

OIL & GAS CONSERVATION COMMISSION
—MINUTES OF MEETING / JULY 17, 2009 —
STEVEN L. RAUZI, OIL & GAS ADMINISTRATOR

NOTICE OF COMBINED PUBLIC MEETING AND POSSIBLE EXECUTIVE SESSION

OIL AND GAS CONSERVATION COMMISSION

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Oil and Gas Conservation Commission and to the general public that the Oil and Gas Conservation Commission will hold a meeting open to the public on July 17, 2009, at 10:00 a.m. in Room 321 of the State Land Department Building located at 1616 West Adams Street, Phoenix, Arizona 85007.

The agenda for the meeting is as follows:

1. Call to Order
2. Approval of Minutes of Meeting of April 17, 2009
3. Conflicts of interest
4. Report of State Geologist and Director about administrative, budget, and staff support matters
5. Report of Oil & Gas Administrator about new permits and drilling activity
6. Introduction of NGS Energy and Eloy Storage Project
7. Status of Ridgeway Arizona Oil Corporation drilling program between St Johns and Springerville including possible report from a representative of Ridgeway
8. Call to the public
 - This is the time for the public to comment. Members of the Commission may not discuss items that are not on the agenda. Therefore, action taken as a result of public comment will be limited to directing staff to study the matter or scheduling the matter for further discussion and decision at a later date.
9. Announcements
10. Adjournment

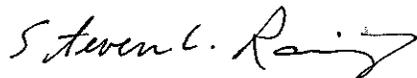
The Oil and Gas Conservation Commission may vote to go into Executive Session, pursuant to A.R.S. § 38-431.03(A)(3) or (4), which will not be open to the public, to consult with its attorney and receive legal advice with respect to any regular agenda item listed on this agenda.

A copy of the agenda background material provided to Commission members (with the exception of material relating to possible executive sessions) is available for public inspection at the Oil and Gas Administrator's office, 416 West Congress, Suite 100, Tucson, Arizona 85701.

The public may be afforded an opportunity to comment on any item on the agenda; however, at the beginning of the meeting, the Commission may vote to set up a time limit on individual comments.

Dated this 10th day of July 2009

OIL AND GAS CONSERVATION COMMISSION



Steven L. Rauzi
Oil and Gas Program Administrator

Persons with a disability may request a reasonable accommodation such as a sign language interpreter, by contacting Steve Rauzi at (520) 770-3500. Requests should be made as early as possible to allow time to arrange the accommodation. This document is available in alternative formats by contacting Steve Rauzi at (520) 770-3500.

OIL AND GAS CONSERVATION COMMISSION

416 West Congress #100

Tucson, Arizona 85701

Minutes of Meeting

April 17, 2009

Present:

Dr. J. Dale Nations, Chairman

Mr. Robert L. Jones, Vice-Chairman

Mr. Stephen R. Cooper, Member

Dr. M. Lee Allison, State Geologist and Director of Arizona Geological Survey

Mr. Steven L. Rauzi, Oil and Gas Program Administrator

Dr. Nations, Chairman, called the regular Commission Meeting of April 17 to order at 10:04 a.m. in Room 321, State Land Department Building in Phoenix, Arizona.

APPROVAL OF THE MINUTES OF THE MEETING AND EXECUTIVE SESSION OF JANUARY 16, 2009

Mr. Jones moved, seconded by Mr. Cooper:

THAT THE MINUTES OF THE MEETING AND EXECUTIVE SESSION OF JANUARY 16, 2009, BE ACCEPTED AS PRESENTED

Motion carried unanimously.

CONFLICTS OF INTEREST

None

REPORT OF STATE GEOLOGIST AND DIRECTOR OF ARIZONA GEOLOGICAL SURVEY

Dr. Allison reported that there were no changes to his last update about the budget and that Mr. Rauzi was still reassigned about half time to external projects and grants. He indicated that legislative proposals that have been leaked so far would add another 13 to 14 percent starting July 1 to the 20 percent reduction in the Geological Survey's budget for this year but he did not know where the Governor's budget would go with that. Dr. Allison indicated that because of these anticipated cuts the Geological Survey was actively seeking additional outside resources and that it was the intent of the Geological Survey to continue to provide the Commission the full support that it needed to carry out its work.

REPORT OF THE OIL AND GAS ADMINISTRATOR

The activity report of Mr. Rauzi was sent to the Commissioners and has been made a part of these minutes. Mr. Rauzi reported that four permits were issued since the January meeting, three to Ridgeway Arizona Oil Corporation (Ridgeway) and one to Willcox Greenhouse LLC. He reported that drilling had started on two wells, one by Ridgeway and one by Willcox. Mr. Rauzi reported that APS (Arizona Public Service Company) planned to start drilling its stratigraphic test near the Cholla Power plant in May and that Southwest Exploration Inc. had submitted applications for five stratigraphic holes on its potash acreage southwest of the Petrified Forest National Park.

SUNCOR REQUEST FOR TEMPORARY ABANDONMENT FOR THE 1-19 WELL

Mr. Rauzi reported that SunCor Development Company submitted a bond and a test demonstrating casing integrity in accordance with the provisions of the motion to extend temporary abandonment in the January 16 meeting. No further action was necessary.

RIDGEWAY REQUEST FOR SHUT-IN STATUS FOR WELL 11-21

Mr. Rauzi reported that Ridgeway submitted an application to plug and abandon the 11-21 well so it was no longer under consideration for shut-in status. No further action was necessary.

RIDGEWAY REQUEST FOR SHUT-IN STATUS FOR WELLS 22-1X, 10-22, 9-21, 11-16-30, 11-29-30, 11-6-31, 11-29-31, 11-24-29, 12-34-29X, AND 11-23-30

Mr. Rauzi reported that Ridgeway submitted an application to plug and abandon the 22-1X and 9-21 wells so they were no longer under consideration for shut-in status. He reported that Ridgeway submitted a one-point back pressure test for the remaining wells as the Commission had requested in the January meeting. Mr. Rauzi recommended shut-in status for the remaining wells.

Mr. Jones moved, seconded by Mr. Cooper:

TO GRANT SHUT-IN STATUS TO THE 10-22, 11-16-30, 11-29-30, 11-6-31, 11-29-31, 11-24-29, 12-34-29X, AND 11-23-30 WELLS

Motion carried unanimously.

STATUS OF RIDGEWAY ARIZONA OIL CORPORATION DRILLING PROGRAM BETWEEN ST JOHNS AND SPRINGVILLE INCLUDING POSSIBLE REPORT FROM A REPRESENTATIVE OF RIDGEWAY

Mr. Portman reported that in light of the recent unit agreement that Ridgeway was reviewing its plan to drill and develop the field and that Ridgeway would provide an update in a future meeting.

CALL TO THE PUBLIC

Mr. Billington, who was Ridgeway's drilling supervisor in 2008, stated that several wells were not drilled or completed in compliance with Arizona rules and regulations. The Commission asked Mr. Billington to submit his complaints in a written, signed statement to Mr. Rauzi to be reviewed for possible inclusion as an agenda item at a future meeting. Mr. Lasker indicated that Ridgeway would like the opportunity to review any written complaints submitted by Mr. Billington.

Mr. Lasker indicated that in light of the State's budget and staff cuts and Ridgeway's anticipated field development now that the State Land Department had approved its unit agreement that Ridgeway would be available to provide funding if it is allowed.

ANNOUNCEMENTS

Mr. Rauzi reported that Ms. Nakai resigned to accept an appointment from Governor Jan Brewer as Policy Advisor for Tribal Affairs.

The Commission scheduled its next meeting at 10:00 a.m. on July 17, 2009, in room 321 at the State Land Department Building in Phoenix.

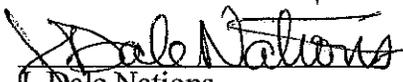
ADJOURNMENT

Mr. Jones moved, seconded by Mr. Cooper:

THAT THE MEETING BE ADJOURNED

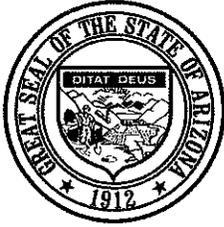
Motion carried unanimously. Time of adjournment was 10:40 p.m.

APPROVED


J. Dale Nations
Chairman

GUESTS IN ATTENDANCE

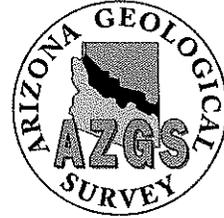
Sam Billington	Self
John Blanchard	Ridgeway Arizona Oil Corporation
Josh Bleak	Southwest Exploration Inc.
Curtis Cox	Assistant Attorney General
Joe Dixon	State Land Department
Jerry Ellsworth	SunCor Development Company
Barry Lasker	Ridgeway Arizona Oil Corporation
Barry Portman	Ridgeway Arizona Oil Corporation
Terrence Smithson	Passport Minerals
Thomas White	Ridgeway Arizona Oil Corporation



Janice K. Brewer
Governor

State of Arizona
Arizona Geological Survey

416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500



M. Lee Allison, Ph.D., R.G.
Director and State Geologist

July 9, 2009

To: Oil and Gas Conservation Commissioners

From: *SLR* Steven L. Rauzi, Oil and Gas Administrator

Re: Activity Report for the July 17, 2009, Meeting

Five permits to drill were issued since your last meeting on April 17 to Southwest Exploration Company for stratigraphic wells at its potash project southeast of Holbrook. Southwest had finished drilling two of the wells by the time of this writing and intended to finish the remaining three wells by the end of July. Willcox Greenhouse is drilling at a depth of 3000 ft on its way to a total depth of 4000 ft on its geothermal well north of Willcox. APS (Arizona Public Service) plans to start drilling its stratigraphic test of the carbon dioxide storage potential of Devonian rocks underlying the Cholla Power near Holbrook within a week of this writing and should be drilling by the time of your July 17 meeting.

Some representatives of NGS Energy plan to attend the July 17 meeting to discuss the Eloy storage project. NGS Energy LP and El Paso Corporation have signed a Memorandum of Acquisition and Understanding with regard to El Paso's Pinal County, Arizona natural gas storage asset.

13-May-09 2:00 PM EDT

May 13, 2009 NGS Energy Signs Exclusivity Agreement, Considers Entrance into Arizona Natural Gas Storage Market

NGS Energy Signs Exclusivity Agreement, Considers Entrance into Arizona Natural Gas Storage Market

NGS Energy LP and El Paso Corporation have signed a Memorandum of Acquisition and Understanding with regard to El Paso's Pinal County, Arizona natural gas storage asset. Under the agreement, NGS Energy has an exclusive due diligence period and right to purchase all acreage, wells, geological and technical data and rights currently held by El Paso. The storage project is in the Picacho Basin and would include a 9 mile header system that could connect to Transwestern Pipeline, El Paso Natural Gas Pipeline, as well as numerous new and proposed gas fired plants.

"The growth in the Arizona market has not received the appropriate response from the natural gas storage industry" said NGS Energy President Laura Luce. "El Paso's work drilling and coring multiple wells to test the viability of the geology and feasibility of the project are the first steps to sincerely address Arizona's storage need."

"The Picacho salt basin will be developed into a highly cyclable gas storage asset that could provide Arizona customers with the flexibility it currently needs and will need with continued growth" continued Luce.

NGS estimates the current acreage position could result in a 20 Bcf storage facility and will utilize above ground evaporation ponds. FERC filings will occur this summer with operations slated for Summer 2012.

"NGS' background in developing storage assets will only further the speed with which the project can be brought to a market with an immediate need. NGS' experience will ensure that the asset is developed by an experienced group in the swiftest timeframe." commented Tom Price, Vice President El Paso.

Any interest or inquiries can be directed to NGS at 203-557-1000.

NGS Energy LP has assembled a portfolio of highly flexible gas storage assets throughout North America. Their newly operational Tres Palacios Gas Storage facility in Matagorda County, Texas just received FERC authorization to operate the entire facility including all interconnects. Other projects in various stages of development are located in Colorado and Louisiana.

El Paso Corporation provides natural gas and related energy products in a safe, efficient, and dependable manner. The company owns North America's largest interstate natural gas pipeline system and one of North America's largest independent natural gas producers. For more information, visit www.elpaso.com.

For additional information on this article, please contact:

Tom Ray
(203) 557-1011
tray@ngsenergy.com

Source: Deirdre McCaffrey

➤ A.R.S. § 27-516(A)(20) -- Commission shall make rules ...[r]equiring the permitting of all wells and the approval of all equipment and methods . . .

- (a) to create or use existing storage space for the underground storage of hydrocarbon substances, whether liquid or gaseous * * *

Page 5

➤ Commission issues permits for injection and storage wells, including "wells used for the underground storage of any hydrocarbons or nonhydrocarbons that are gaseous at standard temperature and pressure, wells used to dissolve salt to create a cavity to be used for underground storage, and wells used to dispose of brine produced in the course of creating a solution-mined salt cavity..." R12-7-175(A)(2)(b)

➤ Applicant must demonstrate to Commission that the proposed storage will preserve the structural integrity of the host rock, including halite, and the overlying sediments (R12-7-181), and Applicant will provide, among other things:

- Storage feasibility study
- Geologic study, engineering study, injection plan (R12-7-176)

Page 2

➤ Commission continues to monitor completed facility

- Operator submits sundry reports on drilling, completion, recompletion, workovers
- Operator notifies Commission on commencement, discontinuance, transfer of operations
- Operator conducts semi-annual safety inspections and reports to Commission
- Operator makes capacity determination that is verified every 5 years
- Operator reports accidents and equipment malfunctions that threaten health, safety, environment
- Operator submits monthly reports on storage numbers

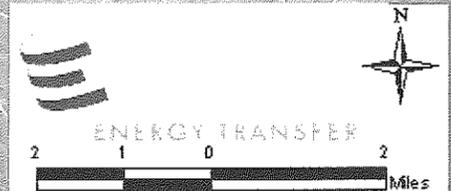
Page 3

Transwestern Phoenix Lateral



Legend

-  East Valley Lateral (EVL)
-  Phoenix Lateral



Note: This map has been compiled from the best existing sources, but Energy Transfer does not guarantee the accuracy of the map or information depicted thereon, nor does Energy Transfer assume any responsibility or liability for reliance thereon.

Drawn: 6/28/2009
 Gas Supply: SRP
 Project: SRP_EVL_Coolidge.mxd



ONGS
ENERGY, LP

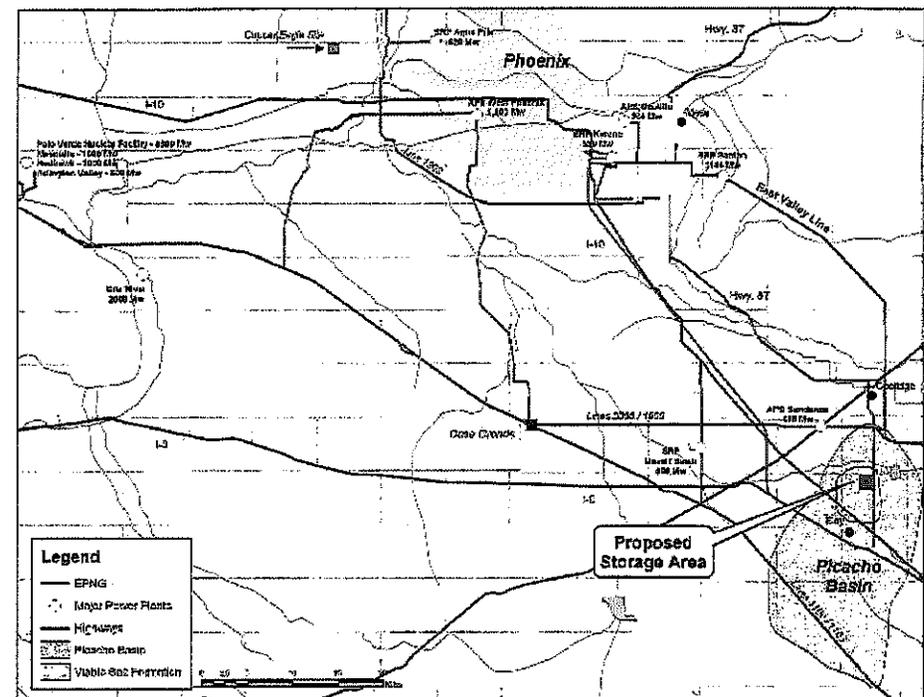


- **NGS was founded in 2006 to develop and manage a portfolio of highly flexible storage assets across several markets**
 - NGS looks for high deliverability assets serving 2 types of markets
 - Under developed areas in need of balancing and storage capacity
 - Well-connected and liquid markets with time and point volatility
 - NGS is in differing stages of operation and development with four projects representing total capacity of 127 Bcf. NGS controls land rights to provide significant future expansion. Assets in Texas, Mississippi, Colorado and Louisiana.

- **Long-seasoned management team in the midstream/gas storage sectors**
 - Founders have over 25 years of combined experience in midstream and gas storage sectors
 - Management has over 150 years of combined experience in sectors including the construction and operation of over 25 gas storage facilities throughout North America
 - Past projects include: Pine Prairie, Bluewater, Moss Bluff, Egan, Copiah, Avoca, Lodi, Katy Hub, Panther Gas, Waha Gas, Southern Pines, Hattiesburg and Napoleonville
 - Management will be fully involved in all key aspects of design, development and operation

Picacho Basin Storage

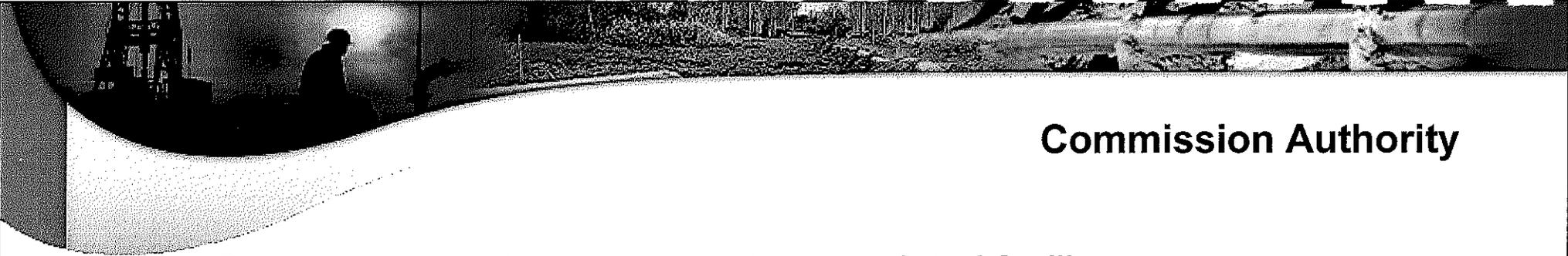
- Salt caverns to be created in the salt beds located in the Picacho Basin near Eloy, Arizona
- Cavern design to be finalized, potential parameters:
 - ~ 5 Bcf storage capacity
 - 500,000 Mcf Maximum Daily Injection Quantity
 - 1.0 Bcf Maximum Daily Withdraw Quantity
- Proposed interconnects with Transwestern, El Paso and direct to several AZ power plants
- Proposed timeline:
 - FERC filed by Fall 2009
 - Commence Construction Fall 2010
 - Operational 2012
- Milestones Achieved
 - Multiple wells drilled and cored
 - Evaporation Pool design commenced
 - Acreage acquired
 - Cavern and Well design commenced





Commission Authority

- A.R.S. § 27-516(A)(20) -- Commission shall make rules ...[r]equiring the permitting of all wells and the approval of all equipment and methods . . .
 - (a) to create or use existing storage space for the underground storage of hydrocarbon substances, whether liquid or gaseous * * *
- Commission issues permits for injection and storage wells, including “wells used for the underground storage of any hydrocarbons or non-hydrocarbons that are gaseous at standard temperature and pressure, wells used to dissolve salt to create a cavity to be used for underground storage, and wells used to dispose of brine produced in the course of creating a solution-mined salt cavity...” R12-7-175(A)(2)(b)
- Applicant must demonstrate to Commission that the proposed storage will preserve the structural integrity of the host rock, including halite, and the overlying sediments (R12-7-181), and Applicant will provide, among other things:
 - Storage feasibility study
 - Geologic study, engineering study, injection plan (R12-7-176)



Commission Authority

- Commission continues to monitor completed facility
 - Operator submits sundry reports on drilling, completion, recompletion, workovers
 - Operator notifies Commission on commencement, discontinuance, transfer of operations
 - Operator conducts semi-annual safety inspections and reports to Commission
 - Operator makes capacity determination that is verified every 5 years
 - Operator reports accidents and equipment malfunctions that threaten health, safety, environment
 - Operator submits monthly reports on storage numbers



Technical Team

■ Internal NGS Technical Team

- Charles Chabannes

- 31 years of experience in the design, construction and operation of storage facilities for both natural gas and liquid hydrocarbons in North America, Europe and the Middle East

- Sid Cecil

- 33 years of experience in the supervision and management of oil and gas production, processing, storage, mechanical design and pipeline network systems

- Larry Fondon

- 25 years experience in the operation, maintenance, design, construction and management of Natural Gas and LPG storage

- David St Romain

- 36 years in oil & gas industry including drilling storage wells

■ Consultants

- Montgomery & Associates

- Sprint Pipeline



Timeline

- Summer/Fall 2009 – Due Diligence, Market Demand and Customer Contracting
- Fall/Winter 2009 – ACC pre-approval, FERC filing and necessary state filings commence
- Late 2011 – FERC certificate and necessary state approvals granted
- Late 2010/Early 2011 – Construction Commences (drill wells for caverns, construct leaching plant, water lines and electricity for de-brining, construct evaporation ponds)
- Spring 2011 – Debrining of initial cavern(s), commence construction of compression plant
- Late 2012 – Initial cavern(s) operational
- 2012 on – continued creation of caverns



Management Team of NGS

■ Laura Luce, President of NGS

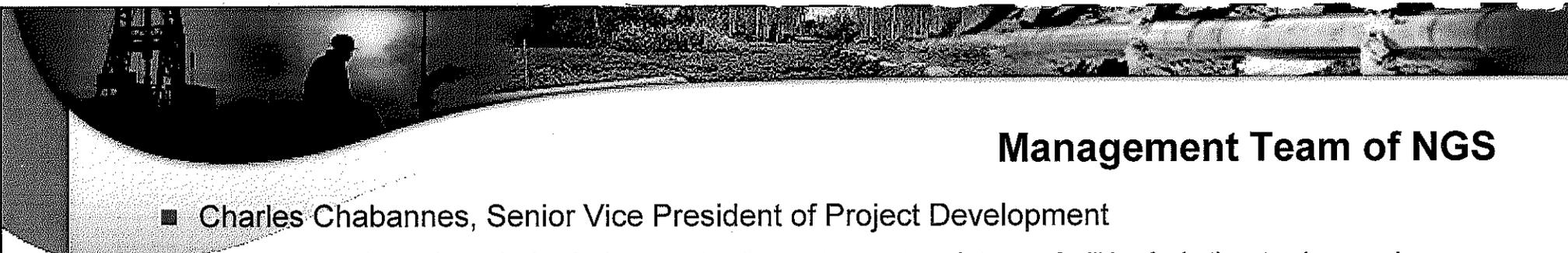
- Prior to NGS, Laura was the President of Energy Center Investments, the former holding company for Sempra Energy Trading's gas storage business
 - Purchased by Plains All American Pipeline/Vulcan Storage in 2005
- Laura's 17+ years of experience is concentrated in business development, marketing, origination, asset development, asset management and trading
 - Held positions with Sempra Energy Trading, Enron North America, CNG and Transok

■ Geof Storey, Executive Vice President of NGS

- Prior to NGS, Geof was Vice President of Strategic Planning and Risk Management with Energy Center Investments
- Geof has 10+ years of experience concentrated in storage and transportation across the North American grid and additional experience in structured transactions, risk management and systems, marketing, fundamental analytics and trading
 - Held positions with Sempra Energy Trading, UBS, and Enron North America

■ Deirdre McCaffrey, Managing Director, Business Development

- Prior to NGS, Deirdre was Managing Director of Upstream Business Development for Constellation Energy Global Commodities Group
- Deirdre has 10+ years of experience in the North American natural gas market. Her experience spans from the upstream to downstream spectrum, concentrating on marketing, origination, business development, asset management and trading.
 - Held positions with Constellation Energy, UBS, and Enron North America



Management Team of NGS

■ Charles Chabannes, Senior Vice President of Project Development

- 31 years of experience in the design, construction and operation of storage facilities for both natural gas and liquid hydrocarbons in North America, Europe and the Middle East
- Past experience as Project Manager for the Pine Prairie Energy Center (a Plains All American Pipeline); Project Director for Market Hub Partners' gas storage development activities at Duke Energy Gas Transmission; Sr. Vice President of Engineering and Construction for Sofregaz US and Vice President of Project Development for Energy Center Investments
- Holds a Bachelor of Science degree in Mineral Engineering from University of Alabama and a Masters of Science in Mining Engineering from Pennsylvania State University

■ Sid Cecil, Senior Vice President of Engineering

- 33 years of experience in the supervision and management of oil and gas production, processing, storage, mechanical design and pipeline network systems
 - Experience includes conceptual design, specialty studies, basic design, detailed design, equipment specifications, fabrication, equipment inspection, construction, commissioning, and startup.
- Project portfolio includes offshore and onshore installations for both domestic and international locations
 - Direct experience with a number storage facilities in various capacities, including Pine Prairie Energy Center, Panther Gas Storage, Waha Gas Storage, Southern Pines Energy Center, Copiah Gas Storage, Egan Gas Storage, Katy Hub, Moss Bluff, Petal, Hattiesburg, Avoca Gas Storage and Lodi Gas Storage
- Provides a wide range of services including conceptual engineering, CAPEX and AFE developments, comprehensive efficiency, debottlenecking study evaluations, detail process design, power and hydraulic system modeling, comprehensive engineering, procurement, inspection and construction management services, facility expansions, field service trouble-shooting, and comprehensive permit application support services



Management Team of NGS

■ Patrice Thurston, Vice President Marketing

- Prior to NGS, Patrice was Director Flow Sales at UBS for UBS Commodities Group, East Desk.
- Patrice has over 20 years experience in marketing physical and financial natural gas
- Has managed physical natural gas trading support groups
- Held various positions with Enron North America

■ David St. Romain, Vice President Drilling & Operations

- 36 years in oil & gas industry including drilling storage wells
- Prior to NGS Energy; developed drilling procedures and AFE's to drill storage projects; directed on-site drilling operations for Pine Prairie Energy, Windy Hill Gas Storage, Leaf River, and Tres Palacios.
- Area Manager in Nigeria for major drilling contractor

■ Larry Fondon, Vice President-Operations

- 25 years experience in the operation, maintenance, design, construction and management of Natural Gas and LPG storage
- Previously held positions as Facility Manager with Pine Prairie Energy Center (a natural gas storage facility in Evangeline Parish, Louisiana)
- Served as Supervisor of Operations with Duke Energy/Market Hub Partners for 15 years at the Egan and Moss Bluff natural gas storage facilities
- Maintenance Supervisor for 11 years at the Chevron/Warren Petroleum LPG storage facility in Mont Belvieu, Texas



Tres Palacios Management Team

■ Rino Pinti, Vice President-Project Development

- 20 years of experience in construction management field where he assisted in managing a family owned electrical contracting business based in New York
- Worked for Reuters SA in Switzerland as a project manager coordinating the implementation of global financial systems
- Holds a BBA in Accounting from Pace University in New York City

■ Rob Davis, Vice President-Hub Optimization

- Rob has 20 years of experience in natural gas transmission, distribution and storage
- Prior to NGS, Rob was the Vice President of Business Management with Energy Center Investments
- His experience has been in regulation, asset development, acquisition and sales having held positions with Sempra Energy, Tenneco Gas, the Federal Energy Regulatory Commission (FERC).

■ Harold Jordan, Manager of Storage Operations

- 25 years of experience in the oil and gas industry
- Worked at Moss Bluff Gas Storage for 15 years; extremely experienced in Salt Dome Storage operations
- Prior to his 15 years of Natural Gas Storage experience, Harold spent 11 years in oil and gas production field for Mobil Oil
- Previously, employed by the Katy Gas Storage Company in Katy, TX gathering experience in reservoir storage.

CHARLES R. CHABANNES
150 Old Stonewall Road
Easton, Connecticut 06612

Sr. Vice President – Storage Development
NGS Energy

Office: 203-713-557-1009 Cell: 203-252-1292
Email: cchabannes@ngsenergy.com

SUMMARY

Twenty eight years of experience in the engineering, development and operation of underground storage facilities for natural gas, compressed air, liquid hydrocarbons, and various types of waste products. Particular expertise in the areas of solution mining, well planning, geomechanics and thermodynamics of storage operations. Experience covers engineering, construction and operational aspects of underground storage. Mr. Chabannes has taught short courses on solution mining, mechanical integrity testing of storage wells, and various aspects of constructing and operating storage caverns.

Mr. Chabannes has been actively involved in the Solution Mining Research Institute (SMRI) since 1986. He has served as Program Chairman, Secretary-Treasurer, Vice-President & Research Committee Chairman and President of the organization. Chabannes has served on the Executive Committee for the Gas Storage Technology Consortium and the Underground Storage Committee for the Pipeline Research Council International (PRCI).

PROFESSIONAL BACKGROUND

2006 - 2009	NGS Energy – Sr. Vice President Storage Development
2005 - 2006	Pine Prairie Energy Center, LLC – Project Manager
2005 - 2005	Energy Center Investments, Corp. – Vice President Project Management and Development
2001 - 2005	Duke Energy Gas Transmission - Project Director
1994 - 2001	Sofregaz US Inc. - Vice President of Engineering, Senior Vice President of Engineering and Operations, and Sr. Vice President Engineering and Construction
1982 - 1994	PB-KBB Inc. - Sr. Mining Engineer, Manager of Engineering for Cavern Engineering Project Group on the

Department of Energy's Strategic Petroleum Reserve (SPR),
Project Manager

1979 - 1982

D'Appolonia Consulting Engineers - Assistant Project
Engineer

PROFESSIONAL EXPERIENCE

September 2006 – Present

Sr. Vice President – Storage Development for NGS Energy for developing domal salt cavern gas storage projects in Matagorda County, Texas and Smith County, Mississippi, and a bedded salt cavern gas storage project near Brush, Colorado.

September 2005 – September 2006 Project Manager for Pine Prairie Energy Center gas storage project being designed and constructed near Pine Prairie, Louisiana.

August 2005 – September 2005

Provided management and engineering oversight for Pine Prairie Energy Center gas storage project being designed and constructed near Pine Prairie, Louisiana.

April 2001 – July 2005

Responsible for planning, operational and regulatory support for gas storage cavern development at Moss Bluff, Texas and Egan, Louisiana. Duties also included screening and evaluating gas storage opportunities in the U.S. and Canada.

March 1994 – April 2001

Responsible for providing management, technical and operational guidance on all projects related to underground storage.

December 1988 -March 1994

During this period, performed numerous studies related to solution mining of various water soluble minerals (salt, potash, and trona) and underground storage of compressed air, natural gas, and liquid hydrocarbon storage.

July 1988 - December 1988

Manager of Engineering for PB-KBB's Cavern Engineering Project Group on the Department of Energy's Strategic Petroleum Reserve (SPR) Project.

1985 - July 1988

Senior Cavern Engineer for PB-KBB Inc. at the Department of Energy's Strategic Petroleum Reserve Weeks Island Storage Facility. Responsible for all subsurface-related

activities, including well workovers, grouting crew, subsidence monitoring, and engineering support to the operations group.

1982 - 1985

Responsible for monitoring all of the Department of Energy's Strategic Petroleum Reserve storage caverns, using operational and geotechnical data to explain variations from the norm.

1979 - 1982

Responsible for developing and applying numerical models for heat transfer, thermomechanical stresses, porous media flow and mass transport of contaminants in ground water.

1979

Graduate assistant at the Pennsylvania State University; worked on a Department of Energy funded project to develop techniques to improve the design of coal pillars by applying the Petite Sismique method to assess the strength and deformational properties of coal pillars.

1976 - 1979

Graduate assistant at the Pennsylvania State University; worked on the American Gas Association funded project related to the design of salt caverns for the storage of natural gas.

EDUCATION

University of Alabama - B.S. Mineral Engineering, 1976

Pennsylvania State University - M.S. Mining Engineering, 1983

PUBLICATIONS

- “Moss Bluff Incident,” presented at the Solution Mining Research Institute Meeting, Syracuse, New York, Nevada, April 17-20, 2005
- “Storage Pressure Limits – Egan Storage Facility,” presented at the Solution Mining Research Institute Meeting, Syracuse, New York, Nevada, April 17-20, 2005
- “Development of a Salt Cavern Thermal Modeling Tool for Natural Gas Storage – History Matching of Sabine Cavern No. 2”, presented at Hydrocarbon Storage Group, Gulf Coast Section of Society of Petroleum Engineers, Houston, Texas, November 21, 2000
- “An Introduction to the Technology of Solution Mining - Mechanical Integrity Testing (MIT),” presented at 8th World Salt Symposium, Salt2000, Solution Mining Research Institute Technical Class, The Hague, The Netherlands, May 7-11, 2000
- “Geomechanical Evaluation of Sabine Gas Transmission Company’s Cavern No. 2 at Spindletop Salt Dome,” presented at the Solution Mining Research Institute Meeting, Las Vegas, Nevada, April 11-14, 1999
- “Thermodynamic Evaluation of Sabine Gas Transmission Company’s Cavern No. 2 at Spindletop Salt Dome,” presented at the Solution Mining Research Institute Meeting, Las Vegas, Nevada, April 11-14, 1999
- “Design and Construction of Salt Caverns for Hydrocarbon Storage,” presented at the North American Rock Mechanics Symposium, NARMS’98, Cancún, Quintana Roo, Mexico, June 3-5, 1998
- “Solution Mining Under Gas – Operational Experience,” presented at the Solution Mining Research Institute Meeting in Cracow, Poland, May 11-14, 1997
- “Design of Liquid Storage Caverns,” presented as part of Cavern Technology Course for Instituto Mexicano del Petroleo, Coatzacoalcos, Veracruz, Mexico, June 3-5, 1996
- “Mechanical Integrity Testing for Cavern Wells,” presented as part of Cavern Technology Course for Instituto Mexicano del Petroleo, Coatzacoalcos, Veracruz, Mexico, June 3-5, 1996
- “Solution Mining Simulators and Well Hydraulics,” presented as part of Cavern Technology Course for Instituto Mexicano del Petroleo, Coatzacoalcos, Veracruz, Mexico, June 3-5, 1996
- “Status Report on the Prediction of Solids Production During Solution Mining,” presented at the Solution Mining Research Institute Meeting, Houston, Texas, April 15-16, 1996
- “Solution Mining Caverns in Bedded Salt - The Effect of Insoluble Content,” presented at the

- American Gas Association Cavern Storage Workshop, AGA Fall Committee Meeting, Chicago, Illinois, September 14, 1995
- "Predicting Cavern Dimensions in Bedded Salt Caverns – The Effects of Waste Filling," invited speaker at Railroad Commission of Texas, Oil and Gas Division, Conference on Solution Mined Caverns for Oil and Gas Waste Disposal, September 13, 1995
- "Solution Mining in Bedded Salt," presented at the Salt Cavern Creation Technical Class during the Solution Mining Research Institute Meeting, San Antonio, Texas, October 22-25, 1995
- "Solution Mining Caverns in Bedded Salt - The Effect of Insoluble Content," presented at the Solution Mining Research Institute Meeting, New Orleans, Louisiana, April 30 – May 3, 1995
- "Status Report on the Prediction of Solids Production During Solution Mining," presented at the Solution Mining Research Institute Meeting, Houston, Texas, April 15-16, 1996
- "Rock Mechanics Evaluation of Alabama Electric Cooperative CAES Cavern While at Atmospheric Pressure," presented at the Solution Mining Research Institute Meeting, Lafayette, Louisiana, October 24-26, 1993
- "Salt Cavern Closure - How to Predict It and How to Minimize It," presented at Gas Storage Strategies, Market Center Hubs Conference, The Unbundling of Storage and Transportation, Detroit, Michigan, October 4-6, 1993
- "Salt Cavern Creep - Why It Happens, How to Predict It and How to Minimize It," presented at Gas Storage, sponsored by Gas Daily, Gas Storage Report, and Gas Buyers Guide, Houston, Texas, 1992
- "Compressed Air/Tracer Gas Test at the Weeks Island SPR Site," presented at the Solution Mining Research Institute Meeting, Denver, Colorado, October 18-20, 1987
- "Evaluation of Excavation - Induced Changes in Permeability Around an Underground Opening," International Journal of Rock Mechanics, Mining Science & Geomechanics Abstracts, 1984
- "Laboratory and Theoretical Studies Relative to the Design of Salt Caverns for the Storage of Natural Gas," Sixth International Symposium on Salt, Toronto, Ontario, Canada, May 24-28, 1983
- "An Evaluation of the Time-Dependent Behavior of Solution- Mined Caverns in Salt for the Storage of Natural Gas," Masters Thesis, Department of Mineral Engineering, The Pennsylvania State University, 1983

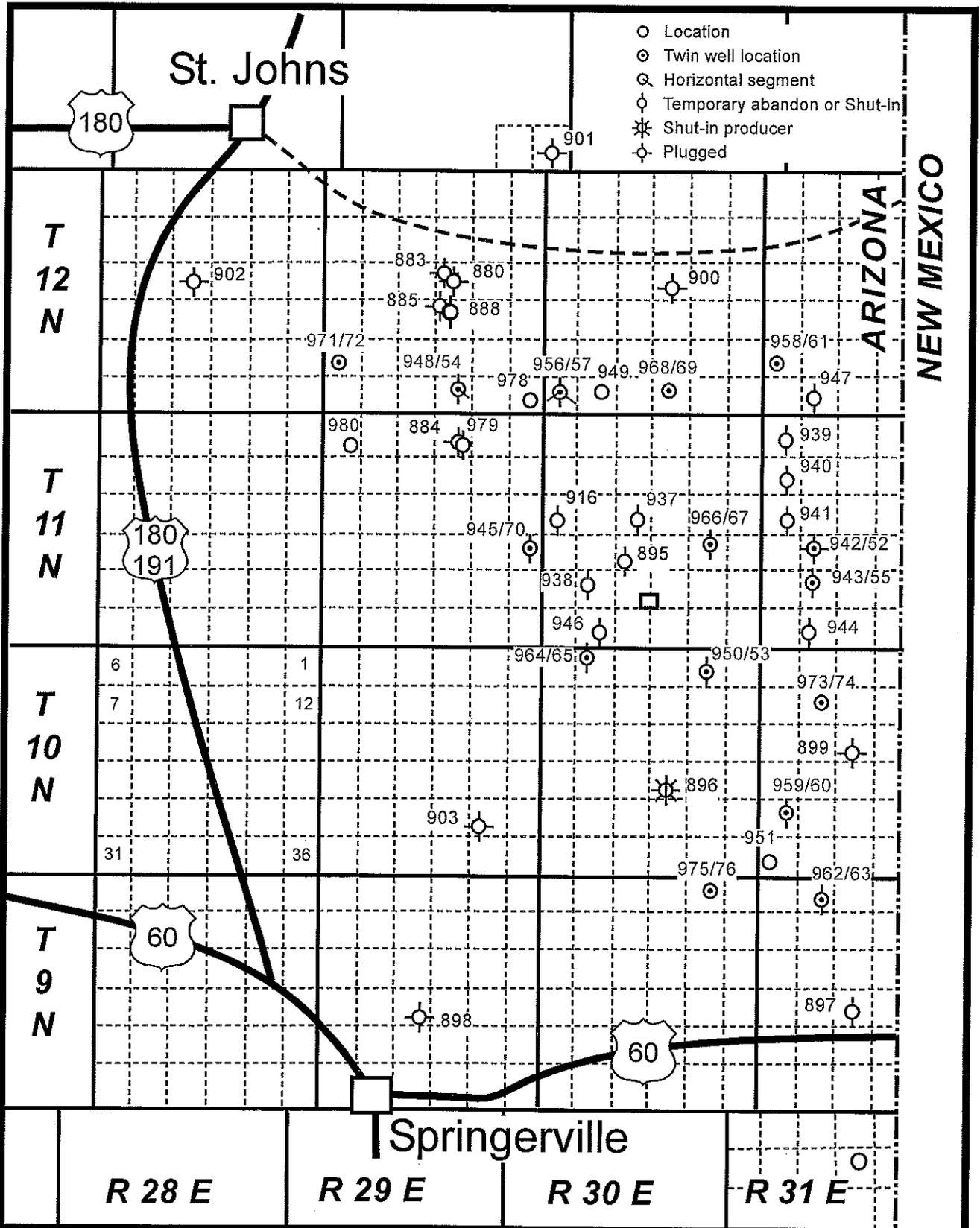
- "Design Considerations for Penetration Seals for a Repository in Basalt," Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio, 1982
- "Schematic Designs for Penetration Seals for a Repository in Bedded Salt," Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio, 1982
- "Theoretical and Laboratory Studies Relative to the Design of Salt Caverns for the Storage of Natural Gas," American Gas Association, 1982
- "A Preliminary Evaluation of the Rock Mass Disturbance Resulting from Shaft, Tunnel or Borehole Excavation," Office of Nuclear Waste Isolation, 1982
- "Schematic Designs for Penetration Seals for a Reference Repository in Bedded Salt," Office of Nuclear Waste Isolation, 1982
- "Rock Mechanics Considerations in WIPP Room Design," First Conference on The Mechanical Behavior of Salt, The Pennsylvania State University, University Park, Pennsylvania, November 9-11, 1981
- "Thermo-mechanical Considerations in Designing Tests at the Asse Mine," First Conference on the Mechanical Behavior of Salt, The Pennsylvania State University, University Park, Pennsylvania, November 9-11, 1981
- "A Preliminary Evaluation of Various Sealing Configurations," Office of Nuclear Waste Isolation Workshop on Borehole and Shaft Plugging, Santa Fe, New Mexico, 1980
- "Design Requirements and Concepts for Penetration Seals at Deep Geologic Waste Repositories - A Progress Report," International Symposium on Subsurface Space, 1980
- "An Evaluation of the Time Dependent Behavior of Solution-Mined Cavities in Salt for the Storage of Natural Gas, Part 2: Closed Form Analytical Solutions," Pennsylvania State University, Department of Mineral Engineering, Geomechanics Section, 1980
- "Finite Element Studies Associated with Salt Cavity Design, Part 4: Further Elastic Studies," Pennsylvania State University, Department of Mineral Engineering, Geomechanics Section, 1977

Location and status of Ridgeway Arizona Oil Corp wells in east-central Arizona

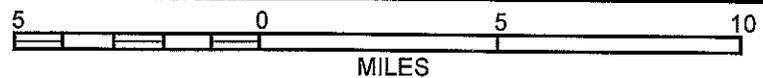
Permit	Well	Location Sec-Twp-Rge	Total Depth	Status and comment
880	1 Plateau Cattle	ne sw 15-12n-29e	2431 ft	Drilled 8/1994, plugged 9/1997
883	1A Plateau Cattle	ne sw 15-12n-29e	220 ft	Drilled 11/1994, plugged 11/1997
884	3-1 State	ne se 3-11n-29e	1813 ft	Drilled 10/1995, plugged 9/2004
885	22-1 State	nw nw 22-12n-29e	218 ft	Drilled 8/1995, plugged 8/1997
888	22-1X State	se nw 22-12n-29e	2149 ft	Drilled 6/1997, shut-in 6/1997
890	35-1 State	ne sw 35-12n-29e	not drilled	Permit expired 4/1997
891	10-1 State	sw ne 10-11n-29e	not drilled	Permit expired 4/1997
892	11-1 State	se nw 11-11n-29e	not drilled	Permit expired 4/1997
893	2-1 State	se nw 2-11n-29e	not drilled	Permit expired 4/1997
895	11-21 State	ne sw 21-11n-30e	2410 ft	Drilled 3/1997, shut-in / app to plug
896	10-22 State	sw sw 22-10n-30e	2265 ft	Completed 7/2002; shut in 3/2004
897	9-21 State	sw ne 21-9n-31e	2686 ft	Drilled 3/1997, shut-in / app to plug
898	9-22-29 State	sw se 22-9n-29e	3180 ft	Drilled 4/1997, plugged 2/2004
899	10-16-31 State	ne sw 16-10n-31e	2728 ft	Drilled 5/1997, plugged 2/2004
900	12-15-30 State	ne sw 15-12n-30e	2603 ft	Drilled 5/1997, plugged 7/2008
901	13-36-29 State	sw ne 36-13n-29e	2454 ft	Drilled 5/1997, plugged 5/1997
902	12-16-28 State	nw ne 16-12n-28e	2280 ft	Drilled 5/1997, plugged 1/2005
903	10-26-29 State	nw sw 26-10n-29e	3200 ft	Drilled 5/1997, plugged 1/2000
904	15-28-29 State	ne nw 28-15n-29e	2410 ft	Drilled 6/1997, plugged 6/1997
915	11-33 State	ne sw 33-11n-30e	not drilled	Permit expired 10/2004
916	11-18 State	c sw 18-11n-30e	2535 ft	Drilled 5/2004, temporarily abandoned
917	10-13 State	ne sw 13-10n-30e	not drilled	Permit expired 10/2004
937	11-16-30 State	nw se 16-11n-30e	2377 ft	Drilled 3/2007, shut-in
938	11-29-30 State	se nw 29-11n-30e	1906 ft	Drilled 2/2007, shut-in
939	11-06-31 State	nw se 06-11n-31e	2711 ft	Drilled 4/2007, shut-in
940	11-07-31 State	nw se 07-11n-31e	1885 ft	Drilled 4/2007, temporarily abandoned
941	11-18-31 State	nw se 18-11n-31e	2035 ft	Drilled 4/2007, temporarily abandoned
942	11-20-31 State	se nw 20-11n-31e	1934 ft	Drilled 5/2007, plugged 2/2008
943	11-29-31 State	se nw 29-11n-31e	2850 ft	Drilled 5/2007, shut-in
944	11-32-31 State	ne sw 32-11n-31e	2900 ft	Drilled 5/2007, temporarily abandoned
945	11-24-29 State	sw ne 24-11n-29e	1906 ft	Drilled 2/2007, shut-in
946	11-32-30 State	c se 32-11n-30e	1690 ft	Drilled 3/2007, temporarily abandoned
947	12-32-31 State	ne sw 32-12n-31e	85 ft	Spudded 5/2007, temporarily abandoned
948	12-34-29 State	nw ne 34-12n-29e	1140 ft	Drilled 2/2008, plugged 2/2008, blow out
949	12-32-30 State	sw ne 32-12n-30e	not drilled	Permit expired 7/2008
950	10-02-30 State	sw ne 02-10n-30e	2650 ft	Drilled 2/2008, temporarily abandoned
951	10-31-31 State	nw sw 31-10n-31e	not drilled	Permit expired 9/2008
952	11-20-31x State	se nw 20-11n-31e	not drilled	Permit expired 7/2008
953	10-02-30x State	sw ne 02-10n-30e	1899 ft	Drilled 2/2008, temporarily abandoned
954	12-34-29x State	nw ne 34-12n-29e	3048 ft	Drilled 2/2008, shut-in
955	11-29-31x State	se nw 29-11n-31e	1909 ft	Drilled 3/2008, temporarily abandoned
956	12-31-30 State	se nw 31-12n-30e	2814 ft	Drilled 3/2008, temporarily abandoned
957	12-31-30x State	se nw 31-12n-30e	2622 ft	Drilled 3/2008, temporarily abandoned
958	12-30-31 State	sw sw 30-12n-31e	not drilled	Permit expired 8/2008
959	10-29-31 State	sw ne 29-10n-31e	4202 ft	Drilled 3/2008, temporarily abandoned
960	10-29-31x State	sw ne 29-10n-31e	not drilled	Permit expired 8/2008
961	12-30-31x State	sw sw 30-12n-31e	not drilled	Permit expired 9/2008
962	09-05-31 State	nw se 05-09n-31e	122	Drilled 4/2008, temporarily abandoned
963	09-05-31x State	nw se 05-09n-31e	2969 ft	Drilled 4/2008, temporarily abandoned
964	10-05-30 State	nw nw 05-10n-30e	2600 ft	Drilled 3/2008, temporarily abandoned
965	10-05-30x State	nw nw 05-10n-30e	not drilled	Permit expired 9/2008
966	11-23-30 State	nw ne 23-11n-30e	2550 ft	Drilled 4/2008, shut-in
967	11-23-30x State	nw ne 23-11n-30e	not drilled	Permit expired 9/2008
968	12-34-30 State	se nw 34-12n-30e	not drilled	Permit expired 12/2008
969	12-34-30x State	se nw 34-12n-30e	not drilled	Permit expired 12/2008
970	11-24-29x State	sw ne 24-11n-29e	2137 ft	Drilled 4/2008, temporarily abandoned
971	12-30-29 State	ne sw 30-12n-29e	not drilled	Permit expired 1/2009
972	12-30-29x State	ne sw 30-12n-29e	not drilled	Permit expired 1/2009
973	10-08-31 State	sw ne 08-10n-31e	not drilled	Permit expired 2/14/2009
974	10-08-31x State	sw ne 08-10n-31e	not drilled	Permit expired 2/14/2009
978	12-36-29 State	nw sw 36-12n-29e	not drilled	Permitted 2/13/2009
979	11-03-29x State	ne se 03-11n-29e	80 ft	Spudded 2/2009, temporarily abandoned
980	11-06-29 State	se se 06-11n-29e	not drilled	Permitted 2/13/2009

06/19/2009

Ridgeway Arizona Oil Corporation Wells



06/19/09



MILES

AOGCC MTG 7-17-09

<u>Name</u>	<u>Representing</u>
/ MICHELE VAN QUATHEN	NGS Energy
/ Laura Lucci	NGS Energy
/ Charles Chabannes	NGS Energy
/ DEIRDRE McCaffrey	NGS Energy
/ GEOF STOREY	NGS ENERGY
/ Thomas White	Ridgeway AZ
/ SLAV SOPKIN	EDC