

BEFORE THE CORPORATION COMMISSION
OF THE STATE OF OKLAHOMA

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CORPORATION COMMISSION
OF OKLAHOMA

APPLICANT: KLO, LLC)
)
RELIEF SOUGHT: APPROVAL AS A NON-)
COMMERCIAL DISPOSAL)
WELL FOR THE JAMES NO 1)
WELL)
)
LEGAL DESCRIPTION: W/2 E/2 SW/4 NW/4 OF)
SECTION 17, TOWNSHIP 8)
NORTH, RANGE 11 EAST,)
HUGHES COUNTY,)
OKLAHOMA)

CAUSE PD NO.
201100111

REPORT OF THE OIL AND GAS APPELLATE REFEREE

This Cause came on for hearing before **David D. Leavitt**, Administrative Law Judge for the Corporation Commission of the State of Oklahoma, on the 29th day of February, 2012, at 10:00 a.m. in the Commission's Courtroom, Jim Thorpe Building, Oklahoma City, Oklahoma, pursuant to notice given as required by law and the rules of the Commission for the purpose of taking testimony and reporting to the Commission.

APPEARANCES: **William H. Huffman**, attorney, appeared on behalf of applicant, KLO, LLC ("KLO"); **Richard K. Books**, attorney, appeared on behalf of Chesapeake Exploration, LLC and Chesapeake Operating, Inc. ("Chesapeake"); **Charles L. Helm**, attorney, appeared on behalf of Glede W. S. Holman ("Holman"); **Keith Thomas**, Assistant General Counsel, appeared on behalf of the Conservation Division of the Oklahoma Corporation Commission ("the Commission") and **Jim Hamilton**, Assistant General Counsel for the Conservation Division, filed notice of appearance.

The Administrative Law Judge ("ALJ") filed his Report of the Administrative Law Judge on the 22nd day of June, 2012, to which Exceptions were timely filed and proper notice given of the setting of the Exceptions.

The Appellate argument concerning the Oral Exceptions was referred to **Patricia D. MacGuigan**, Oil and Gas Appellate Referee ("Referee"), on the 10th

day of August, 2012. After considering the arguments of counsel and the record contained within this Cause, the Referee finds as follows:

STATEMENT OF THE CASE

KLO TAKES EXCEPTION to the ALJ's recommendation that KLO's application seeking approval to convert the James #1-17 well located in the W/2 E/2 SW/4 NW/4 of Section 17, T8N, R11E, Hughes County Oklahoma into a noncommercial salt water disposal ("SWD") well be denied.

On November 23, 2011, KLO filed an application proposing to convert the James #1-17 well into a non-commercial SWD well. The application proposed a maximum injection rate of 250 barrels per day of produced water at an injection pressure of 225 psi into the Stuart Sand common source of supply located between 775 to 1,202 feet subsea. The source of the salt water is the Stuart Sand and the perforation interval in the SWD well is between 832 and 979 feet subsea. The base of the treatable water is 230 feet subsea. The application was not opposed by the Commission's technical staff.

On or about December, 2011, the protestant, Chesapeake protested the cause and requested a hearing. Subsequently, the protestant, Triad Energy ("Triad") and the protestant Holman entered their appearances in protest. The protestants were concerned that the saltwater injected into the well might contaminate fresh water wells in the area, pollute the aquifer and compromise production from other wells in the area. The hearing was consequently held on February 29, 2012. Triad later withdrew from the cause, having found that it had no interest.

KLO TAKES THE POSITION:

- 1) The Report of the ALJ is contrary to the law, the evidence, and fails to protect the owners in the common sources of supply.
- 2) The ALJ denies the application due to the fact the James #1-17 well does not have surface casing as required by the Commission Rules. The ALJ ignores the fact the well has the treatable water zone cased and cemented. The production casing has been cemented from total depth ("TD") to the surface, therefore the treatable water zone has casing and cement from 50 feet below to 50 feet above the treatable water zone. The application contained a cement bond log reflecting a good cementing of the casing through the treatable water zone.
- 3) In analyzing the Commission Rules, the ALJ contends the James #1-17 well is not entitled to an exemption to the surface casing rule because the well is not producing. The evidence presented is that the lease has been shut-in due

to the lack of an economical method to dispose of the produced waters. This analysis is contrary to the long standing position of this Commission and case law that a shut-in well is considered a producing well for application of the Commission Rules. If this were not the case, then all operators would be required either to physically produce its wells or plug the wells. OCC-OAC Rule 165:10-3-4(c)(3) states "Operators having wells producing hydrocarbons which were in compliance with the surface casing requirements at the time of completion shall not be required to comply with (1) of this subsection." The James #1-17 well having been producing hydrocarbons at the time of completion was in compliance with the surface casing requirements and is entitled to an exception. This analysis turns out to be academic since the ALJ ignored a critical exception, the fact the James #1-17 well is in compliance with the surface casing requirements.

4) The ALJ overlooked the opening sentence in OCC-OAC Rule 165:10-3-4(c)(1) "Unless an alternate casing program is authorized by the Conservation Division...." This Commission permits wells to be completed by an alternate casing program by simply noting the alternate method on the Form 1000 and receiving the approval of the Form 1000. OCC-OAC Rule 165:10-3-4(d). The James #1-17 well applied and was approved for an alternate casing program. A review of the Commission's own records will reflect this well has already been granted an exception to the surface casing rule and is in compliance with the Commission rules and regulations.

5) The ALJ concludes that the lack of surface casing creates too great a risk of polluting the treatable water zone. No explanation is given how the zone having been cased and cemented can be polluted. This Commission Underground Injection Control Department has reviewed the application, cement bond log, completion report, Commission records for surrounding wells and has no objection to the granting of the application.

6) KLO requests that the Oklahoma Corporation Commission reverse the recommendations of the ALJ and grant the application.

THE ALJ FOUND:

1) The Commission has jurisdiction under 17 O.S. Section 52 (A)(j) over the handling and disposition of produced water and other deleterious substances associated with oil and gas extraction and transportation activities. Section 17 O.S. Section 52(A)(i) states that the Commission shall have jurisdiction over "the handling, transportation, storage and disposition of saltwater, mineral brines, waste oil and other deleterious substances produced from or obtained or used in connection with the drilling, development, producing and operating of oil and gas wells,...." The Commission is also obligated to prevent pollution and protect human health and the environment under various statutes and rules including 52 O.S. Section 139 which states that "The Corporation

Commission is vested with exclusive jurisdiction, power and authority, and it shall be its duty, to make and enforce such rules and orders governing and regulating the handling, storage and disposition of saltwater, mineral brines, waste oil and other deleterious substances produced from or obtained or used in connection with the drilling, development, producing, and operating of oil and gas wells and brine wells within this state as are reasonable and necessary for the purpose of preventing the pollution of the surface and subsurface waters in the state, and to otherwise carry out the purpose of this act." The Commission also prevents pollution and protects human health and the environment under OCC-OAC 165: 10-7-2(c)(8)(9) and (10) which state that the Commission has jurisdiction over "(8) The handling, transportation, storage and disposition of saltwater, drilling fluids, mineral brines, waste oil and other deleterious substances produced from or obtained or used in connection with the drilling, development, production, and operation of oil and gas wells at any facility or activity specifically subject to Commission jurisdiction or other oil and gas extraction facilities and activities. (9) Spills of deleterious substances associated with facilities and activities specified in OCC-OAC 165:10-7-4(c)(8) or otherwise associated with oil and gas extraction and transportation activities. (10) Groundwater protection for activities subject to the jurisdictional areas of environmental responsibility of the Commission."

3) For these purposes, the Commission has promulgated rules for the location, installation and operation of SWD wells that are intended to protect human health and the environment. These rules are intended to be followed in their entirety to minimize the risks of polluting the waters of the state from the disposal of produced water, saltwater and other deleterious substance generated as a by-product of oil and gas production.

4) Here KLO submitted an application to convert the James #1-17 well into a SWD well to dispose of up to 100 barrels produced water per day at 225 psi injection pressure into the Stuart Sand formation. KLO owns the Marshall #1-17 well that produces a mixture of gas and saltwater from the Stuart Sand located around one-half mile from the James #1-17 well. The Marshall #1-17 well is currently shut in because KLO contends that it is too costly to truck the produced water away for disposal, and that the approval of the proposed SWD well to accept the produced water from the Marshall #1-17 well will make that well economical and prevent waste. The James #1-17 Well was shut-in in 2008 and is not currently producing hydrocarbons.

5) KLO's owner and engineer testified that the base of the treatable water in the area of the James #1-17 well was around 230 feet subsea. He said that this proposed SWD well had 7 inch surface casing cemented from the surface to its base, which appears to be 22 feet subsea according to the setting depth shown in the application. He also said that the disposal well had 4½ inch production casing cemented from the surface to around 1,202 feet subsea. He presented radius of endangerment calculations showing that the well would not

contaminate the treatable water zone in the area when operated at 100 barrels of saltwater per day at an injection pressure of 225 psi.

6) He also pointed out that produced water would only be taken from the Stuart Sand formation through the operation of the Marshall #1-17 well and injected into the same formation using the proposed SWD well located around one-half mile away such that the net water balance in the Stuart Sand would not change. He opined that all of these precautions would serve to protect the treatable water and all of the other producing wells in the area that penetrate the Stuart Sand formation from the intrusion of saltwater during the operation of the disposal well.

7) Chesapeake's experts presented evidence that saltwater produced from the Stuart Sand formation was corrosive and opined that the water could damage the wellbores of the other wells in the vicinity of the proposed SWD well that penetrate the formation, and that the risk of damage would increase during the operation of the disposal well. Chesapeake argued that the corrosion of the wellbores exposed to the Stuart Sand could compromise the integrity of the wellbores and that it could cost around \$75,000 per wellbore to repair the damage. Since many of these wells were only marginally economical, the increase in operating costs could cause Chesapeake to shut in the wells, thus stranding the gas and promoting waste.

8) Chesapeake also presented evidence that many of the wells located within a mile of the disposal well were drilled in the 1950s and were inadequately plugged with mud or partially plugged with cement or had surface casing that terminated above the base of the treatable water zone. Chesapeake's experts opined that the treatable water zone in contact with the wellbores of these older wells could be contaminated with produced saltwater from the Stuart Sand if the proposed SWD well was over-pressurized during its operation.

9) In support of its position, KLO contended that the producing wells closest to the James #1-17 well had casing that would protect the treatable water, and that wells outside of a one-fourth mile radius of the proposed SWD well would not be adversely affected by the operation of the well. KLO argued that it had the right to produce hydrocarbons from the Marshal #1-17 well and whether or not it used a disposal well to handle the produced water, Chesapeake would have to take measures to minimize corrosion and repair its wellbores in order to protect the treatable water. KLO also noted that the UIC Department of the Commission didn't oppose its application.

10) During the hearing, Chesapeake presented a copy of Form 1002A that was submitted by KLO to the Commission for the James #1-17 well. The ALJ notes that the form doesn't show any surface casing or intermediate casing in the wellbore. The form discloses a 7 inch conductor casing cemented from the

surface to a base at 22 feet subsea and a 4½ inch production casing cemented to 1,202 feet subsea. Form 1002C related to casing and cement that is attached to Form 1002A discloses that the James #1-17 well has no surface casing. Form 1002A also discloses that the well is not producing and was shut in on October 10, 2008.

11) Referring to the rules for SWD wells, OCC-OAC 165:10-3-4(m) states that the casing and cementing requirements for wells converted for injection or disposal shall be subject to the casing and cementing requirements effective at the time of conversion of the well. Thus, the current casing and cementing rules, not the rules that were in place when the well was completed or plugged, apply to the conversion of the James #1-17 well into a SWD well. OCC-OAC 165:10-3-4(m) states: "(m) Casing and cementing requirements for wells converted for injection or disposal. If a well is converted for use as an injection or disposal well, it shall be subject to the casing and cementing requirements of this Section effective at the time of conversion of the well."

12) The current casing and cementing rules require that all SWD wells have surface casing and state that the surface casing for such wells must extend at least 50 feet below the base of the treatable water. OCC-OAC 165:10-3-4(c)(1) requires that at a minimum, suitable and sufficient surface casing shall be run and cemented from the surface to at least fifty feet below the base of the treatable water. OCC-OAC 165:10-3-4(c)(1) states: "(c) Surface casing and cementing requirements for wells listed in (a)(2) of this Section: (1) Minimum surface casing requirements. Unless an alternate casing program is authorized by the Conservation Division or by an order of the Commission, suitable and sufficient surface casing shall be run and cemented from bottom to top with a minimum setting depth which is the greater of: (A) Ninety feet below the surface, or (B) Fifty feet below the base of treatable water." OCC-OAC 165:10-5-5(h) also requires that in addition to all of the other requirements related to a SWD well, the surface casing shall be set and cemented at least fifty feet below the base of the treatable water bearing zone and the production casing shall not be allowed to also serve as the surface casing. OCC-OAC 165: 10-5-5(h) states: "In addition to the well construction requirements as set out in 165:10-3-1, commercial saltwater disposal wells shall comply with the following requirements: (1) At a minimum, the well shall be constructed with a wellhead, surface casing, production casing, tubing, and packer. (2) The surface casing shall be set and cemented at least fifty (50) feet below the base of the treatable water bearing zone. The production casing will not be allowed to also serve as the surface casing. (3) The production casing must be set and cemented through the injection zone with the cement circulated behind the casing to a height at least two hundred fifty (250) feet above the disposal zone. A cement bond log showing quality and placement of the cement must be furnished to and approved by the Commission before the well may be used for injection or disposal. The Manager of Underground Injection Control may approve the Arbuckle Formation for open hole completion. (4) The annulus between the

tubing and the casing must be open from the surface to the packer to allow for pressure testing and monitoring of the injection tubing and packer and the annulus filled with a packer fluid that protects against corrosion. (5) The packer must be set at least within seventy-five (75) feet of the top of the perforations. (6) Adequate gauges shall be installed on each annulus to allow proper monitoring of the disposal operation. (7) Tubing must be internally coated or lined to prevent corrosion from injected fluids. PVC, Plastic Coated, Stainless Steel or Fiberglass will qualify. (8) The packer must either internally coated or stainless steel. (9) Commercial disposal wells authorized with a positive injection pressure must be equipped with a down hole shut-off device with a seal divider installed between the packer and the tubing. A Stainless Steel Profile Nipple and an "ON-OFF" Tool will qualify under this Section."

13) KLO's application and proposed SWD well doesn't comply with these rules because the well has no surface or intermediate casing and the conductor casing only extends 22 feet subsea and the base of the treatable water in the area is around 230 feet subsea. The rules require that the surface casing extend at least 50 feet below the treatable water base and do not allow production casing to be substituted for surface casing.

14) Although OCC-OAC 165:10-3-4(c)(3) provides an exception to OCC-OAC 165:10-3-4(c)(1), it can't apply to KLO's cause. The exception is granted to wells producing hydrocarbons that were in compliance with the surface casing requirements at the time of their completion, but the James #1-17 well was shut in during 2008 and isn't producing hydrocarbons today. OCC-OAC 165:10-3-4(c)(3) states: "3) Exceptions to (c)(1). Operators having wells producing hydrocarbons which were in compliance with the surface casing requirements at the time of completion shall not be required to comply with (1) of this subsection."

15) After taking into consideration all of the facts, circumstances, evidence and testimony presented in this cause, it is the recommendation of the ALJ that KLO's application seeking approval to convert the James #1-17 well located in the W/2 E/2 SW/4 NW/4 of Section 17, T8N, R11E, Hughes County Oklahoma into a noncommercial SWD well be denied. Although KLO certainly has the right to produce hydrocarbons from the Marshall #1-17 well, the operation of the James #1-17 well as a SWD well in the Stuart Sand formation creates too great a risk of polluting the treatable water.

16) The proposed SWD well doesn't comply with the rules of the Commission for the construction of an environmentally sound wellbore in that it lacks surface casing protection in and around the treatable water zones. The treatable water in the area is also already exposed to the significant risk of pollution from many old inadequately cased or improperly plugged wells in Sections 16, 17 and 18, and the approval of KLO's disposal well will only increase the risk of pollution.

17) With respect to the prevention of waste, the proposed SWD well poses a threat to the continuing economical production of gas from the wells that are already producing in the area, and continued production from wells that are already producing outweighs the value of attempting to convert an uneconomical shut-in well into an economically viable well by means of a disposal well that could pollute the groundwater.

POSITIONS OF THE PARTIES

KLO

1) **William H. Huffman**, attorney, appearing on behalf of KLO, stated that this case involved a SWD well application to dispose of produced water from a 40-acre oil and gas lease that produces from the Stuart. The proposed SWD well will offset the high cost of transporting excess salt water produced from the nearby Marshall #1-17 well to an off-site location. The proposed plan involves converting the James #1-17 well into a SWD well.

2) Since the James #1-17 well did not have surface casing and cement, the ALJ concluded that the proposal would violate OCC-OAC 165:10-3-4(c)(1) and recommended that the application be denied. KLO contends that the ALJ did not read OCC-OAC 165:10-3-4(c)(1) in its entirety and the exception states "Unless an alternative casing program is authorized by the Conservation Division." KLO argues that the application described an alternative casing procedure, stating that "Cement will be circulated from total depth to ground surface on the production casing string." Cement in the James #1-17 well was circulated to ground surface. The UIC department reviewed the intent to drill application for this well and approved it. KLO contends that the ALJ did not fully apply this exception to the rule on surface casing that allows production casing to suffice.

3) The thrust of KLO's argument is that the treatable water zone in the James #1-17 well is cased and cemented throughout its entire interval.

4) Chesapeake claims that there are many unplugged wells in the area that could lead to pollution of the treatable water. KLO disagrees and supports its position with testimony from the Chesapeake engineer. When KLO asked the engineer whether the James #1-17 well would pollute the Talley well, the engineer stated that he did not say that it can't happen, but he also is not saying it will happen.

5) The Mitchell Argo #4 SWD well has been active in the northern boundary of Section 16 since 2001. Chesapeake has done no study to determine if there was any pollution from it. Chesapeake argues that injecting any salt water into the formation would cause a micro movement of water that will enhance corrosion and cost them thousands of dollars to fix. However, when they recently pulled casing from the Diamond Scott #1-18 well they did not even check for corrosion.

6) Chesapeake wants to prevent KLO from producing their well because it creates a micro movement of water, but when asked if they had considered using cathodic protection in their wells the Chesapeake corrosion expert said they had not considered doing this.

7) Mr. DeWytt, an engineer that Chesapeake presented, indicated that there is no evidence of pollution to any of the treatable water.

8) Chesapeake brought an engineer, Mr. Heath, to testify as to the water saturation. He calculated it to be 38.5%. This is contrary to the argument Chesapeake tried to make that the water saturation was 100%.

9) Mr. Huffman and Mr. Heath went through a calculation using Mr. Heath's numbers and the presumption that KLO put 100 barrels of fluid a day in the well for 10 years. The calculation proved that the water would fill 1.9 acres. The Amerada well, the nearest Chesapeake well, is 259 acres away from the proposed James #1-17 well. KLO would have to inject water for 1,363 years to reach the Amerada well.

10) Chesapeake's argument that there would be a micro movement of water if KLO injects saltwater down the James #1-17 well only works when the water saturation is at 100%.

11) Chesapeake argues that the pressure will rise and could bring the saltwater up to the level of treatable water. This doesn't logically work when KLO is taking saltwater out of the Marshall #1-17 well and putting it back in the James #1-17 well which feeds into the same Stuart formation.

12) KLO argues that no evidence was provided that any treatable water would be in danger.

CHESAPEAKE

1) **Richard K. Books**, attorney, appeared on behalf of Chesapeake and quoted ALJ's finding in paragraph 107 that "With respect to the prevention of waste, the proposed SWD well poses a threat to the continuing economical

production of gas from the wells that are already producing in the area, and continued production from wells that are already producing outweighs the value of attempting to convert an uneconomical shut-in well into an economically viable well by means of a disposal well that could pollute the groundwater."

2) What concerns Chesapeake is loss of wells, extreme costs to them to have to restore a well when it is damaged, and the possibility that groundwater will be polluted.

3) KLO does not have any evidence that supports corrosion will not occur as a result of the James #1-17 well. KLO didn't bring an isopach, didn't bring a structure map, didn't make any geologic study, didn't make any study about corrosion. The water sample that's submitted is not a normal water sample and doesn't include values that should be included. He didn't study which wells might be vulnerable to a SWD, and didn't make a study of the costs if wells were damaged.

4) Chesapeake presented evidence in the form of a complete geologic study with three isopachs. They also brought a structure map and cross section. Chesapeake performed a corrosion study and also one to determine which wells were vulnerable.

5) Despite the KLO witness saying the water isn't very salty, the salt water is five times the salinity of sea water. So, in fact, it is very salty which contributes to corrosion.

6) An expert identified that the level of dissolved iron in the water analysis KLO provided proves that there has been and is corrosion taking place.

7) When a reservoir is disturbed from drilling, it causes a microscopic movement of the water which brings carbon dioxide, iron, oxygen to cause more corrosion. The more movement introduced, the more corrosion occurs.

8) Chesapeake disputes KLO's argument that they will be taking water out of the Stuart and putting it back in the Stuart which won't cause any pressure issues. There is an Upper, Middle, and Lower Stuart and KLO proposes to take out of the Lower Stuart and inject the salt water back into the Upper and Middle Stuart. There is no water coming out of the Upper and Middle Stuart so the pressure will raise up.

9) Chesapeake introduced an operational engineer's testimony into evidence to prove there are wells improperly plugged with mud. The danger is that the mud can dry out and create cracks thus creating a channel for the salt water to be exposed to the fresh water. Chesapeake introduced evidence that there are many producing wells that are at risk because they are not properly

cased and cemented across the Stuart. The Stuart is corrosive and will cause casing leaks. KLO put on no evidence.

10) Chesapeake is worried about a leak into one of their producing wells. If this happens it would cost in the range of \$100,000 to fix it and that may or may not solve the problem. They argue this is economic waste and point out that ALJ Report agrees in paragraph 107.

11) KLO is seeking to inject salt water into a producing zone. Chesapeake argues that this is not uniform and will strand reserves that would otherwise be producing.

12) The radius of endangerment study done by KLO is fatally flawed. First, the permeability in the study is based off the Booch formation and not the Stuart. There is no geologic or engineering evidence that the permeability in the Booch is anything close to the permeability in the Stuart. Second, the calculation in the study is supposed to deal with the threat to the nearest well from the proposed well. KLO used the Amerada well (2,123 feet away) and the closest well is the Alexander #1 being only 40 feet away. Third, even if Amerada was the well to do the study on, it's not 2,123 feet away, it is 1,895 feet away. Fourth, the height used in the study is 56 feet instead of 40 feet. Fifth, KLO used the wrong pressure in the study. They used 100 pounds instead of 335 pounds of pressure. If the calculation were done correctly, the study would have shown a danger to fresh water.

13) KLO argues that the main reason they were denied by the ALJ is for the configuration of the well. This is not true as the ALJ makes clear in his report in paragraphs 106 and 107 that the major concerns are waste and fresh water pollution.

14) KLO suggested that Chesapeake did not even consider cathodic protection for their wells. Chesapeake did talk about it, but it is extremely expensive and doesn't always work. There are 50 wells in the area and it is impractical to ask the operators of these wells to use this extremely expensive process so that KLO can have the SWD well in the area.

RESPONSE OF KLO

1) KLO doesn't believe they needed, and wasn't required by the commission, to do a geological study because they are only injecting 20 barrels of water per day.

- 2) Chesapeake does not have any wells in the Middle Stuart. They do have Upper and Lower Stuart, but the salt water will be injected into the Lower Stuart which has 259 acres of room.
- 3) KLO used the 100 pounds of pressure because that was what the BHP was in the particular well Mr. Kabach was doing the study on.
- 4) To do the zone of endangerment study, you have to have a 100% full of water formation, and that was not the case in the Stuart.
- 5) The 56 feet height was used with 10% porosity while Chesapeake got their number of 40 feet with 17% porosity. The 17% porosity was just an arbitrary number that they cutoff.
- 6) At \$3 gas, the Marshall well will produce around \$97,200 to \$162,000 dollars a year. This doesn't seem to be an uneconomical well.
- 7) KLO is protecting their right to produce, to protect their ability to recover their fair share of the hydrocarbons underlying this particular unit.

CONCLUSIONS

The Referee finds the Report of the Administrative Law Judge should be affirmed.

- 1) The Commission is vested with exclusive environmental jurisdiction, power and authority governing the disposition of produced water and other deleterious substances incidental to petroleum production for the purpose of preventing pollution of the surface and subsurface waters in this state. See 52 O.S. Section 139 et.seq., 17 O.S. Section 52(A)(1)(j); *Meinders v. Johnson*, 134 P.3d 858 (Okl.App. 2005); *State ex rel Pollution Control Coordinating Board v. Oklahoma Corporation Commission and Enserch Exploration Inc.*, 660 P.2d 1042 (Okl. 1983).
- 2) 17 O.S. Section 52(A)(1)(j) provides that the Corporation Commission is vested with exclusive jurisdiction, power and authority with reference to:
 - i. The handling, transportation, storage and disposition of saltwater, mineral brines, waste oil and other deleterious substances produced from or obtained or used in connection with the drilling, development, producing and operating of oil and gas wells,...

3) 52 O.S. Section 139 provides:

A. The Corporation Commission is vested with exclusive jurisdiction, power and authority, and it shall be its duty, to make and enforce such rules and orders governing and regulating the handling, storage and disposition of salt water, mineral brines, waste oil and other deleterious substances produced from or obtained or used in connection with the drilling, development, producing, and operating of oil and gas wells and brine wells within this state as are reasonable and necessary for the purpose of preventing the pollution of the surface and subsurface waters in the state, and to otherwise carry out the purpose of this act.

4) OCC-OAC 165:10-7-2(c)(8)(9)(10) provides for jurisdiction of the Commission over:

(8) The handling, transportation, storage and disposition of salt water, drilling fluids, mineral brines, waste oil and other deleterious substances produced from or obtained and used in connection with the drilling, development, production, and operation of oil and gas wells at any facility or activity specifically subject to Commission jurisdiction or other oil and gas extraction facilities and activities.

(9) Spills of deleterious substances associated with facilities and activities specified at OAC 165:10-7-4(c)(8) or otherwise associated with oil and gas extraction and transportation activities.

(10) Groundwater protection for activities subject to the jurisdictional areas of environmental responsibility of the Commission.

5) OCC-O.A.C. 165: 10-3-4(m) states:

(m) Casing and cementing requirements for wells converted for injection or disposal. If a well is converted for use as an injection or disposal well, it shall be subject to the casing and cementing

requirements of this Section effective at the time of conversion of the well.

6) OCC-O.A.C. 165: 10-3-4(c)(1) states:

(c) Surface casing and cementing requirements for wells listed in (a)(2) of this Section: (1) Minimum surface casing requirements. Unless an alternate casing program is authorized by the Conservation Division or by an order of the Commission, suitable and sufficient surface casing shall be run and cemented from bottom to top with a minimum setting depth which is the greater of: (A) Ninety feet below the surface, or (B) Fifty feet below the base of treatable water.

7) OCC-O.A.C. 165: 10-5-5(h) states:

In addition to the well construction requirements as set out in O.A.C. 165:10-3-1, commercial saltwater disposal wells shall comply with the following requirements: (1) At a minimum, the well shall be constructed with a wellhead, surface casing, production casing, tubing, and packer. (2) The surface casing shall be set and cemented at least fifty (50) feet below the base of the treatable water bearing zone. The production casing will not be allowed to also serve as the surface casing. (3) The production casing must be set and cemented through the injection zone with the cement circulated behind the casing to a height at least two hundred fifty (250) feet above the disposal zone. A cement bond log showing quality and placement of the cement must be furnished to and approved by the Commission before the well may be used for injection or disposal. The Manager of Underground Injection Control may approve the Arbuckle Formation for open hole completion. (4) The annulus between the tubing and the casing must be open from the surface to the packer to allow for pressure testing and monitoring of the injection tubing and packer and the annulus filled with a packer fluid that protects against corrosion. (5) The packer must be set at least within seventy-five (75) feet of the top of the perforations. (6) Adequate gauges shall be

installed on each annulus to allow proper monitoring of the disposal operation. (7) Tubing must be internally coated or lined to prevent corrosion from injected fluids. PVC, Plastic Coated, Stainless Steel or Fiberglass will qualify. (8) The packer must either internally coated or stainless steel. (9) Commercial disposal wells authorized with a positive injection pressure must be equipped with a down hole shut-off device with a seal divider installed between the packer and the tubing. A Stainless Steel Profile Nipple and an "ON-OFF" Tool will qualify under this Section.

8) The Rules of the Commission set out above have the force and effect of law and must be followed. *Brumark Corporation v. Corporation Commission*, 864 P.2d 1287 (Okl.App. 1993); *Ashland Oil Inc. v. Corporation Commission*, 595 P.2d 423 (Okl. 1979). Rules and regulations enacted by the Commission pursuant to the powers delegated to it have the force and effect of law and are presumed to be reasonable and valid. *Toxic Waste Impact Group v. Leavitt*, 755 P.2d 626 (Okl. 1988).

9) Thus, pursuant to OCC-OAC 165:10-3-4(m) the casing and cementing requirements for wells converted for injection or disposal shall be subject to the casing and cementing requirements effective at the time of the conversion of the well. Therefore, the Referee agrees with the ALJ's conclusion that the current casing and cementing rules, not the rules that were in place when the well was completed or plugged, apply to the conversion of the James #1-17 well into an SWD well.

10) The current casing and cementing rules OCC-OAC 165:10-3-4(c)(1) require that all SWD wells have surface casing extending and cemented from the surface to at least 50 feet below the base of the treatable water, and production casing shall not be allowed to also serve as the surface casing. See OCC-OAC 165:10-5-5(h) above.

11) The ALJ in his Report on page 27, paragraphs 103 and 104 states:

103. KLO's Application and proposed SWD well doesn't comply with these rules because the well has no surface or intermediate casing and the conductor casing only extends 22 feet subsea and the base of the treatable water in the area is around 230 feet subsea. The rules require that the surface casing extend at least 50 feet below the treatable water base and do not allow production casing to be substituted for surface casing.

104. Although O.A.C. 165:10-3-4(c)(3) provides an exception to O.A.C. 165:10-3-4(c)(1), it can't apply to KLO's cause. The exception is granted to wells producing hydrocarbons that were in compliance with the surface casing requirements at the time of their completion, but the James 1-17 Well was shut in during 2008 and isn't producing hydrocarbons today.

See OCC-OAC 165:10-3-4(c)(3) which states:

(3) Exceptions to (c)(1). Operators having wells producing hydrocarbons which were in compliance with the surface casing requirements at the time of completion shall not be required to comply with (1) of this subsection.

12) In administrative hearings, the applicant seeking relief has two burdens: the burden of persuasion (that if the evidence is evenly balanced, the party that bears the burden of persuasion must lose); and the burden of production (a party's obligation to come forth with evidence to support its claim). *Director, Office of Workers Compensation Program, Department of Labor v. Maher Terminals, Inc.*, 512 U.S. 267, 272, 275 (U.S. 1994).

13) The Referee finds that the ALJ's determination that KLO failed to carry their burden of proof under their request for approval of the James #1-17 well as a noncommercial disposal well is supported by the weight of the evidence, by law and free of reversible error. It should be noted that KLO did not present an isopach map, a structure map, a geologic study and didn't make any study concerning corrosion. It was asserted that the Exhibit 4, KLO's water analysis was flawed as it did not include values that would be present in a normal water analysis. It did not contain the amount of bacteria present in the water, whether there was CO₂ present in the water or whether there was oxygen present in the water. These values would inform as to whether the water was corrosive. KLO did not perform a corrosion study nor a study concerning which wells were vulnerable to a SWD conversion of the James #1-17 well. If you include the James #1-17 well and the quarter sections surrounding it, there are 50 wells within that area. And many of the wells are not properly plugged or do not have the Stuart cemented and cased off.

14) Chesapeake presented a corrosion engineer and stated that 20 ppm of dissolved iron in the water indicated corrosion. The study in the present case determined that there was 86 ppm, over four times that base line number, and

therefore clearly corrosion has taken place and is taking place. The only evidence regarding corrosion was presented by Chesapeake.

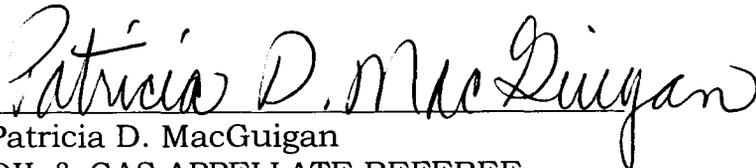
15) Further, the evidence presented by Chesapeake disputes KLO's argument that they will be taking water out of the Stuart and putting it back in the Stuart which won't cause any pressure issues. There is an Upper, Middle and Lower Stuart and KLO proposes to take out of the Lower Stuart and inject the salt water back into the Upper and Middle Stuart. There is no water coming out of the Upper and Middle Stuart so the pressure will rise.

16) There was also introduced by Chesapeake an operational engineer's testimony that there were wells improperly plugged with mud in the area surrounding the James #1-17 well. The danger is that the mud can dry out and create cracks creating a channel for the salt water to be exposed to the fresh water. Chesapeake introduced evidence that there were many producing wells that were at risk because they are not properly cased and cemented across the Stuart. If there was a leak into one of Chesapeake's producing wells it would cost in the range of \$100,000 to repair it or repair may not solve the problem. This would cause economic waste as pointed out by the ALJ in his Report on page 28, paragraph 107.

17) There was also evidence presented by Chesapeake that the radius of the endangerment stated by KLO was fatally flawed and if the calculations had been done correctly the study would have showed a danger to fresh water.

18) For the above stated reasons the Referee agrees with the ALJ's recommendation denying the application of KLO as they failed to provide relevant, material or competent scientific evidence concerning their application for the approval of the James #1-17 well as a noncommercial salt water disposal well and thus failed to carry their burden of proof.

RESPECTFULLY SUBMITTED THIS 4th day of October, 2012.


Patricia D. MacGuigan
OIL & GAS APPELLATE REFEREE

PM:ac

xc: Commissioner Douglas
Commissioner Anthony
Commissioner Murphy
Jim Hamilton

ALJ David D. Leavitt
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