

APPALACHIAN STORAGE HUB (ASH) PROJECT

STRATEGY 1: DATA COLLECTION

Jessica Pierson Moore
West Virginia Geological and Economic
Survey

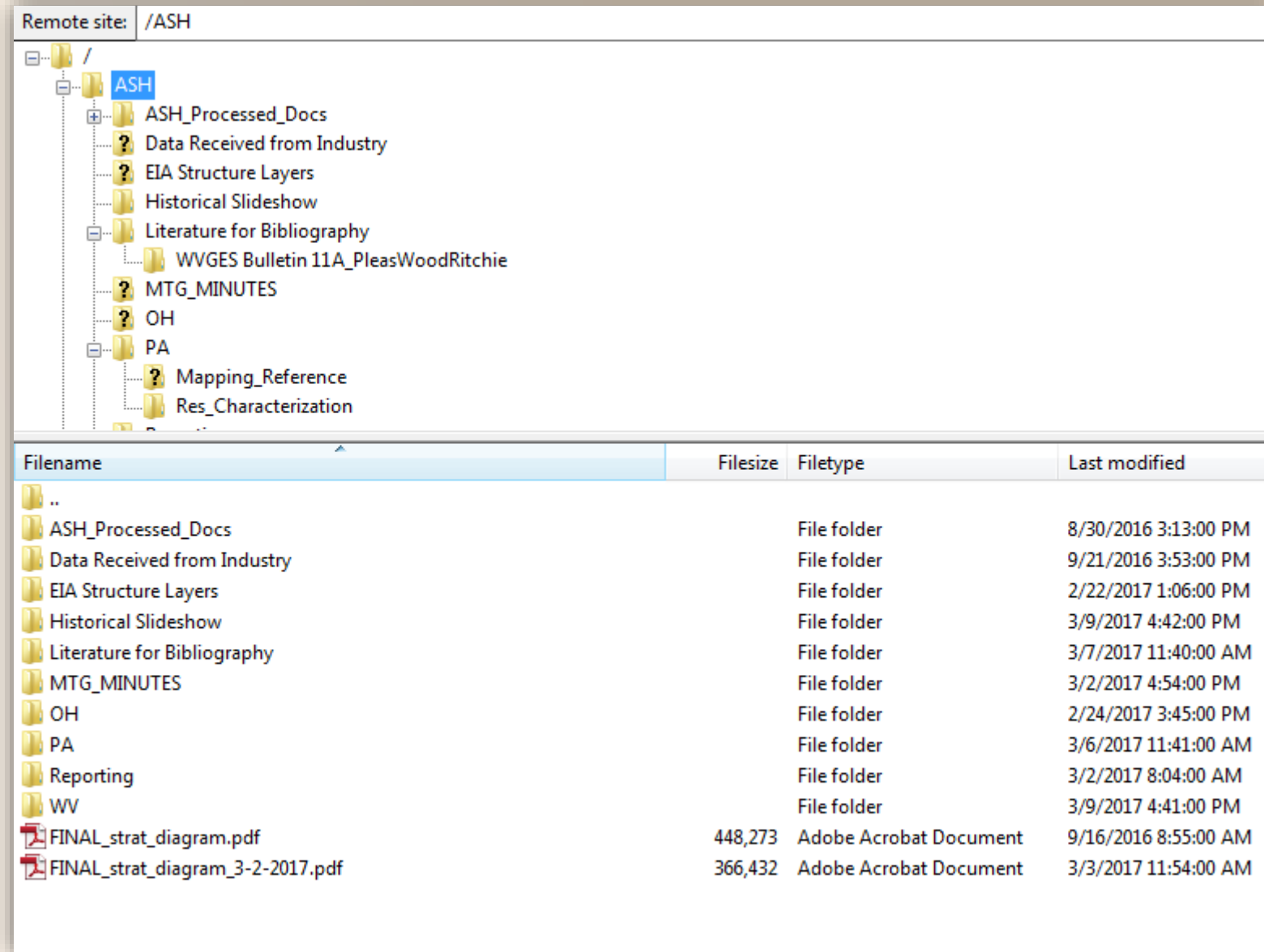


DATA COLLECTION

- Flexible, iterative process that can be modified depending on project needs
- Uses format and template derived from previous work
- Database will be built to ensure maximum efficiency of technology transfers
- 3 Main Tasks:
 - Identify and assemble well log and core data
 - Identify previous studies of interest
 - Create a project database

FILE SHARING

- Researchers submit information as it is gathered/interpreted
- Each folder organized by state
- Linked to **online searchable database**



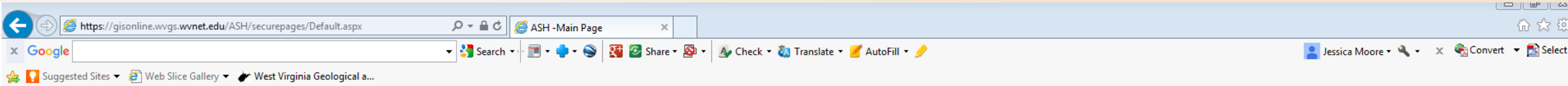
Remote site: /ASH

Directory structure:

- ASH
 - ASH_Processed_Docs
 - Data Received from Industry
 - EIA Structure Layers
 - Historical Slideshow
 - Literature for Bibliography
 - WVGES Bulletin 11A_PleasWoodRitchie
 - MTG_MINUTES
 - OH
 - PA
 - Mapping_Reference
 - Res_Characterization

Filename	Filesize	Filetype	Last modified
..			
ASH_Processed_Docs		File folder	8/30/2016 3:13:00 PM
Data Received from Industry		File folder	9/21/2016 3:53:00 PM
EIA Structure Layers		File folder	2/22/2017 1:06:00 PM
Historical Slideshow		File folder	3/9/2017 4:42:00 PM
Literature for Bibliography		File folder	3/7/2017 11:40:00 AM
MTG_MINUTES		File folder	3/2/2017 4:54:00 PM
OH		File folder	2/24/2017 3:45:00 PM
PA		File folder	3/6/2017 11:41:00 AM
Reporting		File folder	3/2/2017 8:04:00 AM
WV		File folder	3/9/2017 4:41:00 PM
FINAL_strat_diagram.pdf	448,273	Adobe Acrobat Document	9/16/2016 8:55:00 AM
FINAL_strat_diagram_3-2-2017.pdf	366,432	Adobe Acrobat Document	3/3/2017 11:54:00 AM

PROJECT WEBSITE



Appalachian Storage Hub

[Appalachian Storage Hub Main Page](#)

Welcome jmoore
[Profile](#) [Logout](#)

MAIN ▸ Data ▸ Resources ▸

New

ASH Document Search
File Naming Conventions
File Category List/Codes
AOI State/County Codes
AOI Formation List/Codes
Document Identifier (PDF)
Header Data Format

Project Info



[Area of Interest Map \(PDF\)](#)



ASH Quarterly Reports

- ◇ [Feb 2017, Appalachian Storage Hub \(ASH\) Quarterly Report \(PDF\)](#)
- ◇ [Oct 2016, Appalachian Storage Hub \(ASH\) Quarterly Report \(PDF\)](#)



ASH Meeting Minutes

- ◇ [02-07-17 Meeting \(PDF\)](#)
- ◇ [01-05-17 Meeting \(PDF\)](#)
- ◇ [12-07-16 Meeting \(PDF\)](#)
- ◇ [11-09-16 Meeting \(PDF\)](#)
- ◇ [10-05-16 Meeting \(PDF\)](#)
- ◇ [09-08-16 Meeting \(PDF\)](#)

Dates to Remember

- March 14, 2017 Appalachian Storage Hub (ASH) Project Semi-Annual Meeting ([Agenda](#))

<https://gisonline.wvgs.wvnet.edu/ASH/>

Consortium Member Research Geological Surveys:



ASH Partners:

AEP ◇ Antero ◇ Blue Racer ◇ Charleston Area Alliance ◇ Chevron ◇ Dominion ◇ EQT ◇ First Energy ◇ Mountaineer NGL Storage LLC ◇ Noble Energy ◇ Southwestern ◇ XTO Energy ◇ WVONGA

5/14/2017

WELL FILE DOCUMENT SEARCH

Download header data for wells with documents/files	
Project ID / API #:	<input type="text"/>
File Category:	<div><div>Biostratigraphy</div><div>Bitumen Reflectance Report</div><div>CT Image</div><div>CT Scan Data</div><div>CT Zipped Images(CTIMGZ)</div><div>Core Analysis Crossplot</div><div>Core Photos</div><div>Core Photos Zipped</div><div>Crushed Stone Properties (CSP)</div><div>Digitized Logs</div><div>Fluid Inclusion Report</div><div>General Mineralogy (MNRLGY)</div><div>Geo Chem</div><div>High Pressure Mercury Injection Porosity (MICP)</div><div>Isotopes</div><div>Log Tops</div><div>Microscopic Organic Analysis (MOA)</div><div>Other Well Documents</div><div>Production Data</div><div>Ro Histograms</div><div>Rock Mechanics</div><div>Routine Core Analysis (grain size) (RCA)</div><div>SEM Zipped Images (SEMZ)</div><div>Sample Descriptions</div><div>Scanned Logs</div><div>Scanning Electron Microscope (SEM)</div><div>Source Rock Analyses (SRA)</div><div>Thin Section Description</div><div>Thin Section Image</div></div>
State:	
County:	
Results/Page:	
Order By:	
<input type="button" value="Search"/>	

Welcome to the document search page.

- Linked to root file on FTP server
- Creates **customized searches** on multiple criteria

3/142017

ASH Document File Counts as of March 9, 2017

File number will
increase as
Mapping and
Reservoir
Characterization
strategies proceed

As of March 9, 2017		
807 documents (785 well, 22 multi), 1455 document records (when cross APIs)		
File Category	Code	Counts
Biostratigraphy	BIOSTRAT	0
Bitumen Reflectance Report	BRR	28
CT Image	CTIMG	0
CT Scan Data	CTDAT	0
CT Zipped Images(CTIMGZ)	CTIMGZ	0
Core Analysis Crossplot	CRANXPLT	29
Core Photos	CRPH	236
Core Photos Zipped	CRPHZ	4
Crushed Stone Properties (CSP)	CSP	0
Digitized Logs	DLOG	66
Fluid Inclusion Report	FIR	0
General Mineralogy (MNRLGY)	MNRLGY	4
Geo Chem	GEOCHEM	19
High Pressure Mercury Injection Porosity (MICP)	MICP	2
Isotopes	ISO	1
Log Tops	LOGT	1
Microscopic Organic Analysis (MOA)	MOA	7
Non-Well Document	NWDOC	0
Other Well Documents	OTHR	570
Permeability	PERM	0
Porosity	PORO	0
Production Data	PROD	533
Ro Histograms	ROHIST	7
Rock Mechanics	RKMECH	0
Routine Core Analysis (grain size) (RCA)	RCA	1
SEM Zipped Images (SEMZ)	SEMZ	6
Sample Descriptions	SMDS	4
Scanned Logs	ELOG	135
Scanning Electron Microscope (SEM)	SEM	219
Source Rock Analyses (SRA)	SRA	106
Thin Section Description	TSDESC	1
Thin Section Image	TSIMG	14
Thin Section Zipped Images	TSIMGZ	0
Tight Rock Analysis (TRA)	TRA	1
Total Organic Carbon (TOC)	TOC	89
X-Ray Defraction (XRD)	XRD	62
X-Ray Fluorescence (XRF)	XRF	1

BIBLIOGRAPHY, COMPLETED PROJECTS, AND LINKS TO PUBLICATIONS

- Annotated bibliography is being compiled to enable keyword searches of pertinent literature
- Robust legacy dataset available, including many completed projects
- Publications usually reserved for purchase will also be made available

THE ATLAS OF MAJOR APPALACHIAN GAS PLAYS

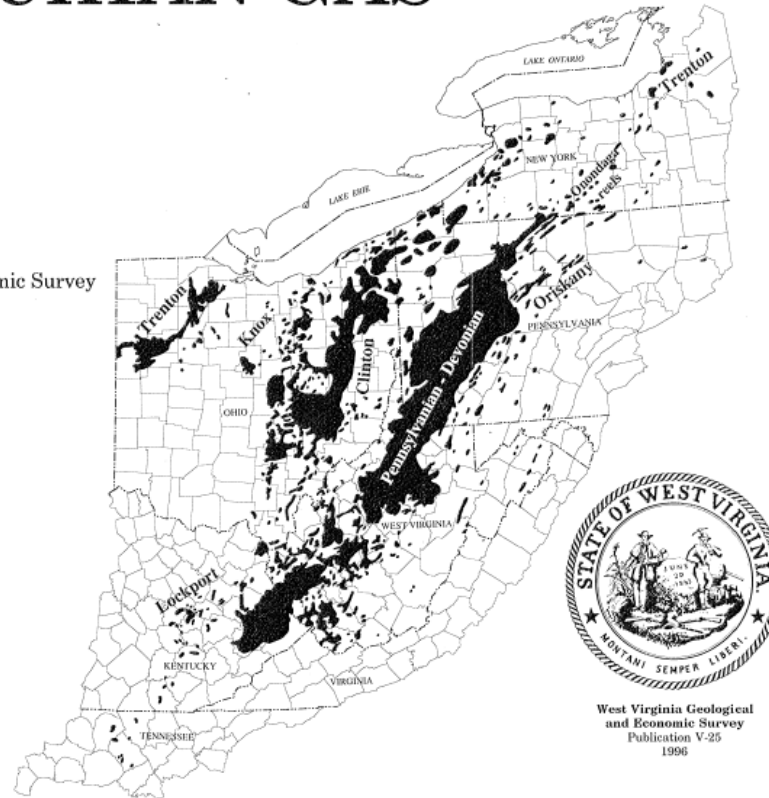
Edited by
John B. Roen
U.S. Geological Survey (Ret.)
and
Brian J. Walker
West Virginia Geological and Economic Survey



U.S. Department of Energy
Washington, DC 20585



Gas Research Institute
Chicago, Illinois 60631



West Virginia Geological
and Economic Survey
Publication V-25
1996



Also available:

Oil and Gas Bulletins
for selected counties
within the ASH area of
interest

TIGHT GAS SANDS



Appalachian Basin Tight Gas Reservoirs Project

Appalachian Oil and Natural Gas Research Consortium ([About](#))

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[System
Overview](#)

[Interactive
Mapping](#)

[Well Header
Data](#)

[Well-Based
E-Files \(Logs\)](#)

[Play-Based
E-Files](#)

Play-Based E-File search

Play Category:

Data Type:

Author (like):

Results/Page:

Order By:

8 Records Found, showing page 1 of 1 at 25 records per page

Details	Play Category	Data Type	Year	Author	File Name
Details	Clinton-Medina	Cross Section	1982	Diecchio, R.J.	MDIN_xsec_Diecchio_1983.pdf
Details	Clinton-Medina	Cross Section	1996	McCormac, M.P., Mychkovsky, G.O., Opritza, S.T., Riley R.A., Wolfe, M.E., Larsen, G.E., and Baranoski, M.T.	MDIN_xsec_McCormac_1996_p158_figScm-5.pdf
Details	Clinton-Medina	Cross Section	1996	McCormac, M.P., Mychkovsky, G.O., Opritza, S.T., Riley R.A., Wolfe, M.E., Larsen, G.E., and Baranoski, M.T.	MDIN_xsec_McCormac_1996_p157_figScm-4.pdf
Details	Clinton-Medina	Cross Section	2000	Ryder, R.T.	MDIN_xsec_Ryder_2000_i-2726_Sheet1.pdf
Details	Clinton-Medina	Report	2004	Burruss, R.C., and Ryder, R.T.	MDIN_rprt_USGS_2003.pdf
Details	Clinton-Medina	Report	1982	Diecchio, R.J.	MDIN_rprt_Diecchio_1982.pdf
Details	Clinton-Medina	Report	1984	Finley, R.J.	MDIN_rprt_Finley_1982.pdf
Details	Clinton-Medina	Stratigraphy	1996	McCormac, M.P., Mychkovsky, G.O., Opritza, S.T., Riley R.A., Wolfe, M.E., Larsen, G.E., and Baranoski, M.T.	MDIN_strd_McCormac_1996_p157_figScm-3.pdf

<http://www.wvgs.wvnet.edu/atg/ProjectInfo.aspx>

3/14/2017

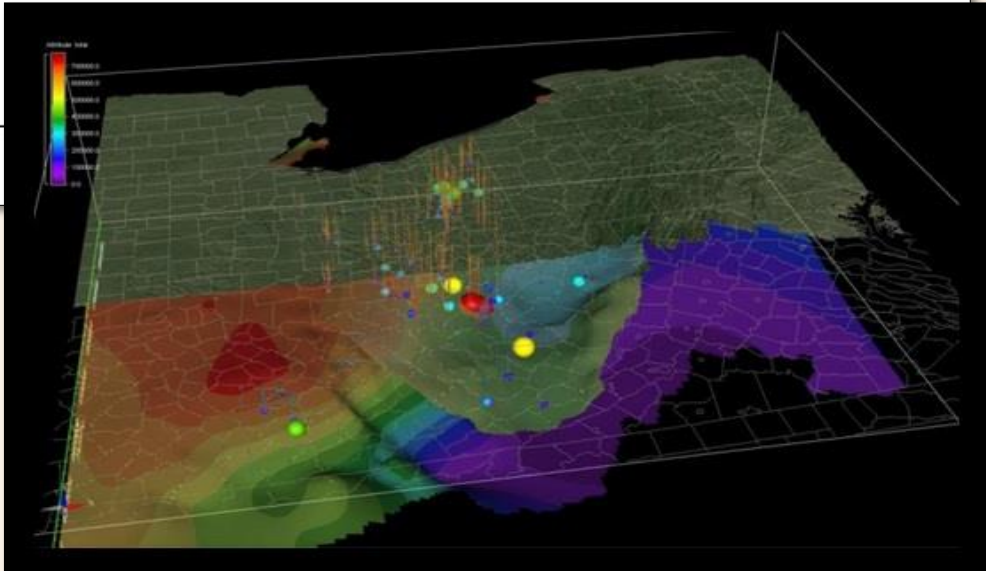
BRINE DISPOSAL FRAMEWORK

Final Report to



• Research
• Partnership to
• Secure Energy
• for America

Development of Subsurface Brine Disposal Framework in the Northern Appalachian Basin



<http://www.rpsea.org/projects/11122-73/>

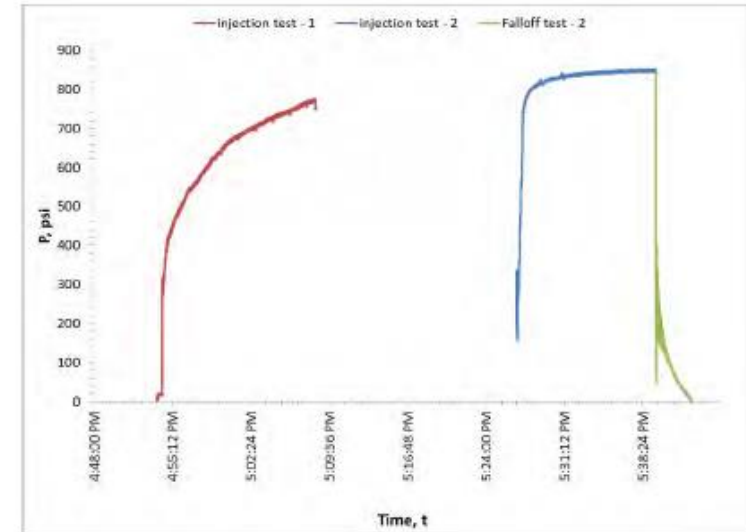


Figure 2-15. Wellhead pressure monitoring results from Clinton-Medina brine disposal well in the east-central Appalachian Basin.

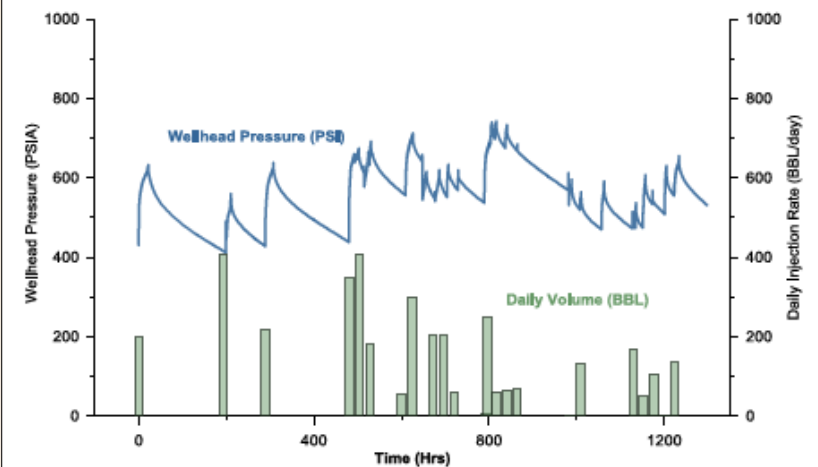
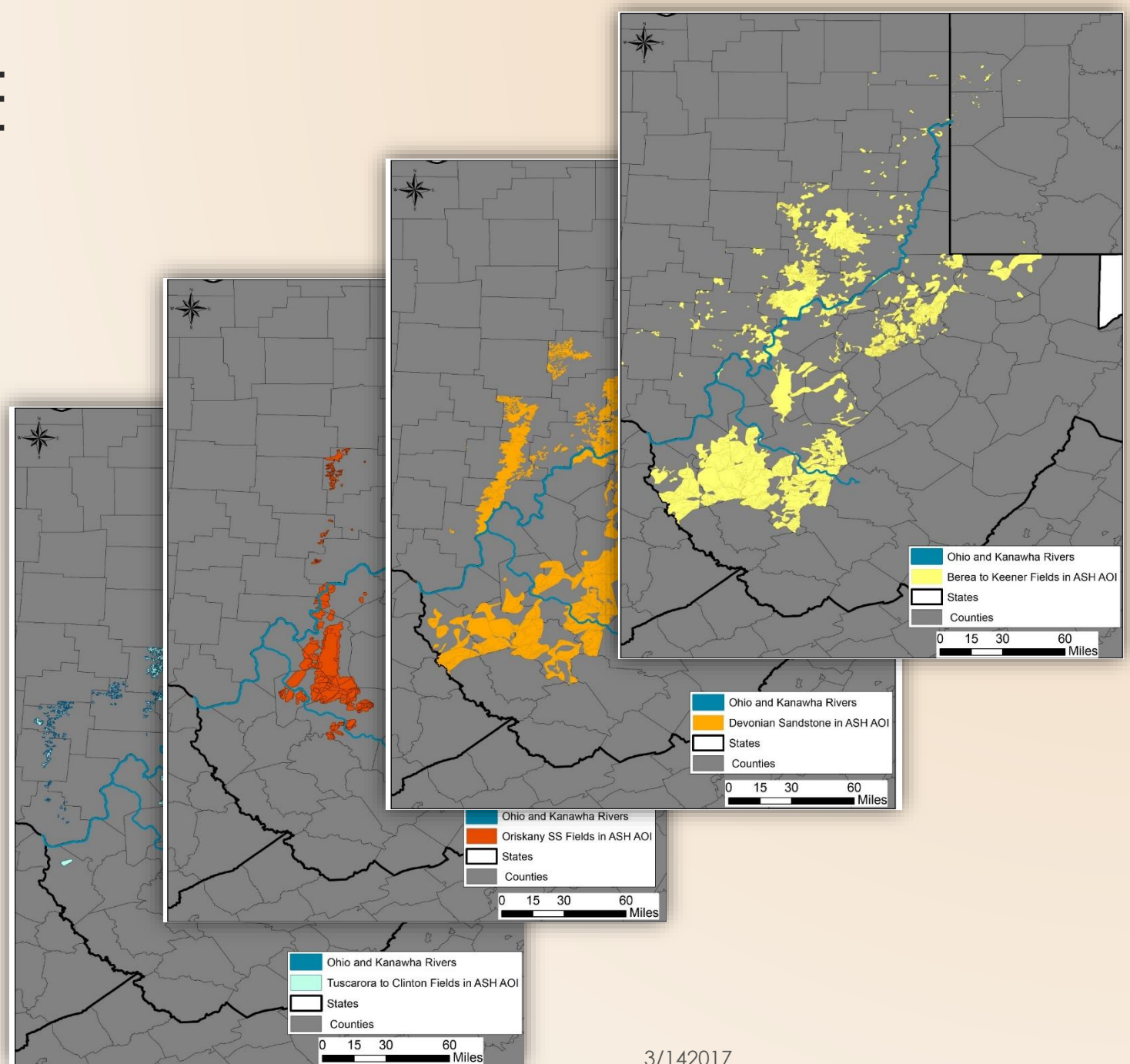


Figure 2-16. Wellhead pressure monitoring results from Newburg brine disposal well in the east-central Appalachian Basin.

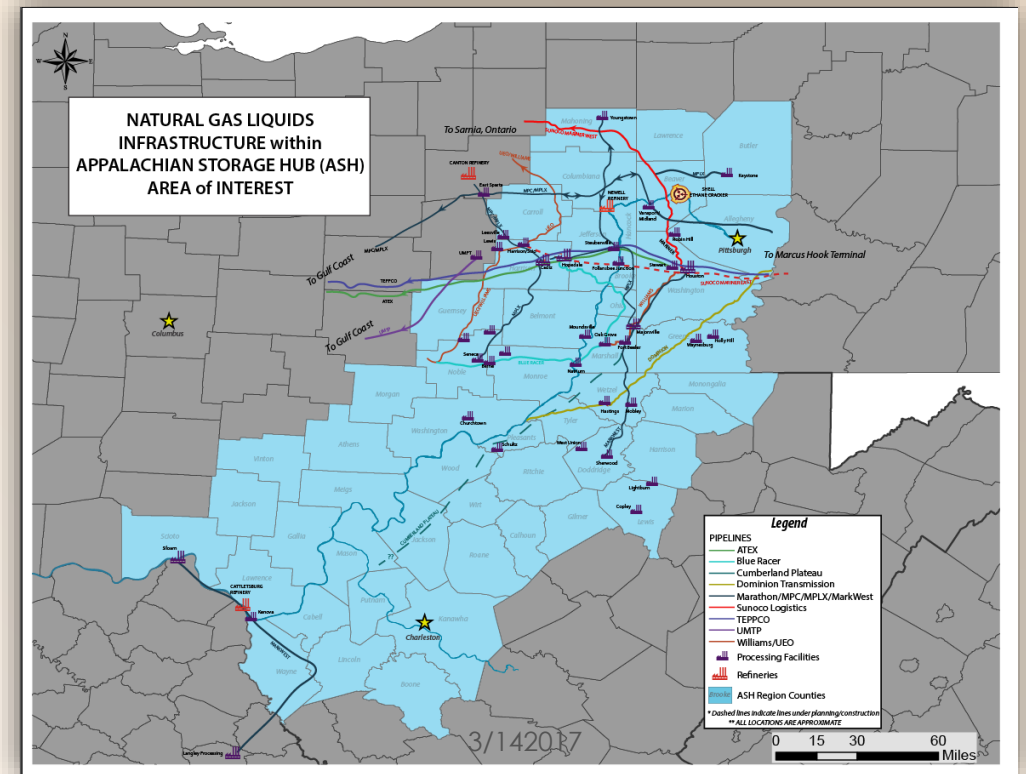
CARBON STORAGE

- Midwest Regional Carbon Sequestration Partnership
- Ongoing, collaborative research encompassing a ten-state region
- Includes detailed reservoir data at the field level as well as regional cross-sections



STATIC MAPS AND MAPPING FILES

- Master Petra project file; .las files and header data will be exported periodically and made available via data search
- Static maps: NGL Infrastructure, production, horizontal well locations
- Final maps of selected targets



A detailed map of the Appalachian Basin region, showing various cities and geographical features. The map includes labels for cities such as Findlay, Lima, Mansfield, Akron, Youngstown, State College, Altoona, Chambersburg, Hagerstown, Martinsburg, Winchester, Washington, Dale City, Fredericktown, Stanton, Harrisonburg, Charleston, Huntington, Parkersburg, Clarksville, Fairmont, Morgantown, Columbus, Zanesville, Dayton, Cincinnati, and Athens. It also shows the Ohio River, Potomac River, and the Appalachian Mountains. The text "APPALACHIAN STORAGE HUB (ASH) PROJECT" is overlaid on the map in a large, bold, orange font.

APPALACHIAN STORAGE HUB (ASH) PROJECT

The Role of Petroleum Geology and Salt
Production on Manufacturing and
Development in the Appalachian Basin



Dr. Israel Charles (I.C.) White, circa 1898

THE NATURAL-GAS JOURNAL

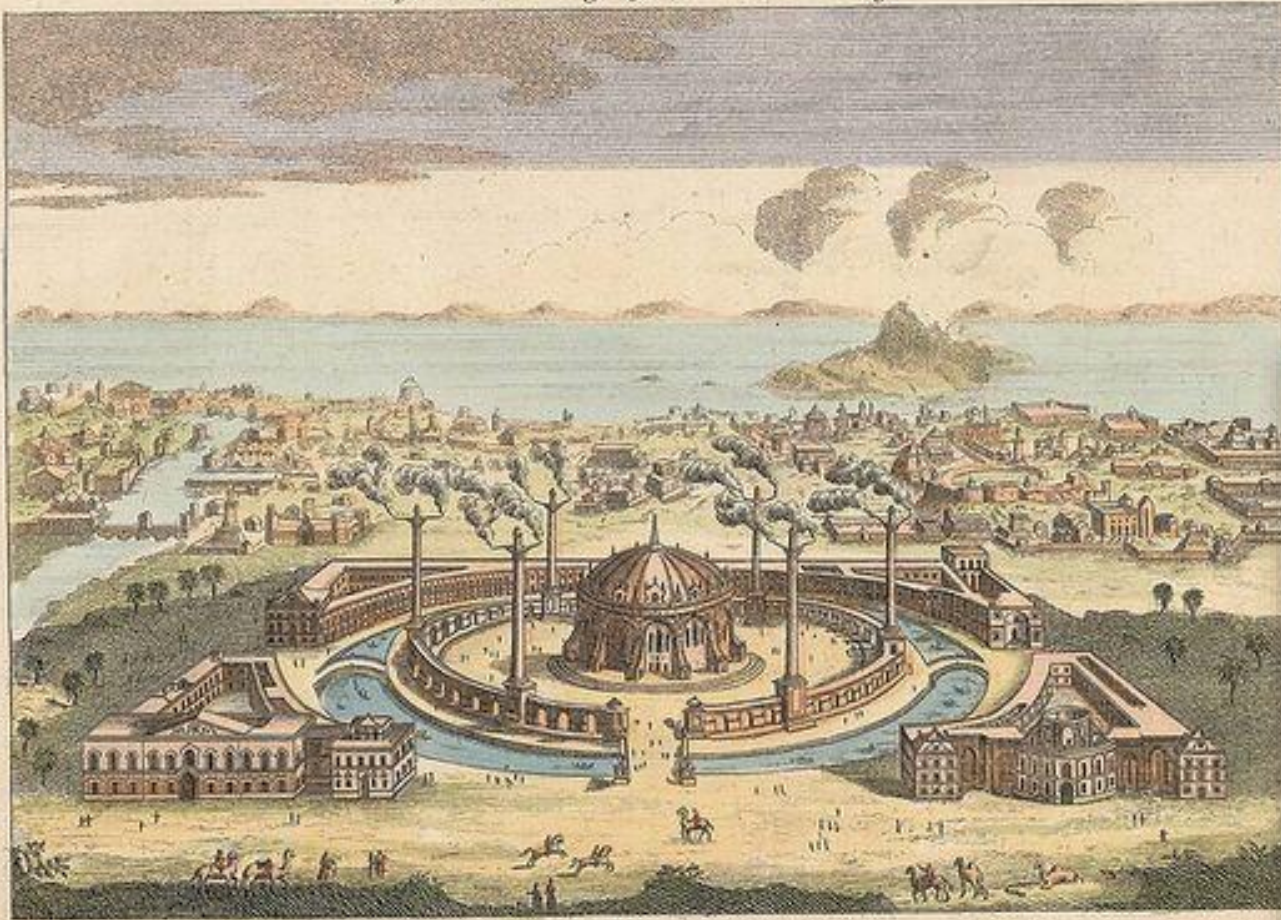
SUBSCRIPTION—
\$2.00 EVERYWHERE

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VOLUME 5
THIS NUMBER 9

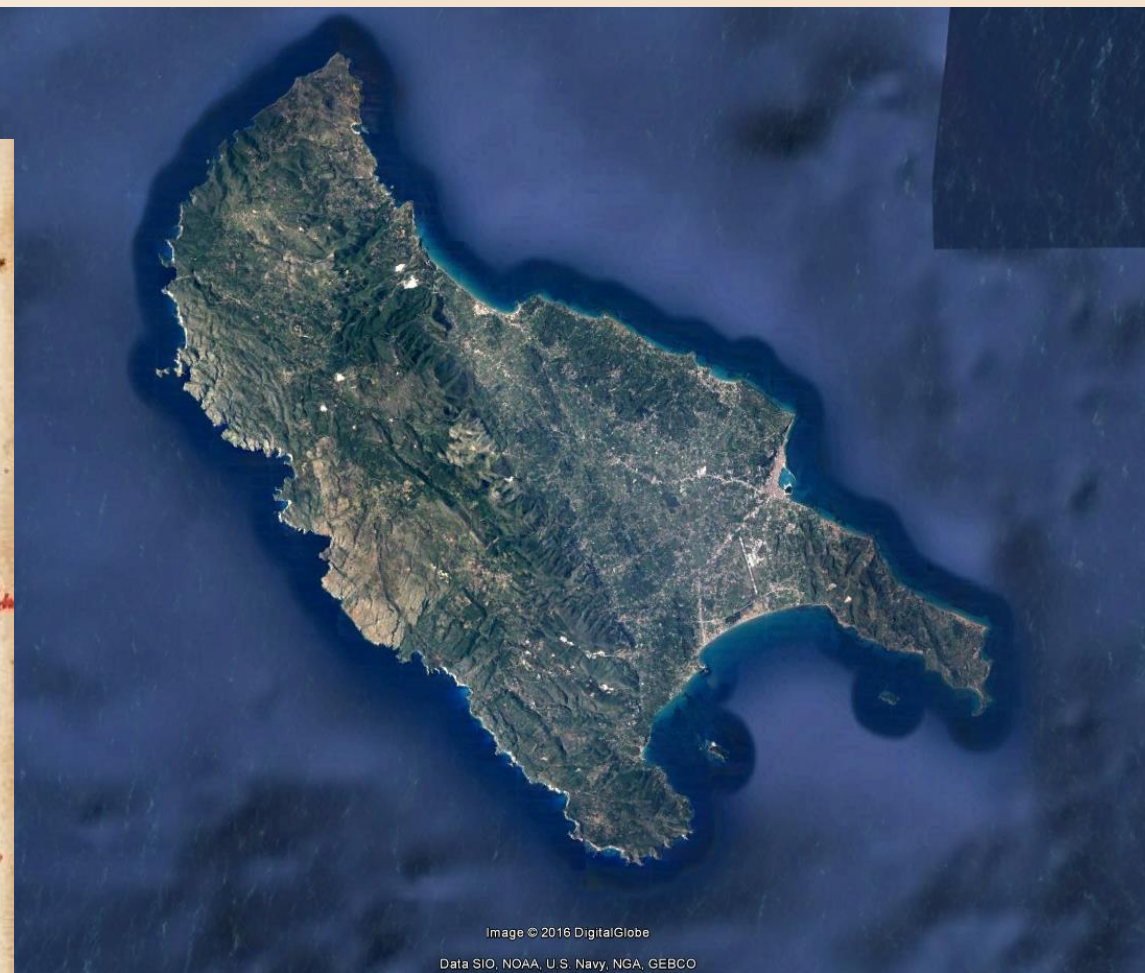
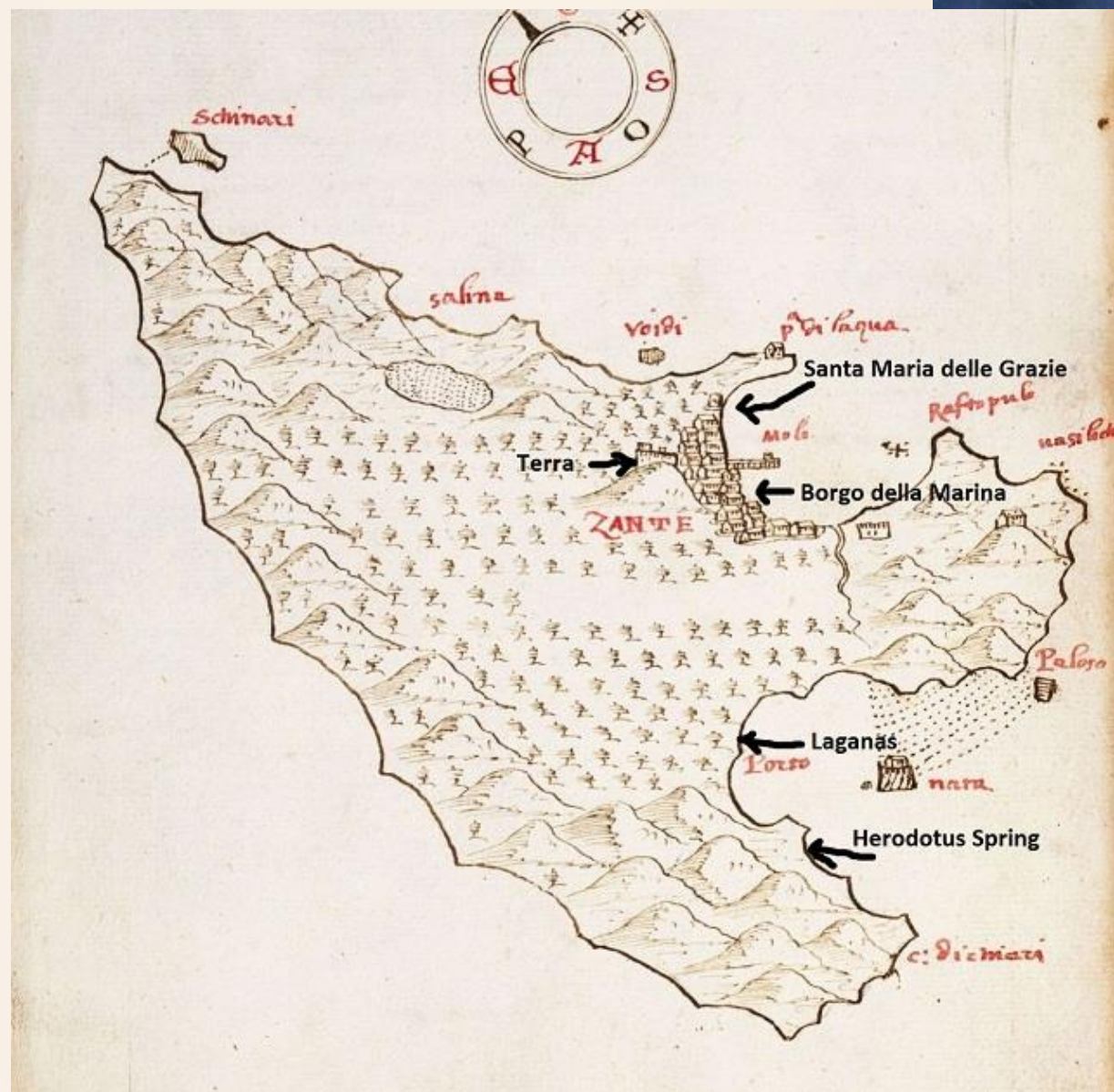
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Engraved for the Geographical Dictionary.



The TEMPLE of the SUN in NINEVEH





БЫВШИЙ ХРАМЪ ОГНЕПОКЛОННИКОВЪ (Въ Сураханахъ банзъ Баку).

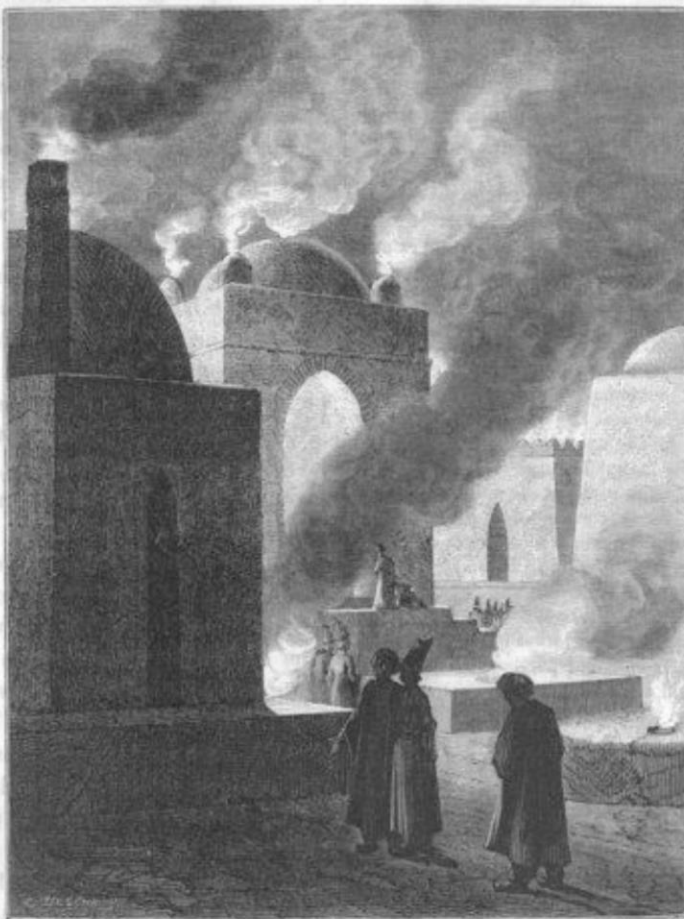
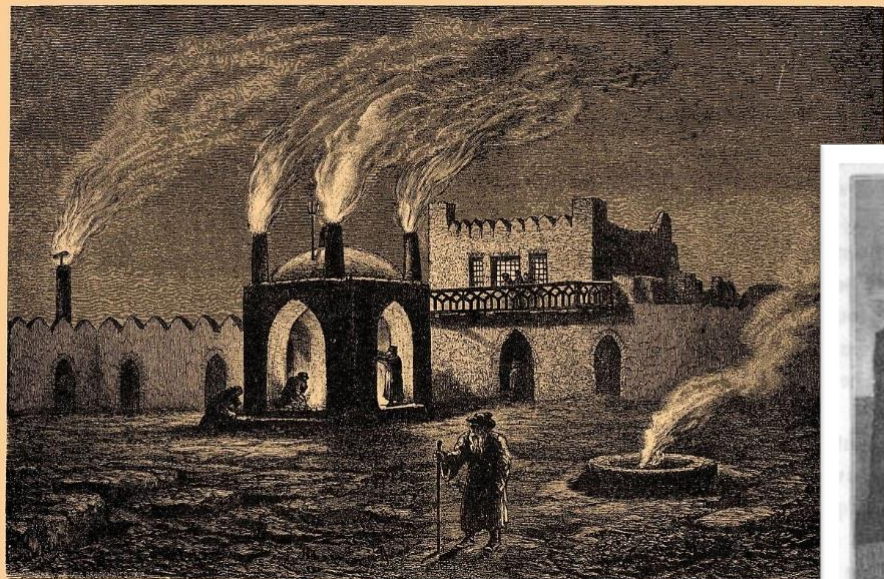
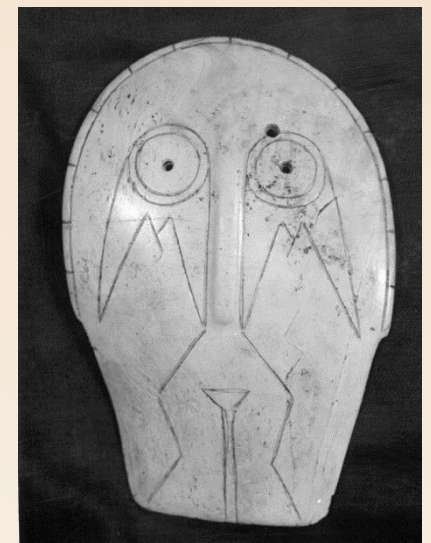
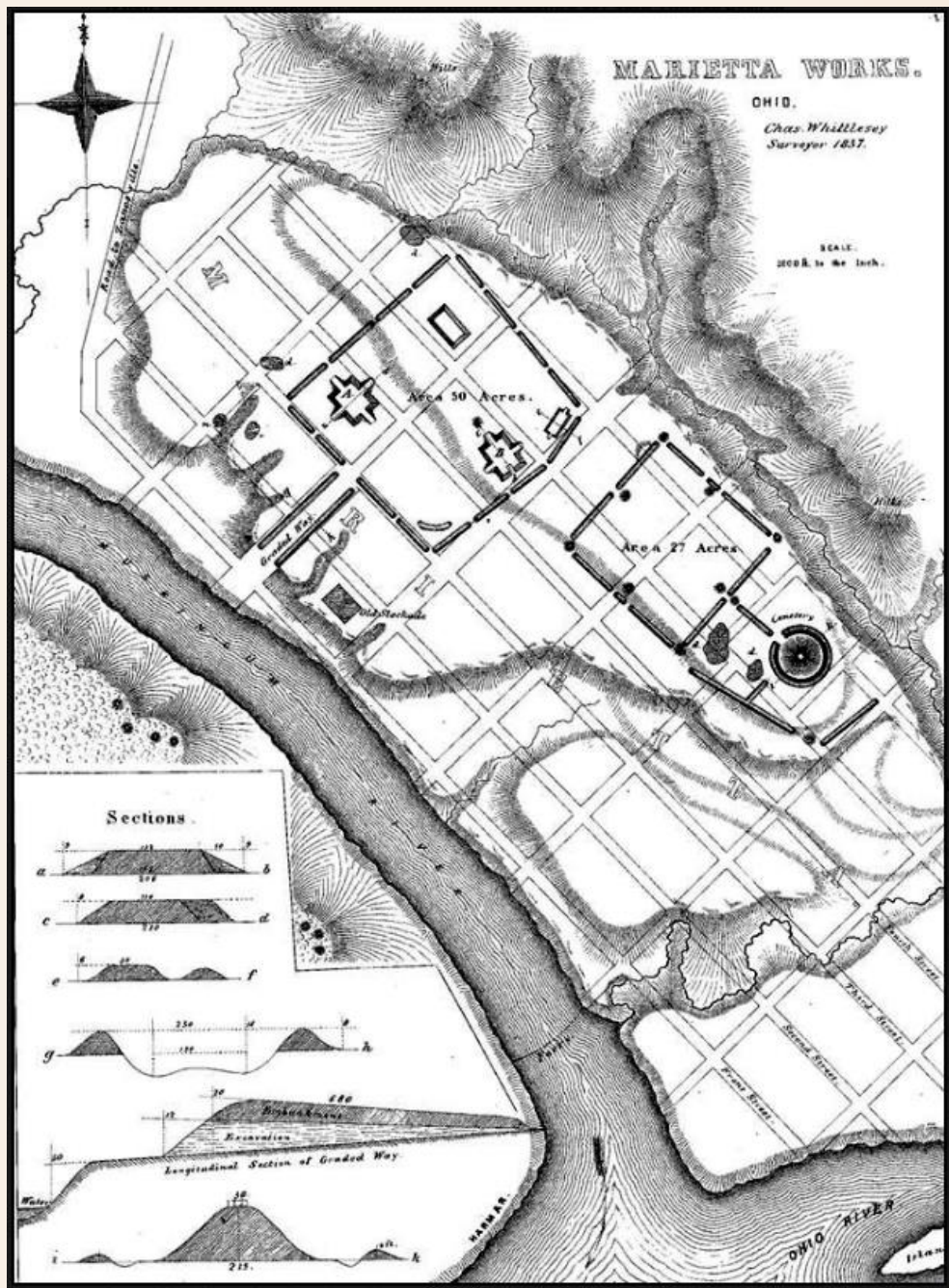


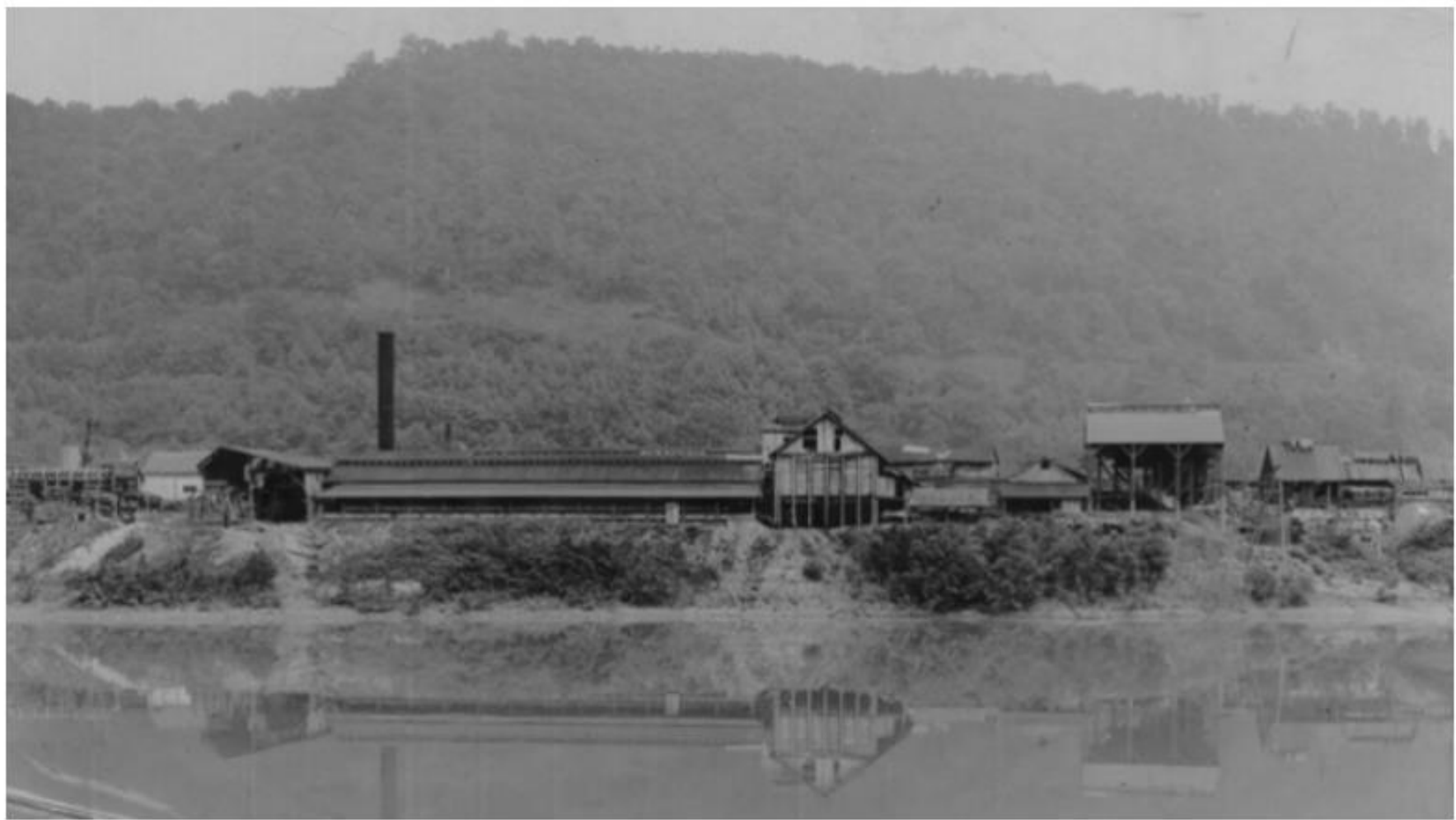
Fig. 106. — Un temple du feu à Bakou.





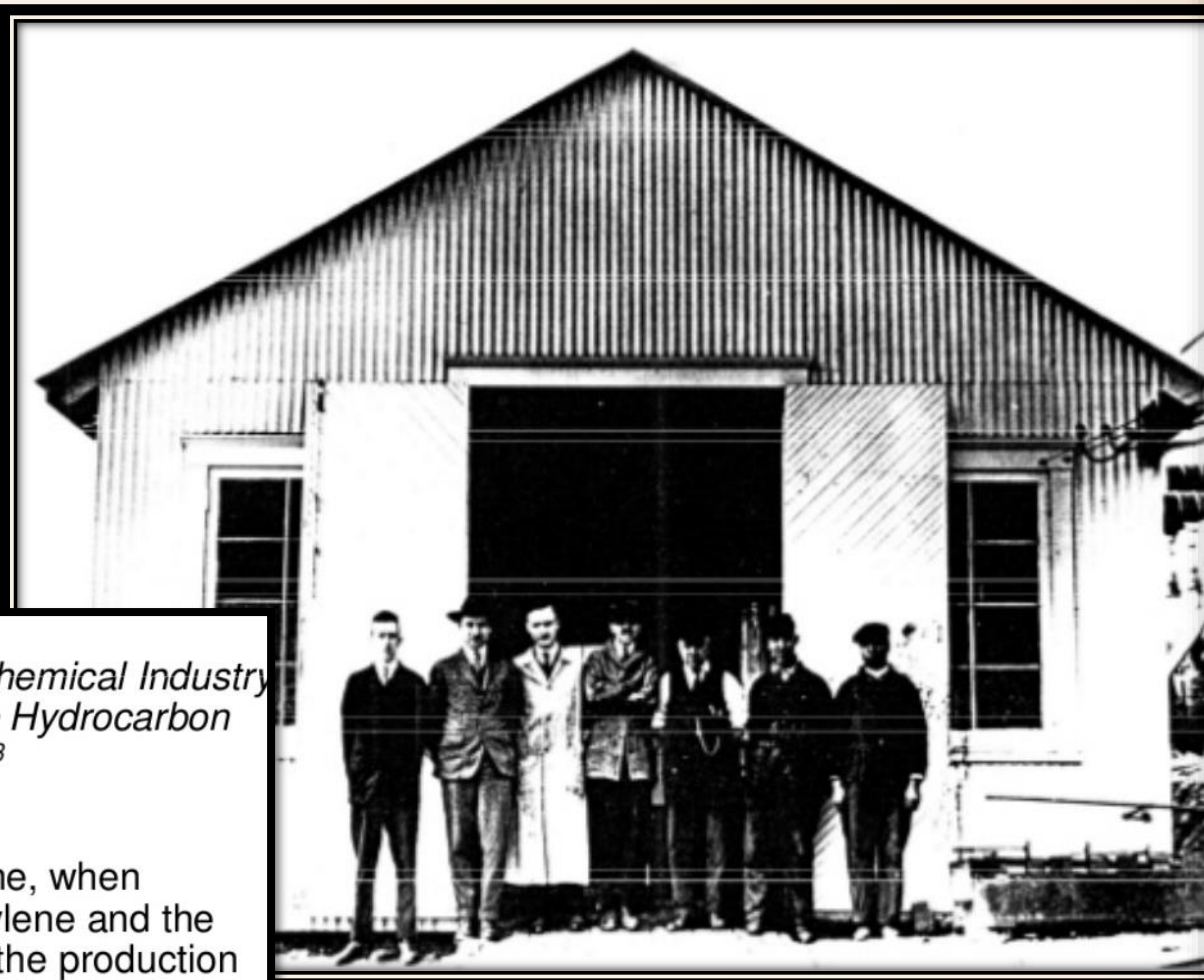




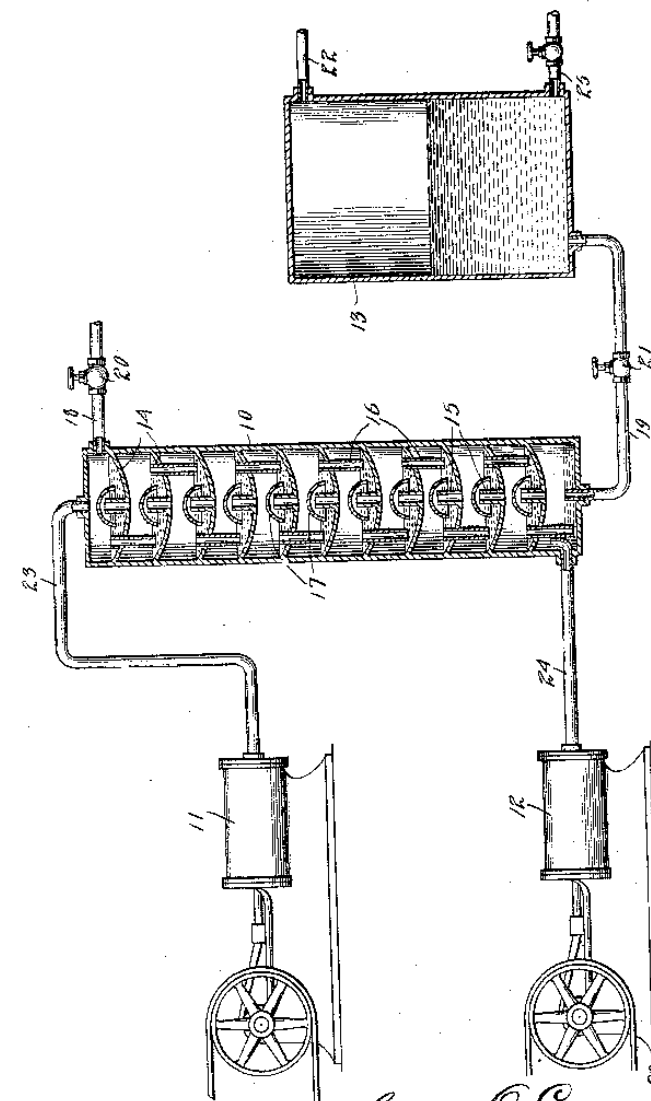


*The Possibilities of a Chemical Industry
Based on the Simple Hydrocarbon
Gases³*

".....In particular, ethylene, when complemented by acetylene and the byproducts obtained in the production of these two substances from their various sources, provides the starting material for an organic chemical industry of almost unlimited proportions which might be extended as desired in any or all directions to cover a large part of the field of the existing chemical industry."



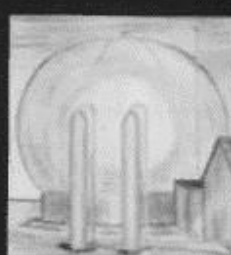
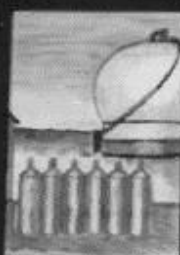
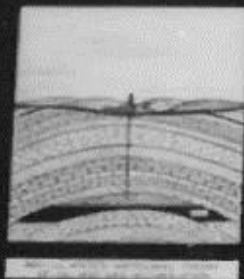
G. O. CURME, Jr.
PROCESS OF SEPARATING ETHYLENE AND OTHER COMPONENTS FROM GASEOUS MIXTURES
CONTAINING THE SAME.
APPLICATION FILED APR. 20, 1917. RENEWED DEC. 1, 1920.
1,422,184. Patented July 11, 1922.



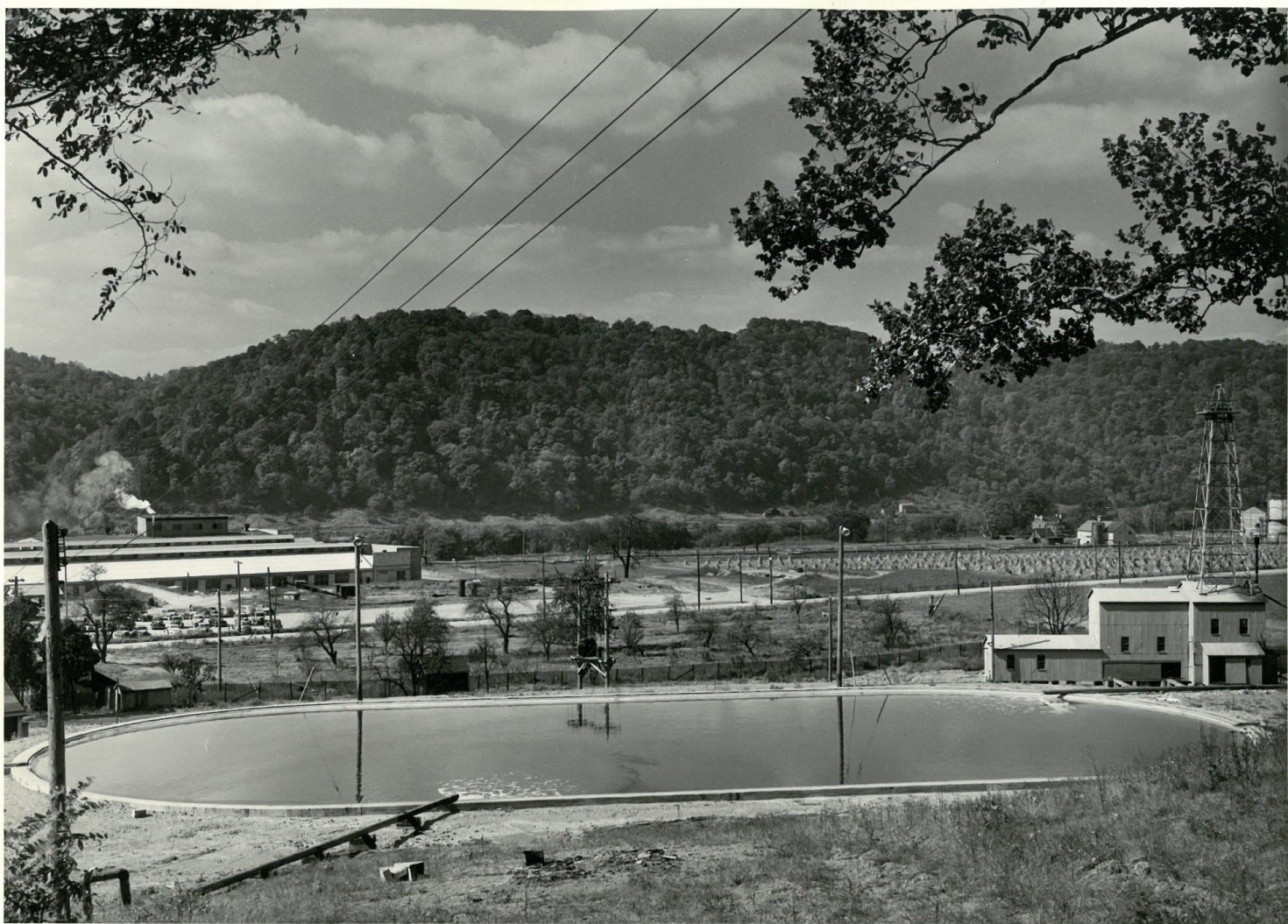
Inventor
George O. Curme, Jr.
By *Bradford & Doolittle,*
Attorneys

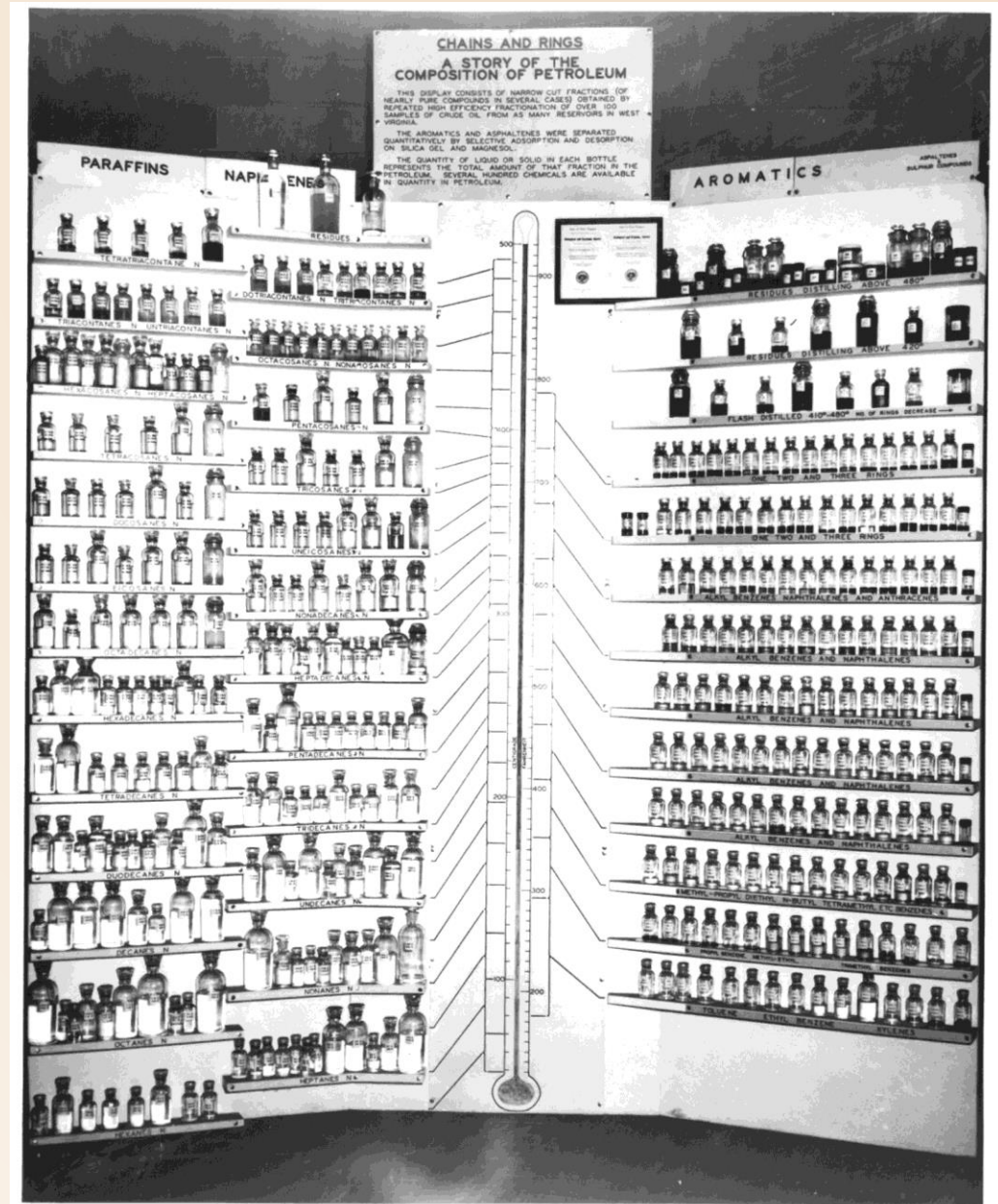
HIGHLIGHTS IN THE DEVELOPMENT OF THE OIL AND GAS INDUSTRY IN WEST VIRGINIA

PREPARED BY THE
WEST VIRGINIA GEOLOGICAL SURVEY













UNION CARBIDE

ANNOUNCES THE
APPOINTMENT OF

**FLASH
GORDON**

AS PLASTICS
REPRESENTATIVE
FOR THE OUTER WORLDS

THE DISCOVERY COMPANY
HAS RETAINED BRILLIANT
DR. ZARKOV TO CREATE
AND PRODUCE THE WIDEST
RANGE OF PLASTICS IN ALL
THE WORLDS: PHENOLIC,
POLYETHYLENE, URETHANE,
VINYL, POLYSTYRENE,
POLYSULFONE, PLASTICIZER,
SILICONE AND EPOXY. THEN
FLASH GORDON PUTS THEM
TO THE TEST.

© King Features Syndicate, Inc., 1978

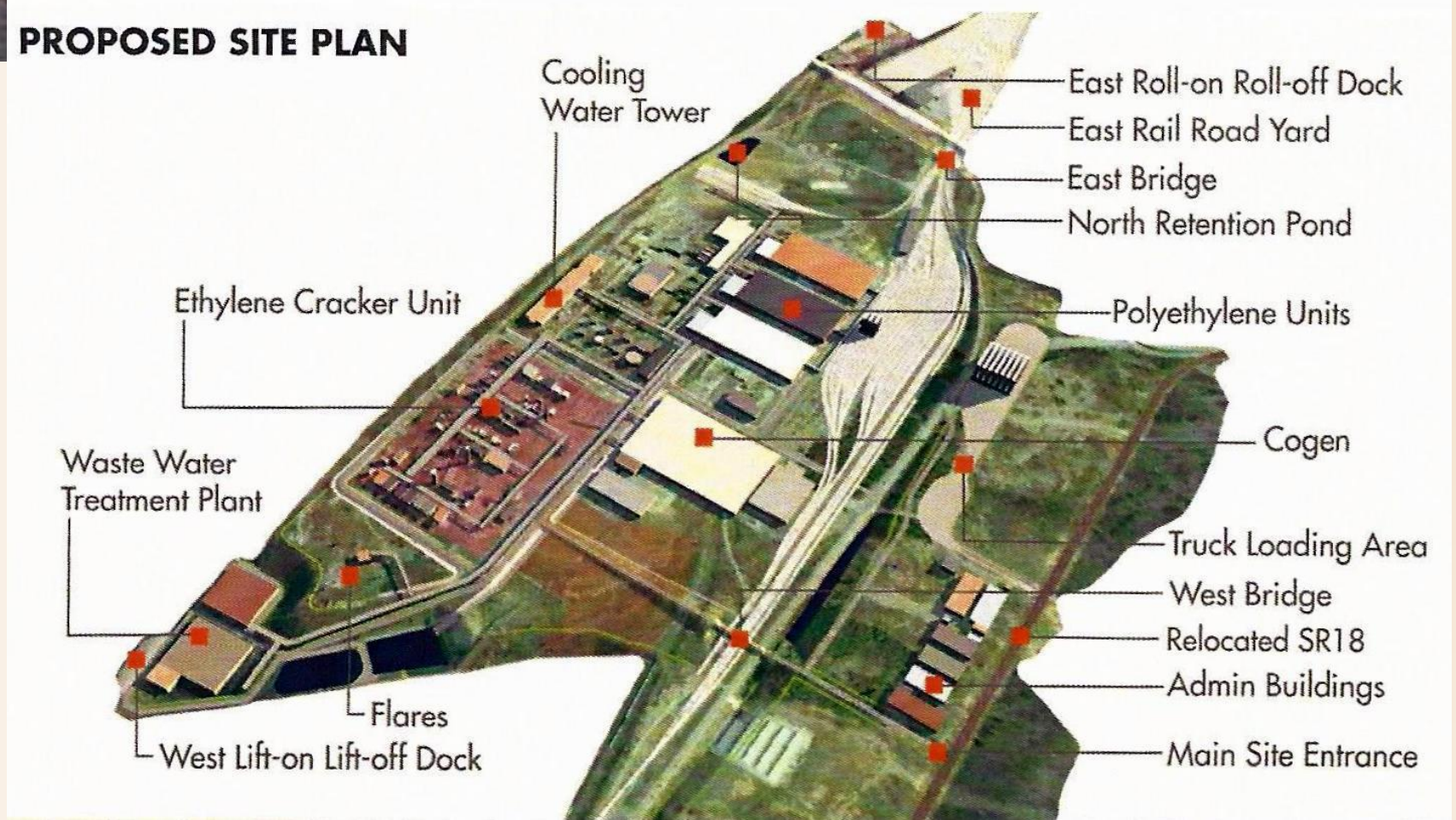




...in particular, ethylene, when complemented by acetylene and the byproducts obtained in the production of these two substances from their various sources, provides the starting material for an organic chemical industry of almost unlimited proportions which might be extended as desired in any or all directions to cover a large part of the field of the existing chemical industry

-- George O. Curme, Jr.

PROPOSED SITE PLAN





THANK YOU!