

Mary Van Der Loop

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Mary Van Der Loop
Certified Petroleum Geologist #2756

QUALIFICATIONS

Proven record of quality prospects exhibiting creativity and superior breadth of vision. Proven oil and gas finding track record at both prospect and trend levels. Excellent communication skills, presentation skills, and organizational ability. Self-motivated, hard-working individual with over thirty years of oil and gas prospecting experience

WORK HISTORY

2020-Present

Currently PhD Candidate at University of Houston, Houston, TX, Dissertation Topic Geologic Sequestration of Carbon Dioxide, Advisors Dr. John Castagna and Dr. Christine Ehlig-Economides. Dissertation study area: Western Delaware Basin, Permian Basin, West Texas. GPA: 3.8 out of 4.0

2002-Present

Owner, Sanctuary Oaks Consultants International Inc.

Geological Consulting Firm, Prospect Generation and Property Evaluation
Specialties: Carbon Dioxide Capture and Geologic Sequestration of Carbon Dioxide, Exploration Prospect Generation, Carbonates, Horizontal Plays, Gas/Oil Shale Plays, Tight Gas Sand Plays.

Areas of Interest: Permian Basin, Oklahoma, South Texas, East Texas, Louisiana, Gulf of Mexico, Colombia

Projects to date: Documentation of paleo-overpressured Wolfcampian sediments through mudlog and resistivity log evaluation, significant for carbon capture and enhanced oil recovery. Regional evaluations of Permian Basin Bone Spring Oil Shale and Wolfcamp Oil Shale plays for private client including extensive log correlation. Client oil and gas production increased tenfold. Prospect development in Woodford Oil Shale play including secondary horizons potential. Regional evaluations of Marcellus and Haynesville Gas Shale Plays for Weatherford Labs Core Consortia. Gas & Oil Shale play development projects in Arkoma (Fayetteville, Woodford Shales), Black Warrior (Floyd Shale), Anadarko (Woodford, Springer Shales), and Williston (Bakken Shale) basins, resulting in significant acreage

acquisitions for clients. Studies included cuttings and core sample collection, regional geologic studies, interpretation of data generated from cuttings/core sampling program (Rock Eval, XRay Diffraction, Porosity/Permeability, Thermal Maturity) and GeoMechanical properties of shale horizon. Deep Water: Eight month project to evaluate Deep Water Gulf of Mexico leases for Wilcox/Middle Miocene Potential for Lease Sale 213. International: Current project (2012) – reserve certification of offshore Democratic Republic of Congo producing fields, including net pay mapping and volumetrics. Detailed evaluation of Colombia’s Upper Magdalena Valley for prospect potential in Tertiary sediments. Detailed stratigraphic evaluation of Golfo San Jorge Basin waterflood area, Argentina, for reserves audit. Evaluation of blocks and producing fields in Peru’s Maranon Basin and Columbia’s Llanos, Magdalena, and Sinu Basins for reserves audit and trap model development. Projects in East Texas/North Louisiana Cotton Valley and Travis Peak/Hosston plays. Exploration prospects sold in Oklahoma Morrow Trend; multiple gas discoveries to date. Exploratory play development in Lower Paleozoic carbonates of West Texas; Field Development projects in mature areas of South Texas, with five successful development wells to date, no dry holes. Field Development projects in West Texas and East Texas. Due diligence evaluation (company wide) of PUD reserves, Data room evaluations of producing properties.

2005-2006

Chief Geologist, Kerogen Resources, Inc., Houston, TX

Generate and evaluate Gas Shale Resource projects in Arkoma and other basins, including cuttings and core analysis programs; propose and sell gas shale projects to funding partners, evaluate acreage submittals for gas shale prospectivity, train junior geologists in gas shale evaluation techniques.

2001-2002

Senior Geologist, BP North American Exploration, Houston, TX

Exploration, Deep Miocene Gas Play, Gulf of Mexico. Analysis of the Gulf of Mexico basement structure and its influence on sedimentation patterns, thermal history, and oil generation/migration pathways, using gravity, magnetics and well control databases.

2000-2001

Senior Geologist, BP Americas Inc., Houston, TX

Permian Basin exploration/exploitation; Development and exploration geology, Southern Permian Basin; work with team of three engineers in \$58 MM/yr capital expenditure program in Horizontal Devonian and Horizontal Montoya, four active rigs; Spraberry Trend development and extension program, one active rig. Initiated expansion of high rate (10-17 MMCFGPD) Horizontal Montoya play through extensive knowledge of Delaware Basin structure and stratigraphy, and extensive industry contact network. Business Unit met production targets as a result of this active drilling program. With

multidisciplinary team, caused acquisition of two 8000+ acre blocks for development of Horizontal Devonian play, resulting in doubled drilling budget for 2002.

1994-2000

Principal Geologist, Vastar Resources, Houston, TX

Offshore exploration/exploitation

Initiated multidiscipline training on state-of-art geophysical software.

Evaluation of producing fields for acquisition potential in Ship Shoal-South Timbalier-Ewing Bank areas. Field studies pinpointed acquisition targets with conventional amplitude related pay and non-amplitude related, low-resistivity low-contrast pay.

Anadarko Basin exploration/exploitation

Initiated and developed high potential Morrow-Springer infill drilling play by coordinating and utilizing teamwork with IHS/Dwight's Energydata; over 7000 wells were analyzed for behind pipe and undrained reserve potential. This computer intensive project highlights TCF infill drilling reserve potential in a mature play. Vastar utilized the study to change its approach to making acquisitions in this basin.

Analyzed and developed extension/infill play in Red Fork Tight Gas Sands, using seismic stratigraphic concepts, vendor supplied Artificial Neural Network Analysis, and over 1000 wells; created extensive database for mapping. Ten prospects developed; three tested, with one discovery.

Developed Hunton structure play, tested by 3D seismic; resulted in one Hunton discovery, 8 MMCFGPD, reserves 5 BCFG, and one Atoka discovery, 4.5 MMCFGPD, field reserves 26 BCFG. Numerous Hunton stratigraphic/structural leads developed based on paleostructure concepts.

1993-1994

Senior Geologist, ARCO Oil and Gas, Dallas, TX

Frontier Areas Exploration

Analyzed discovery trends in Frontier areas 1975-1990, with extensive use of Nehring database; to determine if an economic reserve base existed in Frontier areas. This study provided hard data to support the Frontier exploration program to ARCO senior management.

Analyzed potential of reentering 1880's Trenton Trend in Ohio to recover bypassed oil and improve recovery factor of this historic trend. Developed method of cataloguing and computerizing historic data.

Developed prospects in Big Horn Basin, Sub Absaroka Volcanics.

Developed lead areas in East Continent Rift, MidContinent Rift Pre-Cambrian Basins.

1991-1993

Senior Geologist, ARCO Oil and Gas, Midland, TX

Developed gas property acquisition play, in low gas price environment, with engineering team members, in Delaware Basin gas fields; 1 TCF gas reserves

targeted in underdeveloped competitor properties. (This play has since been successful).

Developed high potential (200 BCF) gas play in Strawn chert conglomerates in Delaware Basin; play idea starts with workover of an existing ARCO well. Evaluated producing trend containing over 12000 wells for deeper exploratory potential, with innovative use of ARCO databases. This work resulted in a change of management direction in the trend.

1989-1991

Independent Consultant, Midland, TX

Contract with Energy Exploration Management Company/Canadian Hunter; Initiated and developed Strawn chert conglomerate stratigraphic prospect trend with high reserve potential on Central Basin Platform and Midland Basin. Wildcat discovery in 1990 potentialized for 200 BOPD.

1986-1989

Senior Geologist, BHP Petroleum, Midland, TX

Initiated and developed stratigraphic Wolfcamp carbonate detrital play with significant reserve potential in several prospects over all Midland Basin. Sold \$1.1 MM in prospects in this trend in a very slow market. This play became one of the most active in the Permian Basin with the use of 3D data.

Initiated evaluation of Val Verde Basin Ellenburger gas play, and Midland Basin Ellenburger oil play.

Evaluated producing properties in Upton, Glasscock, Yoakum, Midland, Garza, and Cochran counties, with emphasis on secondary recovery potential.

1977-1986

Area Geologist, Monsanto Oil Co., Midland, TX

Supervised four to ten geologists and support personnel in more than seven major exploration and development programs in the Permian Basin Area.

Average annual exploratory budget \$2 MM.

Analyzed discovery trends in Permian Basin and directed exploratory effort toward trends with most potential.

Developed effective working relationships with all members of exploration and production team through communications skills and dedication to team effort.

Team effort resulted in reserve additions of 3.7 MMBOE in Chaves Co.

Lower Paleozoics, Bone Spring Sands, Yates Sands, Delaware Sands, and Wolfcamp Carbonates of Glasscock County. Additions were new field wildcat discoveries, new pool discoveries, and field extensions, in structural, stratigraphic, and combination traps.

Promoted the development and application of new exploratory ideas in Delaware Mountain Group Sands, Bone Spring Detrital Carbonates, and Yates Sands.

Effectively coordinated exploratory programs with geophysical staff using state of the art geophysical techniques.

Exploration Geologist, Monsanto Oil Co.

Developed prospects in Delaware Basin Lower Paleozoic Structure Play, Atoka Carbonate Bank Play, Delaware Mountain Group Sands Play, Morrow Deltaic Sands Trend. Well Site Geology

1975-1977

Geologist, Texaco

Developed prospects in Delaware Mountain Group Sands, Silurian, and Atoka Carbonates. Wellsite geology

EDUCATION

Bachelor of Science in Geology, University of Wisconsin, Madison, 1975
Master of Science in Geology, University of Texas, Arlington, 1983
Numerous short courses in all phases of petroleum exploration and production
Current PhD Candidate, University of Houston, Houston, TX 2019-present

COMPUTER SKILLS

- Microsoft Excel, Microsoft Word, Microsoft Access, PowerPoint
 - GeoFrame, & Geoquest products; Finder, Stratlog, Charisma.
 - Dwight's Powertools (Economics and Production Software)
 - OGRE Economics
 - Geographix Mapping & Cross Section Software
 - Petra (Geoplus Corp). Mapping and Database Management Software
 - Petra License Owner
 - Petrel
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PUBLICATIONS

1984 Carbonate Facies in the Pueblo Formation -- Lower Permian, Eastern Shelf; Transgressive Phylloid Algal Biostromes IN Lower Permian to Upper Pliocene Carbonate and Clastic Facies, Southern Eastern Shelf - SEPM Field Trip Guidebook Publication #84-23, G. Grover, Jr. editor, P. 34-62

1990 Amacker Tippet Wolfcamp Field: Hydrocarbon Production from Deep Water Grainflows, Debris Flows and Slide Blocks IN Permian Basin Oil and Gas Fields: Innovative Ideas in Exploration and Development, WTGS Publication #90-87, J. E. Flis and R. E. Price, editors, p. 133-152

1991 Depositional Environments in the Arenoso Field, Winkler County, Texas IN Permian Basin Plays, Tomorrows' Technology Today, WTGS Publication #91-89

1992 Stratigraphy of Pennsylvanian Detrital Reservoirs, Permian Basin, abstract IN Transactions of the Southwest Section AAPG, 1992 Convention, Midland, Texas AAPG SWS, Publication SWS #92-90, p. 301

1995 Is there a Resource Base in Lower 48 Frontiers? poster presented at ARCO Exploration Technology Conference, May 22-24, 1994, Plano Texas, recipient of Best Poster award.

1996 Is there a Resource Base in Lower 48 Frontiers? paper presented at AAPG Annual Convention, 1995, Houston, TX, AAPG Bulletin Vol 79, p. 99-100, 1995

1997 Upper Red Fork Depositional Environments, Anadarko Basin, poster presented at ARCO Annual Exploration Technology Conference, October 1997, Plano, Texas.

1999 Identification of Morrow-Springer Infill Opportunities, Anadarko Basin, Using Reservoir Database Technique, Poster prepared for ARCO Annual Exploration Technology Conference, October 1999, Plano, Texas

2005 Historical Comparison of PD vs PUD: Largest Publicly Traded Oil Companies: paper presented at AAPG Annual Convention, 2005, Calgary Alberta Canada, June 21, 2005, AAPG Bulletin 2005.

2016 Proposed Stratigraphic Correlation Framework, Wolfcamp of Delaware Basin, West Texas, paper presented at AAPG SW Section Convention, April 2016. This paper was also presented at Delaware Basin Playmaker Forum, Midland Texas, Feb 22, 2017, was presented in Poster Format at AAPG Convention 100th Anniversary AAPG, Houston, TX April 2017

2019 Paleo Overpressure in the Delaware Basin Determined from Drill Stem Tests, Resistivity Logs and Mud Logs; poster presented at AAPG Convention May 21, 2019, San Antonio, TX. This paper was also presented at the Houston Geological Society dinner meeting September 16, 2019.

2022 Houston Geological Society Short Course on Overpressure: Paleo Overpressure in the Delaware Basin Determined from Drill Stem Tests, Resistivity Logs and Mud Logs presented to HGS on February 16, 2022.

2023 Paleo Overpressure in the West Texas Permian Delaware Basin Determined From DST, Resistivity Logs and Mud Logs; a Potential Reservoir for CO₂ Storage has been submitted for review for publication to AAPG Bulletin on February 28, 2023.

2023 Characterization of Third Bone Spring Sand Gigaton CO₂ Storage Complex, Delaware Basin, West Texas: Using the Cookbook Approach in Defining CO₂ Sequestration Targets; Poster presented at the 29th Annual Milton Dobrin Lecture, University of Houston, February 21, 2023

PROFESSIONAL AFFILIATIONS & AWARDS

Texas Registered Professional Geoscientist #3121
AAPG American Association of Petroleum Geologists, member since 1976
Certified Petroleum Geologist #2756
AAPG House of Delegates Member 1985-1990
WTGS West Texas Geological Society (President, 1989-90, Dedicated Service Award)
Honorary Life Member, West Texas Geological Society, 2006
SEPM Society for Sedimentary Geology (Permian Basin Section President, 1984-85)
Honorary Life Member, Permian Basin Section SEPM
SEG Society of Exploration Geophysicists
HGS Houston Geological Society
Oklahoma City Geological Society
SIPES Society of Independent Professional Earth Scientists

PERSONAL

Excellent Health, Married, Three Children, Three Grandchildren
Hobbies: Geology, reading, walking
Languages: English & Spanish

REFERENCES AVAILABLE ON REQUEST