bottoms and combines them with hot regenerated catalyst. This mixture flows up the riser which provides the necessary cracking characteristics and is designed for smooth flow and minimum erosion. All the cracking takes place in the riser and the cracking process produces light olefinic hydrocarbons, LPG, high octane gasoline and middle distillates. The riser, in turn, discharges into the reactor which separates the now spent catalyst and the hydrocarbons. These pass out of the

reactor through cyclones, which prevent the catalyst from leaving the system, to a fractionator which divides the hydrocarbons into fuel gases, LPG, high octane gasoline, light cycle oil and slurry oil. These are all processed further. The spent catalyst is simultaneously drawn from the reactor into the regenerator where, in the presence of air, the remaining hydrocarbon in the form of coke, is burned from the catalyst. This burning releases large amounts of heat which acts to drive the system by cleansing and heating the catalyst. The catalyst is then drawn from the regenerator and is combined with the crude atmospheric bottoms to begin the cycle again.

At Bloomfield, in June, the slurry oil comprising 5% of the feed is sold as heavy burner fuel; the light cycle oil comprising 17% of the feed is taken to diesel blending; the FCC gasoline comprising 61% of the feed is taken to gasoline blending; and the LPG is further divided into propane, butane, and olefins which are sent to the Roosevelt Refinery.

The gasoline and diesel blending sections collect the appropriate streams, including the natural gasoline, and blend them into finished products with seasonal specifications. The Table II shows a brief synopsis of the refinery yields.



PRODUCTS	BPD	%
POLYFEED	200	1.79
PROPANE	67	0.60
BUTANE	530	4.73
UNLEADED	2854	25.48
REGULAR	4280	38.21
KEROSENE -SEASONAL-	0	0
DIESEL	2767	24.71
HVY BURNER	145	1.29
FUEL GAS	381	3.40
LOSS (GAIN)	(24)	(0.21)
	11200	100.00

TABLE II

FEED STOCKS	BPD	%
Crude	10500	93.75
Natural Gasoline	700	6.25
	11200	100.00

PRODUCTS	BPD	%
Propane	67	0.60
Butane	530	4.73
Unleaded	2854	25.48
Regular	4280	38.21
Mogas	7134	63.69
Diesel	2767	24.71
Hvy Burner	145	1.29
Fuel Gas	381	3.40
Loss (Gain)	(24)	(0.21)
	11200	100.00

GENERAL

Explosions, fires or serious accidents may occur despite the finest possible safety precautions. In these times of emergency, it is essential for the protection of personnel and property that preplanned, well rehearsed action be taken. It is the purpose of this emergency plan to outline the action to be taken, and to assign the responsibility for these actions.

This plan is intended to cover foreseeable types of emergencies. Examples are:

1. Fire and/or Explosions
2. Release of Flammable Vapor or Gas
3. Release of Toxic Vapor or Gas
4. Bomb Threats

All Plateau personnel are part of the emergency organization and expected to carry out their assigned duties of fire fighting operations involving incipient stage fires as well as more advanced fire and emergencies to the ability of received training. Each employee will participate in a minimum of 24 hours per year of combined academic and practical training to better equip them with the knowledge and skill required for performance of their duties.

All members of the emergency organization should remain currently informed as to their roles in handling these emergency situations.

Each employee will receive the following aspects of industrial firefighting and emergency control:

a) Hose handling and appliances
b) Inspection, maintenance and use of portable fire extinguishers
c) Agents and modes of extinguishment
d) Tank fire fighting (pressure and atmospheric)
e) Operation of mobile fire equipment
f) Operation of fire pumps
g) Use of protective clothing
h) Use and inspection of breathing apparatus
i) Control of hazardous materials
j) Control of leaks (with or without fire)
k) Control of spills (with or without fire)

TABLE OF CONTENTS

I RESPONSIBILITIES

Operating Shift Supervisor

It is realized that the Operating Shift Supervisor has special knowledge of operating equipment and process flows and is generally most available at any time of day or night. For this reason it will be the Operating Supervisor's responsibility to assume command of emergency control efforts until arrival of a member of the Safety Department. The Shift Supervisor will then continue to assist the control effort as a member of the command team.

Safety Supervisor

Direct field command at emergency scene and assure all functions pertaining to the emergency operation are being carried out in an efficient manner. Later references in this order may signify this position by the title "Fire Chief".

Safety Representative

Assist the direction of field command by establishing an Emergency Command Post to coordinate activities and establish lines of communication. In the absence of the Safety Supervisor the Safety Representative will assume duties required as Fire Chief.

Operation Day Supervisor

Coordinate activities between emergency command post at emergency scene and process equipment control in control room.

Chief Operator

Maintain control of process unit(s) left operating and act as dispatch operator until an Emergency Control Center can be established. The Chief Operator is responsible for maintaining an updated list of employees and their phone numbers in a readily accessible location in the control room.

Operators

Perform necessary shut down of involved equipment as required by the situation and assist emergency control efforts as fire crew member.

Pumper-Gauger

Assist as fire crew member until relieved by the Fire Chief to take command of gate guard duties as outlined in the section of this order titled "Plant Security".

Maintenance Supervisors/Planner

Proceed to emergency scene and assume responsibility of fire crew leaders under direction of acting Fire Chief. The Maintenance Supervisors and Maintenance employees will insure all fire equipment is taken to the scene.

Maintenance Employees

Proceed to emergency scene and assume fire crew duties under direction of assigned fire crew leader.

Process Engineer

Act as information chief between emergency scene and Emergency Control Center. Provide technical and process information to command team.

Warehouse Supervisor

Assume duties of coordinating first aid and medical treatment. Coordinate ambulance/rescue personnel. Reports to Emergency Control Center for supplying needed supplies and equipment.

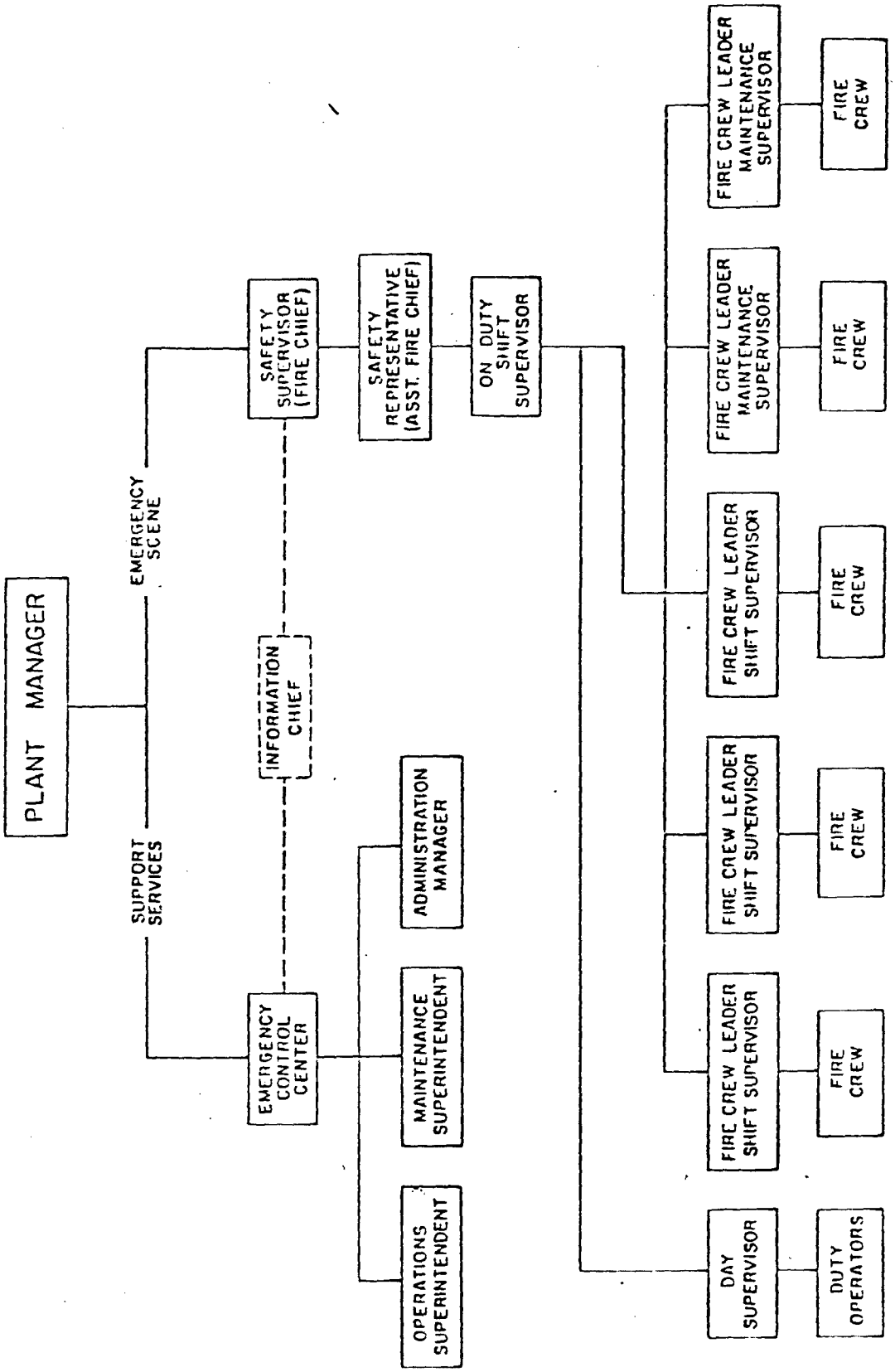
Plant Manager

Coordinate all activities by establishing an Emergency Control Center in the main office building aided by the Administrative Manager, Maintenance Superintendent and Operation Superintendent.

Emergency Control Center

Make available outside services, equipment, and supplies as needed. Coordinate support services and provide communication to necessary corporate offices and new media.

ORGANIZATIONAL CHART



II FIRE AND/OR EXPLOSION

A. Reporting The Fire

Upon discovering a fire, unless it is obvious that the fire is so small that it can be easily extinguished, proceed immediately to the alert sounding station south of the control room and signal the alarm. The alarm signals will determine the general location of the emergency by use of fire zones. (See below)

If the nearest alert station is not readily accessible, the alert should be communicated to the control room by radio or telephone, who will in turn sound the alert over the alarm system. When contact is made to the control room, give your name, the location of the fire, and the fire zone. Be calm; sure that the person answering has received the proper information before discontinuing the conversation.

B. Fire Zones

To make it possible to quickly designate the general area of a fire or emergency, the Bloomfield Complex has been divided into three fire zones. The fire alarms should be sounded in a manner to identify the general location of the emergency. The alarm should sound a long blast, followed by short blast(s) which indicate the fire zone and then repeated after a short time lapse. The following table lists the fire zones, location, and corresponding alarm.

Zone No.	Locations	Alarm Signal
Zone 1	Process Unit	1 long - 1 short
Zone 2	Tank Farm	1 long - 2 short
Zone 3	Term./Trans.	1 long - 3 short

A recall or all clear signal will be sounded when requested by the Fire Chief and will be characterized by five short blasts of the fire alarm.

C. Immediate Corrective Action

Most fires are relatively small when first ignited, but can spread very rapidly. Many serious fires and explosions have been prevented

by taking immediate action to extinguish the fire or prevent the escape of the flammable liquid, vapor or gas. While the fire is being reported, operations and maintenance personnel at the scene should immediately proceed to block off the feed to the fire and put to use available emergency equipment as needed. Do not wait for the fire crews to arrive; in most instances, the fire can be extinguished or contained before fire crews arrive.

D. Direction of Fire Fighting Efforts

The ultimate responsibility as Fire Chief rests with the Safety Supervisor. However, until he arrives, direction of the fire fighting effort must be assumed by others at the scene of the emergency. When the alarm is sounded the first Operating Shift Supervisor at the scene should assume responsibility for directing the fire fighting effort and isolating process equipment. Command should be transferred to a member of the safety department upon arrival and briefing, releasing the supervisor for fire crew leader duties.

E. Fire Water Supply

Water for fire fighting purposes is provided by automatic start stand-by pumps, and a system of underground piping.

If long duration fire fighting is evident all possible water resources from in-plant storage and city water supplies shall be made available and periodic checks of the fire pumps should be made. The fire officer in charge shall make determination when the above items become necessary and designate an available operator to assume the duties.

F. Emergency Call Out Procedure

An emergency occuring after normal working hours can pose serious manpower problems. To minimize these problems the following call out procedure should be followed.

Alert lists are provided to notify appropriate refinery personnel of an emergency in an orderly manner. Each list has a specific purpose and is designated as to who makes the call, who is called and at what times these lists are used.

Alert List #1

The following people should be contacted by the Shift Supervisor in the event of a bomb threat, suspected radiation accident or a fire or emergency that has been controlled by personnel on duty:

1. Safety Supervisor or Safety Representative
2. Operation Superintendent or Operation Day Supervisor

Alert List #2

This call out list is designed to notify personnel of a major emergency situation that requires additional manpower. The Chief Operator, upon request of the Fire Chief, will call *Contact of New Mexico* at 327-4666 who will make the actual phone contact with our people. For reference purposes this list consists of:

1. Safety Department Personnel
2. Maintenance Supervisor
3. Operation Supervisor
4. Maintenance Employees
5. Operation Employees

Alert List #3

To be called by Chief Operator when extended emergency control efforts are evident and the Fire Chief determines the necessity for an Emergency Control Center:

1. Plant Manager
2. Administrative Manager

The Administrative Manager will be responsible for contacting personnel to perform support services as necessary.

All phone calls made should calmly identify the caller and explain the situation as completely and briefly as possible. The desired course of action should be explained.

G. Emergency Command Post

During a major emergency, it will be necessary to establish communication between members of management at the scene and the

Emergency Control Center outside the immediate area of the fire.

This Emergency Command Post will be a base for the direction of all fire fighting activities as well as a communication post to all involved. All information from this post will be transmitted by way of radio or communicated directly by the Information Chief to the Emergency Control Center.

Outside aid organizations should report to this command post after arrival and clearance at the front gate.

All off duty employees should contact this post upon arrival for fire crew assignments.

H. Emergency Control Center

During a major emergency, it will be necessary to establish an Emergency Control Center where senior management have means of communication with the Emergency Command Post, with personnel outside the plant, with necessary corporate offices, and with press and news media personnel.

The main office building has been designated as the Emergency Control Center. In anticipation of its use a radio receiver-transmitter will remain in this center at times of emergency.

When the necessity arises that requires establishing an Emergency Control Center, the Administrative Manager or another member of this team will be responsible for contacting secretarial, purchasing and warehousing personnel to aid in the emergency effort through actions within their departmental control.

I. Requests For Outside Assistance

In the event that outside assistance is needed, we can request this aid from the local fire departments - primarily the Bloomfield Department. It shall be the responsibility of the Chief Operator to request this aid, by telephone, upon the direction of the Fire Chief.

Mutual aid personnel and equipment will assemble outside the main refinery gate in the roadway southwest of the gate. The person in charge of each group should report to the main gate and stand by. Personnel and equipment will be admitted to the refinery only after specific authorization and instruction is given by the Emergency Command Post. Each responding fire chief or officer is responsible for the specific safety of his personnel. Each responding fire chief will work with and under the direction of the Plateau Fire Chief at the scene.

J. Recall

As soon as the emergency situation is under control and in a safe condition, the Fire Chief will ask for the recall signal to be sounded. After the recall signal is sounded the Chief Operator will repeat over the radio three times on each channel that all is clear and under control.

The fire equipment will then be cleaned and returned to its designated locations for future use. When all equipment is returned to operable condition, fire crew members will return to their regular jobs, or may return home when released by the Fire Chief.

K. Public Relations

A spectacular fire is a very newsworthy event, and we can expect visitations by members of the news medias. It is quite important that factual information be made available as soon as possible.

This general policy is based on recognition that the press has a legitimate interest in any disaster that strikes a company facility. It is to the company's benefit to cooperate with news media when emergencies occur. This is the company's best guarantee that the resulting news reports are factual and accurately present the company's position. Only the facility manager or designee will release information to the news media.

A press waiting center will be set up in the main shop complex until such time as the Emergency Control Center is prepared to make a statement. A person designated by the Emergency Control Center team will remain with press personnel and assure them they will be furnished information and updates as soon as possible. Under no circumstances will news media personnel be allowed at the fire scene without explicit consent from the Fire Chief and never unaccompanied.

L. Plant Security

During a major emergency, the main entrance gate becomes an important center of activity. Entry of personnel and vehicles into the plant must be curtailed or stopped completely. Congestion of vehicles must be prevented to make it possible to bring in emergency equipment without delay.

The activities at the main gate will be supervised by the Pumper/Gauger when relieved of his fire crew duties by the Fire Chief. These activities should include closing the east entrance gates in the boneyard and at the roadway by the burnerfuel rack and taking station at the front gate to restrict and eliminate all unnecessary traffic.

If additional security is needed along the frontage road, contact will be made to the county sheriff's office at 334-6107. The gate guard will request this assistance through the Chief Operator for dispatch purposes, or through the Emergency Control Center if one has been established.

M. Injuries And First Aid

Injuries will be handled in accordance with Safety Order S-12. If a major explosion or fire results in multiple serious injuries the Warehouse Supervisor is to coordinate first aid and medical treatment of these individuals. The Shift Supervisor or Fire Chief should consider the injuries when requesting outside assistance. If ambulances or medical assistance is needed, it can be obtained from the Bloomfield Fire Department and the San Juan Emergency Center.

After medical treatment for the individuals has been taken care of the first aid coordination group should see the contact is made with the injured parties families. A member of the Emergency Control Center will make this contact with the information supplied by the first aid group.

N. Emergency Shut Down Procedures

A quick efficient shut down of equipment is a necessity in emergency action situations. Each situation will be different but the main objective is to eliminate flow to the involved area. This may include closing a suction valve to a pump for seal fires or may require complete unit shut down for more involved emergencies. Each operator should know the safe emergency shut down procedures for this unit.

Emergency shut down procedures are found in the unit operating manuals as laid down by the engineering department for your information.

III RELEASE OF FLAMMABLE VAPOR OR GAS

In general, releases of flammable vapors or gas are handled in much the same way as fires. The reporting of these emergencies, sounding of the alarm, and reporting of fire crews should be identical to the procedure outlined in the other sections of this emergency plan.

All sources of ignition near the release should be extinguished immediately. Large quantities of water spray should be directed upon the area of discharge to disperse the flammable material and isolate it from sources of ignition. Every effort should be made to quickly isolate and depressure the leaking equipment.

The formation of a flammable vapor cloud can be extremely hazardous. Every effort should be made to prevent personnel from entering the cloud, because they can be engulfed in the flame if ignition occurs.

RELEASE OF TOXIC VAPOR OR GAS

In the event of a major release of a toxic vapor or gas, it may be desirable to absorb or disperse the toxic material with large volumes of water. In this event, the regular alarm should be sounded, as outlined in other sections of this plan, and fire crews will respond.

When responding to a release of, or fire involving toxic material, all personnel should respond to the upwind side of the emergency. All personnel should be prepared to use the protective equipment required for such a case as directed by the supervisor in charge.

It should be remembered that water solutions of some chemical vapors are extremely corrosive (chlorine, HCl). For this reason, if water sprays are played directly on the leak, the resulting corrosion could intensify the leak. However, a curtain of water spray may be played on the vapor cloud downwind of the leak, until such time as the equipment can be isolated and the leak stopped.

INCIDENTS INVOLVING RADIATION SOURCES

Radiation is a form of energy and as such can be put to use for a variety of purposes. As with other forms of energy it can be dangerous when uncontrolled. To control radiation intelligently it is necessary to understand its seriousness and proceed in practical aspects with respect.

The radioactive elements in use at the refinery (i.e. precipitator hopper level indicators and "Princeton Gamma-Tech Chemical Analyzer in the lab) are sealed sources with controlled directional energy output and present no personnel physical danger under normal operating conditions. However, as with any other hazardous material, when one of these sources enters an uncontrolled state thru physical damage to the sealed housing, proper precautions and definite action steps must be taken to rectify the situation.

No employee is to attempt operation or repairs on any equipment containing a radioactive source without specific authorization, instruction and training in the operation and handling of the equipment.

INCIDENTS INVOLVING RADIATION SOURCES (Cont'd.)

The following procedure is to be used in the case of suspected damage or leakage of a radiation device. (The cause for concern could be the result of physical evidence of damage, fire involving the area of the source housing or general surveys conducted using the portable radiation detection meter.)

1. Clear the area of all personnel as quickly as possible, to a distance of 15 feet from the source.

2. Contact the Shift Supervisor and the Safety Department.

3. A 2 mRem/hr boundry line will be established using radiation detection instruments.

4. Avoid confusion and assist in maintaining control of established boundries.

5. A report or log will be established listing:

   a. Time of suspected incident.
   b. Names of personnel in the area and their exact location.
   c. Incidental meter readings and their location taken while establishing boundries.

   d. Cause of disturbance of radioactive material (if known).

6. Contact Kay-Ray if additional assistance or information is needed.

7. All reports to governmental and other agencies will be made by the Safety Department.

VI BOMB THREATS

It is the purpose of this section to establish a policy and procedure that will provide for personal safety of employees, protection of company property and products, and assure continuance of safe operations in the event that a threat of destruction is directed against a Plateau facility.

Action to be taken in response to these threats is the responsibility of the Operations Superintendent or Safety Supervisor. The Operations Superintendent also has the responsibility of:

   a. Communications with senior management
   b. Requesting law enforcement assistance
   c. Notifying other industry of a possible threat to their location

Information concerning a threat of destruction should not be released to non-Plateau persons or news media by anyone except the Operations Superintendent or Plant Manager.

A. Procedure

Threats would probably be received by the receptionist in the office during office hours and a shift operator in the control room after hours. However, a threat could be directed to any person working at the plant. Any person receiving a bomb threat should respond as follows:

1. Remain calm. DO NOT PANIC!
2. STALL. Keep the party talking and get as much information as possible.
3. Listen closely to the individual and any other background noises. If possible, have another person listen to the conversation from another phone.
4. Have available, and fill out, the accompanying phone call form with as much detail as possible. (Attachment II)
5. Immediately, upon completion of the telephone call, relay the information to the Operation Superintendent and Safety Department.

When a call is received, the Safety Department or available supervision will set up emergency headquarters to coordinate and direct the search, and address the following:

1. Only authorized personnel will be admitted to the refinery.
2. Designate someone to watch for suspicious persons or cars outside the plant and record any descriptions or license numbers of any such person.
3. If more help is needed, the Operation Superintendent is the only person authorized to call off duty employees to assist.
4. Two-way radios are to be left in the control room or offices and not be used while the refinery is under alert.
5. In instituting a search for possible bomb location, each operator should perform a search of his unit paying special attention to column skirts, debris and cluttered areas, and areas around major pieces of equipment. Only general visual inspection will be conducted by in-house personnel. Contact will be made with the State Police for assistance and more extensive search efforts.