Becoming a Registered Professional Geologist and Doing Mineral Remoteness Opinions -Another Way for Geologists to Make a Living*

Scott T. Hector¹

Search and Discovery Article #70358 (2018)**
Posted September 17, 2018

¹Hobby Energy, Rio Vista, CA, United States (scott.hector@gmail.com)

Abstract

Many states in the United States now require a geologist to be a registered professional geologist in order to perform certain tasks. Such tasks include making a mineral remoteness opinion. This "opinion" is often required when the owners of the surface rights and the mineral rights are not the same. In that case, the mineral holders often want their rights to be considered when lands are being proposed for a solar or wind farm development. This is also often the case when land is being sought for mitigation purposes for the preservation of habitat. Thus, a mineral remoteness opinion is authorized, to give both sides of the argument a better understanding of the actual mineral potential of the surface and sub-surface. The geologist then determines what mineral commodities may be present on the property, and also evaluates the likelihood of the commodity having commercial viability given the remoteness of its location. While much of the work of Hobby Energy has involved discussing the potential for oil and natural gas under certain properties, it has also included gypsum and aggregate evaluation.

^{*}Adapted from oral presentation given at AAPG 2018 Annual Convention & Exhibition, Salt Lake City, Utah, United States, May 20-23, 2018

^{**}Datapages © 2018. Serial rights given by author. For all other rights contact author directly. DOI:10.1306/70358Hector2018

BECOMING A REGISTERED PROFESSIONAL GEOLOGIST AND DOING MINERAL REMOTENESS OPINIONS – ANOTHER WAY FOR GEOLOGISTS TO MAKE A LIVING

SCOTT T. HECTOR
HOBBY ENERGY
RIO VISTA, CALIFORNIA
2018 AAPG CONVENTION, SALT LAKE CITY

A TALE OF TWO HALVES

1. Professional Registered Geologist

2. MINERAL REMOTENESS OPINIONS

NO MATTER
HOW YOU
TRY TO SELL
YOURSELF

>>>>>>



NO MATTER
HOW FAR
YOU HAVE
TO GO





NO MATTER HOW YOU ADVERTISE WHAT YOU BELIEVE





NO MATTER WHO YOU THINK CAN PREDICT OIL FUTURES





YOU MIGHT WANT TO CONSIDER EXPANDING YOUR WAYS TO MAKE MONEY AS A

<<>>

STATE REGISTERED PROFESSIONAL GEOLOGIST!!!!!!!!

THE NATIONAL ASSOCATION OF STATE BOARDS OF GEOLOGY



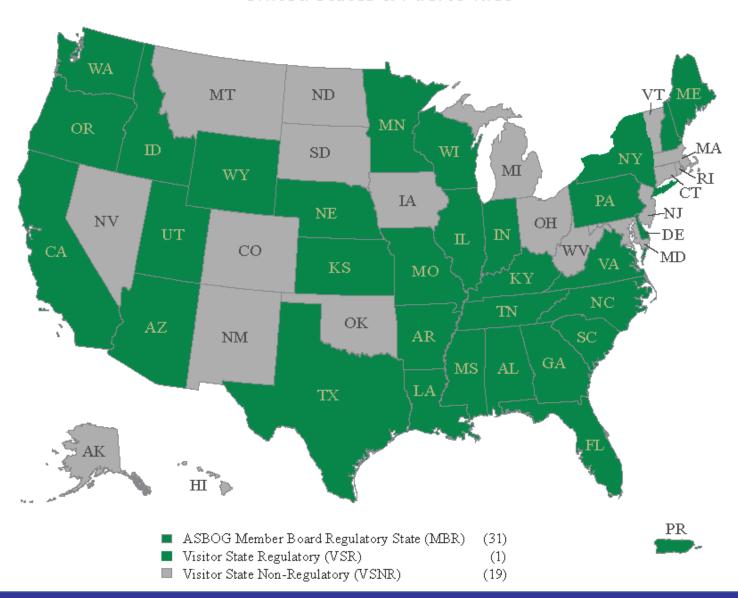
"ASBOG" RUNS EXAMS THAT ARE HONORED BY

MOST STATES

FOR BECOMING A REGISTERED PROFESSIONAL

GEOLOGIST

United States & Puerto Rico



TOPICS IN THIS TALK

1. GET YOUR PROFESSIONAL REGISTRATION

2. MINERAL REMOTENESS OPINIONS

SCOTT TOWERS HECTOR – WHY ME?

1981 - CALIFORNIA LICENSE

1990 – 2003 - EXAMINATION COMMITTEE

2017 - UTAH LICENSE

Susan Nash of AAPG called and asked me to give this talk!

HOBBY ENERGY PROFESSIONAL GEOLOGIST LICENSES

EMPLOYEE	STATE	NUMBER	AGENCY -See below
Blake, Karen E.	Texas	5936	
Hector, Scott T.	California	3682	
Hector, Scott T.	Utah	10234574-2250	

AGENCY IN CHARGE OF PROFESSIONAL GEOLOGICAL LICENSES:

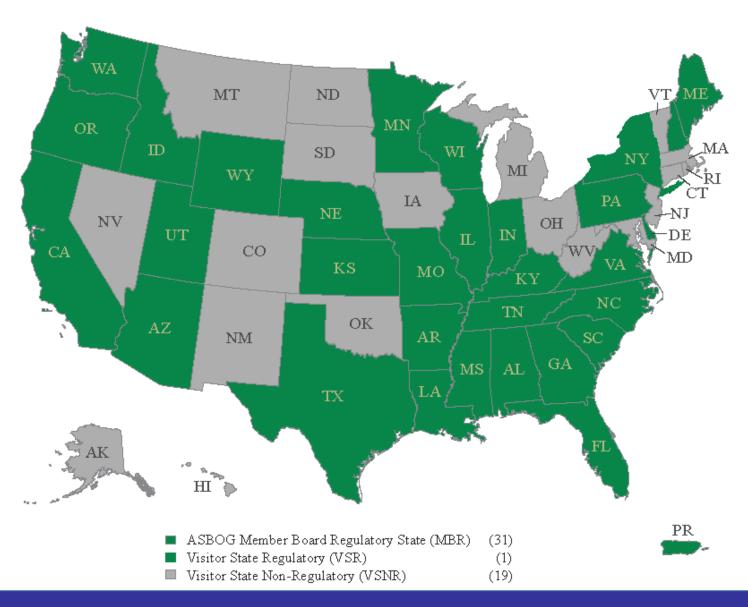
1.	Texas	Board of Professional Geoscientists
- .	ICAGS	Board of Fronciscional acoscicings

2. California Board of Registration of Engineers, Land Surveyors and Geologists, Dept. of

Consumer Affairs

3. Utah Division of Occupational and Professional Licensing, Dept. of Commerce

United States & Puerto Rico



HISTORY OF THE CALIFORNIA REGISTRATION EXAMINATION

- 1. STARTED IN THE 1970'S
- 2. INTITIALLY A DUAL EXAM- MULTIPLE CHOICE & WRITTEN EXAM
- 3. STATE DECIDES TO GO TO ALL MULTIPLE CHOICE AND ASBOG
- 4. ASBOG = AMERICAN ASSOCIATION OF STATE BOARDS OF GEOLOGY
- 5. THE STATE BOARD OF REGISTRATION OF GEOLOGISTS AND GEOPHYSICISTS

IN 2005 OR SO, A POLITICIAN DESIDES TO PUT THE GEOLOGY REGISTRATION WITH THE ENGINEERS

HE SHUTS DOWN THE BOARD OF REGISTRATION FOR GEOLOGISTS,
WHICH, THOUGH SELF FUNDING, IS SEEN AS A PLOY
TO SHOW THAT HE IS TRIMMING THE SIZE OF GOVERNMENT

SO, THE GEOLOGISTS ARE NOW PART OF THE

BOARD OF REGISTRATION OF ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS

WHO WAS THAT POLITICIAN?



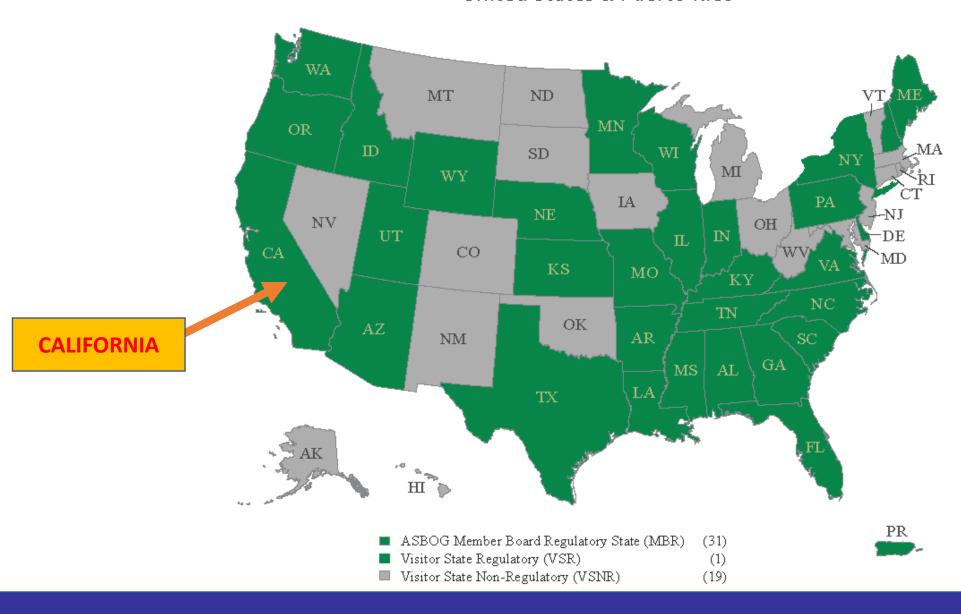
WHAT?

YOU STILL DON'T KNOW WHO THIS IS?

SHALL WE TAKE A LOOK AT ANOTHER PICTURE OF THIS POLITICIAN?



United States & Puerto Rico



ASBOG STATE BY STATE REGULATIONS FOR EXAMS

NOTE: THIS
SLIDE NOT
INTENDED TO
BE SEEN
CLEARLY BY
AUDIENCE

	ALIA!	STA	NDA	RDS	(Nov	remb	er 20	116)							1107770											_			-
		_						EME	NTS						Λ	UTII	ORT	Y					EXE	MPT	IONS			_	_
EMARKS	BS/BA Geoscience	BS/BA Engineering	Walver of Degrees	Minimum Credit Hrs (Sem)-No Degree	Work Experience (Years post BA/BS)	Years Experience in Lleu of Education	Credit for Post-graduate Degree	Specially Available/Required	x Geophysics (Independent Exam)	Fundamentals of Geology Examination	Practice of Geology Examination		Geologist-In-Training or GRIT's	Ethics/Cont. Education Requirements	Cooperative Licensure(Carnity/Reciprocily)	Temporary Permit Registration	Practice Agreement (PEs)	Waiver of Examination	Federal Employees	State Employees	E Local/Municipal Employees	Enginears	Teaching	Academic Research	Other Professionals	Petroleum Resource	Other Minerals (incl. sand, gravel, etc.)	Exploration/Public	
		-		- Mag-	au-ro	154511			-	BLA	NK =	- NO	T req	uired	оги	nspec	ified	for re	gistra	ition	-								
SBOG® Model Law	Y	Man.		30	4	A PROPERTY.		Y	Y	ASI	AS	∘ M o	Y	Y	Υ	Y		Y					x						T
			_	30	4			1	1	AS	-	0000	F-5100				10000					-			TO SE		225		1
State Alabama	Υ	Υ		30	5		Y			AS	AS	SB	Y	Men Y ¹	nber Y	Bα	rd S	Y	х	Y	x	x	x	x		x	x		T
Arizona	,	-	γ	30	4	8	,			AS	AS		γ	Y.	T	7	Y	Y	X	7	^	^	X	^			x	555	1
Anzona	γ		7	30	5	8	Y	Y		AS	AS		Y		Y	Y	4	Y	X	x	х		X				X		+
Arkansas California	Y		-	30	3		Y	Y	Y	AS	AS	Y	-		Y	Y			x	X	X		-			-			1
	-		-	-	-		Y	Y	Y			Y	Y						×			×	×						-
Delaware	Y	222		30	5	00000				AS	AS			Y	Y		-						X						-
Florida	У			30	5					AS	AS		Υ		Y	Υ	Y	Y	Х	X	х	X	X	X		X	X		-
Georgia	Υ			30	5					AS	AS		010000		Y		Υ				х		х						4
Idaho	Y			30	5		Y			AS	AS	_	Υ		Υ	Υ	-		x	х									4
Illinois	γ	2000		30	4					AS	AS				Υ			Υ	х	X			X	X	X		x		+
Indiana	Y			30	5		Y		-	AS	AS							Y	x	x	x		×	x					+
Kansas	Y	Y		30	4		Y	-		AS	AS	_	Y	Υ	Y		-					X	×			X			1
Kentucky	Y	Y		30	5					AS	AS	5-01	Y		Υ	Υ					х	Х	x		-	_			+
Louisiana	A			30	5		Y			AS	AS	-	γ	Υ	Υ			- 669							_				+
` Maine	Y			30	7					AS	AS	Y			Υ								X						ļ
Minnesota	Y	10000		30	5					AS	AS		Υ	Y	Y			Y				х	x				х		+
Mississippi	Y	Y		30	4		Y	Y		AS	AS		Y	Y ²	Y	Υ	Y	Y								X			+
Missouri	Υ	Y		30	3					AS	AS	Name of the last	Υ					Υ	х			х							+
Nebraska	Υ			30	5		Υ			AS	AS		Y	_	Υ	Υ	Υ	Y			х		x	х	X		x	Х	1
New Hampshire	Υ	Υ		30	5					AS	AS			Υ	-	Υ	-		×	X		×	x	×	×		-	-	1
New York	Y			30	5	12	Y			AS	AS		Y			Y							×	×					+
North Carolina	Y	Y		30	5		Y	-		AS	AS		Y		Y	Y	Υ		X	X	X	х	X	X			×		1
Oregon	Y			30	5		Y	Υ	_	AS	AS		Υ	_	Υ	Y			х				х	X					1
Pennsylvania	Y			30	5		Y			AS	AS		Y	Υ	Y	Y						x	х				Х		4
Puerto Rico	Υ			30	3					AS	AS		Υ		Υ	Υ					х	Х	х		_		х	-	1
South Carolina	Y			30	5	-	Υ			AS	AS			Y	Y	Y	Y	Y	x	х	x	х	×	х			х		1
Tennessee	Y			30	5		Y	00000		AS	AS				Y		_						×	×					+
Texas	Υ		٧	30	5		Y		Υ	AS	AS		٧	Y	Y	Y	Y	Y	x			Х	х	х		х	х	X	1
Utah	Y			30	5					AS	AS				Y							х	x						1
Virginia	Y	Y		30	7				-	AS	AS		Y				_	Y			х	х	х				х		4
Washington	Υ			24	5		Υ	Υ		AS	AS		Υ		Υ		_		х			х	х		х		х	Х	1
Wisconsin	Y	Y		30	5					AS	AS				Y			Y				X	×				x		1

Notes:
1. Licensees 65 and older are exempt

HIGHLIGHTS OF SOME STATES IN THE ASBOG SOLAR SYSTEM

STATE	CALIF.	UTAH	TEXAS	MAINE
BS/BA Geology	Υ	Υ	Υ	Υ
Waiver of Dg.			Υ	
Min.Crd.Hrs.	30	30	30	30
Work Exp. (post BA/BS)	3	5	5	7
Grad. Degree Credit of Yrs.	Υ			
Fundamen. Of Geol. Exam	AS	AS	AS	As
Practice of Geo. Exam	AS	AS	AS	AS
State Specific Exam.	Υ			Υ
Reciprocity		Υ	Υ	
Waiver Exam			Υ	
Petroleum Exemption			Υ	
Engineers Exemption	Υ	Υ	Υ	

WHAT YOU HAVE TO DO TO BE ABLE TO TAKE THE ASBOG EXAM

- 1. **GEOLOGY DEGREE** BACHELOR's or HIGHER in geological sciences
- 2. **EXPERIENCE** 5 years minimum in most states (some credit is given for geological study in school and teaching)
- 3. <u>DEMONSTRATE WORK EXPERIENCE</u> OF A CHARACTER TO ASSUME RESPONSIBLE CHARGE OF GEOLOGICAL WORK
- 4. YOU HAVE TO SUBMIT YOUR INFORMATION TO THE STATE BOARD YOU WANT TO WORK IN

(over 30 states are members of ASBOG)

- 1. Sealed, certified transcripts of all relevant degrees
- 2. Experience must be documented by reference providers
- 3. Applicants must provide proof of fingerprinting (I didn't do this)

FIRST PAGE OF APPLICATION CHECK-LIST FOR CALIFORNIA ASBOG EXAM

NOTE: THIS SLIDE ALSO NOT INTENDED TO BE SEEN CLEARLY BY AUDIENCE STATE OF CALIFORNIA GOVERNOR EDMUND G. BROWN

BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS 2535 Capitol Oaks Drive, Suite 300, Sacramento, California, 95833-2944 Telephone: (916) 263-2222 – Toll Free: 1-866-780-5370 Facsimile: (916) 263-2246



www.bpelsg.ca.gov Application Checklist and Instructions Professional Geologist (PG) Examinations

Note: In order for an individual to become licensed as a PG in the State of California, they must qualify for, take, and pass the ASBOG® Fundamentals of Geology (FG), ASBOG® Practice of Geology (PG), and the California Specific Examination (CSE). The Board does not have reciprocity agreements with any other state; however, if an applicant has passed the ASBOG® FG and/or PG examinations in another state (after the date of November 1, 1996) the Board will accept those scores (a "<u>Verification of Licensure or Passage of Examinations</u>" form completed by the appropriate state agency is required).

The following checklist is intended to help PG applicants complete all application requirements:

- Qualifying Education (Business and Professions Code § 7841): Graduation with a major in geological sciences from a college or university is required. Applicants must request and submit sealed, certified transcripts for all relevant degrees and course work with their application (including community college transcripts). Unsealed transcripts will not be accepted. Each year of undergraduate study in geological sciences shall count as one-half year of experience, up to a maximum of two years; additionally, each year of graduate study or research counts as one year of experience. Teaching in the geological sciences at a college level shall be credited year-for-year toward meeting the requirement in this category, provided that total teaching experience includes a minimum of six semester units per semester, or equivalent if on the quarter system, of upper division or graduate courses. Credit for undergraduate study, graduate study, and teaching, individually, or in any combination thereof, shall in no case exceed a total of three years towards meeting the requirement of at least five years of professional geological education and work experience.
- Qualifying Experience (Business and Professions Code § 7841): An applicant for licensure as a Professional Geologist must have a combination of at least five years of geological education and professional geological work experience of a character satisfactory to the Board, demonstrating that the applicant is qualified to assume responsible charge of this work upon licensure as a geologist. Credit will not be given for professional geological work until the applicant has completed the education requirements (work experience completed before the degree conferral date of the qualifying degree cannot be counted). This experience shall be gained under the supervision of a licensed Professional Geologist, Professional Geophysicist, or Professional Civil Engineer in this or any other state, or under the supervision of others who, in the opinion of the Board, have the training and experience to have responsible charge of geological work.

Professional geological work does not include routine sampling, laboratory work, or geological drafting. Credit will not be given for professional geological work experience performed during the same time period when full-time graduate study or research is being done for which educational experience credit is allowed. Part-time graduate study or research and part-time professional geological work experience will be prorated and combined on a 12-calendar month basis.

Request "Independent Evaluation of Scope, Character and Duration of Applicant's Qualifying Geological Work Experience" form(s) from qualified reference providers (Business and Professions Code § 7841). The Board encourages applicants to review this

EDUCATION

EXPERIENCE

"Qualified Reference Providers"

SECOND PAGE OF ASBOG CHECKLIST SENT TO APPLICANTS FOR CALIFORNIA EXAMS

NOTE: THIS PAGE IS NOT INTENDED TO BE SEEN CLEARLY BY THE AUDIENCE, EITHER form with their reference providers prior to submission with their application to ensure they have enough experience to qualify to take the required examinations. Only those references necessary to adequately document an applicant's qualifying experience are required (at least one reference must be submitted, or more if necessary to fully document the required experience). Please include a copy of the Geology "Definitions of Critical Concepts" with each evaluation you request. If the reference provider is not a licensed Professional Geologist, Professional Geophysicist, or Professional Civil Engineer, they must provide their resume with the reference for verification of their qualifications to provide a reference. The completed form(s) must accompany your application.

- □ All applicants are required to provide proof of fingerprinting when submitting applications. For more information and to download the Board specific <u>Live Scan Form</u> (in California) or to request Board specific hard copy <u>fingerprint cards</u>, please visit the Board's Frequently Asked Questions (FAQs).
- Contact the court to obtain original certified court documentation for all convictions other than a minor traffic offense (including entering a plea of nolo contendere). Non-certified copies are not accepted.
- Submit: 1) the "Application for the Professional Geologist and Geophysicist Examinations;" 2) payment of applicable examination fee(s) and the \$250 non-refundable application filing fee (see fee schedule on the application); 3) all transcript(s); and 4) "Independent Evaluation of Scope, Character and Duration of Applicant's Qualifying Geological Work Experience" form(s) postmarked by the final filing date for the desired examination cycle. If additional information is requested, applicants will have until 70 days prior to the examination date to submit the requested information or documents.

Applicants will be contacted, via the e-mail address provided by them on their application, once examination eligibility has been determined.

Please make checks, money orders, or bank drafts payable to the "Department of Consumer Affairs" (DCA). The applicant's cancelled check will serve as receipt for fees paid.

<u>Previous California PG Examination Applicants:</u> Applicants who have taken but did not pass any of the PG examinations *within the past two years* need not provide new transcripts or "Independent Evaluations of Scope"; however, it is necessary to complete a <u>Re-Examination Form</u> and include payment of all applicable fees, postmarked by the final re-exam date for the desired examination cycle.

Mail the application and all materials to:

Board for Professional Engineers, Land Surveyors, and Geologists 2535 Capitol Oaks Drive, Suite 300 • Sacramento, CA 95833-2944

Tracking or delivery confirmation is recommended so you know the Board has received your application

Due to the volume of applications received, the Board cannot confirm receipt of individual applications.

FINGERPRINTS

\$250 NON-REFUNDABLE APPLICATION FILING FEE

SAMPLE QUESTIONS

FROM

CALIFORNIA SPECIFIC EXAMINATION

Geology California Specific Examination (CSE) Sample Questions

Example No. 1

Shallow test pits excavated for a proposed project within the Melones Fault Zone reveal the presence of tremolite schist. Which of the following conditions would typically require mitigation during site development?

- A. Fugitive dust
- B. Expansive soils
- C. Corrosive soils
- D. Collapsible soils

Example No. 2

A geologist is writing a report to estimate the extent of dissolved contamination from a source that has been removed. If the data set is limited, which data characteristics would give the best estimate of the extent of the contaminants?

- A. The samples were collected over a long period of time and there is a trend in concentrations
- B. The samples were collected at high frequency and there is variability in concentrations
- C. The samples were collected by the same person using the same equipment each time
- D. The samples were collected on the same calendar dates each time

Example No. 3

A quantitative evaluation of seismic hazard potential at a site should include which of the following work tasks?

- A. Subsurface exploration, geotechnical testing, and geologic mapping
- B. Subsurface exploration, geotechnical testing, and in-situ permeability testing
- C. Seismic reflection survey, land-use mapping, and geologic mapping
- D. Seismic reflection survey, land-use mapping, and in-situ permeability testing

EXAMINATIONS GIVEN BY THE STATE TRY TO **TEST WHAT WE** REALLY DO ON OUR **JOBS!**

THE STATE OF CALIFORNIA RECENTLY SENT ME AN INVITATION TO DO JUST THAT:

"We are inviting California Professional Geologists to participate in an online survey to identify the tasks and knowledge that are relevant to the profession of California geology"

"The purpose of the occupational analysis is to obtain feedback from a representative group of licensees and use the results to update the California Specific Exam for Professional Geologists"

(If given in 1848, all of the geologists would be trying to find GOLD! The test now has been broadened to other aspects of our science)

SINCE I SAT ON THE EXAM COMMITTEE, I KNOW WHAT THAT IS ALL ABOUT. EVERY FIVE YEARS, THE STATE GOES THROUGH A REVIEW TO MAKE SURE THE TEST IS "CURRENT". WE HAVE TO HAVE A LEGALLY DEFENSABLE TEST WHICH ASSURES THE PUBLIC THAT YOU, THE PROFESSIONAL GEOLOGIST IS:

MINIMALLY COMPETENT!



WE WILL NOW ASSUME THAT YOU HAVE:

- 1. MET THE MINIMUM REQUIREMENTS TO TAKE THE ASBOG TEST (and, in California and Maine, passed an additional test)
- 2. THE YOU HAVE PASSED THE TEST(S) with at least the MINIMUM passing score!
- 3. THAT YOU HAVE BEEN DEEMED TO BE MINIMALLY COMPETENT IN YOUR PROFESSION
- 4. NOW, YOU CAN PROCEED TO THE SECOND HALF OF THIS TALK

SECOND HALF

PART 2. THE MINERAL REMOTENESS OPINION

- 1. States Like California allow different ownership of the surface and the mineral estates.
- 2. Normally, the State Laws allow the mineral estate to have ingress and egress rights
- 3. If the mineral and surface estates cannot agree to agree on subjugating the mineral estate for development of certain projects, then a Registered Professional Geologist may be called upon to write a report that gives an honest evaluation of the potential for economic development of the minerals. Such a report, by law, must be stamped with the stamp of the RPG.
- 4. The evaluation includes not only if minerals are present, but also, due to their location, whether or not the minerals can be economically developed. Therefore, the word "remoteness" is included.
- 5. These reports are typically written as part of an attempt to secure the future of the project, be it solar or wind power, or even for salvation of the rare and endangered. Often these reports are commissioned at the behest of the Surety Company that is backing the project.

WHAT IS THE MINERAL REMOTENESS OPINION GOOD FOR?

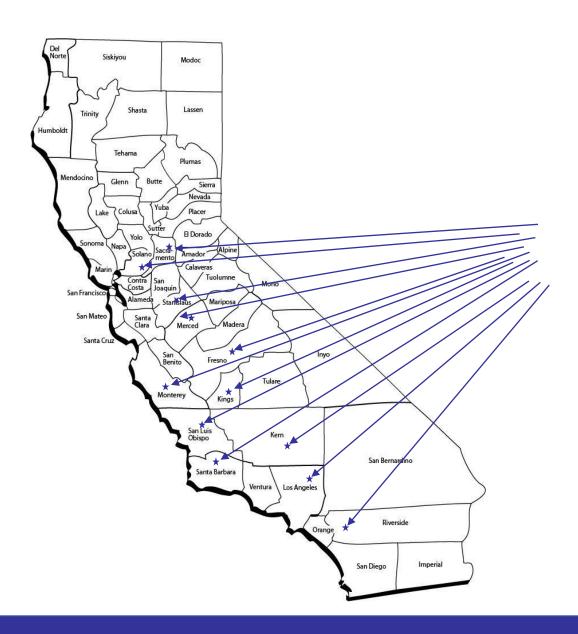
- 1. For <u>solar and wind power farms</u>, that can occupy hundreds of even thousands of acres, the study of surface minerals for mining, and for petroleum potential in the sub-surface, may require a report if the mineral ownership is severed from the surface ownership
- 2. For the preservation of lands that are needed to meet State laws for the preservation of rare and endangered animals and plants, which is often done by having farmers agree to keep their lands stay as open space and not be developed into residences, so that the biota is preserved. In California, the ratio varies from 1 acre of preserved land to 5 acres of preserved habitat for each acre that will be destroyed. Reports for damaged habitat by the highway agencies, power companies and the public transportation agencies are examples where the reports have been used.
- 3. Reports have also been written for non-profit conservation entities that needed reports on the mineral remoteness of lands to be acquired and the mineral estate owners wished that an evaluation of petroleum or other mineral potential be done.

State of California Division of Fish & Wildlife Guidelines

Ownership of the mineral estate, even if it is not severed, is an important consideration for the Department in determining whether intended conservation purposes can be achieved and maintained. Further, when future development of mineral estates is a threat, substantial workload and expense may be required by the Department to manage that risk in perpetuity or for as long as the property is intended to fulfill a conservation purpose.

CONTENT OF A MINERALS ASSESSMENT REPORT

- 1. Introduction Report purpose, location maps, legal description.
- 2. Title report review (both preliminary (if available) and final title reports).
- Description of surface and mineral estate ownerships, including all changes in ownership over the fifteen preceding years and rights to access the surface by the owners of the mineral estate.
- Specific mineral resources included and excluded in the mineral estate.
- Review of locatable, useable and salable mineral resources on the property.
- Maps and aerial photographs of property with delineated mineral estates.
- Assessment of mineral resource potential, including a map showing locations
- 8. Discussion of environmental constraints which may constrain mining.
- Opinion as to the likelihood of surface mining, or other forms of mining, including a determination whether the "probability of surface mining is so remote as to be negligible".
- 10. References cited.
- 11. Preparer's qualifications. Preparer's expertise shall include the ability to competently assemble, review and interpret title reports and provide legal descriptions of the ownership. All discussion of minerals, geology and mining potential shall be prepared by a California-Licensed Professional Geologist with demonstrated experience with mining and mineral experience. The report shall bear a California-Licensed Professional Geologist stamp and signature.



COUNTIES WHERE HOBBY ENERGY HAS DONE MRO STUDIES

By

Scott Hector, Partner Karen Blake, Sr. Geologist

STORIES OF MY OWN # 1

IN ONE DISCUSSION ON A MINERAL PARCEL THAT NEEDED DRILLING ISLANDS TO CONSUMMATE THE DEAL,

IN A CONFERENCE CALL WITH COMPANIES INVOLVED,

The shape of them came into play.

ONE SIDE said, WE ARE PLANNING ON DRILLING 16 WELLS ACROSS THIS SECTION OF LAND,

AND WE NEED AN ISLAND OF THE PROPER SHAPE

The other side said, Well, what about a shape like Wyoming in the upper corner of the parcel

To which, the opposite side said "What about a shape like Maryland

They said no

Well, WHAT ABOUT New Jersey?

IN THE END, AN AGREEMENT WAS REACHED FOR DRILLING ISLANDS LIKE DELAWARE
ALONG THE EAST SIDE OF THE RECTANGULAR PARCEL

STORIES OF MY OWN # 2

IN ANOTHER STORY, A RANCH WAS NEEDED IN THE BAY AREA BY CAL-TRANS TO PRESERVE HABITAT FOR A NEWT

THE RANCHER HAD AGREED ON THE EASEMENT AND WOULD AGREE TO RUN CATTLE ON THE LAND

AND NOT DEVELOP THE LAND

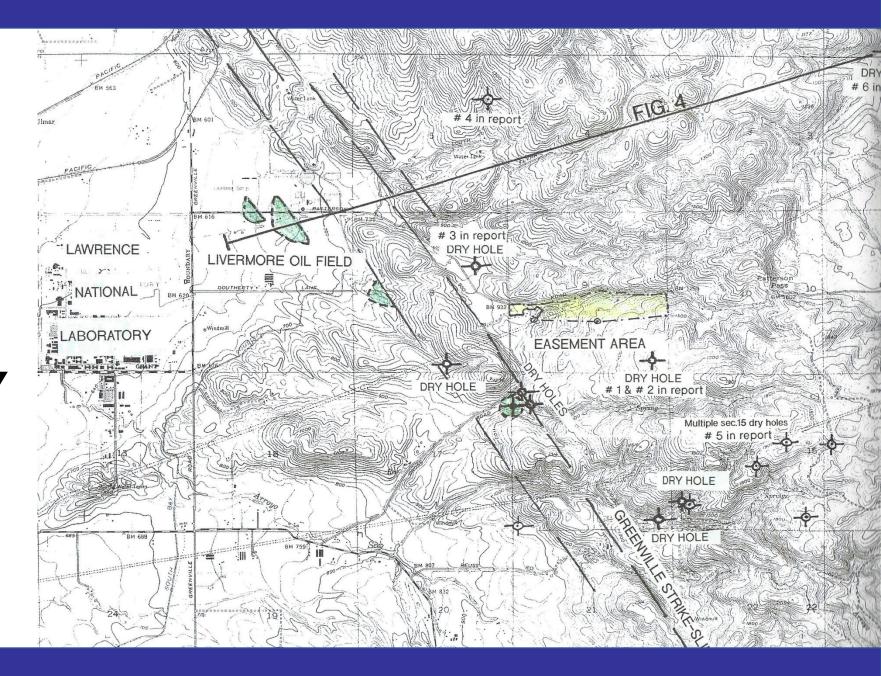
THE FORMER OWNER, WHO HAD KEPT THE MINERALS SAID "I'VE BEEN LOOKING AT THOSE OIL WELLS DOWN THE ROAD AND I JUST KNOW THEY'VE BEEN TAKING OIL FROM ME".

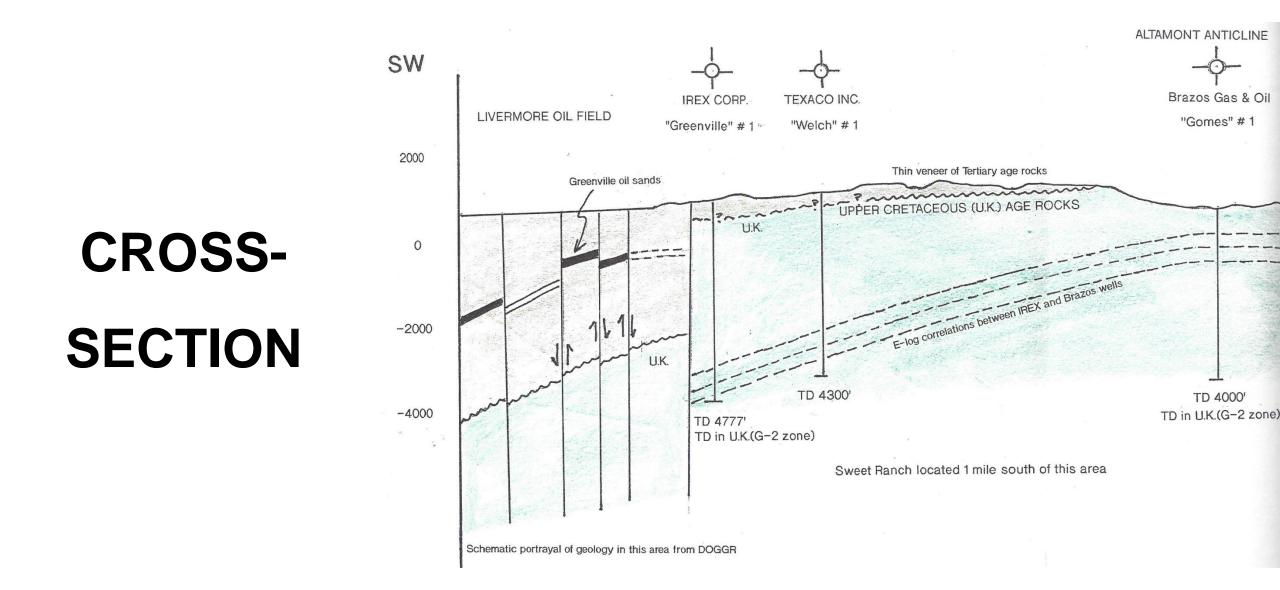
HE SAID "UNLESS YOU GIVE ME SOME DRILLING ISLANDS, I WON'T AGREE"

SO, IN OUR STUDY WE DID DRILLING ISLANDS AND SHOWED THAT WE COULD DRILL WELLS BENEATH THE GROUND FROM DRILLSITES ON THE RANCH OUTSIDE OF THE CRITICAL HABITAT AREA

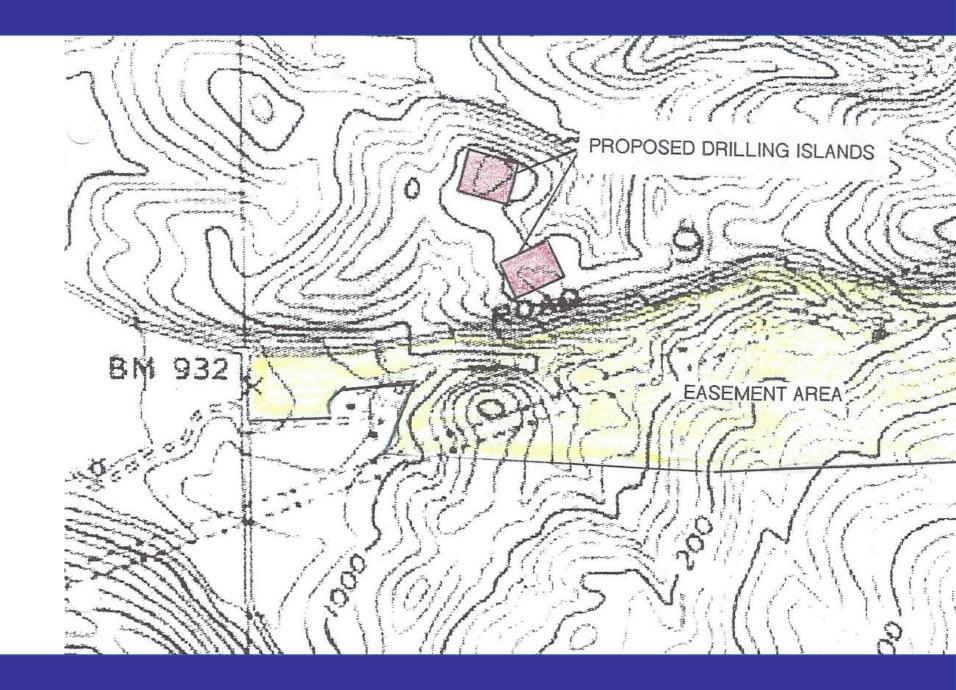
WE DID, HOWEVER, NOTE IN THE REPORT THAT THE OIL FIELD WAS ON ONE SIDE OF A STRIKE-SLIP FAULT AND THERE WAS NOT A CHANCE THE OIL FIELD EXTENDED TO HIS MINERALS

SURFACE TOPOGRAPHY





DRILLING ISLANDS



NON-DISCLOSURE AGREEMENTS TYPICALLY HAVE THESE TERMS

- 1. THE CONSULTANT MUST KEEP ALL MATERIAL RECEIVED CONFIDENTIAL
- 2. IF ASKED, THE CONSULTANT MUST RETURN ALL CONFIDENTIAL MATERIALS PROVIDED TO HIM
 OR HER
- 3. THE CONSULTANT MUST AGREE TO NEVER DISCLOSE THE DATA (Except if required to do so by a government agency-"never" often is set as a certain number of years)
- 4. IN MOST CASES, THE CONSULTANT MUST HAVE ERRORS AND OMISSIONS INSURANCE
- 5. FOR MOST COMPANIES WE HAVE WORKED FOR, YOU SIGN AND AGREE TO THEIR AGREEMENT
- 6. YOU CREATE A WORK ORDER FOR THE WORK AND AGREE ON A FEE THAT TYPICALLY IS SET AS A SOLID, IMMOVABLE AMOUNT
- 7. WE NORMALLY TAKE 2 to 3 WEEKS to MAKE A DIGITAL REPORT AND CHARGE \$150 to \$200 PER HOUR OUR SERVICES

SUMMARY OF WORK FOR PROFESSIONAL GEOLOGISTS AND MINERAL REMOTENESS OPINION WRITERS

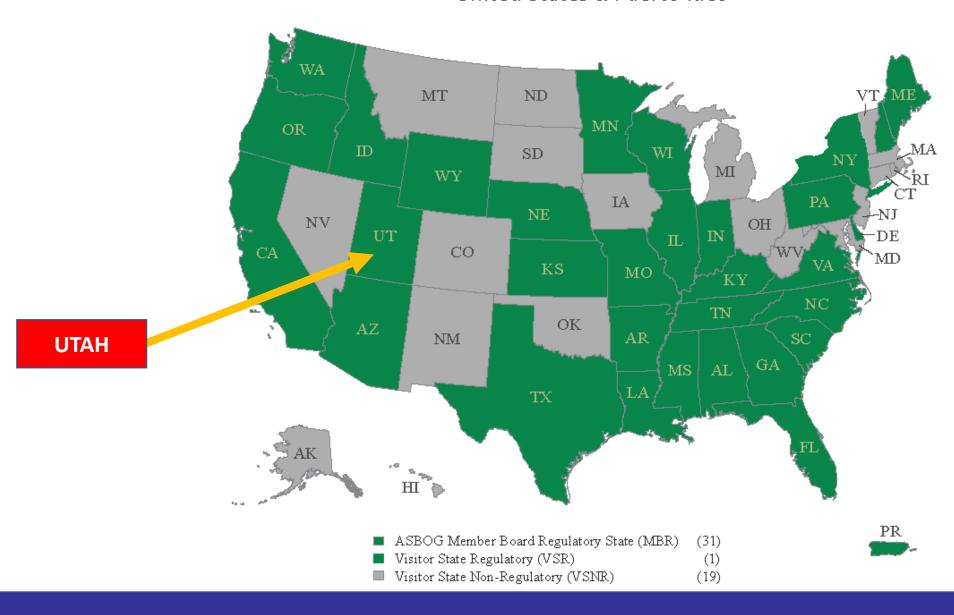
- 1. Depending upon the nature of the study, either the surface mineral potential and/or the sub-surface mineral potential of the lands in question will be studied.
- 2. The report normally requires no access to the property or additional sampling of rocks, but rather studies the public records for the mineral potential of the area
- 3. In California, some 35 different <u>commercially mined minerals</u> in the state have been studied in detail by the State Geological Survey. These include minerals as widely diverse as gold, boron and mercury. The Office of Mine Reclamation keeps a list of mines and their status, and also has an interactive map with details on all mines.
- 4. In California, <u>the aggregate resource</u> has been carefully studied, with the Geological Survey empowered by the Legislature to keep a 50-year supply available. Most of the aggregate is used by the public agencies, with most by the state for highways.
- 5. The State of California has named some 30 Production-Consumption Regions, and has published studies on each. These studies are updated periodically. This is miscellaneous study # 52. This report is critical to determining if an area of study is so remote that minerals found there could not be commercially developed.
- 6. Often, our reports have included the <u>sub-surface petroleum potential</u> of the area. Data from the Division of Oil, Gas and Geothermal Resources has been used <u>to construct contour maps, cross-sections</u> and other data as required.



THIRD HALF

(If Time Permits – Getting a License in Utah)

United States & Puerto Rico



RECIPROCITY

- 1. In early 2017, I was told I was in line to get a great deal of work in Utah
- 2. I had previous experience as a petroleum geologist in Utah, mainly in the Paradox Basin in San Juan
 County
- 3. I contacted the State of Utah about obtaining a license
- 4. Since I had a license in California, I had to obtain and provide certain data.
- 5. To my surprise, some of what I sent in was not acceptable! A scanned copy of my Registered Geologist status, copied from the internet, was not acceptable. I contacted the Registration Board, paid the \$2.00 fee, and they sent proof to the Utah Board that I really was registered and had had no complaints filed against my license.
- 6. To my surprise, my resume I sent saying that I had graduated from college was not good enough! I paid about \$20 to Humboldt State University for my undergraduate transcripts to be sent to Utah, and \$0 (no money!) to have the University of California at Davis send their transcripts for my B.S. and M.S Geology

RECIPROCITY - 2

- 7. To my surprise, saying that I did good work was not enough. I had Dr. Victor Cherven in Idaho discuss my work at M.C.O. Resources and Hal Miller from Subsurface Consultants and Associates in Houston discuss work I had done for them. To my surprise, though I had told them I was a principal in an organization, they asked that my business partner send a letter proving it. My business partner, Kevin Graham, sent a letter demonstrating that I was indeed an important part of Hobby Energy and ran it's day to day affairs, though he was Managing Partner and joined in making major pecuniary decisions. (Please visit the SCA booth while you are here!).
- 8. To my surprise, after all the data was in, the good people at the Division of Occupational and Professional Licensing, Department of Commerce, State of Utah approved my application!
- 9. The time to do this was relatively short, between 1 and 2 months. (If I had had more urgency, it could have been done much more quickly, and many states that use ASBOG also can order temporary licenses when needed).
- 10. I want to extend my thanks to Ms. Katie Corak of the Utah licensing division for her patience and help in the process!

THANK YOU!