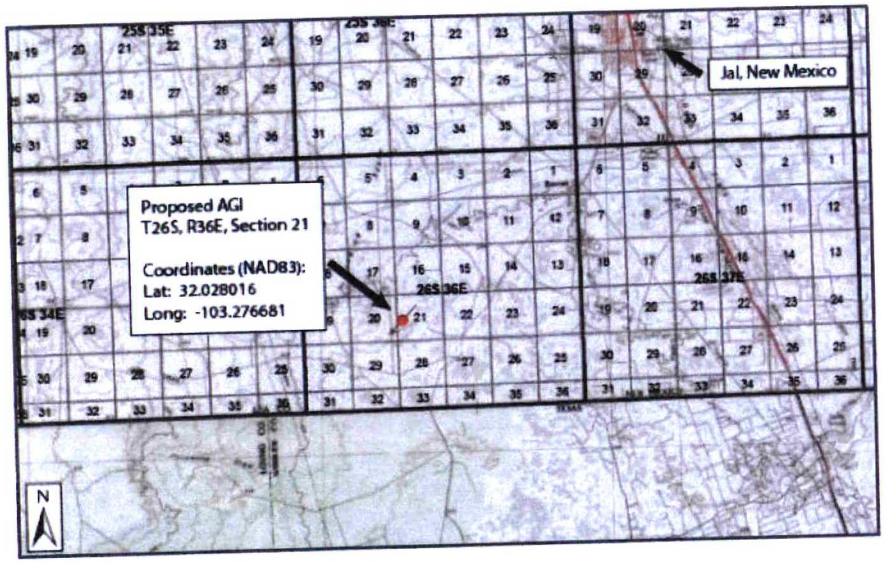
SALT CREEK
MIDSTREAM

APPLICATION FOR AUTHORIZATION TO INJECT

C-108 Application for Salt Creek AGI #1



Presented in Hearing Before the
New Mexico Oil Conservation Commission
Case # 20780

December 11, 2019

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Application prepared by:
Geolex, Inc.®
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Case No. 20780
Salt Creek Midstream
Exhibit 1

Salt Creek Midstream, LLC Witnesses

- Brian Perilloux, PE– Salt Creek Midstream, LLC (SCM)
  - BS Mechanical Engineering (University of New Orleans 1984)
  - Over 30 years professional experience in petroleum industry
  - Senior Vice President for Engineering and Operations at SCM since January 2019
  - Expert in petroleum engineering, processing and plant design and operations
- Alberto A. Gutiérrez, R.G. – Geolex, Inc.® (Geolex)
  - M.S., Geology (UNM 1980)
  - Registered geologist in 21 states; 40 years experience
  - Petroleum geology and hydrogeology expert
  - Expert in permitting, design, construction, and operation of AGI wells
- David A White, MS – Geolex, Inc.® (Geolex)
  - M.S., Geology (UNM 2018)
  - Extensive project management experience and geologic support for AGI projects
  - Permitted, designed and installed AGI wells in Permian Basin
  - Expert in petroleum geology, seismic interpretation and fault-slip probability modeling

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Brian Perilloux

Senior Vice President of Operations and Engineering, Salt Creek Midstream

- Holds B.S. in Mechanical Engineering from the University of New Orleans (1984) and is a P.E., licensed in Louisiana
- More than 30 years of experience in oil and gas petrochemical, chemical and refining industries
- Joined SCM in January 2019 as SVP of Operations and Engineering for SCM
- Before joining SCM, Mr. Perilloux served as SVP of Operational Excellence at Williams Companies, where he was responsible for companywide central engineering, operations and technical support, gas control, operational regulatory compliance and EHSS
- Prior to Williams, Mr. Perilloux was co-owner of an E&C firm, where he had a key role in the establishment of engineering and construction competencies in LA, TX, AL and Nigeria, Africa, before the co. was sold to Heerema Fab. Group in 2006

David A. White, MS

Geologist and Project Manager, Geolex, Inc.®

Education:

- B.S., Earth & Planetary Science – University of Tennessee (2014)
- M.S., Geology – University of New Mexico (2018)

Relevant Experience:

- Extensive project management experience and geological support for AGI projects
- Permitted, designed, and installed AGI wells in the Permian Basin
- Provides operational and regulatory support for existing AGI wells in New Mexico and Texas
- Completion of induced-seismicity risk assessments for potential locations in the Permian Basin
- Expert in petroleum geology, seismic interpretation, and fault-slip probability modeling

Presentation Topics for Each Witness

- Brian Perilloux, PE – Describe SCM's commitment providing treating services to permit responsible development of SE NM oil and gas resources. SCM is committed to NM and is making significant capital investments to improve infrastructure and allow for development of oil and gas resources (Slides 6–14).

- Alberto A. Gutiérrez, R.G. – Describe relevant site geology and hydrogeology, system design, operation, analyses of anticipated effect on injection zone and all components of C–108 application; explain permit conditions agreed upon by OCD, SLO, and SCM (Slides 15–49; and Slides 55–66)

- David A. White, MS – Describe the seismic analysis and fault-slip probability modeling (Slides 50–54)

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Organizational Structure

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Executing along the Energy Value Chain

ARM Energy

Fundamentals

- *Identify strategic opportunity*
- *Understand basin economics and infrastructure opportunity*

Midstream Services

- *Over $2B of capital deployed last 3 years*
- *50+ corporate engineering & construction professionals*

Downstream Solutions

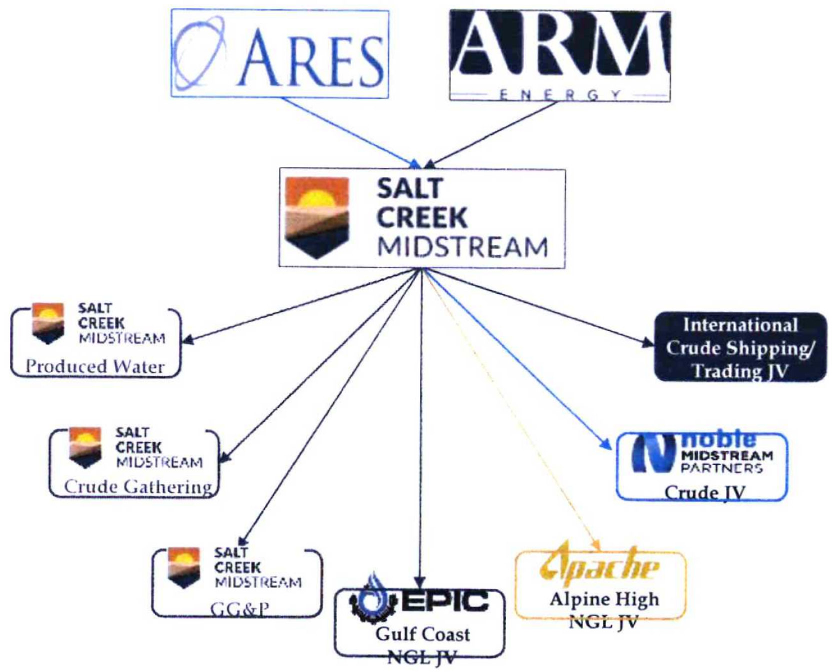
- *Marketing solutions and physical trading*
- *Reduce bottlenecks and deliver producers additional netback*

Hedging Advisory

- *Optimize value of resources*
- *Leverage fundamental and intra-basin knowledge base to add value to producer resource*

Partnership Structure

- *Salt Creek Midstream is a crude and gas gathering & processing, and water gathering joint venture formed in 2017 between Ares Management and ARM Energy*
- *Ares Corporation has over $130 billion in assets under management with a significant capital commitment to SCM*
- *SCM has also secured significant debt financing*
- *Since inception Salt Creek Midstream has secured nearly one million in acreage commitments through long term dedication agreements*



Sour Oil and Gas

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- Crude oil and gas originating from wells that contain undesirable quantities of H_2S (hydrogen sulfide), mercaptans and/or CO_2 (carbon dioxide) is considered to be "sour." H_2S is of particular concern because even at relatively low (500-1000 PPM) concentrations, it is highly toxic and lethal.
- From Wikipedia - Hydrogen sulfide is often produced from the microbial breakdown of organic matter in the absence of oxygen gas, such as in swamps and sewers; this process is commonly known as anaerobic digestion which is done by sulfate-reducing microorganisms. H_2S also occurs in volcanic gases, natural gas, and in some sources of well water. The human body naturally produces small amounts of H_2S and uses it as a signaling molecule.
- Sour oil and gas naturally occurs in many oil and gas rich geologic zones in SE NM, particularly Lea county, where H_2S concentrations in natural gas are often 20,000 PPM or more.
- Historically, Amines (an aqueous solution) have been used to remove H_2S and CO_2 from natural gas streams, as the leading most reliable, safe and cost effective solution to "clean up " natural gas. Amines are usually regenerated by heating, which liberates a waste gas stream called "Acid Gas" consisting of primarily H_2S and CO_2 , where the H_2S concentration can be 30%+ (300,000 PPM +) of the acid gas.
- Other methods of removing H_2S, such as non-regenerative (scavenger) chemicals or "Redox" (iron chelate aqueous) processes are often best used for low H_2S (< 100 PPM) concentrations since the total volume/weight of sulfur removed can be more easily disposed of.
- 10 MMSCF at 20,000 PPM H_2S contains about 17,000 LBS (8.5 tons) of sulfur. For example, if the daily production rate of natural gas is 80 MMSCF/Day, 68 tons or approx. 40 Cu Yds of sulfur per day will have to be removed and disposed of.

Disposal of Sulfur

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There are many ways to "dispose" of sulfur, whether in the form of H_2S, elemental sulfur or other compounds such as Iron Sulfide. They include:

1. Acid gas (from an amine treater) compressed and injected into an AGI disposal well.

   Pros:
   - Ability to safely dispose of large quantities of acid gas with minimal risk to the public or the environment
   - Added benefit of CO_2 (carbon dioxide) sequestration and disposal
   - No fuel gas required to flare the CO_2
   - Very economical in areas of high H_2S and CO_2 concentrations

   Cons:
   - The only significant con is AGI wells can only be located where ideal subsurface conditions exist

2. Acid gas (from an amine treater) converted to elemental sulfur via a Claus plant.

   Pros:
   - Ability to safely dispose of large quantities of acid gas with limited risk to public and some environmental risk

   Cons:
   - Only works where H_2S to CO_2 ratio is high enough to support combustion
   - Does not sequester the CO_2, which is flared or released to the atmosphere via a thermal oxidizer
   - Requires trucking liquid sulfur to landfills, assuming there is a limited commercial market to sell the sulfur
   - Very maintenance intensive
   - Emits all of the recovered CO_2 to the environment
   - Very capital cost intensive

Disposal of Sulfur (cont'd)

3. Chemical Scavengers/iron sponge (Triazine, Sulfatreat, etc)

   Pros:
   - Ability to safely remove H_2S from natural gas

   Cons:
   - Only practical for low concentrations of H_2S (~250 PPM or less)
   - Requires hauling fresh chemical or absorbents to the site and hauling spent products to waste disposal wells or hazardous waste landfills
   - Does not sequester CO_2
   - Very high operating expense at higher acid gas concentrations

4. Redox Sulfur recovery (Valkyrie, etc)

   Pros:
   - Ability to safely dispose of large quantities of acid gas with minimal risk to the public or the environment
   - Can accommodate high concentrations of acid gas (but at the expense of capacity)

   Cons:
   - Requires hauling fresh chemical to the site and hauling elemental cake sulfur to landfills
   - Does not sequester CO_2
   - Requires air oxidation, which can emit BTEX's and hydrocarbons to the atmosphere
   - High capital cost and high operating expense
   - Limited gas processing capacity (<30 MMSCFD) especially at higher acid gas concentrations

Other Sour Gas Considerations

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- Moving Sour Natural Gas from the wellhead to centralized natural gas treating facilities through pipelines could potentially expose the public to lethal concentrations of H_2S should there be a loss of containment. This is especially true for higher concentrations or pipelines operating at higher pressures, where the radius of exposure increases up to a mile or more. Therefore, treating facilities are typically located as near as practical to production wells as possible, noting that centralized treaters that clean up gas from multiple wells in aggregate is a typical arrangement .
- Acid gas should only be transported within the confines of the treating facility or short (up to 1 mile) distances (avoiding public regularly used roads/highways) to disposal facilities (Sulfur recovery, AGI well, etc), to minimize the risk of exposure to the public.
- AGI wells provide the safest and most economical solution for cleaning up sour natural gas, especially at higher concentrations of H_2S and provide the added benefit of CO_2 sequestration.

Current and Future H2S Treating Investment

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Design Basis and Facilities

SCM is committed to the safe handling and responsible disposal of total acid gas using suitable and acceptable solutions.

SCM has installed 35 MMSCFD natural gas treating facility (amine system) in Lea County -

- Train I commenced operations during 1st Q 2019
- 475 GPM traditional amine system
- Treating 7% CO_2 and 25,000 ppm H2S in inlet gas

SCM has an H2S Contingency Plan in place and SCM revalidates the H2S Contingency Plan as required to ensure consistency with SCM H2S facility operations.

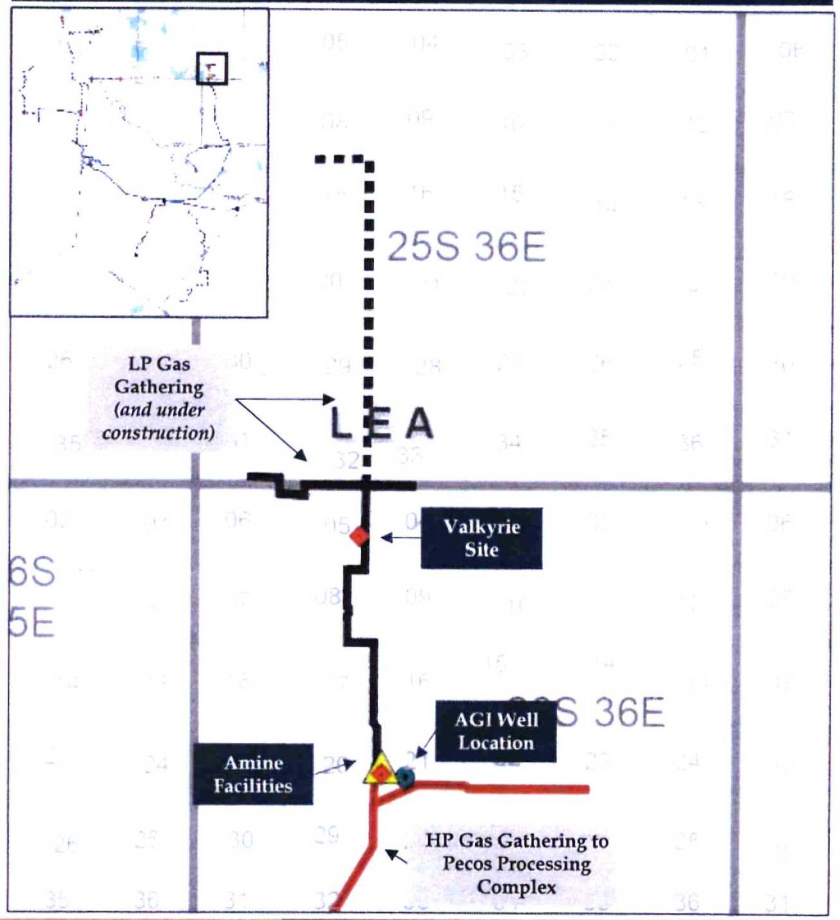
SCM expects to add an additional 50 MMSCFD inlet gas treating capacity at the current location -

- Train II will increase total treating capacity to 85 MMSCFD
- Expected completion during 3rd Q 2020

Permitting initial AGI well -

- Expected drilling and completion in early 2020 with total facility in service May 2020
- Long-lead items for the AGI well and acid gas compression and facility have been ordered

Treating Infrastructure



System Overview

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Company Snapshot

Services / JV's

- Crude gathering and storage
- Natural gas gathering, processing and treating
- Produced water gathering and disposal
- JV's with Apache (NGL), Noble Midstream (Crude), EPIC (NGL) and international crude shipping/trading company

Customers

- 21 contracted producers across three product streams
- Nearly one million acres under dedication

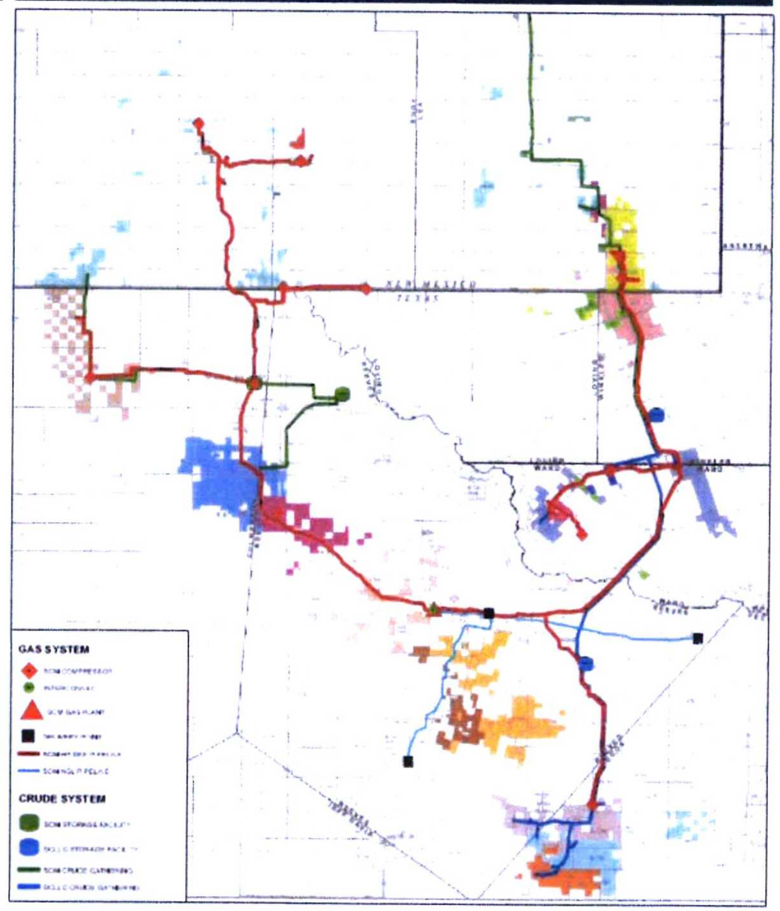
Downstream

- Multiple downstream interconnects for each product
- Crude: EPIC, NBLX/Advantage, Andeavor
- Residue: El Paso, ONEOK Roadrunner
- NGL: Enterprise, EPIC

Facilities (In Service and Planned)

- Processing capacity currently 400 MMSCFD
- 475 GPM Amine treating facility in New Mexico
- 300,000 barrels of crude tankage (expandable to over 1 million)
- 485+ miles of gas gathering trunk lines installed and under construction
  - Large diameter pipelines (16 – 30" Trunk Lines)
- 260+ miles of crude gathering trunk lines installed and under construction
  - Large diameter pipelines (12 – 16" Trunk Lines)
- 75+ miles of produced water gathering

SCM Footprint



Natural Gas Infrastructure

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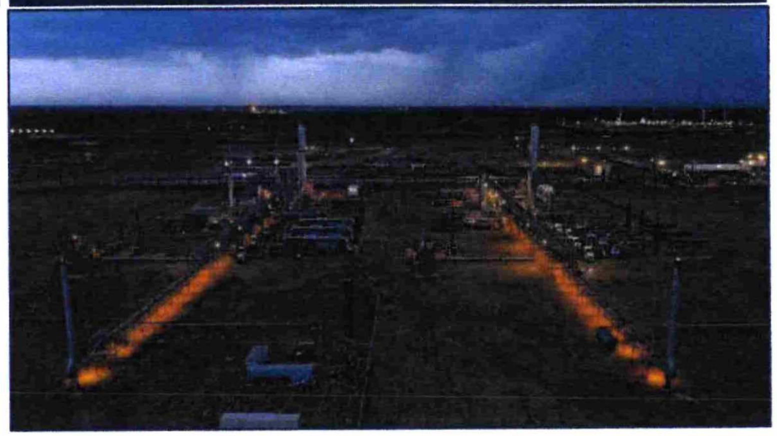
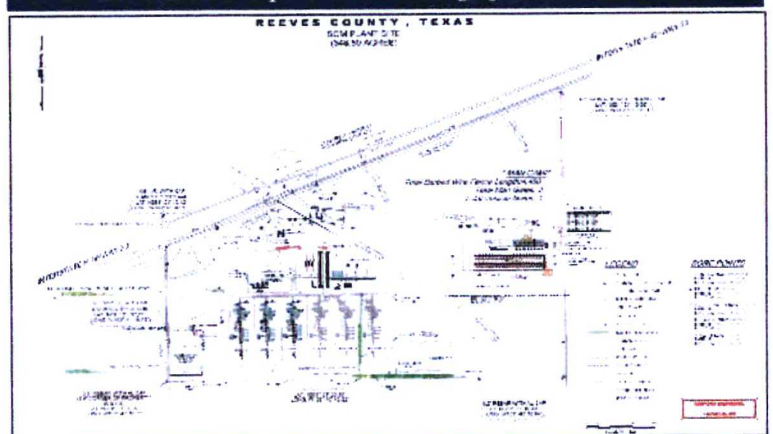
Detailed Gas Infrastructure and System Capability	
Processing Capacity In Service	Pecos Plants I & II (400 MMcf/d)
High Pressure Gas Pipeline	325 miles in service or under construction *(160 miles in service)*
Pipeline Diameter	8" - 30" ~1.0 Bcf/d Capacity to SCM Processing
Condensate Stabilization	5,000 bpd
Slug Catcher Capacity	3,000 bbls
Installed Compression	39,720 hp and 180 MMcf/d
Residue Interconnects	El Paso 1600 ONEOK Roadrunner
NGL Transportation Capacity	445,000 bpd (to Waha)
NGL Interconnects	EPIC (Gulf Coast; Minority Interest) Enterprise (Waha via Apache JV)

Pecos Gas Processing Facility



Plant site capable of Processing up to 1.2 Bcf/d



Operational Excellence & HSE

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SCM Health, Safety and Environmental

SCM remains committed to responsible environmental stewardship as we continue to look for ways to improve operational efficiency while minimizing environmental impacts

Integrity and Safety are foundational to SCM's operations. A safe and healthy work environment is one of our top priorities and we believe that all injuries and occupational illnesses, harm to the environment and damage to assets are preventable with proper planning and attention

- SCM's HSE program establishes rules above and beyond local, state & federal requirements, for example, application of OSHA 1910.119 requirements to non-OSHA 1910.119 regulated facilities
- Every employee, contractor, & visitor is responsible for upholding the highest level of Health, Safety & Environmental Regulation
- SCM field operations employees have completed over 90,000 hours with zero OSHA Reportable or Recordable incidents, and all personnel have full "Stop Work" authority
- Operations programs include Hazard & Job Training (annually along with pre-screening), Operator Qualification (OQ), and Drug & Alcohol Plan
- Disaster mitigation plan including but not limited to: Natural Disasters, Force Majeure, Civil Disturbances & Threats, Facility Outages, Fire Prevention, Emergency Shut Down Protocols, Medical Assistance & Emergency Procedures

Key Elements of SCM's C-108

- AGI project has substantial environmental benefits of greenhouse gas reduction due to sequestration of CO_2, which otherwise would be released to atmosphere

- AGI project reduces waste and air emissions by eliminating flaring of acid gas or operation of a sulfur-recovery unit as a sulfur control measure

- Nearby oil and gas wells, nearby water wells, and surface waters are all protected by well design, best practices operations, and geologic factors

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Key Elements of SCM's C-108 (cont'd)

- Salt Creek's C-108 application details all information needed to approve the installation of the proposed AGI well
- Adjacent operators, strongly support the proposed AGI project
- Operators and surface owners have received proper notice and there have been no objections to the proposed AGI project
- H_2S Contingency Plan for the current SCM facility is currently being modified and will be submitted for approval by OCD prior to the commencement of operations

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Location, Background, and Legal Description

- The proposed AGI well is designed to support the operations of the SCM Midstream Ameredev South Gas Processing Plant (treating facility)
- The treating facility and proposed well are located in Section 21, Township 26 South, Range 36 East in Lea County, New Mexico (see location map on figures 1 and 2)
- The AGI well will enable the facility to treat approximately 85 MMSCFD of inlet natural gas with the addition of amine equipment
- AGI #1 will be a vertical well, located at 594' FWL, 2,370' FSL in Section 21, T26S, R36E (32.028017, -103.276681 NAD83)

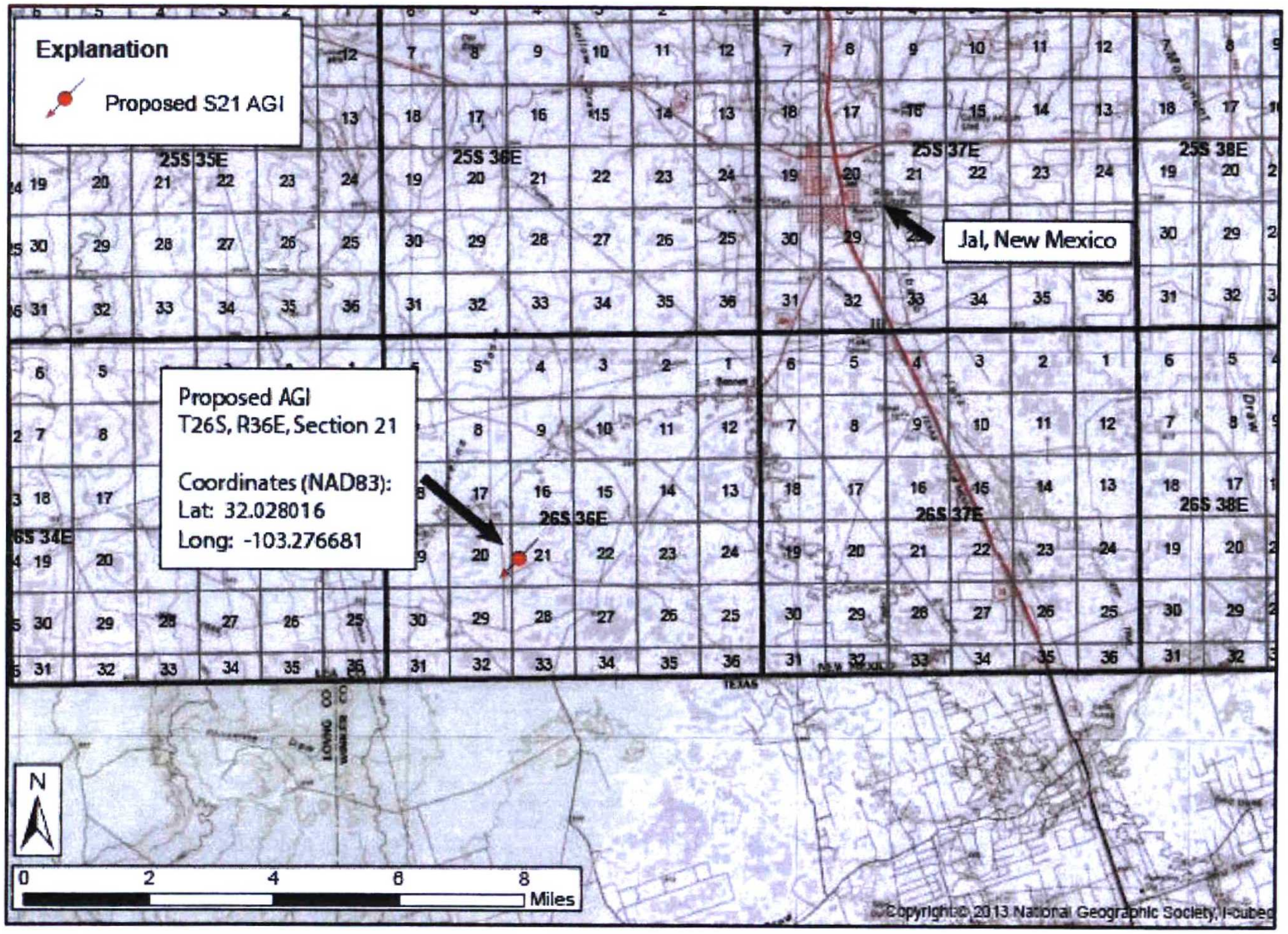

Figure 1. General location of the proposed SCM AGI #1

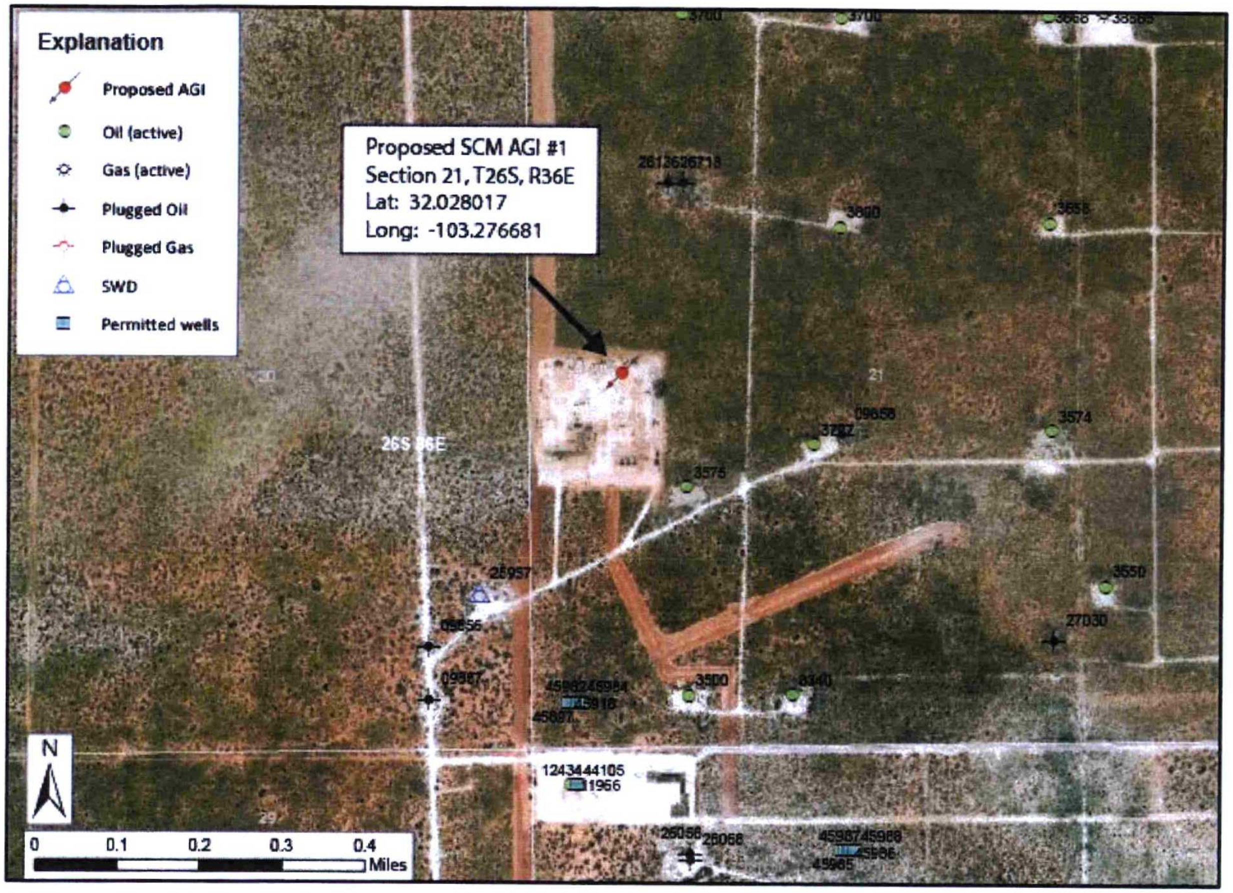

Figure 2. Aerial photographic view of SCM Section 21 facility and proposed AGI well

Plant Site Details

- The overall site encompasses approximately 17 acres, and the plant operations area occupy approximately 11 acres (Figure 4)
- Well is sited on lands for which SCM/ARM Energy, have an easement to drill, complete, test and operate the well from NGL (Exhibit 3)
- Underlying mineral rights are owned by the United States and administrated by the BLM
- Field gas will be "sweetened" by amine units and the TAG will then be compressed and piped to the AGI well
- The proposed well and all surface equipment will be contained within the 17-acre SCM gas-processing facility property

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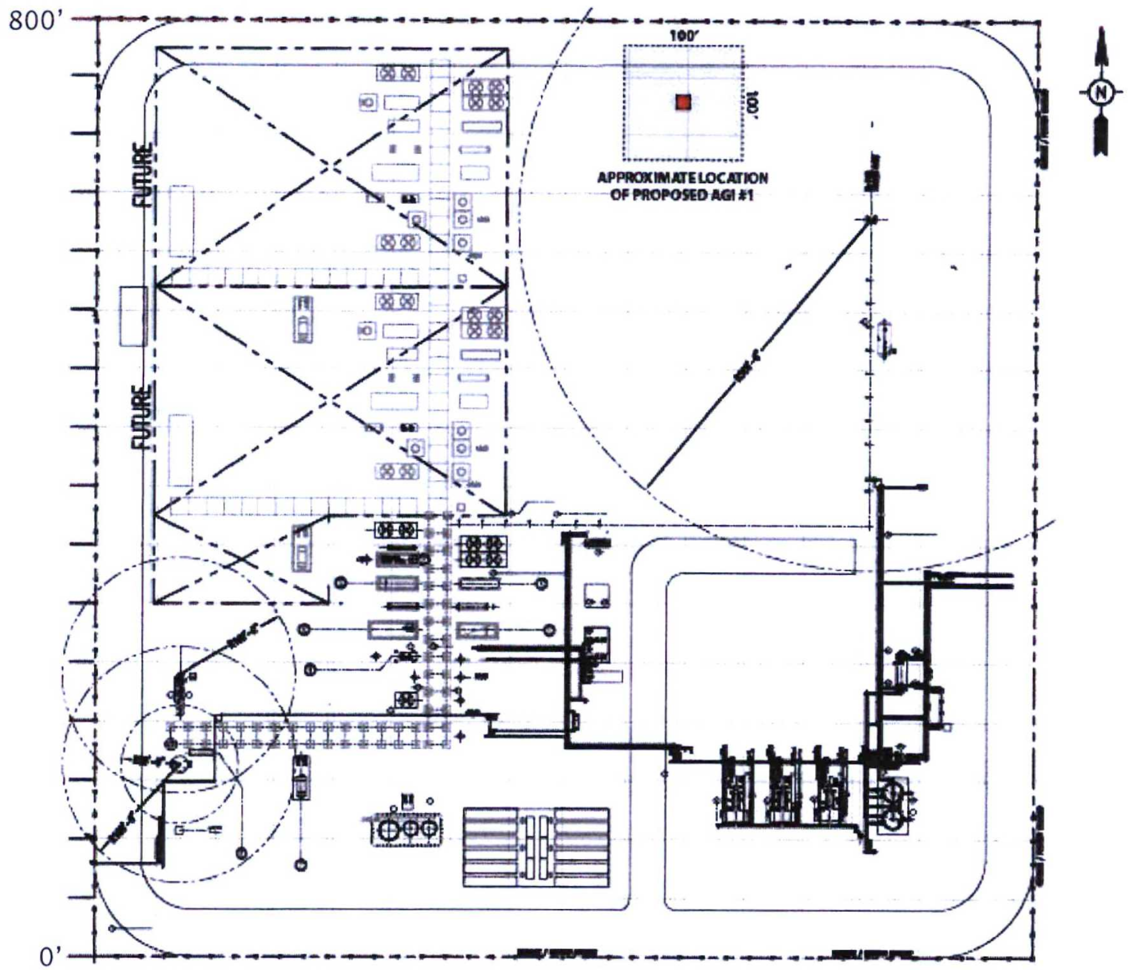

Figure 3. General schematic of Ameredev South Gas Processing Plant

Injection fluid volume, composition, and pressure calculations for the AGI well

- Maximum injection rate for system is approximately 8 MMSCFD
- Anticipated Injected fluid composition is 22% H_2S, 78% CO_2, and traces of light hydrocarbons (C_1-C_8)
- Injected fluid compatibility was determined through nearby injection experience, USGS produced water database, and previous formation fluid analyses
- The Maximum Allowable Operating Pressure (MAOP) requested was calculated per NMOCD guidelines to be 2,149 psig at the surface
- Actual average injection pressures are anticipated to be in the range of 1,400 to 1,600 psi

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Reservoir Volume and Area Calculations

- At the anticipated reservoir conditions of 115° F and 3,050 psig, each MMSCF of TAG will occupy a volume of 2,293 cubic feet (408 barrels)
- At the anticipated maximum operational capacity of 8 MMSCFD, the compressed TAG will occupy 3,268 barrels per day in the reservoir
- Table 1 below shows the calculations for the proposed well injection area and proposed MAOP of 2,149 psig
- After 30 years of operation, the TAG will occupy an area of approximately 47.1 acres, or a radius of 808 feet (0.15 miles) from the bottom of the well
- Figure 4 shows the area of the calculated TAG plume after 30 years of injection at 8 MMSCFD

Table 1: Reservoir Volume and MAOP Determination

- TAG characteristics at surface and reservoir conditions were determined using AQUAlibrium™ modeling software
- Anticipated TAG Composition:
  - 78% CO_2
  - 22% H_2S
  - <1% Residual hydrocarbons

PROPOSED INJECTION STREAM CHARACTERISTICS

TAG Gas Volume MMSCFD[-1]	H_2S Conc Mol %	CO_2 Conc Mol %	H_2S Injection Rate lbs/day	CO_2 Injection Rate lbs/day	TAG Injection Rate lbs/day
8	22	78	167064	764876	931940

CONDITIONS AT WELLHEAD

Wellhead		TAG							
Temp F	Pressure psi	Gas Vol MMSCFD[-1]	Comp CO_2:H_2S	Inject Rate lbs/day	Density[1] kg/m^3	SG[2]	Density lbs/gal	Volume ft^3	Volume bbl
110	1200	8	78:22	931940	356.05	0.36	2.97	41907	7464

CONDITIONS AT BOTTOM OF WELL

Injection Zone Conditions					TAG				
Temp F	Pressure[3] psi	$Depth_{Top}$ ft	$Depth_{Bot}$ ft	Thickness[4] ft	Density[1] kg/m^3	SG[2]	Density lbs/gal	Volume ft^3	Volume bbl
115	2976	5410	6310	900	813.26	0.81	6.79	18347	3268

RESERVOIR AT EQUILIBRIUM

Injection Zone Conditions					TAG				
Temp F	Pressure[3] psi	$Porosity_{Avg}$ %	S_{WR}	Porosity ft	Density[1] kg/m^3	SG[2]	Density lbs/gal	Volume ft^3	Volume bbl
115	3,050	17	0.36	97.92	813.26	0.81	6.79	18347	3268

CONSTANTS

		SCF/mol
Molar volume @ STP		0.7915
	g/mol	lbs/mol
Molar weight of H_2S	34.0809	0.0751
Molar weight of CO_2	44.0096	0.0970
Molar weight of H_2O	18.015	0.0397

CALCULATION OF MAX INJ. PRESSURE LIMITATION

SG_{TAG}	0.5847	
$PG = 0.2 + 0.433\ (1.04 - SG_{TAG})$	0.397	psi/ft
$IP_{Max} = (PG)(Depth)$	2149	psi

Where: SG_{TAG} is TAG specific gravity; PG is calculated pressure gradient. IP_{Max} is calculated max injection pressure

CALCULATION OF 30-YR AREA OF INJECTION

Cubic feet/day (5.6146 ft^3/bbl)	18347	ft^3/day
Cubic feet/30 years	201039804	ft^3/30yr
Area = V/Net Porosity	2053103	ft^2/30yr
Area = V/Net Porosity (ft) (43560 ft^2/acre)	47.1	Acres/30 yr
Radius	808	ft
Radius	0.15	miles

[1]Density calculated using AQUAlibrium™ software
[2]Specific gravity calculated assuming a constant H_2O density
[3]PP is extrapolated using drill stem tests at nearby wells
[4]Thickness is average total thickness of porous units in the reservoir
[5]Reservoir temp is extrapolated from bottom-hole temp measured in nearby wells
[6]Porosity is estimated using geophysical logs from nearby wells

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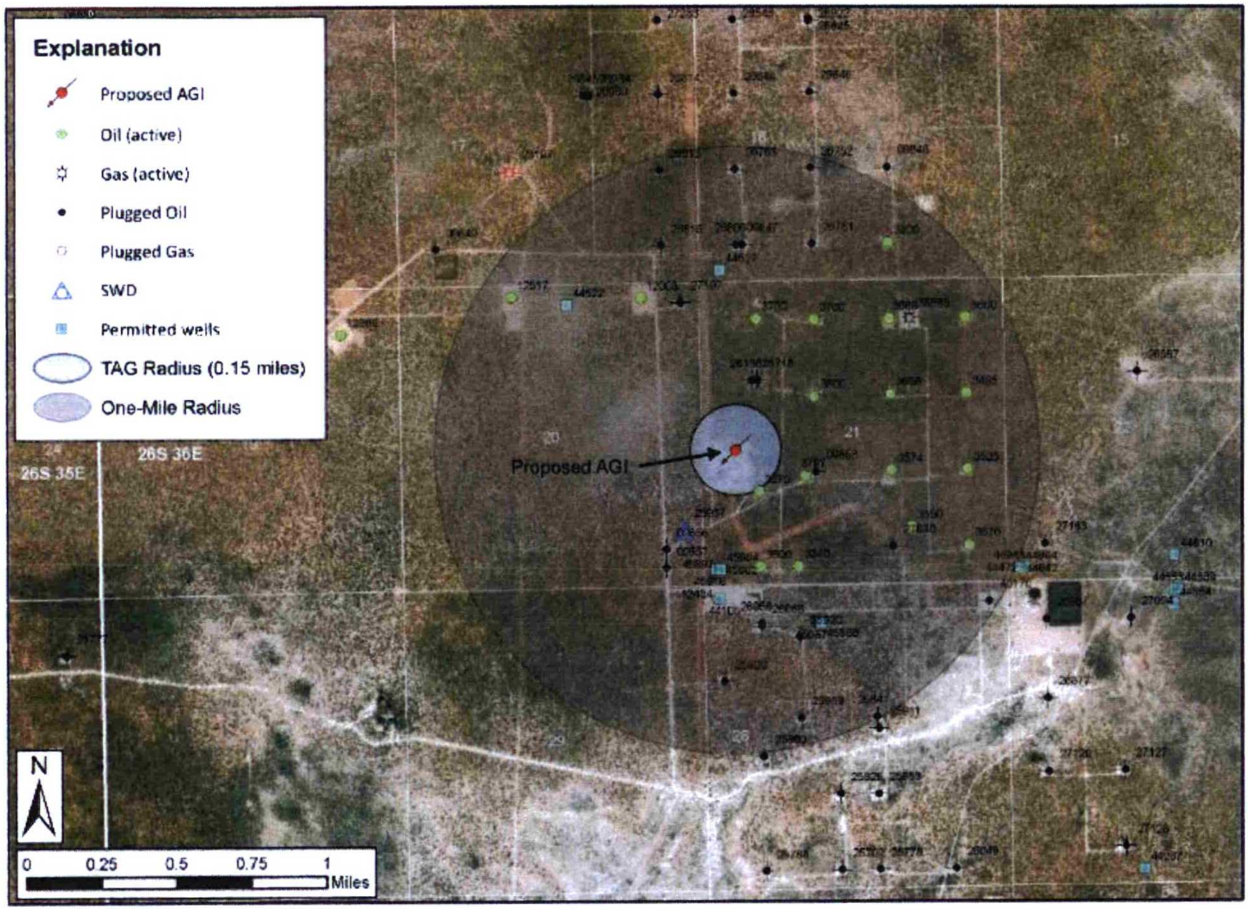

Figure 4. Calculated radius of TAG plume after 30 years of operation at 8 MMSCF per day.

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Adjacent Operators and Surface Owner Notification and Notices

- SCM's C-108 application was sent to adjacent operators and surface owners within the one-mile radius of the proposed wells via Certified Mail, Return Receipt Requested

- Notice of the application and the Commission hearing were published in the local paper by NMOCC

- To date, no objections to SCM's application have been filed by operators in the area of the proposed AGI well

- Adjacent operators support the AGI project, which will:
  - Allow increased throughput and production capacity
  - Increase royalties paid to the State of New Mexico
  - Protect freshwater resources and correlative rights

What are we looking for in a reservoir for CO_2 and acid gas sequestration?

- Geologic seal (caprock) to permanently contain injected TAG
- Isolation from, and fully protective of, any fresh groundwater
- No effect on existing or potential oil and gas production
- Laterally extensive, permeable, high-porosity reservoirs
- Excess capacity for anticipated injection volumes
- Compatible injection zone fluid chemistry

<u>*SCM's PROPOSED AGI WELL MEETS ALL OF THESE CRITERIA*</u>

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Identification and Characterization of Wells in the Project Area

- There are 56 wells within one-mile of the proposed SCM AGI well, of which, 22 are active and 21 are plugged and abandoned (Figure 5)
- There are 13 approved locations that have not yet been drilled (excluding the proposed AGI well). These proposed wells target the Bone Springs and Wolfcamp pools underlying the proposed injection zone by at least 1,300 feet.
- Of the completed wells, six wells (6) penetrate deeper than the top of the proposed injection zone at 5,410 feet (5 active and 1 plugged)
- The one plugged well within the one-mile area of review is the Maralo Sv 16 State #006 well, which is properly plugged and presents no risk of releases from the injection zone
- The remaining active and proposed wells that penetrate the injection zone are located a minimum of 0.4 miles from the proposed location, which is more than twice the anticipated TAG radius after 30 years of injection at 8 MMSCFD

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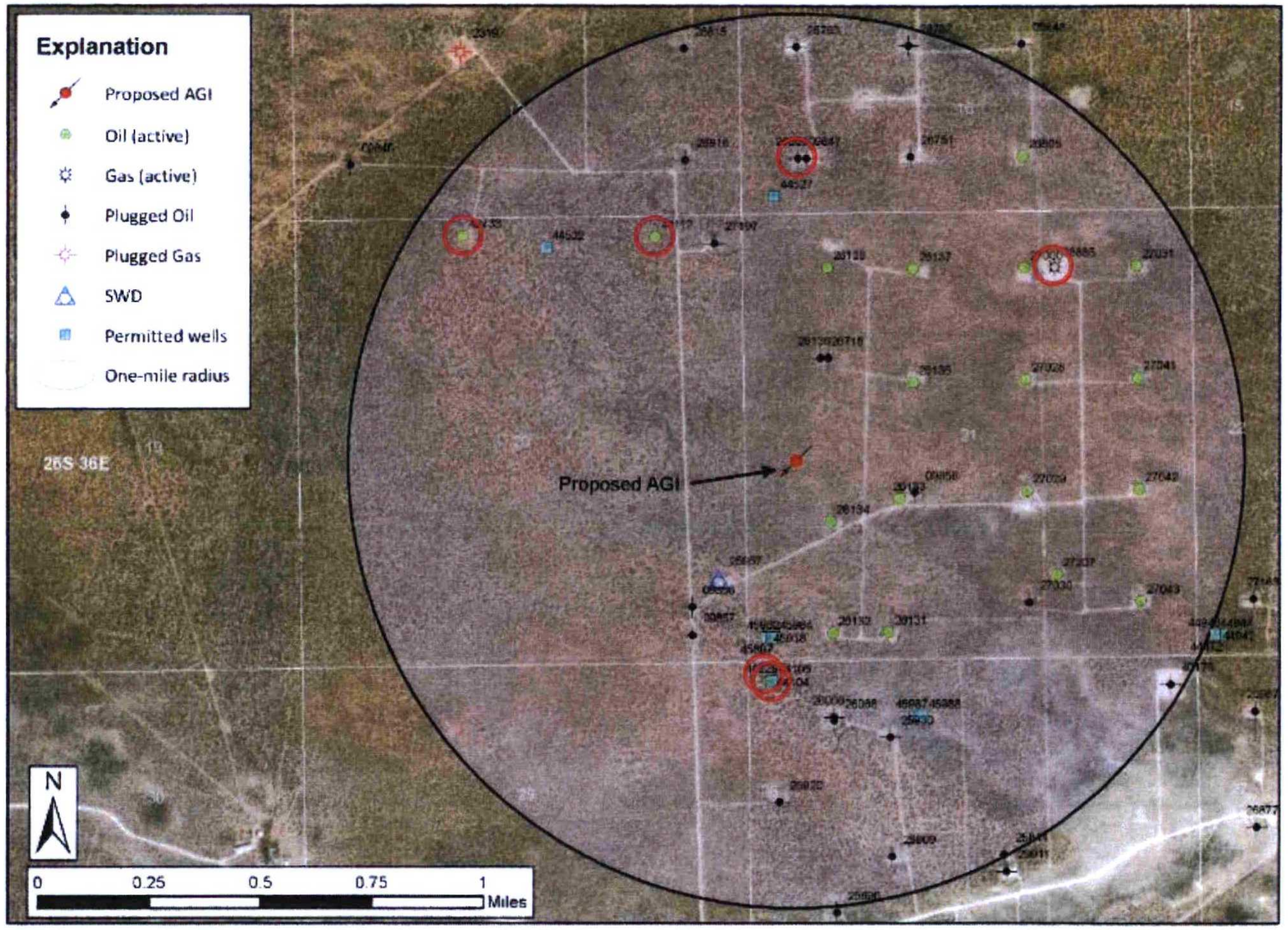
Figure 5. All wells located within a one-mile radius of the proposed SCM AGI #1

- Wells penetrating the proposed injection zone are circled in red on this map



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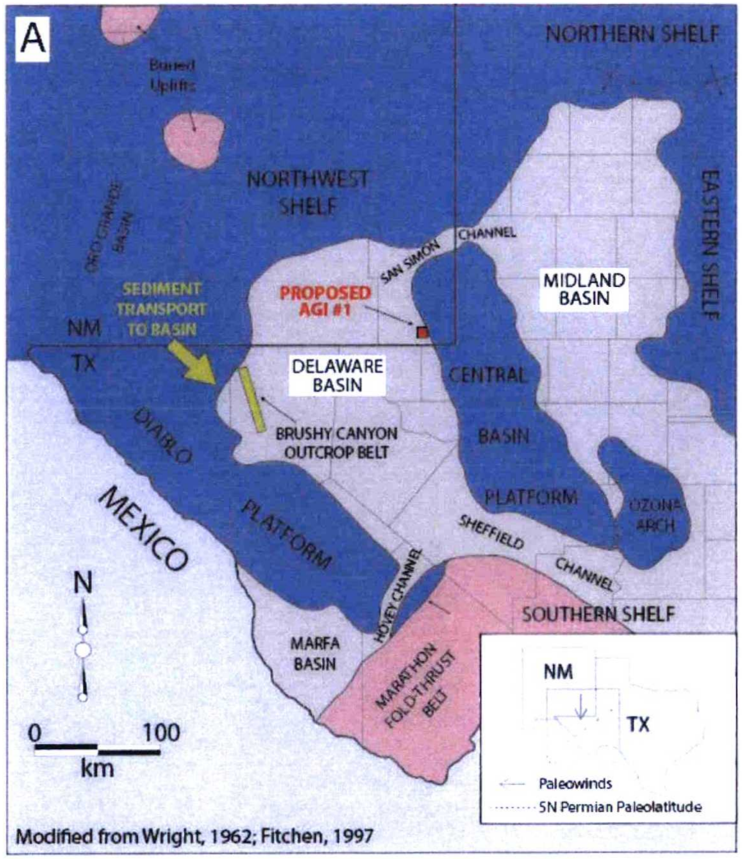
Stratigraphy of the Proposed Injection Area

- The proposed well will be located in the eastern Delaware Basin along the marginal of the Central Basin Platform (Figure 6)
- The Bell Canyon and Cherry Canyon formations of the Delaware Group in this area include porous sandstone units and are adequately contained above and below by low-permeability strata.
- The injection zone is capped above by approximately 1,500 feet of tight, shelf-transitional facies carbonates and shales, as well as, Castile Formation anhydrite.
- Underlying the proposed injection zone, low-permeability siltstones and shales of the Brushy Canyon Formation will prevent downward migration of the injected TAG
- Figure 7 details the general stratigraphy of the proposed project area and includes an offset well log illustrating the anticipated geologic formations to be encountered while drilling SCM AGI #1

Figure 6. General Structure of the Permian Basin



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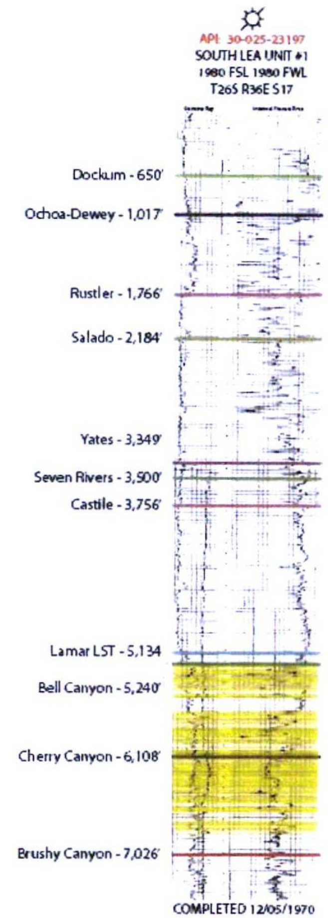
Stratigraphy and Pay Zones in the General Area

SYSTEM	SERIES/ STAGE	NORTHWEST SHELF	CENTRAL BASIN PLATFORM	MIDLAND BASIN & EASTERN SHELF	DELAWARE BASIN	VAL VERDE BASIN
PERMIAN	OCHOAN	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO CASTILE	RUSTLER SALADO
	GUADALUPIAN	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES GLORIETA	★ TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES GLORIETA	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES SAN ANGELO	DELAWARE MT. GROUP BELL CANYON CHERRY CANYON BRUSHY CANYON	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES
	LEONARDIAN	CLEARFORK YESO WICHITA ABO	CLEARFORK WICHITA	LEONARD SPRABERRY, DEAN	★ BONE SPRING	LEONARD
	WOLFCAMPIAN	WOLFCAMP	WOLFCAMP	WOLFCAMP	★ WOLFCAMP	WOLFCAMP
PENNSYLVANIAN	VIRGILIAN	CISCO	CISCO	CISCO	CISCO	CISCO
	MISSOURIAN	CANYON	CANYON	CANYON	CANYON	CANYON
	DESMOINESIAN	STRAWN	STRAWN	STRAWN	★ STRAWN	STRAWN
	ATOKAN	ATOKA BEND	ATOKA BEND	ATOKA BEND	★ ATOKA BEND	(ABSENT)
	MORROWAN	MORROW	(ABSENT)	(ABSENT ?)	★ MORROW	(ABSENT)
MISSISSIPPIAN	CHESTERIAN MERAMECIAN OSAGEAN KINDERHOOKIAN	CHESTER MERAMEC OSAGE KINDERHOOK	CHESTER MERAMEC OSAGE "BARNETT" KINDERHOOK	CHESTER MERAMEC OSAGE "BARNETT" KINDERHOOK	CHESTER MERAMEC OSAGE "BARNETT" KINDERHOOK	MERAMEC OSAGE "BARNETT" KINDERHOOK
DEVONIAN		WOODFORD DEVONIAN	WOODFORD DEVONIAN	WOODFORD DEVONIAN	WOODFORD DEVONIAN	WOODFORD DEVONIAN
SILURIAN		SILURIAN (UNDIFFERENTIATED)	SILURIAN SHALE FUSSELMAN	SILURIAN SHALE FUSSELMAN	MIDDLE SILURIAN ★ FUSSELMAN	MIDDLE SILURIAN FUSSELMAN
ORDOVICIAN	UPPER	MONTOYA	MONTOYA	SYLVAN MONTOYA	SYLVAN MONTOYA	SYLVAN MONTOYA
	MIDDLE	SIMPSON	SIMPSON	SIMPSON	SIMPSON	SIMPSON
	LOWER	ELLENBURGER	ELLENBURGER	ELLENBURGER	★ ELLENBURGER	ELLENBURGER
CAMBRIAN	UPPER	CAMBRIAN	CAMBRIAN	CAMBRIAN	CAMBRIAN	CAMBRIAN
PRECAMBRIAN						

Figure 7. General stratigraphy of the Permian Basin (pay zones noted by red stars) and offset well log showing anticipated geologic formations



Offset well log illustrating the expected geologic formations to be encountered during the drilling of proposed AGI

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Structure of the Proposed Injection Area

- Figure 8 shows a structure-contour map illustrating the top of the Bell Canyon Formation in the area of the proposed well
- The Bell Canyon dips steeply to the east toward the marginal trough at the toe of the Central Basin Platform
- The proposed AGI location overlies three major depositional fairways (as shown in the Figure 9 isopach map) where thick intervals of porous sand are present within the targeted injection reservoir
- SCM AGI #1 overlies the southernmost depositional fairway near the thickest point of the sand deposit

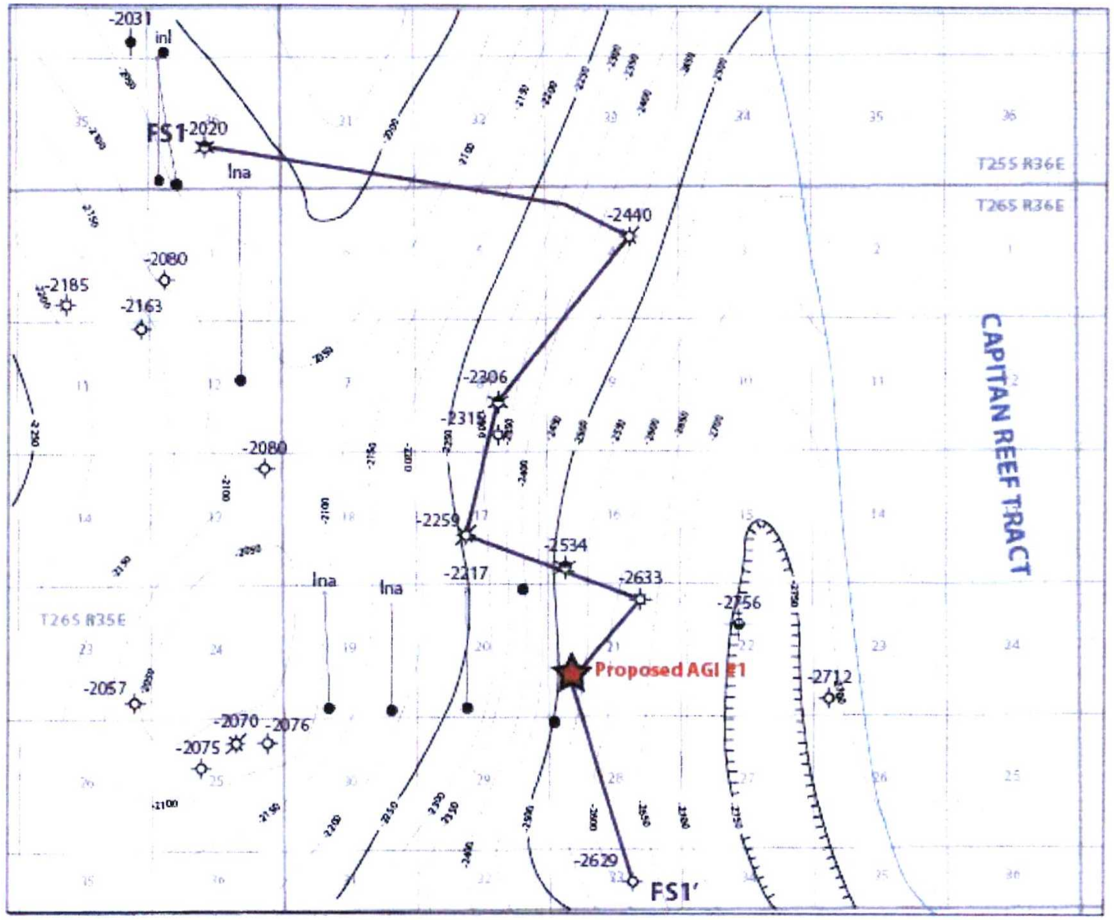

Figure 8. Structure contour map showing the top of the Bell Canyon Formation (top of proposed injection zone).

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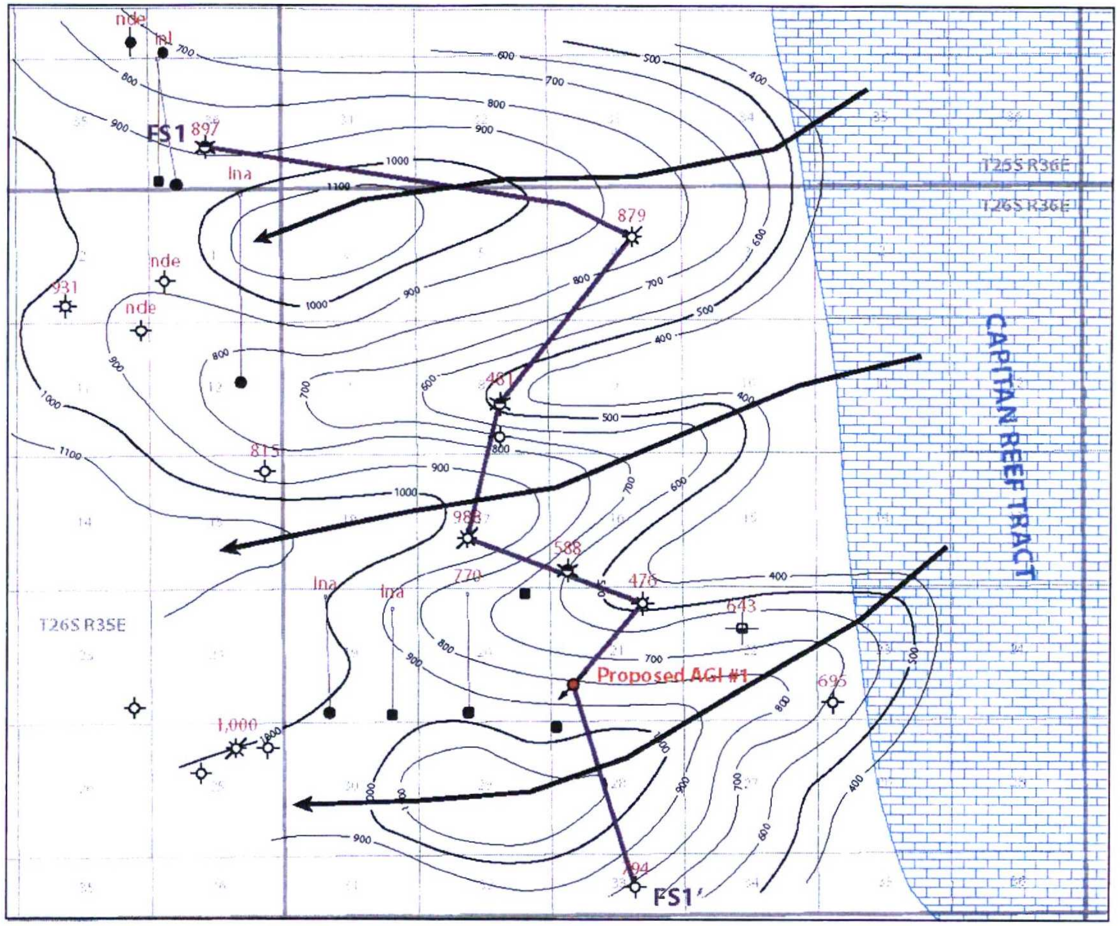

Figure 9. Isopach map showing the proposed Delaware injection zone. Interpreted depositional fairways are shown with black arrows.

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Major Geologic Structures and Anticipated Reservoir Porosity

- Figure 10 shows a structural cross-section illustrating the subsurface characteristics in the area of the proposed AGI well
  - Cross section FS'-FS1' includes the porosity profile of the injection zone and shows numerous intervals with greater than 12% porosity isolated by low-porosity intervals above and below
  - The specific locations for wells included in cross section FS1-FS1' are shown in figures 8 and 9
- No subsurface structures were identified in the immediate area, however, review of 3D seismic data show two approximately NNW-SSE trending faults approximately 3 miles east and northeast outside the area of review
  - These subsurface structures are discussed further in the Induced-Seismicity Risk Assessment included in this presentation and are shown in Figure 13
  - Identified subsurface features are anticipated to pose no hazard to the project, nor will they have any effect on the TAG plume geometry (plume has been modeled to have an approximate radius of 0.15 miles after 30 years of operation at maximum daily injection rates)

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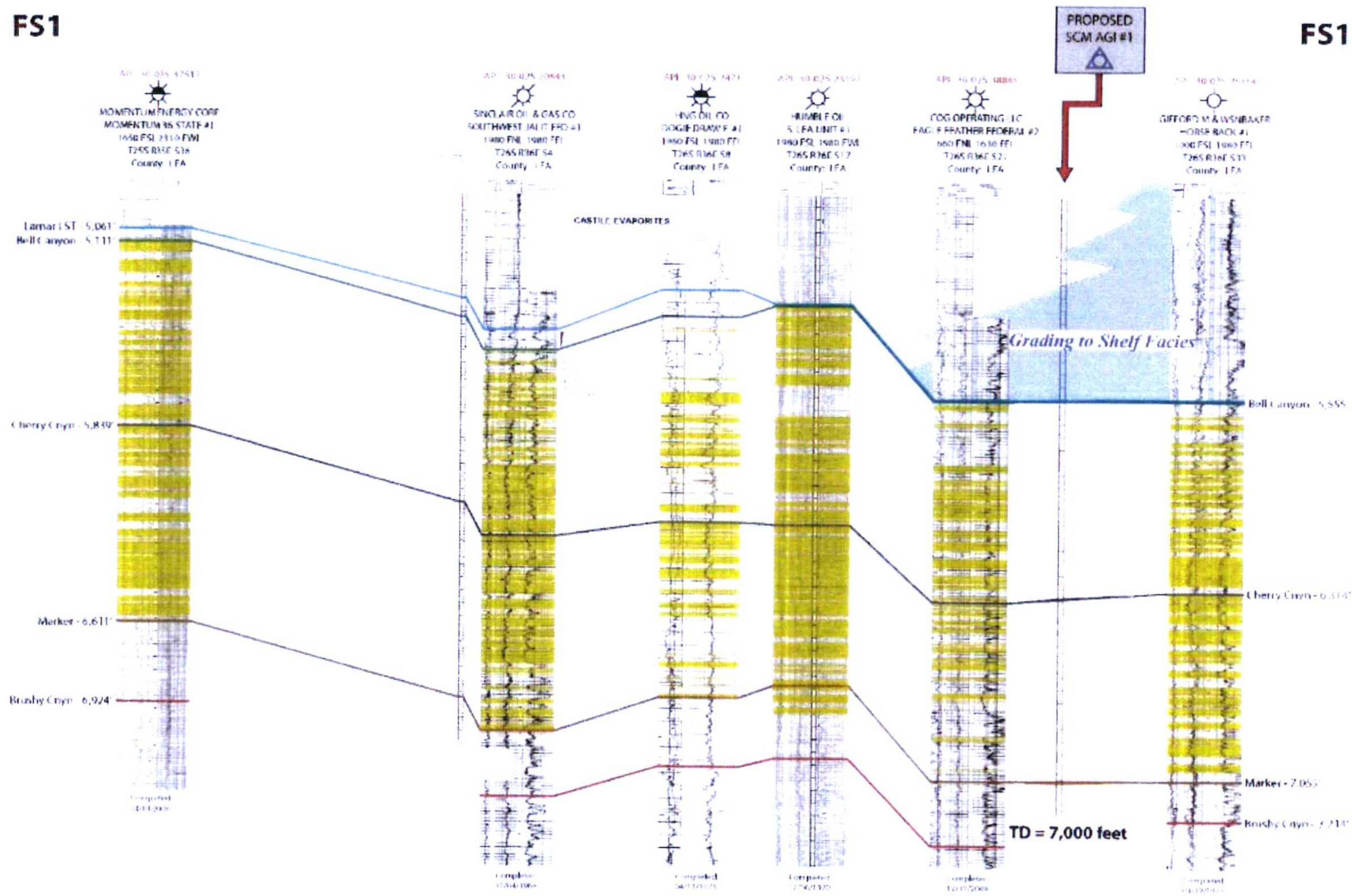
Figure 10. Structural cross-section showing porosity profile within the proposed injection interval.

Yellow shading indicates sandstones of the Delaware Mountain Group with porosity of 12% or greater.



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CONCERNS OF THE STATE LAND OFFICE (SLO)

- Salt Creek Midstream, SLO, and the OCD have agreed to special conditions for the proposed AGI to address concerns previously expressed in the SLO Pre-Hearing Statement
- With this agreement, <u>SLO and OCD fully support</u> the AGI application and project
- Concerns expressed by the SLO are discussed in the following slides and summarized below:
    1. Nearby production in the requested injection zone
    2. Presence of horizontal wells in the area that penetrate injection zone
    3. Potential communication between injection zone and Capitan Reef
    4. Elevated health and safety risk to nearby producing well operators
    5. Migration of acid gas into producing wells in the Delaware and deeper formations

ADDRESSING SLO CONCERNS

1. **There is no Delaware production within the area potentially affected by operation of the proposed AGI**
   - NM production limited to small area west and northwest (>5 miles to nearest production, green arrow)
   - Nearby Delaware completions not commercially productive (red arrow)
2. **There are no horizontal wells penetrating the injection zone**
   - The closest vertical well bore portion of a horizontal well is located outside the model-predicted AGI well plume after 30 years of injection (0.15-mile radius)
   - Furthermore, no wells (active, proposed, or plugged) completed at any depth are located within the 30-year plume area

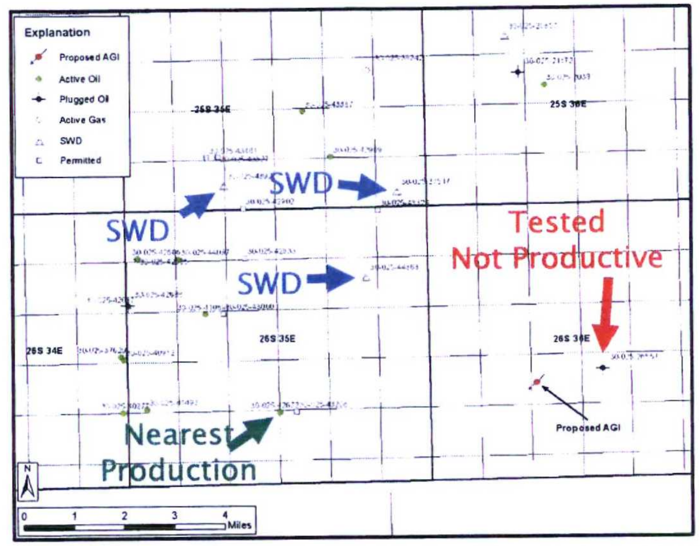

Figure A-1. Delaware Mountain Group wells in the area of the proposed Salt Creek AGI #1

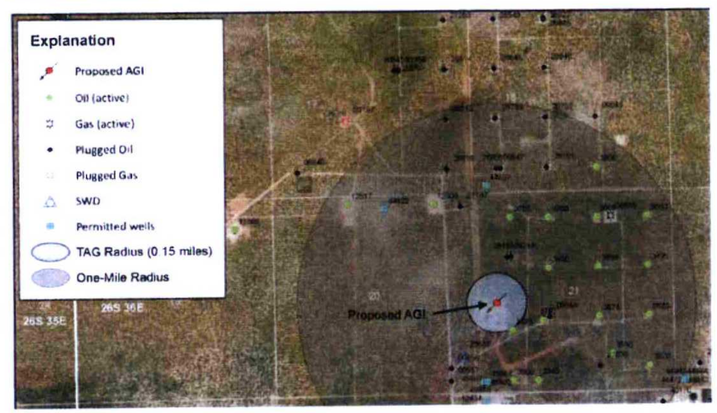

Figure A-2. Anticipated TAG radius after 30-years of injection at 8 MMSCFD

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ADDRESSING SLO CONCERNS

3. **The proposed injection zone <u>is not</u> in communication with the Capitan Reef. It is isolated by low-porosity, low-permeability evaporites from the reef**

   - The Delaware Mountain Group is overlain by sufficient cap rock that will contain the injected TAG and prevent migration into adjacent and overlying geologic units
   - Figure A-4 (shown to right) illustrates the extensive intervals of low-porosity overlying the proposed injection zone

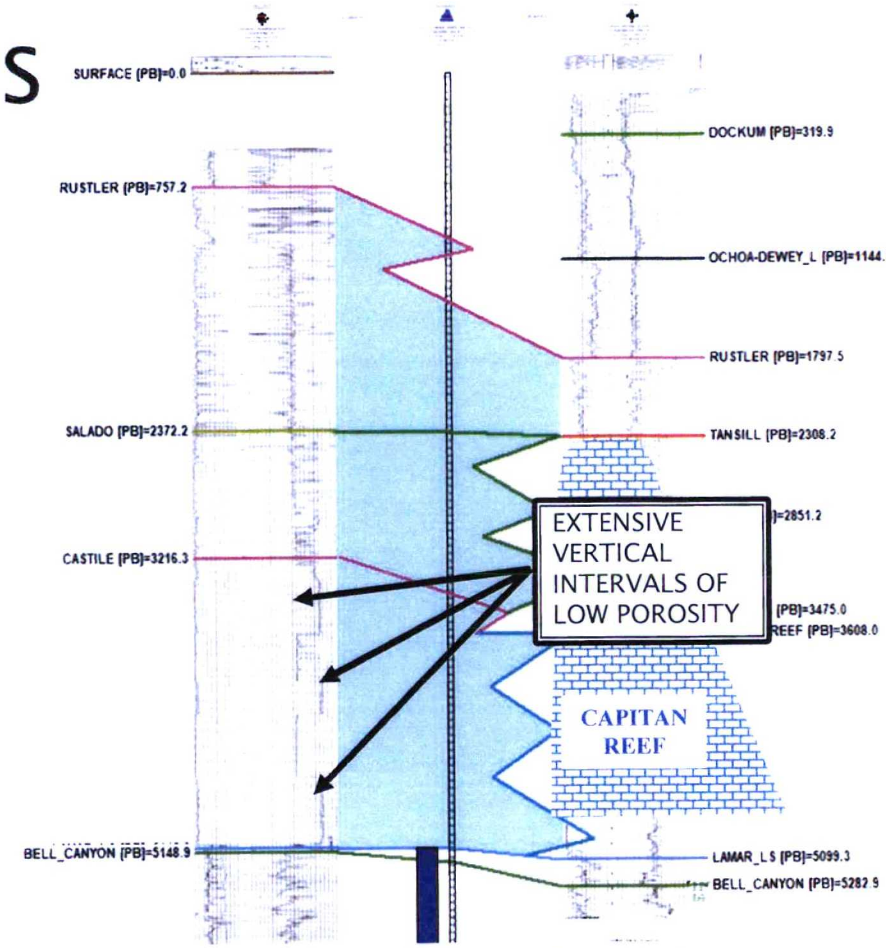

Figure A-3. Correlation section and porosity log showing strata overlying the proposed injection zone

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ADDRESSING SLO CONCERNS

4. The proposed injection zone <u>is not</u> in communication with the Capitan Reef. It is isolated by low-porosity, low-permeability evaporites from the reef (cont'd)

   - Where facies of the Capitan Reef *may be* present in this area, they will consist of tight fore-reef deposits that also provide excellent cap-rock material to contain the injected TAG
   - Furthermore, the proposed AGI well is located 30 miles southeast of the Bureau of Land Management (BLM) 4-string area, where additional well design considerations are required by the BLM to protect usable water resources.
   - Will be verified by core results

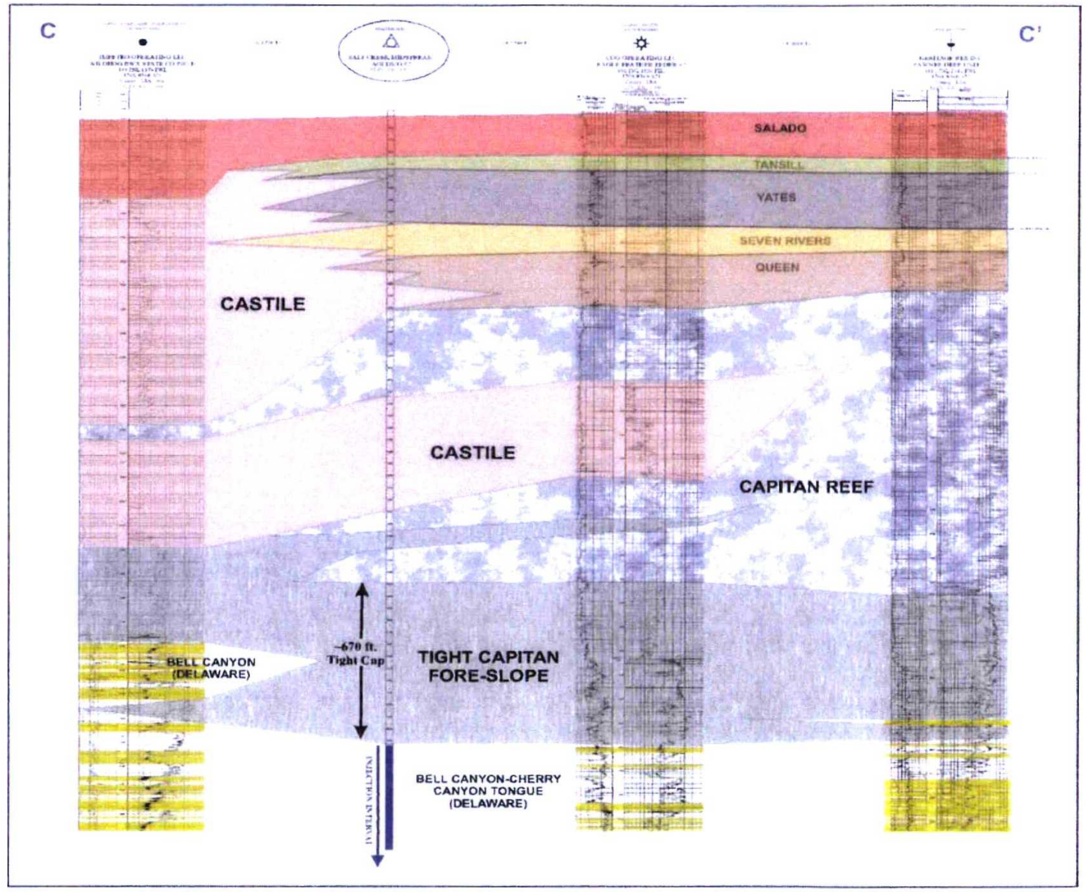

Figure A-4. Correlation section illustrating relationship of fore-reef facies to the main Capitan Reef strata in question

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ADDRESSING SLO CONCERNS

5. **The proposed well does not represent undue and elevated health and safety risks to nearby operators**

   - All nearby wells are located greater than the maximum anticipated extent of TAG after 30 years of injection (0.15-radius) and are completed in formations geologically isolated from the proposed injection zone
   - The proposed AGI well actually reduces risk to operators in the area versus current treatment of H_2S on the surface utilizing catalysts which must be regenerated

6. **The proposed AGI well will not cause waste or damage correlative rights in any formations in the area**

   - As shown previously, there is no Delaware production in the area of the proposed AGI
   - Underlying potential and current production is isolated by over 2,100 feet of tight (impermeable) sandstones, shale, siltstone, and carbonates of the Brushy Canyon and Bone Springs formations

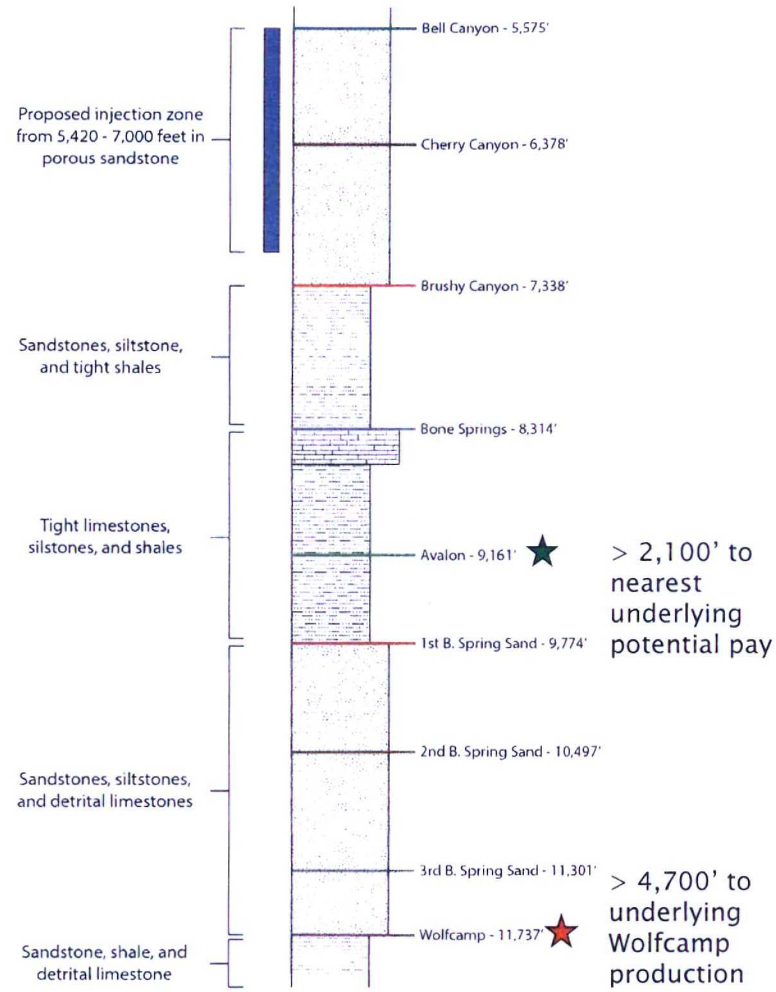

Figure A-5. Permeability barriers below injection zone. Modified from COG Oper. Eagle Feather Fed #2 logs.

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RESULTS OF ANALYSIS OF SLO AND OCD CONCERNS

- Based on our evaluation of the concerns of the SLO, the proposed Salt Creek AGI #1 poses no risk to Delaware production in the area and no active, proposed, or plugged wells are anticipated to encounter the TAG plume after 30 years of injection at 8 MMSCFD.

- The AGI well does not increase the health and safety risk to nearby operators, but rather reduces risk in the area as it avoids the current surface treatment of H_2S utilizing catalysts which must be regenerated.

- The proposed Delaware injection zone is not in communication with the Capitan Reef. It is isolated above and below by extensive low-porosity, low-permeability geologic strata that assure correlative rights remain protected.

IN SUMMARY, THE DELAWARE MOUNTAIN GROUP PROVIDES THE NECESSARY PROTECTION AND IS STILL A VIABLE OPTION FOR THE SEQUESTRATION OF TREATED ACID GAS IN MANY LOCATIONS IN THE DELAWARE BASIN

SLO AND OCD SPECIAL TERMS AND CONDITIONS

Salt Creek, SLO, and the OCD have agreed to the following special terms and conditions (Exhibit 2):

1. No later than 6 months after issuance of the Delaware Mountain Group ("DMG") permit, Salt Creek Midstream ("SCM") shall file a C-108 with the Oil Conservation Division ("ODC") for approval to construct a redundant AGI well in the Devonian-Silurian formations ("Devonian well"), and will complete the Devonian well no later than 15 months after the Oil Conservation Commission issues an order approving the Devonian well.

2. No later than 6 months after placing the Devonian well in service, SCM shall inject into the Devonian well and cease injection into the DMG well as the primary source for disposal.

3. Upon commencing injection in the Devonian well, SCM shall maintain the DMG well as a redundant well.

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SLO AND OCD SPECIAL TERMS AND CONDITIONS

4. SCM may operate the DMG well as a primary source for disposal until it switches injection to the Devonian well as a primary source of disposal, and shall maintain the DMG well as a redundant well subject to OCD standard conditions and the following special conditions.

   - SCM shall not injection more than the proposed 8 MMSCFD (3,268 barrels per day at reservoir conditions) of TAG.
   - SCM shall construct the well to prevent migration of TAG into the Capitan Reef.
   - The upper perforation within the approved injection interval shall be at least 500 feet below the base of the Capitan Reef aquifer or the stratigraphic equivalent. SCM shall propose to OCD and SLO the depth for the upper perforation based on its evaluation of the geophysical logs obtained during the drilling of the well. OCD, SLO, and SCM shall meet to confer regarding the depth for the upper perforation, and SCM shall not initiate the upper perforation until the OCD approves in writing.

5. SCM shall comply with the requirements of 19.15.26.10 NMAC in effect at the time of permit issuance regarding the migration of injectate outside the approved injection zone.

6. If SCM fails to timely submit or to diligently prosecute the application for the Devonian well, or after receiving OCD approval, fails to construct the Devonian well by the specified deadline, this permit shall terminate automatically and SCM shall plug and abandon the DMG well pursuant to an OCD-approved plan.

SEISMIC REVIEW & FSP MODELING

- To evaluate the potential for injection-related seismic events, Geolex conducted an induced-seismicity risk assessment covering the area of the proposed Salt Creek AGI #1

- Components of Risk Assessment:

  1. Review and interpretation of licensed seismic surveys to identify subsurface features in the area of the proposed Salt Creek AGI #1 (courtesy of Ameredev II, LLC)

  2. Fault-slip probability modeling of a six-well injection scenario over 30 years to evaluate the potential for induced-seismic events utilizing the Stanford Center for Induced and Triggered Seismicity's Fault Slip Potential (FSP) model

Seismic Review

- Geolex evaluated and interpreted the South Lea Seismic Survey to identify subsurface faults to be included in the FSP model simulation
- Two faults were identified striking NNW–SSE and located approximately 3 miles east and northeast of the proposed AGI
- In total, six injection wells were included in the model. Their simulated injection rates and API numbers are shown in Figure 13
- All identified faults were included in the FSP injection simulation, however, due to the large distance from active and proposed injection wells, these features were not expected to be significantly affected in the injection scenario

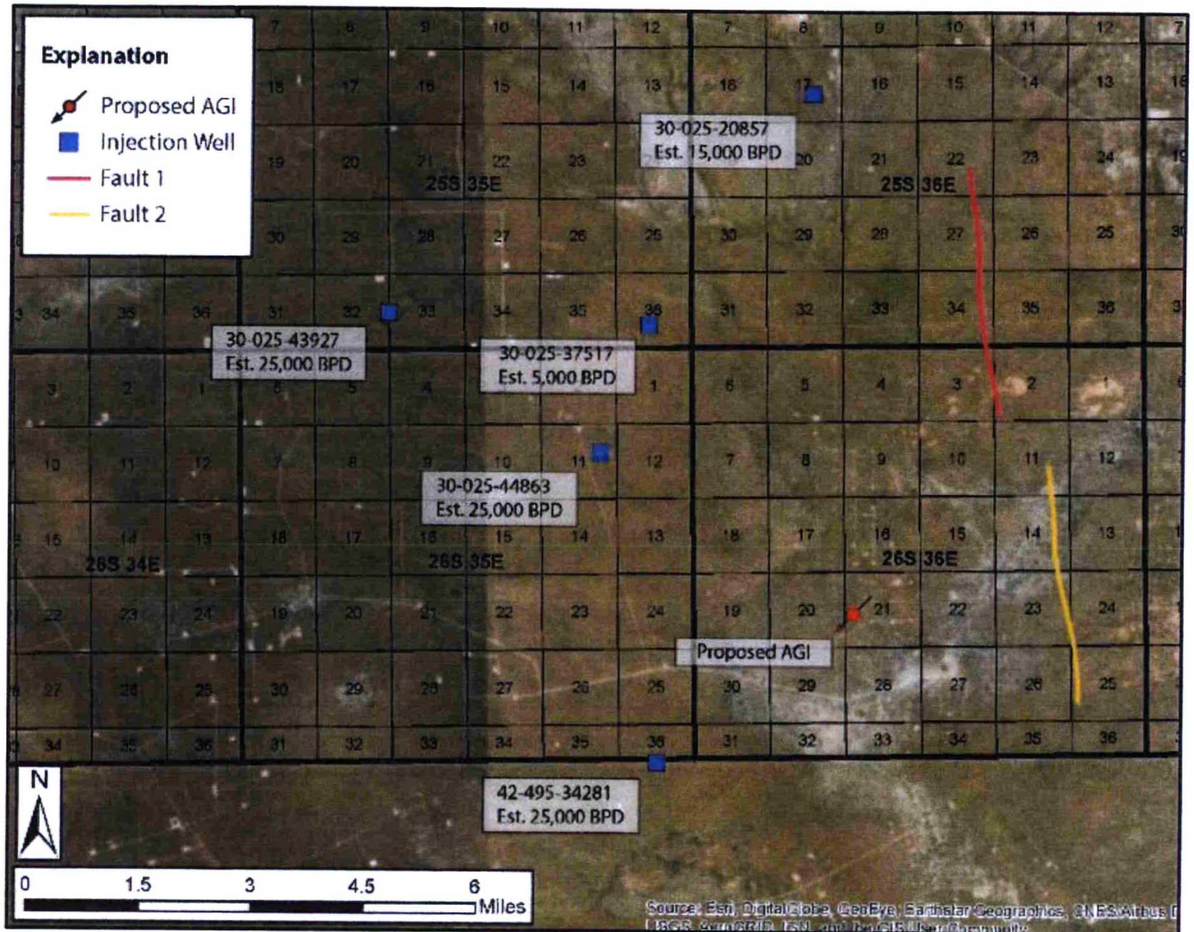

Figure 13. Injection wells and subsurface faults in the area of the proposed AGI

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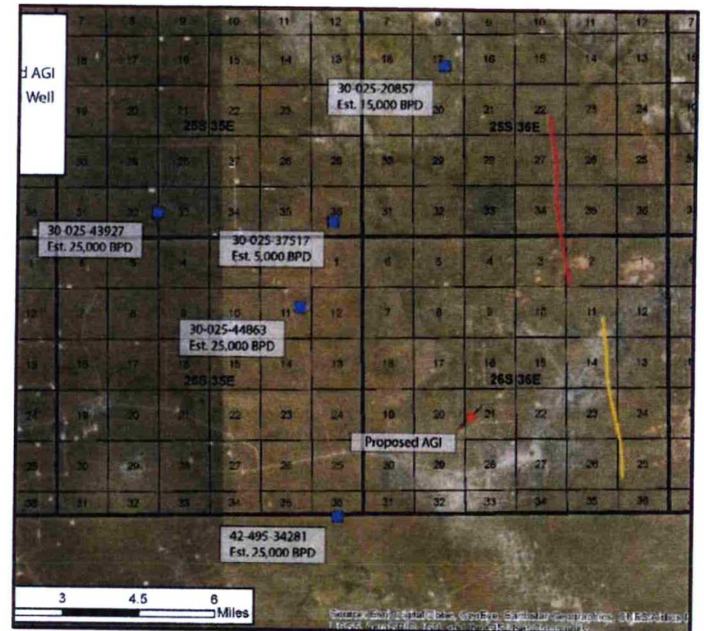
CONDITIONS REQUIRED TO INDUCE FAULT SLIP

- Faults in the area of review were divided into 6 fault segments to accurately characterize their non-linear expression
- The FSP model first utilizes input parameters describing fault geometry, orientation, and local stress conditions to calculate the required pressure increase to induce motion along each structural feature (shown above)



Faults in the vicinity of the proposed Salt Creek AGI #1

FAULT #	SEGMENT #	REQUIRED ΔPRESSURE TO INDUCE SLIP (PSI)
1	1	2,821
	2	2,266
	3	2,793
2	4	2,586
	5	2,842
	6	2,431

Fault segments and required pressure increase to induce slip (model-derived)

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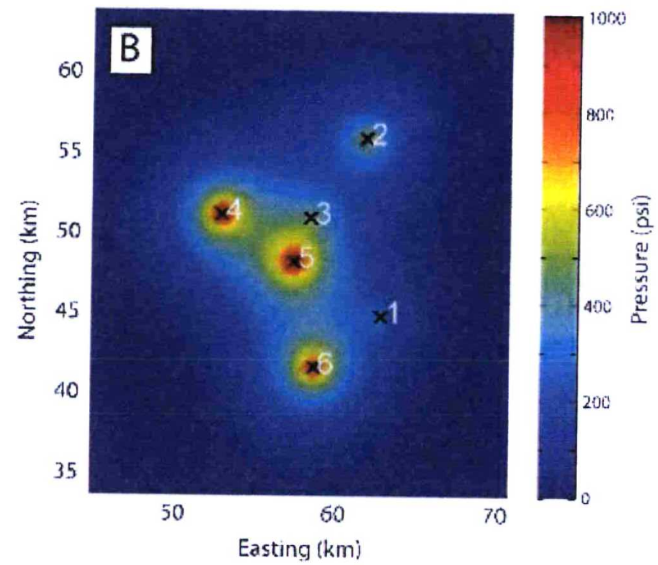
MODELED INJECTION SCENARIO

Nearby active and proposed injection wells included in model simulation

MODEL WELL NUMBER	API	WELL NAME	MODELED INJECTION RATE (BPD)	START YEAR	END YEAR
1	TBD	Salt Creek AGI #1	5,000	2020	2050
2	30-025-20857	West Jal B #1	13,000	2017	2050
3	30-025-37517	Momentum 36 State 1	5,000	2017	2050
4	30-025-43927	TeleDelux 32 St SWD #1	25,000	2020	2050
5	30-025-44863	Nkatata Federal SWD #1	25,000	2020	2050
6	42-495-34281	Felix Water Com 27-C23	25,000	2020	2050

Resultant pressure front after 30 years of injection



- Five (6) active and proposed injection wells were included in the FSP model assessment (listed in above table) to estimate the effect on reservoir pressure conditions after 30 years of continuous injection
- Simulated injection volumes reflect rates reported in the C-108 injection application for each well included in the injection scenario

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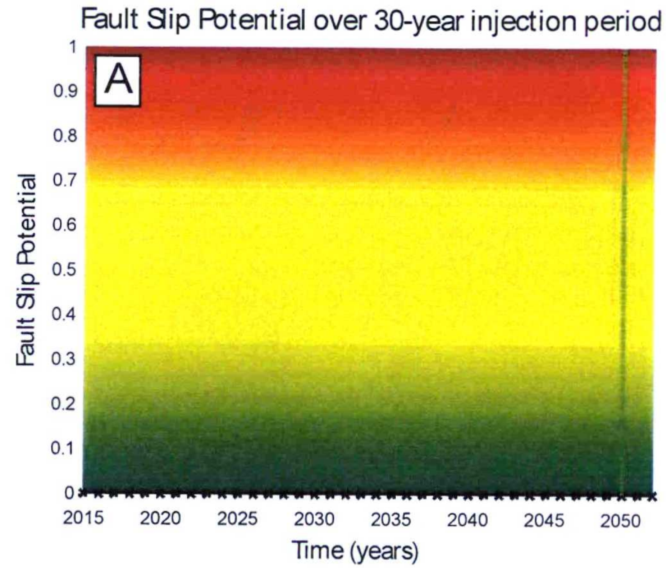
FAULT SLIP POTENTIAL

- Model predicts ZERO PROBABILITY for induced-seismic events along all observed structural features in the area of the proposed Salt Creek AGI #1

- Resultant pressure conditions are significantly lower than model-derived pressure required to induce fault motion

- Additionally, after 30 years of injection, the proposed SCM AGI #1 is not predicted by the FSP model to contribute significantly to the resultant reservoir pressure front

- **In summary**, features included in this simulation do not display significant risk for injection-induced slip and the density of active and proposed SWD wells is low enough that the 30-year resultant pressure front only minimally influences the injection reservoir



FAULT #	SEGMENT #	REQUIRED ΔPRESSURE TO INDUCE SLIP (PSI)	ACTUAL ΔPRESSURE (PSI)
1	1	2,821	**93**
	2	2,266	**73**
	3	2,793	**52**
2	4	2,586	**32**
	5	2,842	**30**
	6	2,431	**25**

Summary of required pressure increase to induce fault slip and model-derived actual pressure change along included fault features

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General Design of the AGI System

- A schematic of the SCM Ameredev South AGI system is shown in Figure 11
- The surface compressors and lines will be protected with automatic safety valves to prevent overpressure and to isolate TAG lines in the event of leaks
- The well will include an automatic subsurface safety valve (SSSV) that will allow the well to be isolated down hole and prevent migration of TAG back to surface
- Freshwater will be protected by the surface casing, extending to 2,080 feet
- Approximately 300 feet of corrosion-resistant alloy (CRA) production casing will be installed immediately above the perforated injection zone to protect the packer and packer seat

General Design of the AGI System (cont'd)

- The injection tubing will be a combination of corrosion-resistant HL80 and a 300' corrosion-resistant alloy section immediately above the packer
- The annulus between the production casing and tubing will be filled with corrosion-inhibited diesel fuel with biocide additives
- Annular pressure and injection-tubing pressure and temperature will be continuously monitored and recorded
- Bottom-hole injection pressure and temperature will also be continuously monitored and recorded with sensors installed at the packer

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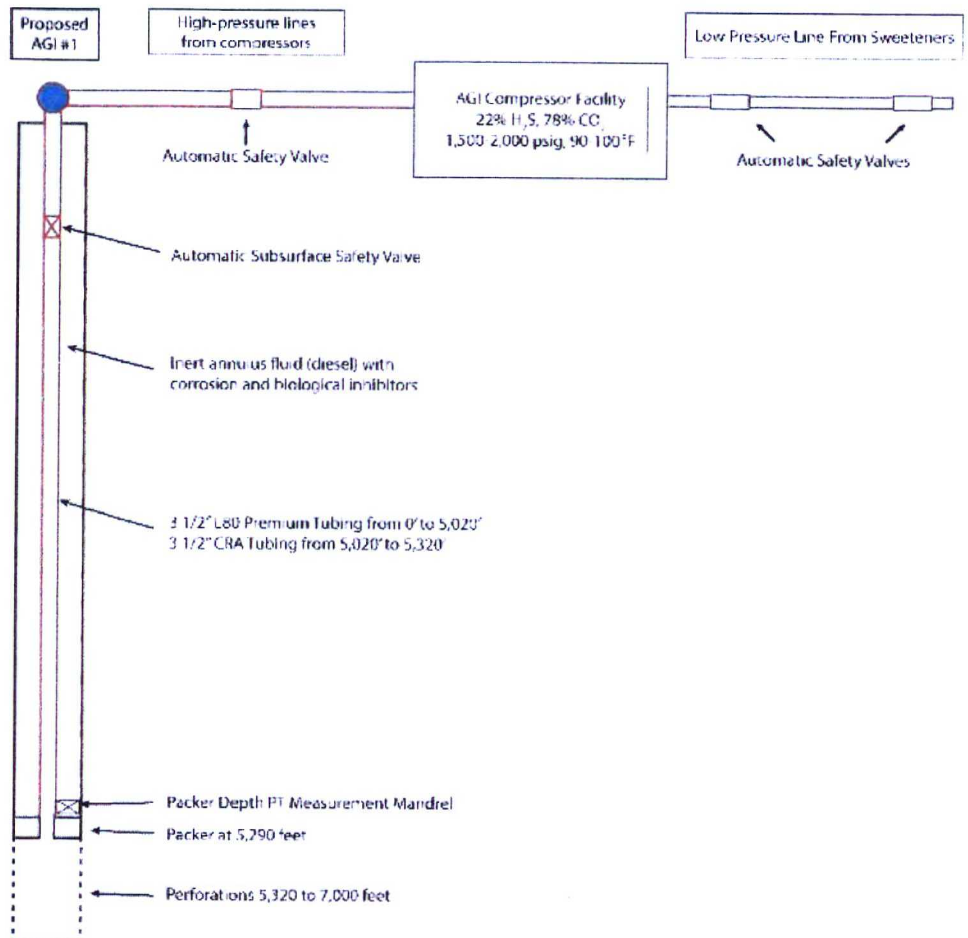

Figure 11. General schematic of the Proposed SCM AGI System

Design of SCM AGI #1

- Figure 12 shows the anticipated SCM AGI #1 well design
- Corrosion-resistant alloy (CRA) material will be utilized in critical areas immediately above the packer and in the top of the injection zone and caprock
- The SCM AGI #1 injection zone will be cased with 7", L80 and subsequently perforated along intervals of porosity between depths of 5,410 to 7,000 feet

Design of SCM AGI #1 (cont'd)

- SCM AGI #1 will be drilled as a vertical well, using:

▪ 20-inch conductor casing	Surface to 80 feet
▪ 9 5/8-inch surface casing	Surface to 2,080 feet
▪ 7-inch, L80 production casing	Surface to 5,110 feet
▪ 7-inch, CRA production casing	5,110 to 5,410 feet
▪ 7-inch, L80 production casing	5,410 to 7,000 feet

- The well will be completed using:

▪ 3 ½-inch, L80 injection tubing	Surface to 5,110 feet
▪ 3 ½-inch, CRA injection tubing	5,110 to 5,410 feet
▪ Permanent CRA packer	Set at approx. 5,110 feet
▪ Automatic subsurface safety valve (SSSV)	Set at approx. 250 feet
▪ Bottom-hole pressure/temperature sensors	Immediately above packer

- All casing strings will be cemented to the surface, and cement integrity verified using 360° cement bond logging prior to final acceptance

- The annular space adjacent to the CRA casing (5,110 to 5,410 feet) will be cemented with Halliburton WellLock™ cement, which has superior resistance to acid gases

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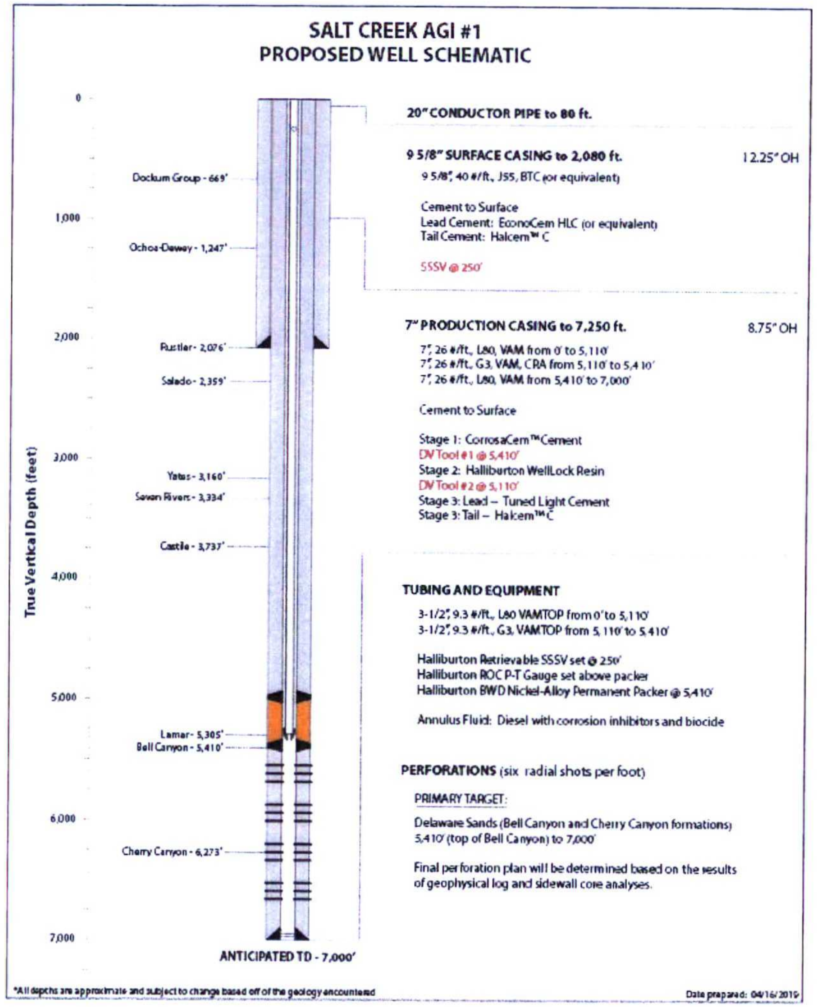

Figure 12. Proposed SCM AGI #1 Well Schematic

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Casing and Cement Program

- All casing strings will be cemented to the surface, pressure tested, and integrity of operations verified using 360° cement-bond logs
- The production string will be cemented above the injection zone and the critical caprock area will be emplaced with acid-resistant cement (Halliburton WellLock™, or equivalent)
- This casing and cement program is consistent with BLM guidelines applicable to wells on BLM-mineral lease lands in this area

Groundwater Conditions in the Area of Review

- Based on the New Mexico Water Rights Database from the New Mexico Office of the State Engineer, there is one reported freshwater well located within a one-mile radius of the proposed SCM AGI #1
- The water well within one mile of the proposed AGI (Well #J 00025 POD 2) is located approximately 0.89 miles to the southeast and has a total depth of 800 feet
- The surface casing for SCM AGI #1 will extend to approx. 2,080 feet, isolating and protecting all shallow groundwater resources in the area
- Well # J 00025 POD 2 is the deepest water well within two miles of the proposed location and will be isolated from the proposed injection zone by more than 4,610 feet of geologic strata
- There are no permanent bodies of surface water within a one-mile radius of the proposed AGI location

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C-108 Application Summary

- SCM is requesting authority to inject acid gas into proposed SCM AGI #1
  - Targeted disposal zone is the Delaware Mountain Group Bell Canyon and Cherry Canyon formations at depths of approximately 5,410 to 7,000 feet
  - Requesting a maximum injection rate of 8.0 MMSCFD and maximum operating surface injection pressure of 2,149 psig
- Proposed AGI will be a vertical well located at 594' FWL & 2,370' FSL in Section 21 of T26S, R36E (32.028017, -103.276681 NAD83)
- Surface casing string will extend to a depth of approximately 2,080 feet to protect shallow groundwater resources
- The radius of influence after 30 years of injection operations calculated to be approximately 0.15 mile (808 feet)
- There is no current or anticipated production in the targeted Delaware formations in the area of the proposed SCM AGI #1

C-108 Application Summary (cont'd)

- Six wells (6) penetrate the proposed injection zone within the one-mile radius area of review. These include: Five (5) active wells completed greater than 1,300 feet below the proposed injection zone that produce the Bone Springs, Wolfcamp, and Strawn pools; and one (1) plugged well (Maralo Sv 16 State #006) approximately 0.68 miles to the north.
- The Maralo Sv 16 State #006 well is properly plugged and abandoned, such that the proposed injection zone is properly isolated from producing and freshwater zones
- The proposed injection zone (5,410 to 7,000 feet) is capable of permanently containing the injected fluid due to low porosity and permeability of cap rock above and below the target interval
- Appropriate materials and drilling procedures will be employed to assure well integrity and prevent the migration of injected fluids to adjacent production and/or underground sources of drinking water

Summary of Geologic Factors Assuring Integrity and Safety of the Proposed AGI Well

- Wells penetrating the target injection zone within the area of review are well isolated and properly protected in that zone
- Caprock is low porosity, impermeable rock, which is an effective barrier above injection zone
- Injection zone is vertically isolated from adjacent production zones
- All freshwater zones are isolated by conductor- and surface-casing intervals
- Proposed injection pressure is well below anticipated fracture pressure of reservoir and caprock
- Step-rate testing will verify that an appropriate maximum allowable operating pressure is approved
- The proposed injection zone is fully capable of permanently sequestering the injected TAG without any measurable risk of induced seismicity

SCM's Request for NMOCC Order

1. Authority to drill, test, complete, and operate the AGI well as specified in SCM's C-108 application with a period of 2 years to get the well in operation based on need to order long-lead items and to construct surface facilities
2. SCM requests permission to inject acid gas at a maximum rate of eight (8) MMSCFD and maximum operating pressure of 2,149 psi for at least 30 years
3. SCM will begin drilling as soon as all NMOCC and BLM permits are in place
4. SCM also requests to be permitted to resolve normal technical changes in the drilling program by administrative approval of the NMOCD
5. As proposed, the well will enhance the reliability of the plant and the AGI system and the project is supported by the BLM and adjacent producers
6. The proposed well will dispose of acid gas safely and effectively and assures the protection of surface and groundwater resources and correlative rights
7. Injection of TAG will begin only after the revised Rule 11 H_2S Contingency Plan is approved
8. Permit conditions agreed upon by OCD, SLO, and SCM

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