

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION**

**APPLICATION OF THE JOINT INDUSTRY
TECHNICAL COMMITTEE TO AMEND
COMMISSION ORDER R-111-P, LEA AND
EDDY COUNTIES, NEW MEXICO.**

**CASE NO. 23655
Order No. R-111-Q**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on March 14, 2024, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the “**Commission.**”

NOW, on this 10th day of May, 2024, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) Order R-111-A was entered on July 14, 1955, and has since been amended from time to time, most recently on February 18, 1988, under Case No. 9316, as Order No. R-111-P.

(3) The Oil and Gas Act, 70-2-3(F) NMSA 1978, declares as waste “drilling or producing operations for oil or gas within any area containing commercial deposits of potash where such operations would have the effect unduly to reduce the total quantity of such commercial deposits of potash which may reasonably be recovered – or where such operations would interfere unduly with the orderly commercial development of such potash deposits.”

(4) The Oil and Gas Act in 70-2-12(B)(17) empowers the Division “to regulate and, where necessary, prohibit drilling or producing operations for oil and gas” in areas which would

cause waste as described in 70-2-3(F).

(5) Current Order R-111-P reflects that it is the product to of a study group of volunteer representatives from the oil and potash industries and other interested parties convened by the Director of the Oil Conservation Division in 1986. Existing Order R-111-P notes, among other things, that:

- a. Release of methane into potash mine workings would endanger the lives of miners and would render further mining activities uneconomic because of the additional, and more expensive safety requirements which would be imposed by the Mine Safety and Health Administration (MSHA) of the U.S. Department of Labor.
- b. Salt and potash deposits are essentially non-porous and impermeable but are inter-bedded with clay seams which, in an undisturbed state are porous but of extremely low permeability.
- c. Primary mining activity creates minor localized disturbance but secondary mining causes subsidence of the overburden the effects of which tend to expand beyond the mined out area a distance approximately equal to the depth of the mined area.
- d. During the drilling of wells for oil and gas, measures should be taken to protect the salt-protection casing from internal pressures greater than the designed burst resistance plus a safety factor so as to prevent any possible entry of methane into the salt and potash interval.

(6) The evidence presented at the March 14th hearing established that the Applicant in this matter is similarly comprised of representatives of companies engaged in the drilling and production of oil and gas, or the mining and refining of potash, within the Known Potash Leasing Area (KPLA) in Eddy and Lea Counties. A work group comprised of experts from the oil and gas and potash industries met periodically over the last six years to review oil and gas and potash mining operations within the KPLA. Through these meetings, the Applicant agreed upon a set of proposed modifications to Order R-111-P to improve practices for the safe and responsible concurrent development of oil and gas and potash within the KPLA.

(7) These modifications were presented at the March 14th hearing along with evidence supporting the adoption of the modifications. No one appeared at the hearing in opposition to the proposed modifications. .

(8) The Commission finds that the proposed modifications to Order R-111-P will promote the safe and responsible concurrent development of oil and gas and potash reserves within the KPLA, prevent the undue waste of commercially recoverable potash, avoid the waste of oil and gas resources, and protect the correlative rights of the oil and gas mineral owners.

IT IS THEREFORE ORDERED THAT:

This order shall wholly supersede and replace Order R-111-P ("Order"), and is hereafter to be referred to as Order R-111-Q, as follows:

A. THE POTASH AREA

(1) The Potash Area, as described in Exhibit A attached hereto and made a part hereof, represents the area in various parts of which potash mining operations are now in progress, or in which core tests indicate commercial potash reserves. Such area is coterminous with the Known Potash Leasing Area ("KPLA") as determined by the U.S. Bureau of Land Management ("BLM").

(2) The Potash Area, as described in Exhibit "A" may be revised by the Division after due notice and hearing at the regular pool nomenclature hearings, to reflect changes made by BLM in its KPLA.

B. DRILLING IN THE POTASH AREA

(1) All drilling of oil and gas production wells in the Potash Area shall be subject to these Rules and Regulations.

(2) No wells shall be drilled oil or gas at a location which, in the opinion of the Division or its duly authorized representative, would result in undue waste of potash deposits or constitute a hazard to or interfere unduly with mining of potash deposits.

(3) No mining operations shall be conducted in the Potash Area, that would, in the opinion of the Division or its duly authorized representative, constitute a hazard to oil or gas production, or that would unreasonably interfere with the orderly development and production from any oil or gas pool.

(4) Upon discovery of oil or gas in the Potash Area the Division may promulgate pool rules for the affected area after due notice and hearing in order to address conditions not fully covered by these rules and the general rules.

(5) The Division may waive the requirements of Sections D and H which are more rigorous than the general rules upon satisfactory showing that a location is outside of the Life of Mine Reserves (LMR) and surrounding buffer zone as defined hereinbelow and that no commercial potash resources will be unduly diminished.

(6) Encounters during drilling operations with flammable gas, including hydrogen sulfide, other than normal drill gas from known gas bearing intervals shall be reported immediately to the Division followed by a written report of the same. Drill gas is defined as the gas released from the pore space in the volume of rock drilled.

C. DRILLING AND CASING PROGRAM

(1) For the purpose of the regulations and the drilling of wells for oil and gas, shallow and deep zones are defined as follows:

(a) The shallow zone shall include all formations above the base of the Delaware Mountain Group or, above a depth of 5,000 feet, whichever is lesser.

(b) The deep zone shall include all formations below the base of the Delaware Mountain Group or, below a depth of 5,000 feet, whichever is lesser.

(c) For the purpose of identification, the base of the Delaware Mountain Group is hereby identified as the geophysical log marker found at a depth of 7485 feet in the Richardson and Bass No. 1 Rodke well in Section 27, Township 20 South, Range 31 East, NMPM, Eddy County, New Mexico.

(2) Anti-collision Measures:

(a) While drilling, the operator will monitor separation distance to offset. Operators will maintain a Separation factor ("SF") greater than 1.0 for any active (capable of natural free flowing or on active gas lift) or inactive wells through the salt interval. For blind or inclination only offset wells, maintaining greater than 300 feet center-to-center separation is acceptable.

(b) If the SF for any well projected to the next survey point is equal to or less than 1.0 while drilling through the salt interval, the operator shall perform all of the following mitigation measures if applicable:

(i) The applicable offset active well(s) will be shut-in and if well is on active gas lift, the well shall be shut in and the gas lift pressure shall be bled off from casing. The applicable annulus shall be monitored continuously in the event that corrections cannot be made.

(ii) Drilling must cease and efforts made to correct or alter the well path so the SF becomes greater than 1.0.

(iii) Monitoring magnetic interference and ranging away from the offset well shall be considered an acceptable well path correction.

(iv) If offset wells are owned by another operator, reasonable efforts shall be made to contact the offset operator and raise awareness prior to commencing drilling.

(v) Prior to requesting another operator to shut in a well, the drilling operator shall make reasonable effort to reduce the drilling well's Ellipse of

Uncertainty (“EOU”) through the use of Measurement While Drilling (“MWD”) corrections (Sag corrections, In-Field Referencing (“IFR”), Gyro services, etc.).

(c) In the case where laterals are stacked and the True Vertical Depth (“TVD”) separating the lateral wellbores is less than or equal to 50 feet, corrections shall be made if SF fall below 1.0 in the lateral according to directional plan. All laterals must be geo-steered to control lateral placement in the vertical plane.

(d) The drilling operator will implement a survey tool quality control program consistent with applicable American Petroleum Institute (“API”) and Industry Steering Committee on Wellbore Survey Accuracy (“ISCWSA”) industry standards. All wells shall include directional surveys with both inclination and azimuth and a maximum separation of 200’ between survey points.

(e) The drilling operator will monitor for and document within a daily drilling summary or equivalent the following: erratic torque, standpipe pressure changes and other signs of collision.

(3) Surface Casing String:

(a) A surface casing string of new oil field casing in good condition that meets API specifications and rated for the loads expected over the lifecycle of the well shall be set in the “Red Bed” section of the basal Rustler formation immediately above the salt section, or in the anhydrite at the top of the salt section, as determined necessary by the regulatory representative approving the drilling operations, and the cement shall be circulated to the surface.

(b) The surface casing string shall have at least the following centralization program:

(i) One (1) centralizer per joint across the shoe track;

(ii) One (1) centralizer per 2 joints from casing shoe to the top of useable fresh water; and

(iii) Not less than one (1) centralizer every three (3) joints for surface casing.

(c) Cement shall be allowed to cure an adequate amount of time to allow for both the lead and the tail cement to reach 500 pounds per square inch (“psi”) compressive strength before drilling or initiating pressure tests. Cement slurry lab test shall be performed at expected bottom hole temperature.

(d) A casing pressure test shall be made before drilling below the casing seat or at the time of plug bump. The casing shall be tested to 0.22 psi per foot of casing string length or 1500 psi whichever is greater, but not to exceed 70 percent (“%”) of casing burst. If a drop

of 10% or more should occur within thirty (30) minutes, corrective measures shall be applied.

(e) Shoe integrity shall be verified via a formation integrity test ("FIT"). Surface applied pressure during the FIT shall take into account the maximum anticipated equivalent mud weight that will be required to drill the next hole section.

(f) The above requirements for the surface casing string shall be applicable to wells targeting both the shallow and deep zones

(4) 1st Intermediate / Salt Protection Casing String:

(a) The 1st intermediate casing string, also known as the salt protection string, shall consist of new oil field casing in good condition that meets API specifications and rated for the loads expected over the lifecycle of the well.

(b) The casing shall be set (i) at least one hundred (100) feet below the base of the salt interval, and (ii) above the top of the highest known oil or gas zone.

(c) The wellbore may be deviated from the vertical after completely penetrating USGS Marker Bed No. 126

(d) The 1st intermediate casing string shall have at least the following centralization program:

(i) One (1) centralizer per joint across the shoe track and not less than one (1) centralizer every three (3) joints to the surface.

(ii) The operator shall confirm the effectiveness of centralization program with cement placement simulations.

(iii) The Division, or its duly authorized representative, may require the use of additional centralizers on the salt protection string when in its judgment the use of such centralizers would offer further protection to the salt interval.

(e) The 1st intermediate casing string cement slurry shall have the following characteristics:

(i) Cement should be a high sulfate resistance ("HSR") slurry.

(ii) Include a minimum of 10% (by weight of water) salt.

(iii) Include an expansion additive (1% – 3% by weight of magnesium oxide or equivalent thereof).

(iv) Have free-water separation of no more than two millimeters per 250 millimeters of cement tested in accordance with the current API RP 10B-2: Recommended Practice for Testing Well Cements (or any update thereto).

(v) The zone of critical cement shall extend from the 1st intermediate casing shoe to 300 vertical feet above the casing shoe. The zone of critical cement shall have a 72-hour compressive strength of at least 1200 psi. Lab testing criteria shall be performed at bottom hole static temperature of the anticipated casing seat.

(vi) Cement with volume extenders (filler cement) that do not degrade long term cement integrity may be used above the zone of critical cement but in no case shall the cement have a compressive strength less than 500 psi the time of drill out. For the filler cement, the test temperature shall be the temperature found 100 feet below the ground level, or 80 degrees Fahrenheit, whichever is greater.

(f) The 1st intermediate casing string shall be cemented as follows:

(i) Cement shall be pumped with a top plug. To minimize cement contamination, either a bottom plug shall be used or minimum 50% excess applied to the annulus cement volume.

(ii) A viscosified saltwater spacer of higher density than the drilling fluid shall be included followed by enough cement to circulate to surface. Enough spacer shall be used to cover a minimum 500 feet of annular length that is compatible with the mud and cement, and a surfactant spacer shall be used when displacing oil-based mud ("OBM").

(g) The 1st intermediate casing string shall be cemented with sufficient cement to fill the annular space behind the pipe from the casing seat to the surface or to the bottom of the cellar. If the cement fails to reach the surface or the bottom of the cellar, the top of the cement shall be located by an appropriate survey method such as a radial cement bond log, an equivalent log appropriate for cement type, or other survey method administratively approved by the Division. Additional cementing shall be done until the cement is brought to the point required by the applicable regulatory body.

(h) Cement shall be allowed to cure an adequate amount of time to allow both the lead and the tail cement to reach 500 psi compressive strength based on cement slurry lab testing before drilling or initiating pressure tests. Cement slurry lab test shall be performed at expected bottom hole temperature.

(i) A casing test shall be made before drilling below the casing seat or at plug bump. The casing shall be tested to 0.22 psi per foot of casing string length or 1500 psi whichever is greater, but not to exceed 70% of casing burst unless required otherwise per Section

D.(4).(k).(i). If a drop of 10% or more should occur within thirty (30) minutes, corrective measures shall be applied.

(j) The shoe integrity shall be verified via a FIT. Surface applied pressure during the FIT shall take into account the maximum anticipated equivalent mud weight that will be required to drill the next hole section.

(k) For all wells within the KPLA where a 2nd intermediate string will not be utilized resulting in a three (3) -string wellbore design (surface, 1st intermediate/salt protection, and production strings only), one of the below two methods is required in order to safely contain or divert flow of wellbore fluids away from the salt formation in the event of a sudden production casing failure. For either method, the surface equipment utilized during stimulation operations shall be designed to relieve pressure from the annulus between the intermediate and production casing strings below the failure threshold of the casing string components.

(i) Intermediate casing (salt protection string) shall be designed to contain wellbore pressures anticipated during fracture stimulation production casing leak scenario. The intermediate casing string shall then be pressure tested to operating fracture stimulation pressure for a minimum of thirty (30) minutes after installation. The top of production casing cement must tie back at least 500 feet inside the intermediate casing but not above the USGS Marker Bed No. 126. Reference wellbore diagram Figure A in Exhibit B; or

(ii) A monitored open annulus shall be incorporated during completion by leaving the annulus between the intermediate and production casing strings un-cemented and monitored inside the intermediate string. Reference wellbore diagram Figure B in Exhibit B.

(1) The top of cement in the annulus between the intermediate and production casing strings shall stand un-cemented at least 500 feet below the intermediate casing shoe. Zero percent excess shall be pumped on the production cementing slurry to ensure no tie-back into the intermediate casing shoe.

(2) Not less than two (2) weeks prior to commencing hydraulic fracturing operations on wells of this design, operator shall provide notice to operators of offset wells actively producing from the Delaware Mountain Group located within one (1) mile of subject well's surface hole location. During hydraulic fracturing operations, the pump pressure and the annulus between the intermediate and production casing strings shall be continuously monitored for signs of production casing failure.

(3) After hydraulic fracturing operations have been concluded and no longer than 180 days after the well is brought online, the operator shall bradenhead

cement to ensure at least a 500 foot tie-back has been established inside the intermediate (Salt) string but not higher than USGS Marker Bed No. 126.

(4) The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid.

(5) 2nd Intermediate Casing String (if applicable):

(a) In drilling wells to the deep zone for oil or gas, the operator shall have the option of running an intermediate string of pipe, unless the Division requires an intermediate string be run. However, a 2nd intermediate casing string is required in areas of the Capitan Reef unless otherwise through an exception approved by the Division.

(b) The 2nd intermediate string shall consist of new oil field casing in good condition that meets API specifications and rated for the loads expected over the lifecycle of the well.

(c) For all wells within the KPLA where a 2nd intermediate string will be utilized resulting in a four (4) -string wellbore design (surface, 1st intermediate, 2nd intermediate, and production casing strings), one of the following four methods shall apply to safely divert flow of wellbore fluids away from the salt interval in the event of a sudden production casing failure. For any of the methods described, the surface equipment utilized during stimulation operations shall be designed to relieve pressure from the annulus between the 2nd intermediate and production casing strings below the failure threshold of the casing string components.

(i) 2nd Intermediate casing string (salt protection string) shall be designed to contain wellbore pressures anticipated during fracture stimulation production casing leak scenario. The 2nd intermediate casing string shall then be pressure tested to operating fracture stimulation pressure for a minimum of thirty (30) minutes after installation. The top of production casing cement must tie back at least 500 feet inside the intermediate casing but not above the USGS Marker Bed No. 126. Reference wellbore diagram Figure C in Exhibit B;

(ii) A monitored open annulus shall be incorporated by leaving the annulus between the 1st intermediate (salt string) and 2nd intermediate casing strings un-cemented and monitored inside of the 1st intermediate casing string. Reference wellbore diagram Figure D in Exhibit B. This design is appropriate if the 2nd intermediate casing is set below the base of the Brushy Canyon formation of the Delaware Mountain Group.

(1) The top of cement in the annulus between the 1st intermediate (salt string) and 2nd intermediate casing strings shall stand un-cemented at least 500 feet below the 1st intermediate casing shoe. Zero percent excess shall

be pumped on the 2nd intermediate cementing slurry to ensure no tie-back into the 1st intermediate casing shoe.

(2) After hydraulic fracturing operations have been concluded and no longer than 180 days after the well is brought online, the operator shall bradenhead cement to ensure at least a 500 foot tie-back has been established inside the 1st intermediate string but not higher than USGS Marker Bed No. 126.

(3) The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid;

(iii) A monitored open annulus shall be incorporated by leaving the annulus between the 2nd intermediate and production string casings un-cemented and monitored inside of the 2nd intermediate string. Reference wellbore diagram Figure E in Exhibit B. This design is appropriate if the 2nd intermediate string is set above the Delaware Mountain Group / Brushy Canyon formation.

(1) The top of cement in the annulus between the 2nd intermediate and production casing strings shall stand un-cemented at least 500 feet below the 2nd intermediate casing point. Zero percent excess shall be pumped on the production cementing slurry to ensure no tie-back into the 2nd intermediate casing shoe.

(2) After hydraulic fracturing operations have been concluded and no longer than 180 days after the well is brought online, the operator shall bradenhead cement to ensure at least a 500 foot tie-back has been established inside the 2nd intermediate casing but not higher than USGS Marker Bed No. 126.

(3) The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid; or

(iv) An engineered weak point shall be included in the 2nd intermediate casing string below the salt formation in the form of a lower strength casing or rupture disc to divert fluid into a suitable relief zone below the salt formation. Reference wellbore diagram Figure F in Exhibit B.

(1) The 2nd intermediate casing string engineered weak point must be placed no less than 100 feet below the salt formation.

(2) The top of production casing cement must tie back at least 500 feet inside the 2nd intermediate casing string but not above the engineered weak point.

(3) The annulus between the 2nd intermediate and production casing strings shall remain open to surface and monitored

(4) The engineered weak point shall be designed to meet the minimum casing design criteria for the well but remain weaker than the rest of the casing string to ensure that the fluid is directed into the appropriate relief zone. For example: 7-5/8-inch, 29.7 pound L-80 grade casing from the shoe to Cherry Canyon formation crossed over to 7-5/8-inch, 29.7 pound P-110 grade casing to surface, noting that the L-80 grade casing meets the design requirements but is weaker than the P-110 grade casing.

(d) A casing integrity test shall be performed before drilling below the casing seat or at plug bump. The casing shall be tested to 0.22 psi per foot of casing string length or 1500 psi whichever is greater, but not to exceed 70% of casing burst (unless required otherwise per Section D.5.c.i). If a drop of 10% or more should occur within thirty (30) minutes, corrective measures shall be applied.

(e) Cement shall be allowed to cure an adequate amount of time to allow tail cement to reach 500 psi compressive strength before drilling or initiating pressure tests. Cement slurry lab test shall be performed at expected bottom hole temperature.

(f) Operator shall verify shoe integrity via a FIT. Surface applied pressure during the FIT shall take into account the maximum anticipated equivalent mud weight that will be required to drill the next hole section.

(g) If sustained annular pressure build-up in the annulus between the 1st intermediate and 2nd intermediate casing strings occurs in excess of 500 psi while the well is being drilled, the operator will bleed off this pressure safely and establish a plan to safely manage the annular pressure. Maximum Allowable Wellhead Operating Pressure (MAWOP) shall be the lesser of:

(i) 50% of the Minimum Internal Yield Pressure (MIYP) of pipe body of intermediate casing string being evaluated;

(ii) 80% of the MIYP of pipe body of the next outer casing string; or

(iii) 75% of the minimum collapse pressure of the production casing.

(6) Production Casing String:

(a) The production string shall consist of new oil field casing in good condition that meets API specifications. Production casing shall have the following design considerations:

(i) Ensure production casing and connections are properly designed to handle all completion and production loads, including reviewing Combined Von Mises equivalent stress loading and cyclical fatigue.

(ii) Production casing string shall be selected to perform as designed in all the anticipated environments that may be encountered during the life of the well.

(b) Production casing string make-up shall be monitored, recorded, and documented.

(c) The top of cement will consist of at least a 500 foot tie-back inside the last Intermediate casing string but not higher than USGS Marker Bed No. 126 or an engineered weak point if present as described in Section D(5)(c)(iv). If an un-cemented shoe is utilized, reference Section D(4)(k)(ii) or D(5)(c)(iii) for top of cement requirements before and after stimulation.

(i) Cement slurry lab test shall be performed at expected bottom hole temperature. A free fluid and a HTHP fluid loss tests per latest revision of API RP 10B-2 shall be performed on all production cement slurries. Maximum acceptable fluid loss is 150 milliliters ("mL") for thirty (30) minutes. Free fluid test shall be conducted at 45° angle with zero free water allowed.

(ii) If the production section is drilled with non-aqueous fluid ("NAF"), a viscous weighted spacer with surfactants that are effective at water wetting the wellbore shall be utilized.

(d) Production casing string shall be pressure tested to operating pressures for a minimum of thirty (30) minutes that are anticipated during hydraulic fracturing operations as well as during the production lifecycle of the well.

(e) The annulus between the production and intermediate casing strings shall be actively monitored for pressure during hydraulic fracturing operations. If pressure communication is observed, indicating a possible production casing failure, hydraulic fracturing operations must immediately cease, and source of the pressure increase shall be investigated. During hydraulic fracturing operations, a pressure relief valve or appropriate venting system shall be installed to relieve pressure in the event of a production casing failure. The opening pressure of any pressure relief valves must be set below 50% of the intermediate casing burst rating. If the well design features an uncemented intermediate casing shoe (for example as shown in Exhibit B, Figure B) and the well approaches to within ¼ mile of an offset well drilling, completing or producing from the Delaware Mountain Group, then the pressure relief valve opening pressure shall be set no more than 1000 psi and at no time shall the pressure on the annulus be allowed to exceed 1000 psi. This requirement can be waived by the offset well operator.

(f) Emergency pump shutoff system shall be used to prevent system overpressure during completion operations and shall be set not more than 85% of the pipe body and/or connection internal yield pressure.

D. DRILLING FLUID FOR 1ST INTERMEDIATE HOLE SECTION

The fluid used while drilling the salt section shall consist of water, to which has been added sufficient salts of a character common to the zone penetrated to completely saturate the mixture or non-aqueous drill fluid. Other additives may be added to the fluid by the operator to address any specific well control problem. This requirement is specifically intended to prevent enlarged bore holes.

E. NOTIFICATION REQUIREMENTS TO POTASH OPERATOR

Any oil and gas well operator within the KPLA must notify both potash operators as soon as possible if any of the following conditions are encountered during oil and gas operations:

- (1) Indication of any well collision event,
- (2) Suspected well fluid flow (oil, gas, or produced water) outside of casing,
- (3) Sustained annulus pressure between the 1st intermediate and next innermost casing string in excess of 500 psi above the baseline pressure of the well, or above 1500 psi total,
- (4) Increasing pressure buildup rates (psi/day) across multiple successive bleed-off cycles on the annulus between the 1st intermediate and next innermost casing during well production, or
- (5) Sustained losses in excess of 50% through the salt formation during drilling.

F. SUBSIDENCE MONITORING

For a well or group of wells drilled with surface locations within 1 mile of an existing mine or planned mine activity as defined in 3-year development plans, subsidence shall be monitored to provide an early warning of conditions that may threaten the integrity of active wells. Devices or methods providing subsidence measurement at the surface, casing deformation measurements along the wellbore, or equivalent technology may be utilized. Such data shall be reported by the operator of such wells at least annually to the BLM and the Division as appropriate, except in the event when such monitoring suggests conditions that threaten the integrity of any active wells in which case the rules and requirements of the Divisions or the BLM's rules concerning casing integrity shall apply.

G. PLUGGING AND ABANDONMENT OF WELLS

All wells heretofore and hereafter drilled within the Potash Area shall be plugged in a manner and in accordance with the general rules or field rules established by the Division that will provide a solid cement plug through the salt section and any water-bearing horizon and prevent liquids or gases from entering the hole above or below the salt section.

H. DESIGNATION OF DRILLABLE LOCATION FOR WELLS

(1) Within ninety (90) days following effective date of this Order and annually thereafter by January 31 if revised, each potash lessee, without regard to whether the lease covers State or Federal lands, shall file with the District Manager, BLM, and the State Land Office (SLO), a designation of the potash deposits considered by the potash lessee to be its life-of-mine reserves (. For purposes of this Agreement, "life of mine reserves" means those potash deposits within the Potash Area reasonably believed by the potash lessee to contain potash ore in sufficient thickness and grade to be mineable using current day mining methods, equipment and technology. Information used by the potash lessee in identifying its LMR shall be filed with the BLM and SLO but will be considered privileged and confidential "trade secrets and commercial information" within the meaning of 43 C.F.R. §2.13(c)(4) (1986), Section 19-1-2.1 NMSA 1978, and not subject to public disclosure.

(2) Authorized officers of the BLM and SLO shall review the information submitted by each potash lessee in support of its LMR designation on their respective lands and verify upon request, that the data used by the potash lessee in establishing the boundaries of its LMR is consistent with available to the BLM and SLO. Any disputes between the BLM and potash lessee concerning the boundary of a designated LMR shall be resolved in accordance with the Department of Interior's Hearings and Appeals Procedures, 43 C.F.R. Part 4.

(3) A potash lessee may amend its designated LMR by filing a revised designation with the BLM and SLO accompanied by the information referred to in Section H(1) above. Such amendments must be filed by January 31 next following the date the additional data becomes available.

(4) Authorized officers of the BLM and SLO shall commit the designated LMR of each potash lessee to a map(s) of suitable scale and thereafter revise the map(s) as necessary to reflect the latest amendments to any designated LMR(s). These maps shall be considered privileged and confidential and exempt from disclosure under 43 C.F.R. Part 2 and §19-1-2.1 NMSA 1978 and will be used only for the purposes set forth in this Order.

(5) The foregoing procedure can be modified by policy changes within the BLM and State Land Office. An approved modification of this procedure is provided in Secretarial Order No. 3324, entitled "Oil, Gas and Potash Leasing and Development within the Designated Potash Area of Eddy and Lea Counties, New Mexico" (dated December 3, 2012). The BLM maintains this alternative procedure through a program which provides a process for the designation of drilling islands and development areas. This procedure shall satisfy the requirements of Section I until such time the BLM no longer sanctions this program.

(6) Before commencing drilling operations for oil or gas on any lands within the Potash Area, the well operator shall prepare a map or plat showing the location of the proposed well, and said map or plat shall accompany each copy of the Notice of Intention to Drill. In addition to the number of copies required by the Division, the well operator shall send one copy by registered mail to each potash operator holding potash leases within a radius of one mile of the proposed well, as reflected by the plats submitted under Section K(2). The well operator shall furnish proof of the fact that said potash operators were notified by registered mail of its intent by attaching return receipt to the copies of the Notice of Intention to Drill and plats furnished to the Division.

(7) Drilling applications on federal lands will be processed for approval by BLM. Applications on state or patented lands will be processed by the Division and, in the case of state lands, in collaboration with the SLO. The Division will first ascertain from the BLM or SLO whether the location is within the LMR area. Active mine workings and mined-out areas shall also be treated as LMR. Any application to drill in the LMR area, including buffer zones, may be approved only by mutual agreement of lessor and lessees of both potash and oil and gas interests. Applications to drill outside the LMR will be approved as indicated below; provided there is no protest from potash lessee within twenty (20) days of its receipt of a copy of the notice:

(a) a shallow well shall be drilled no closer to the LMR than one-fourth (1/4) mile or 110% of the depth of the ore, whichever is greater; and

(b) a deep well shall be drilled no closer than one-half (1/2) mile from the LMR.

I. INSPECTION OF DRILLING AND MINING OPERATIONS

A representative of any potash lessee within a radius of one mile from the oil or gas well location may be present during drilling, cementing, casing, and plugging of any oil or gas wells to observe conformance with these regulations. Likewise, a representative of the oil and gas lessee may inspect mine workings on its lease to observe conformance with these regulations.

J. FILING OF WELL SURVEYS, MINE SURVEYS, AND POTASH DEVELOPMENT PLANS

(1) Directional Surveys:

The Division shall require an oil and gas operator to file a certified directional survey from the surface to a point below the lowest known potash-bearing horizon on any well drilled within the Potash Area as required under either 19.15.16.14 NMAC or 19.15.16.15(E) NMAC.

(2) Mine Surveys:

Within thirty (30) days after the adoption of this order and thereafter on or before January 31st of each year, each potash operator shall furnish the Division two copies of a plat of a survey of the location of its leaseholdings and all of its open mine workings, which plat shall be available for public inspection and on a scale acceptable to the Division.

K. APPLICABILITY OF STATEWIDE RULES AND REGULATIONS

All general statewide rules and regulations of the Oil Conservation Division governing the development, operation, and production of oil and gas in the State of New Mexico not inconsistent or in conflict herewith, are hereby adopted and made applicable to the areas described herein.

IT IS FURTHER ORDERED: Jurisdiction is retained by the Commission for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) be consistent with the requirements in this Order.

DONE at Santa Fe, New Mexico on the 10 day of May, 2024.

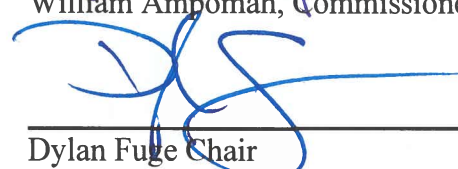
**STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION**



Greg Bloom, Commissioner



William Ampomah, Commissioner



Dylan Fuge Chair

EXHIBIT "A"
CASE 9316
ORDER R-111-P

CONSOLIDATED LAND DESCRIPTION OF THE KNOWN POTASH
LEASING AREA, AS OF FEBRUARY 3, 1988

EDDY COUNTY, NEW MEXICO

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM

Section 10: SE/4 SE/4
Section 11: S/2 SW/4
Section 13: W/2 SW/4 and SE/4 SW/4
Section 14: W/2 NE/4, NW/4 and S/2
Section 15: E/2 NE/4, SE/4 SW/4 and SE/4
Section 22: N/2, N/2 SW/4, SE/4 SW/4 and SE/4
Section 23: All
Section 24: N/2 NW/4, SW/4 NW/4 and NW/4 SW/4
Section 26: NE/4, N/2 NW/4 and SE/4 NW/4
Section 27: N/2 NE/4 and NE/4 NW/4

TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM

Section 11: SE/4 SE/4
Section 12: SE/4 NE/4 and S/2
Section 13: All
Section 14: NE/4, SE/4 NW/4 and S/2
Section 15: SE/4 SE/4
Section 22: NE/4, E/2 W/2 and SE/4
Section 23: All
Section 24: All
Section 25: NW/4 NW/4
Section 26: N/2 NE/4 AND NW/4
Section 27: NE/4 AND E/2 NW/4

TOWNSHIP 19 SOUTH, RANGE 30 EAST, NMPM

Section 2: SW/4
Section 3: W/2 SW/4, SE/4 SW/4, S/2 SE/4 and
NE/4 SE/4
Section 4: Lots 3 and 4. SW/4 NE/4, S/2 NW/4
and S/2
Section 5: Lots 1, 2. and 3, S/2 NE/4,
S/2 NW/4 and S/2
Section 6: S/2 SE/4 and NE/4 SE/4
Sections 7 to 10 inclusive
Section 11: S/2 NE/4, NW/4 NW/4 and S/2
Section 12: NE/4, S/2 NW/4 and S/2
Section 13: NE/4, W/2, N/2 SE/4 and SW/4 SE/4
Sections 14 to 18 inclusive
Section 19: Lots 1, 2, and 3, NE/4, E/2 NW/4,
NE/4 SW/4, E/2 SE/4 and
NW/4 SE/4
Sections 20 to 23 inclusive

Section 24: NW/4. NW/4 SW/4 and S/2 SW/4

Section 25: NW/4 NW/4
Section 26: NE/4 NE/4, W/2 NE/4, W/2, W/2 SE/4
and SE/4 SE/4
Section 27: All
Section 28: All
Section 29: E/2, E/2 NW/4 and NW/4 NW/4
Section 32: E/2 and SE/4 SW/4
Section 33 to 35 inclusive
Section 36: NW/4 NW/4, S/2 NW/4 and S/2

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM

Section 7: Lots 1, 2, and 3 and E/2 NW/4
Section 18: Lots 1, 2, and 3 and SW/4 NE/4,
E/2 NW/4 and NE/4 SW/4
Section 31: Lot 4
Section 34: SE/4 SE/4
Section 35: S/2 SW/4 and SW/4 SE/4
Section 36: S/2 SE/4

LEA COUNTY, NEW MEXICO

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM

Section 31: Lot 4
Section 33: Lots 1 to 4 inclusive and N/2 S/2
Section 34: Lots 1 to 4 inclusive and N/2 S/2
Section 35: Lots 1 to 4 inclusive and N/2 S/2
Section 36: Lots 1 to 4 inclusive, SE/4 NE/4,
NW/4 SW/4 and NE/4 SE/4

TOWNSHIP 19 SOUTH, RANGE 33 EAST, NMPM

Section 22: SE/4 NE/4, E/2 SW/4 and SE/4
Section 23: S/2 NW/4, SW/4, W/2 SE/4 and
SE/4 SE/4
Section 25: SW/4 NW/4, W/2 SW/4 and SE/4 SW/4
Section 26: All
Section 27: All
Section 28: S/2 SE/4 and NE/4 SE/4
Section 30: Lots 2 to 4 inclusive, S/2 NE/4,
SE/4 NW/4, E/2 SW/4 and SE/4
Section 31: All
Section 32: NE/4, S/2 NW/4 and S/2
Sections 33 to 35 inclusive
Section 36: W/2 NE/4, SE/4 NE/4, NW/4 and S/2

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM

Section 31: Lots 3 and 4

EDDY COUNTY, NEW MEXICO

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMPM

Section 1: SE/4 NE/4 and E/2 SE/4
Section 13: SW/4 NW/4, W/2 SW/4 AND SE/4 SW/4
Section 14: NW/4 NE/4, S/2 NE/4, NW/4 and S/2
Section 15: E/2 E/2, SE/4 SW/4 and W/2 SE/4
Section 22: E/2 and E/2 NW/4
Section 23: All
Section 24: SW/4 NE/4, W/2, W/2 SE/4
and SE/4 SE/4
Section 25: N/2, SW/4, W/2 SE/4 and NE/4 SE/4
Section 26: All
Section 27: E/2
Section 34: NE/4
Section 35: N/2
Section 36: W/2 NE/4 AND NW/4

TOWNSHIP 20 SOUTH, RANGE 30 EAST, NMPM

Sections 1 to 4 inclusive
Section 5: Lots 1 to 3 inclusive, S/2 N/2
and S/2
Section 6 Lots 5, 6, and 7, S/2 NE/4, E/2 SW/4
and SE/4
Section 7 Lots 1 and 2. E/2 and E/2 NW/4
Sections 8 to 17 inclusive
Section 18 E/2
Section 19 E/2 and SE/4 SW/4
Sections 20 to 29 inclusive
Section 30: Lots 1 to 3 inclusive , E/2 and
E/2 W/2
Section 31 E/4 and E/2 SE/4
Sections 32 to 35 inclusive

TOWNSHIP 20 SOUTH, RANGE 31 EAST, NMPM

Section 1 Lots 1 to 3 inclusive, S/2 N/2
and S/2
Section 2: All
Section 3: Lots 1 and 2, S/2 NE/4 and SE/4
Section 6: Lots 4 to 7 inclusive , SE/4 NW/4,
E/2 SW/4, W/2 SE/4 and
SE/4 SE/4
Section 7: All
Section 8: S/2 N/2 and S/2
Section 9: S/2 NW/4, SW/4, W/2 SE/4 and SE/4 SE/4
Section 10: E/2 and SW/4
Section 11 to 36 inclusive

LEA COUNTY, NEW MEXICO

TOWNSHIP 20 SOUTH, RANGE 32 EAST, NMPM

Sections 1 to 4 inclusive

Section 5: S/2 SE/4

Section 6: Lots 4 to 7 inclusive, SE/4 NW/4,
E/2 SW/4 and SW/4 SE/4

Sections 7 to 36 inclusive

TOWNSHIP 20 **SOUTH**, RANGE 33 EAST, NMPM

Sections 1 to 36 inclusive

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM

Section 6: Lots 3 to 7 inclusive, SE/4 NEW/4,
E/2SW/4, W/2 SE/4 AND
SE/4 SE/4

Section 7: All

Section 8: SW/4, S/2 NW/4, W/2 SE/4 and
SE/4 SE/4

Section 16: W/2 NW/4, SE/4 NW/4, SW/4 and
S/2 SE/4

Sections 17 to 21 inclusive

Section 22: N/2 NW/4, SW/4 NW/4, W/2 SE/4,
and SE/4 SE/4

Section 26: SW/4, W/2 SE/4 and SE/4 SE/4

Sections 27 to 35 inclusive

Section 36: SW/4 NW/4 and W/2 SW/4

EDDY COUNTY, NEW MEXICO

TOWNSHIP 21 SOUTH, RANGE 29 EAST, NMPM

Sections 1 to 3 inclusive

Section 4: Lots 1 through 16, NE/4 SW/4 and
SE/4

Section 5: Lot 1

Section 10: N/2 NE/4, SE/4 NE/4 and SE/4 SE/4

Sections 11 to 14 inclusive

Section 15: E/2 NE/4 and NE/4 SE/4

Section 23: N/2 NE/4

Section 24: E/2, N/2NW/4 and SE/4NW/4

Section 25: NE/4 NE/4 and S/2 SE/4

Section 35: Lots 2 to 4 inclusive, S/2 NE/4,
NE/4 SW/4 and N/2 SE/4

Section 36: Lots 1 to 4 inclusive, NE/4,
E/2 NW/4 AND N/2 S/2

TOWNSHIP 21 SOUTH, RANGE 30 EAST, NMPM

Sections 1 to 36 inclusive

TOWNSHIP 21 SOUTH, RANGE 31 EAST, NMPM
Sections 1 to 36 inclusive

LEA COUNTY, NEW MEXICO

TOWNSHIP 21 SOUTH, RANGE 32 EAST, NMPM

Sections 1 to 27 inclusive

Section 28: N/2 and N/2 S/2

Sections 29 to 31 inclusive

Section 32: NW/4 NE/4, NW/4 and NW/4 SW/4

Section 34: N/2 NE/4

Section 35: N/2 N/2

Section 36: E/2, N/2 NW/4, SE/4 NW/4 and
NE/4 SW/4

TOWNSHIP 21 SOUTH, RANGE 33 EAST, NMPM

Section 1: Lots 2 to 7 inclusive, Lots 10
to 14 inclusive, N/2 SW/4 and
SW/4 SW/4

Sections 2 to 11 inclusive

Section 12: NW/4 NW/4 and SW/4 SW/4

Section 13: N/2 NW/4, S/2 N/2 and S/2

Sections 14 to 24 inclusive

Section 25: N/2. SW/4 and W/2 SE/4

Sections 26 to 30 inclusive

Section 31: Lots 1 to 4 inclusive, NE/4,
E/2 W/2, N/2 SE/4 and
SW/4 SE/4

Section 32: N/2 and NW/4 SW/4

Section 33: N/2

Section 34: NE/4, N/2 NW/4 and E/2 SE/4

Section 35: All

Section 36: W/2 NE/4, NW/4 and S/2

TOWNSHIP 21 SOUTH, RANGE 34 EAST, NMPM

Section 17: W/2

Section 18: All

Section 19: Lots 1 to 4 inclusive, NE/4,
E/2 W/2, N/2 SE/4 and
SW/4 SE/4

Section 20: NW/4 NW/4

Section 30: Lots 1 and 2 and NE/4 NW/4

Section 31: Lots 3 and 4

EDDY COUNTY, NEW MEXICO

TOWNSHIP 22 SOUTH, RANGE 28 EAST, NMPM

Section 36: E/2 E/2

TOWNSHIP 22 SOUTH, RANGE 29 EAST, NMPM

Sections 1 and 2 inclusive
Section 3 SE/4 SW/4 and SE/4
Section 9 S/2 NE/4 and S/2
Sections 10 to 16 inclusive
Section 17 S/2 SE/4
Section 19 SE/4 NE/4 and E/2 SE/4
Sections 20 to 28 inclusive
Section 29 N/2 N/2, S/2 NE/4 and SE/4
Section 30 NE/4 NE/4
Section 31 Lots 1 to 4 inclusive, S/2 NE/4,
E/2 W/2 and SE/4
Sections 32 to 36 inclusive

TOWNSHIP 22 SOUTH, RANGE 30 EAST, NMPM

Sections 1 to 36 inclusive

TOWNSHIP 22 SOUTH, RANGE 31 EAST, NMPM

Sections 1 to 11 inclusive
Section 12: NW/4 NE/4, NW/4 and NW/4 SW/4
Section 13: S/2 NW/4 and SW/4
Sections 14 through 23 inclusive
Section 24: W/2
Section 25: NW/4
Section 26: NE/4 AND N/2 NW/4
Sections 27 to 34 inclusive

LEA COUNTY, NEW MEXICO

TOWNSHIP 22 SOUTH, RANGE 32 EAST, NMPM

Section 1: Lot 1
Section 6: Lots 2 to 7 inclusive and SE/4 NW/4

TOWNSHIP 22 SOUTH, RANGE 33 EAST NMPM

Section 1: Lots 1 to 4 inclusive, S/2 N/2 and
N/2 S/2

Section 2: All
Section 3: Lot 1, SE/4 NE/4 and SE/4
Section 6: Lot 4
Section 10: NE/4
Section 11: NW/4 NE/4 AND NW/4

TOWNSHIP 22 SOUTH, RANGE 34 EAST NMPM

Section 6: Lots 4 to 6 inclusive

EDDY COUNTY, NEW MEXICO

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM

Section 1: Lot 1

TOWNSHIP 23 SOUTH, RANGE 29 EAST, NMPM

Sections 1 to 5 inclusive

Section 6: Lots 1 to 6 inclusive, S/2 NE/4,
SE/4 NW/4, E/2 SW/4 and SE/4

Section 7: NE/4 and NE/4 NW/4

Section 8: N/2, N/2 SW/4, SE/4 SW/4 and SE/4

Sections 9 to 16 inclusive

Section 17: NE/4 and E/2 SE/4

Sections 21 to 23 inclusive

Section 24: N/2, SW/4 and N/2 SE/4

Section 25: W/2 NW/4 and NW/4 SW/4

Section 26: All

Section 27: All

Section 28: N/2, N/2 SW/4, SE/4 SW/4 and SE/4

Section 33: N/2 NE/4 and NE/4 NW/4

Section 34: NE/4, E/2 NW/4, NW/4 NW/4,
NE/4 SW/4 and SE/4

Section 35: All

Section 36: W/2 NE/4, NW/4 and N/2 SW/4

TOWNSHIP 23 SOUTH, RANGE 30 EAST, NMPM

Sections 1 to 18 inclusive

Section 19 N/2, N/2 SW/4, SE/4 SW/4 and SE/4

Section 20 All

Section 21 All

Section 22 N/2, S/2 SW/4, N/2 S/2 and SE/4 SE/4

Sections 23 to 25 inclusive

Section 26 E/2, SE/4 NW/4 and SW/4

Section 27 N/2 NW/4, SW/4 NW/4, SE/4 SW/4,
S/2 SE/4 and NE/4 SE/4

Section 28 N/2 and SW/4 Section 29 N/2 and SE/4

Section 30 N/2 NE/4

Section 32 N/2 NE/4

Section 33 SE/4 NE/4, N/2 NW/4, NE/4 SE/4
and S/2 SE/4

Sections 34 to 36 inclusive

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM

Section 2: Lot 4, SW/4 NW/4 and W/2 SE/4

Sections 3 to 7 inclusive

Section 8: NE/4 NE/4, W/2 NE/4 and W/2

Section 9: N/2 N/2

Section 10: NW/4 NW/4 and SE/4 SE/4

Section 11: S/2 NE/4, S/2 SW/4 and SE/4

Section 12: SW/4 NW/4 and SW/4
Section 13: SW/4 **NE/4**, W/2 and W/2 SE/4
Section 14: All
Section 15: E/2, SE/4 NW/4 and **SW/4**
Section 16: SW/4 and S/2 SE/4
Section 17: NW/4 and S/2
Sections 18 to 23 inclusive
Section 24: W/2 NE/4 and W/2
Section 25: W/2 NE/4, NW/4, N/2 SW/4 and
NW/4 SE/4
Section 26 to 34 inclusive
Section 35: N/2 NW/4 and SW/4 NW/4

TOWNSHIP 24 SOUTH, RANGE 29 EAST, NMPM

Section 2: Lots 2 to 4 inclusive
Section 3: Lot 1

TOWNSHIP 24 SOUTH, RANGE 30 EAST, NMPM

Section 1: Lots 1 to 4 inclusive, S/2 N/2,
SW/4 and NW/4 SE/4
Section 2: All
Section 3: All
Section 4: Lots 1 and 2, S/2 NE/4, SE/4 NW/4,
SW/4 SW/4. E/2 SW/4 and SE/4
Section 9: N/2, N/2 SW/4, SE/4 SW/4 and SE/4
Section 10: All
Section 11: All
Section 12: W/2 NW/4 and NW/4 SW/4
Section 14: W/2 NE/4 and **NW/4**
Section 15: NE/4 and N/2 NW/4

TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM

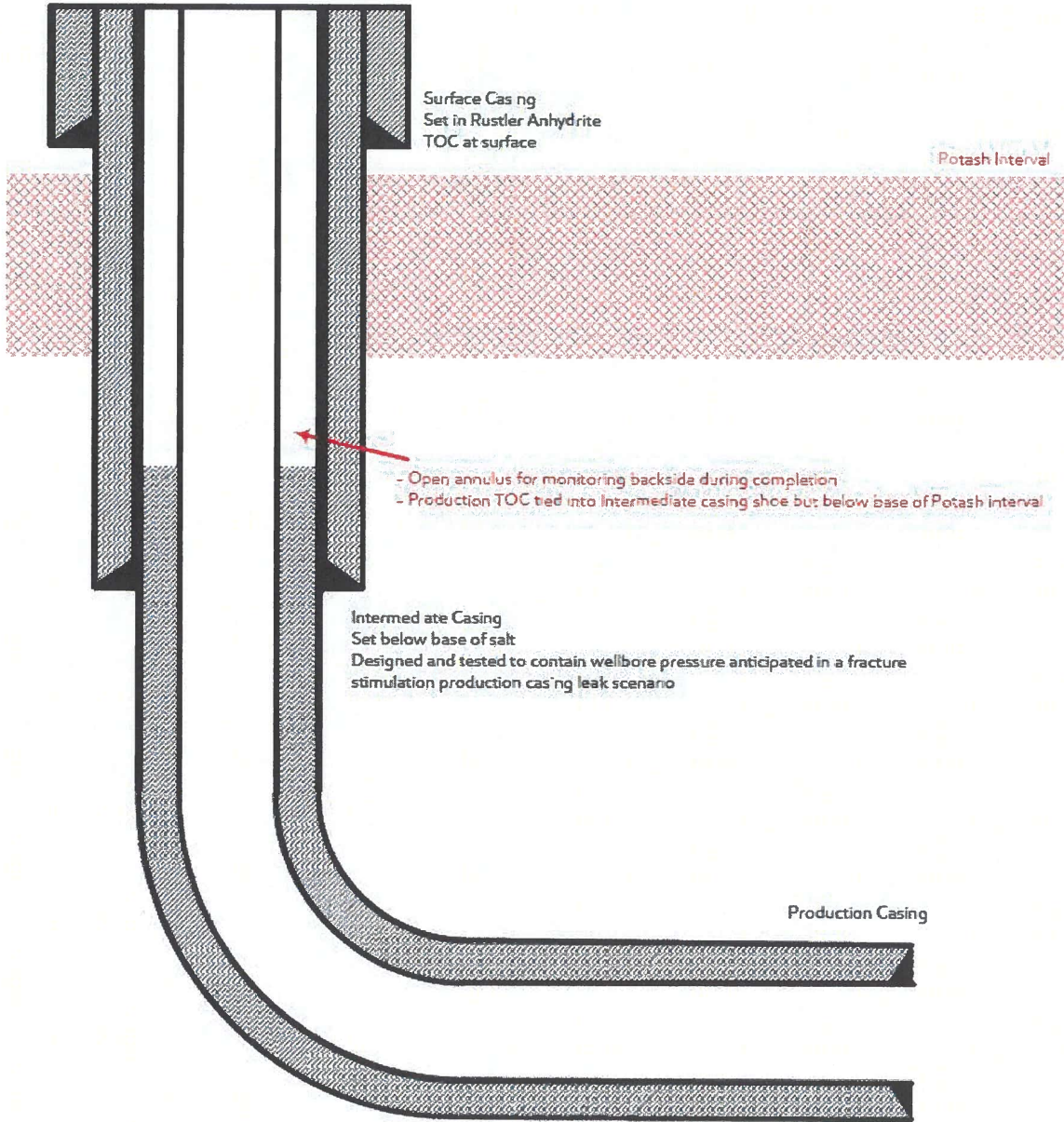
Section 3: Lots 2 to 4 inclusive, SW/4 NE/4,
S/2 NW/4, SW/4 and W/2 SE/4
Section 4: All
Section 5: Lots 1 to 4 inclusive, S/2 N/2,
N/2 S/2 and SE/4 SE/4
Section 6: Lots 1 to 6 inclusive, S/2 NE/4,
SE/4 NW/4, NE/4 SW/4 and
N/2 SE/4
Section 9: E/2 and NW/4
Section 10: W/2 NE/4 and W/2
Section 35: Lots 1 to 4 inclusive, S/2 N/2 and
N/2 S/2
Section 36: Lots 1 and 2, SW/4 NW/4 and N/2 SW/4

TOWNSHIP 25 SOUTH, RANGE 31 EAST, NMPM

Section 1: Lots 3 and 4 and S/2 NW/4
Section 2: Lots 1 to 4 inclusive and S/2 N/2

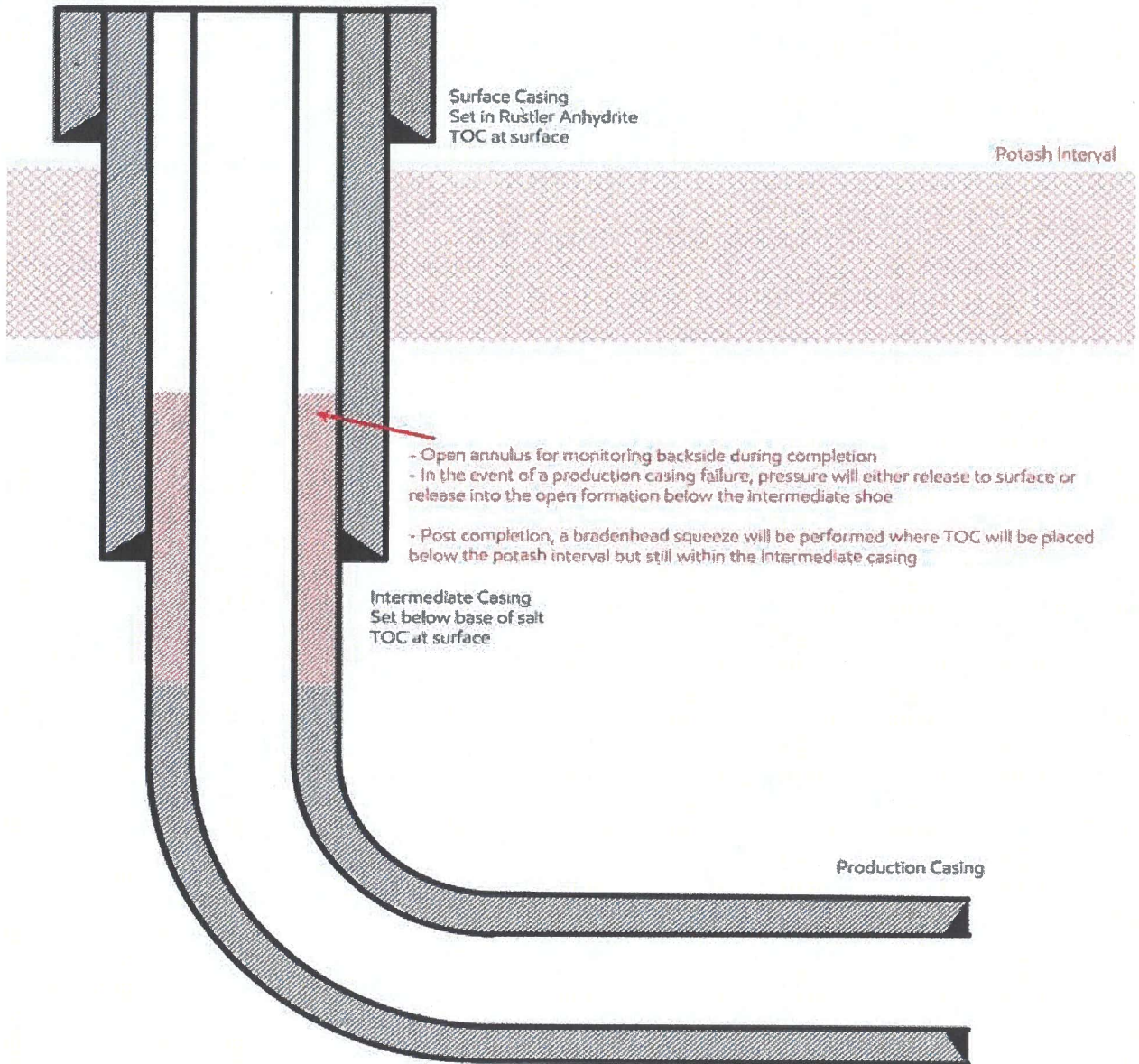
Exhibit B: Wellbore Diagrams

3-String Design – Intermediate Casing Designed for Frac Loads



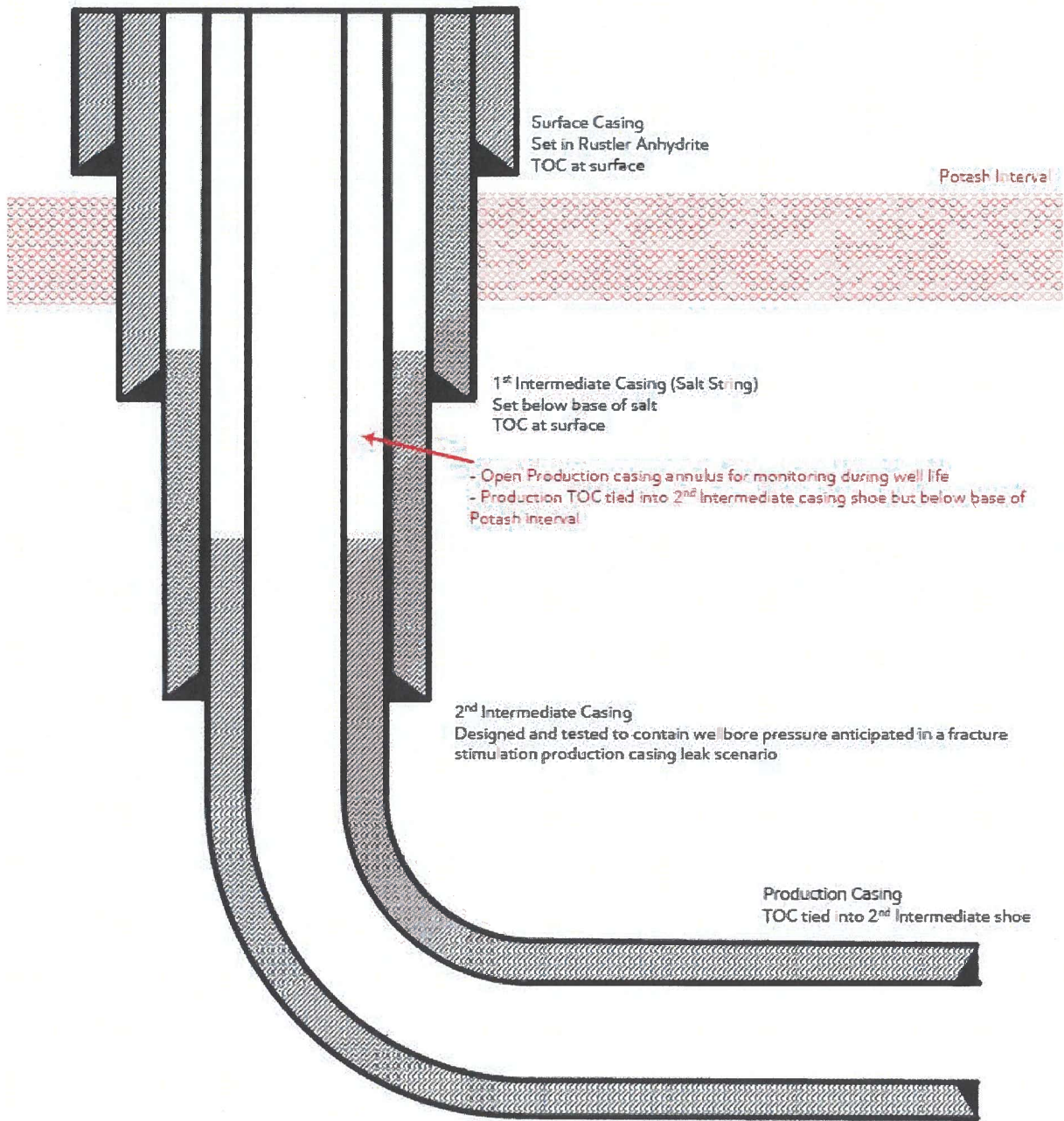
[Figure A] 3 String – Intermediate casing designed for frac loads

3-String Design – Open Production Casing Annulus



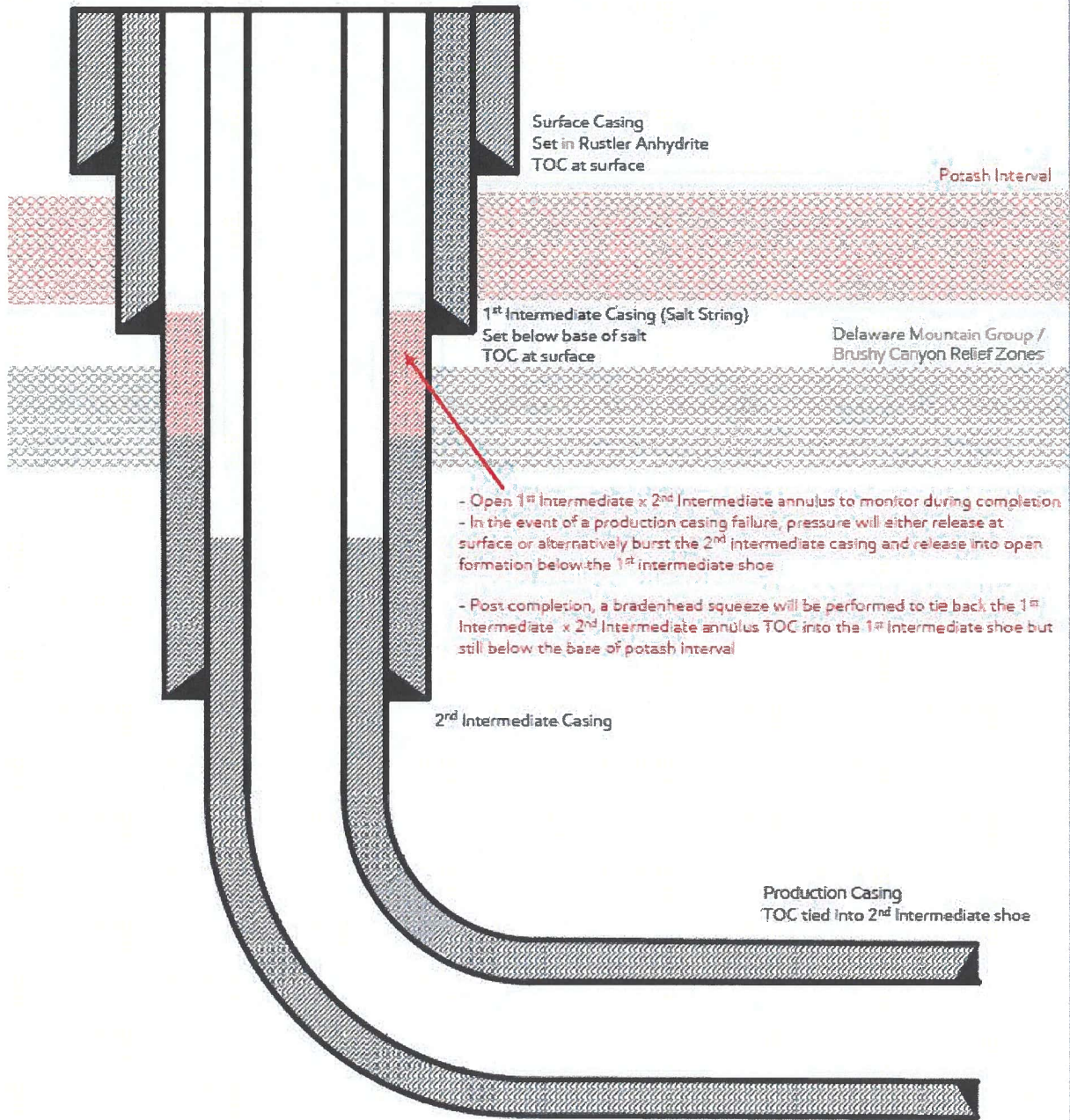
[Figure B] 3 String - Uncemented production casing annulus

4-String Design – 2nd Intermediate Casing Designed for Frac Loads



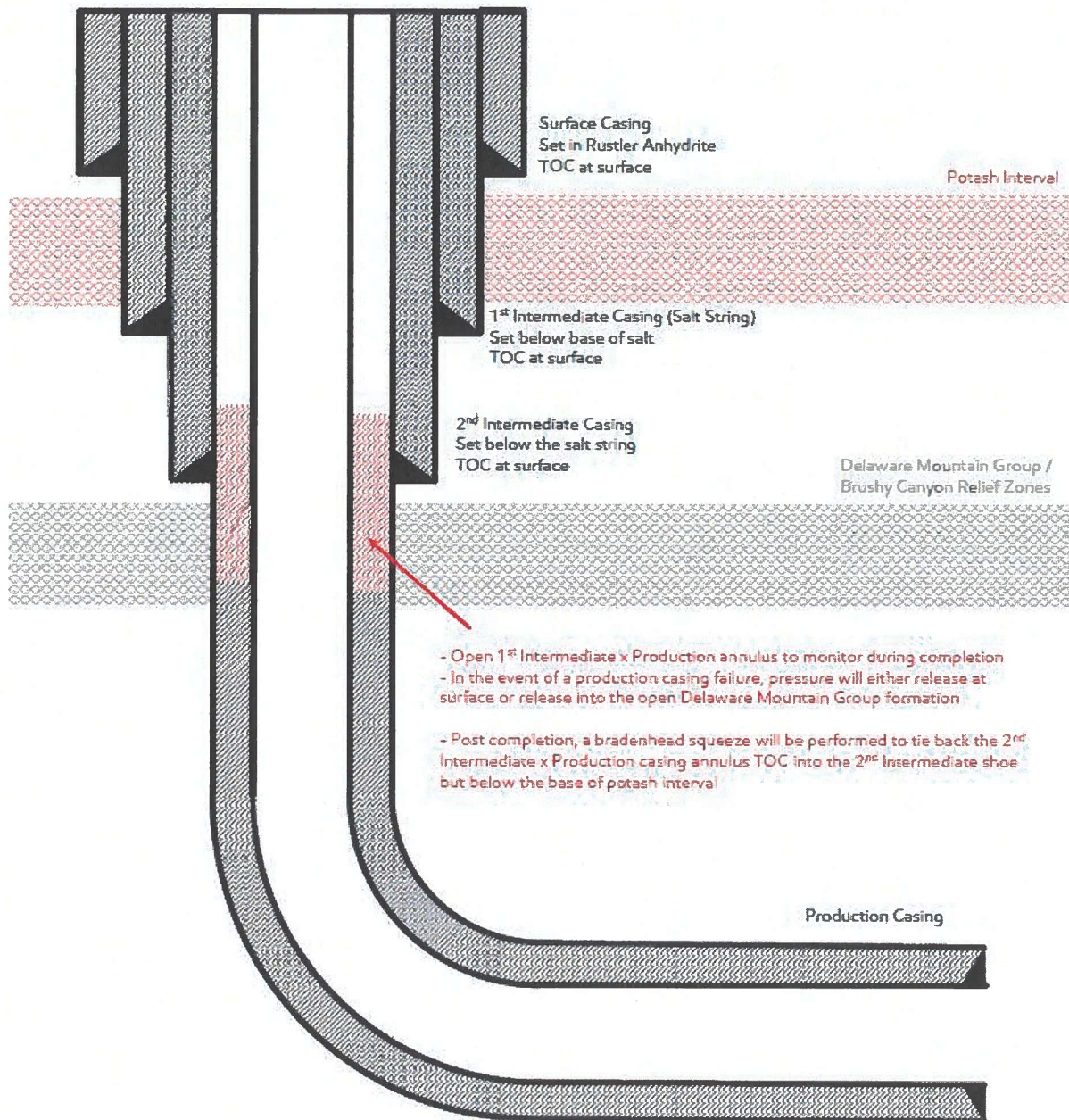
[Figure C] 4 String – 2nd Intermediate casing designed for frac loads

4-String Design – Open 1st Int x 2nd Int Annulus (ICP 2 below relief zone)



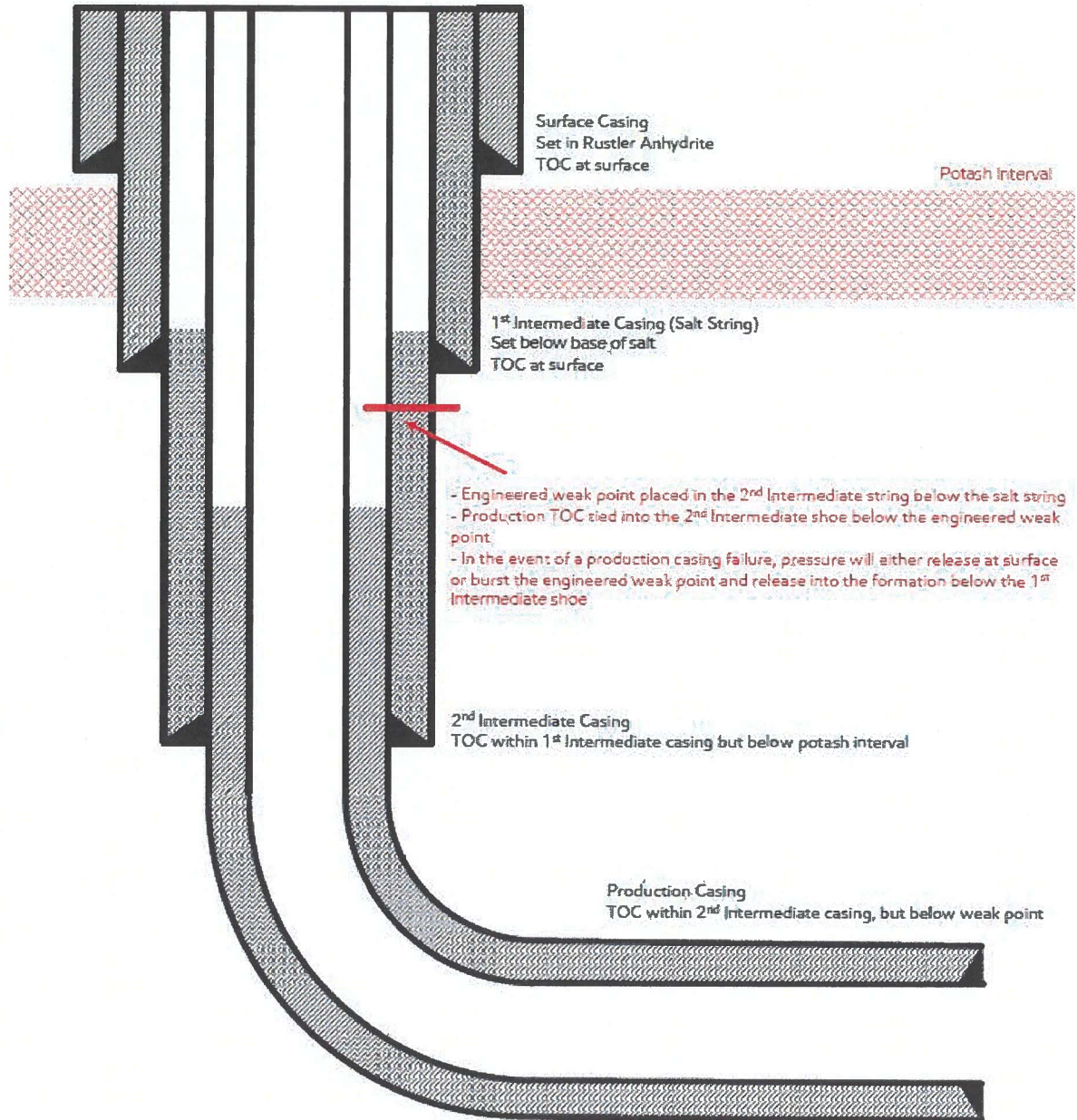
[Figure D] 4 String – Uncemented annulus between 1st and 2nd Intermediate casing strings

4-String Design – Open 1st Int x Production Casing (ICP 2 above relief zone)



[Figure E] 4 String – Uncemented Annulus between 2nd Intermediate and Production Casing Strings

4-String Design – Engineered Weak Point



[Figure F] 4 String – 2nd Intermediate casing engineered weak point