OIL & GAS DOCKET NO. 10-0252412

COMMISSION-CALLED HEARING TO PROVIDE DCP MIDSTREAM, LP THE OPPORTUNITY TO SHOW CAUSE WHY W-14 PERMIT NO. 11455 TO DISPOSE OF OIL AND GAS WASTE INTO A FORMATION NOT PRODUCTIVE OF OIL OR GAS, SNEED PLANT H2S INJECTION (186450) WELL NO. 1, PANHANDLE (GR. WASH-H2S DISPL) FIELD, MOORE COUNTY, TEXAS SHOULD NOT BE MODIFIED, SUSPENDED, OR TERMINATED IN ACCORDANCE WITH 16 TEX. ADMIN. CODE § 3.9(6)(A)

OIL & GAS DOCKET NO. 10-0252413

APPLICATION OF DCP MIDSTREAM, LP (DCP), FOR A PERMIT TO INJECT FLUID CONTAINING HYDROGEN SULFIDE GAS INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS, PURSUANT TO STATEWIDE RULES 36 AND 46, SNEED H2S INJECTION LEASE (186450), WELL NO. 1, PANHANDLE MOORE COUNTY FIELD, MOORE COUNTY, TEXAS (PERMIT NO. 11455)

PROPOSAL FOR DECISION

APPEARANCES:

For Applicant DCP Midstream, L.P.

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For the Intervenors:

JBREX Company, LERA, SNW Operating, Sargeco, Inc., and Linn Energy

Jody Sheets

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For the Railroad Commission of Texas:

David Cooney

PROCEDURAL HISTORY

DATE APPLICATION FILED:	March 12, 2007
DATES OF PREHEARING CONFERENCES:	July 27 and October 24, 2007
DATE OF NOTICE OF HEARING:	November 7, 2007
DATE HEARD:	December 12, 2007
EXAMINERS ASSIGNED:	James Doherty, Hearing Examiner Donna Chandler, Technical Examiner

STATEMENT OF THE CASE AND DISCUSSION OF EVIDENCE

The Panhandle, West, Panhandle Moore County and Panhandle Hutchinson County Fields produce natural gas that contains both Hydrogen Sulfide (H_2S) and Carbon Dioxide (CO2). These impurities must be removed to make the gas marketable. DCP's predecessor, GPM Gas Corporation, L.L.C., applied to the Commission under Statewide Rules 9 and 36 for a Permit to Dispose of Oil and Gas Waste by Injection into a Formation Not Productive of Oil or Gas (Form W-14) to permit the Sneed Plant H2S Injection lease (186450) ("Sneed") well. GPM planned to build a processing facility to remove H_2S/CO_2 and to dispose of this acid gas by

injecting it into the Sneed well. This injection application was filed on March 6, 2000. The injection application requested injection into the Granite Wash formation from a depth of 3,500 feet to 4,200 feet, with a limit of 1,500 MCFD at a maximum pressure of 1,300 psi. The Commission held a hearing on the application on October 18, 2000. The Commission approved the injection application by Final Order No. 10-0225440, dated November 9, 2000. The Commission staff issued the existing permit for the Sneed well on February 8, 2001.

After issuance of the permit, DCP's predecessor Duke Energy Field Services took over operations and drilled and completed the Sneed well and DCP subsequently took over operations. The Sneed well went into continuous acid injection service in May of 2002. From May of 2002 until August of 2005, continuous acid injection occurred without incident. In August of 2005, DCP noticed an increase in the levels of H_2S in the gas being received at its Rock Creek Plant. DCP traced the increase in H_2S to wells on Momentum's Armstrong lease, particularly to wells on that lease producing from the Lower Moore County Lime Formation. The Sneed plant and the Sneed well are located on the Armstrong lease. DCP notified Momentum of the increase in H_2S and switched portions of Momentum's production from DCP's "sweet" gathering system to DCP's "sour" gathering system.

In late August or early September of 2005, Momentum advised DCP of Momentum's belief that the increase in H_2S produced from some of Momentum's wells on its Armstrong lease was as a result of DCP's injection of acid gas into the Sneed well. On September 25, 2005, DCP hired a third-party contractor to perform a wellbore integrity test on the Sneed well. This test confirmed that all of the acid gas injected into the Sneed well was entering into the Granite Wash formation and none of the gas was leaking into other formations at the well. Because of the increased levels of H_2S and CO_2 in some of Momentum's wells, DCP commissioned a study by a third party professional engineering firm. The study would be performed to determine the cause of the elevated acid gas levels in certain of Momentum's wells and whether DCP was responsible for the increase in acid gas levels in certain Momentum wells and, if so, to determine what actions should be taken by DCP.

In December 2005, DCP contacted Dr. Steven Seni, Assistant Director, Environmental Services, to advise him of the situation and its plan to have an engineering study undertaken. DCP met regularly with the Commission staff in both Austin and Pampa, to keep the Commission advised of the study being performed and the results that were being generated.

The results of DCP's study confirmed that injected acid gas had escaped the non-productive Granite Wash formation and was migrating to a portion of the productive Moore County Lime formation. On March 12, 2007, DCP filed an application under Statewide Rules 46 and 36 for a Permit to Inject Fluid into a Reservoir Productive of Oil or Gas (Form H-1/H-1A) to expand the injection interval for the Sneed well to include a portion of the productive Moore County Lime. This application was opposed by Momentum and supported by a group of operators who rely on the Sneed Plant to process and sell their gas. DCP revised this application

after it decided to build a Sulphur Recovery Unit (SRU) and now requests that the term of the permit be limited to approximately 2 years, until the SRU is built. DCP also proposed implementation of a Monitoring Plan, prepared in conjunction with the Commission staff, to track the movement, if any, of the injected acid gas.

DCP processes gas produced in the Panhandle area at its Rock Creek Plant. This plant has a limited capacity to handle sour gas. DCP located the Sneed Plant and Sneed injection well in an area where the highest concentrations of H_2S are found. The Sneed Plant removes the H_2S/CO2 and the tailgate gas goes to the Rock Creek plant for further processing. Approximately 40 MMCFD of both gas well and casinghead gas would be shut-in if the Sneed well is no longer allowed to inject. It was noted that the Rock Creek plant has a limit of approximately 500 ppm H_2S.

In the Final Order signed in Oil and Gas Docket No. 10-0255440, based on evidence presented at an uncontested hearing, the Commission found that the Moore County Limestone overlying the Granite Wash formation into which disposal of acid gas was proposed, contained thick beds of limestone with essentially no vertical permeability and even if 1,500 MCFD of acid gas were injected into the well for 50 years, the injected fluid plume would extend only about 2,100 feet. A special condition of the permit provided that oil and gas waste could be injected only into the strata in the subsurface depth interval from 3,500 feet to 4,200 feet, which is the Granite Wash formation. The permit also contained a condition that, should it be determined that injected fluid was not confined to the approved strata, the permission given in the permit was suspended and the disposal operation must be stopped until the fluid migration from such strata was eliminated.

DCP's study revealed no evidence that the fresh water has been contaminated and there is no evidence of any potential path that would allow the fresh water to be contaminated. Further, a radioactive tracer survey had been run in the well in September 2005 indicating that all fluids injected into the well were entering the permitted Granite Wash Formation. A cement bond log indicated good cement across the Granite Wash which should isolate fluids to the permitted interval.

DCP reviewed the various H_2S and CO2 levels in Momentum's Armstrong lease wells versus their various completions in an effort to determine why there were increased levels of acid gas in some wells and not in others. As a result of this review, it was concluded that acid gas had migrated from the Granite Wash formation into the Lower Moore County Lime formation. In this area, the Moore County Lime, comprised of the Upper Moore County Lime and Lower Moore County Lime, lies on top of the Granite Wash. While evidence in the initial permit hearing for the well indicated an impermeable barrier between the Moore County Lime and Granite Wash, further review indicates that a barrier apparently exists between the Lower Moore County Lime and the Upper Moore County Lime. There are apparently some natural fractures in the Lower Moore County Lime which provided a means of communication between

the Granite Wash and the Lower Moore County Lime. The differences in acid gas content when compared to the completion intervals of the various wells led Mr. Payne to conclude that when wells were effectively plugged out of the Lower Moore County Lime, there is no migration of acid gas into the upper formations.

In the area of the Sneed well, some oil wells completed in the Lower Moore County Lime and some gas wells completed in the Upper Moore County Lime and Brown Dolomite have seen and are seeing significantly elevated levels of H2S as a result of failure to confine injected fluids in the Sneed well to the permitted interval. Native background concentrations of H2S in the area of the Armstrong lease range from 0 ppm to about 9,000 ppm, with the higher native background concentrations being seen the Armstrong No. 12R on the north part of the lease. Monitored wells that have seen elevated concentrations of H2S are located on the Armstrong lease and areas to the west of the Armstrong lease. Concentrations of H2S as high as 190,000 ppm have been observed.

DCP established that many oil and gas fields in Texas operate at, near or in excess of the H_2S content seen in the wells on the Armstrong lease. DCP thus concluded that operators across the state have operated wells with H2S levels as high or higher than the H2S concentrations in wells in this area. It is therefore DCP's opinion that it is safe to operate the Sneed well and produce oil and gas from wells in the area while the SRU is being constructed. As an additional safety measure, DCP proposed a monitoring program for wells surrounding the Sneed well.

If producing wells in the area are required to be shut-in due to the unavailability of the Sneed well for acid gas injection, DCP believes that cross-flow of acid gas could occur in wells which have communication between the Moore County Lime and Brown Dolomite. Injected gas could migrate into the Brown Dolomite where elevated levels of H2S and CO2 do not currently exist. DCP believes the best solution is to recycle the acid gas by continued production of wells in the area.

Nuumerous operators in the area intervened in the case in support of continued operation of the Sneed well. A study performed by the Panhandle Producers and Royalty Owners Association (PPROA) concluded that the shut-in of the Sneed well would have a devastating impact on the economies of Moore and Hutchison County. Lera and Rimrock Gas Company, operators of wells in the immediate vicinity of the Sneed well, described how it is possible to safely operate wells with the high H2S content seen on his leases and on the Armstrong lease. Lera and Rimrock urge the Commission not to shut-in the Sneed well. SNW, an operator behind the Sneed Plant, estimates that 1,128 wells operated by just five companies (Linn Operating, SNW, Sargeco, Nisrol and Lera) would be impacted by a shut-in of the Sneed well. For these 1,128 wells, there would be a loss of 15.9 MMCFD and 1,074 BOPD. Shutting in these wells would be worse than keeping them producing, because of deferred maintenance and potential loss of wellbores and leases.

At the direction of the Examiners, DCP met with Commission staff to propose an agreed Monitoring Plan. DCP agreed to hire a third party to coordinate with the Commission and to implement the Monitoring Plan. The Commission Staff has proposed language to be included in the Final Order in this case to implement the Monitoring Plan. The agreed language is included in Special Conditions 5 and 6 in the Proposed Order attached to this Proposal for Decision.

Momentum withdrew its protest of the application, subject to the following conditions: (1) DCP will have an alternative acid gas disposal method in place by September 30, 2009, (2) DCP will monitor the effects of continued injection or disposal of acid gas as required by the RRC, but not less than as proposed by DCP at the first prehearing conference in this matter, and (3) when an alternative acid gas disposal method is ready, DCP will discontinue the injection of acid gas and will remediate the effects of acid gas disposal as may be required by the RRC.

EXAMINERS' OPINION

The Examiners recommend that DCP's application to expand the injection interval for the Sneed injection well be granted with the limitations agreed to by the parties. The parties agreed to expand the injection interval to include the Lower Moore County Lime and to limit the term of the permit to allow time for DCP to complete permitting and construction of an SRU. Additionally, DCP is developing a monitoring plan, with input from the Railroad Commission staff. The monitoring plan is required to be in place within 30 days of the effective date of the final order in these matters. The continued operation of the Sneed well will prevent the shut-in of approximately 40 MMCFD and prevent a tremendous adverse economic impact on Moore and Hutchison Counties. The Examiners' believe that the recommended monitoring plan will protect public safety while the SRU is being constructed. Once the SRU is constructed and in operation, the Sneed well will cease operation and DCP will begin the remediation of injected gas.

The existing permit for the Sneed well, Permit No. 11455, is subject to a special condition providing that, should it be determined that injected fluid is not confined to the approved strata, the permission given in the permit is suspended. Fluid injection pursuant to the permit has not been confined to the approved strata. The approval of DCP's application in Docket No. 10-0252413, as recommended in this Proposal for Decision, will result in issuance of a new permit to DCP, subject to conditions. Accordingly, the examiners recommend that Permit No. 11455 be cancelled.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the subject hearing. Copies of DCP Midstream's application were also provided to the Moore and Hutchinson County Clerks, and notice was additionally published in newspapers of general circulation in both Moore and Hutchinson County.

2. DCP Midstream's Sneed H_2S injection well is currently permitted to Dispose of Oil and Gas Waste by Injection into a Formation Not Productive of Oil or Gas under Form W-14 Permit No. 11455. This permit was issued on February 8, 2001.

3. The Sneed injection well disposes of acid gas (hydrogen sulfide, or H_2S and carbon dioxide, or CO_2) that prior to 2001 was flared at the Sneed booster facility or treated and disposed of at the Dumas treating facility, which is no longer in operation.

4. The acid gas to be disposed of is removed from natural gas produced by numerous wells in various Panhandle fields that is treated at DCP Midstream's Sneed booster facility.

5. Injection through the Sneed well is performed through tubing set on a mechanical packer. The Sneed well injects into the Granite Wash formation through perforations at depths between 3,842 feet and 4,286 feet. Tests have confirmed that the injected fluids are entering the Granite Wash Formation through the described perforations.

6. Acid gas is migrating vertically from the Granite Wash Formation into the productive lower Moore County Lime Formation which overlies the Granite Wash Formation.

7. Surface casing in the Sneed well is set to a depth of 1,302 feet, and intermediate casing is set at 3,773 feet and both strings of casing are cemented to the surface.

8. Per terms of the current permit issued for the Sneed well, the maximum daily injection rate is 1500 MMCF, at a maximum injection pressure of 1300 psi which is less than the fracture pressure of the Granite Wash.

9. The base of usable quality water in the area of the Sneed well is at 750 feet.

10. DCP Midstream has applied with the Texas Commission on Environmental Quality to permit a sulfur recovery unit ("SRU") to replace the Sneed well and it is anticipated that it will take approximately two years before permitting approvals are obtained and construction is completed. When the SUR has been constructed and is operational, injection into the Sneed well will cease.

11. In the absence of the disposal capacity provided by the Sneed well, numerous producing wells in various Panhandle fields might need to be shut in temporarily due to lack of gas processing capacity, resulting in a temporary loss of production of potentially large volumes of hydrocarbons.

12. Although elevated H_2S and CO_2 concentrations have been detected in certain wells in the vicinity of the Sneed well, numerous wells in Texas produce gas containing native levels of H_2S that are as high or higher than the H_2S levels encountered in the vicinity of the

Sneed well. The wells in the vicinity of the Sneed well that have experienced elevated levels of H_2S and CO_2 may continue to be produced as long as appropriate safety procedures are taken, as set forth in permit conditions.

13. DCP Midstream has developed and will implement a comprehensive program to be approved by the Commission to monitor nearby wellbores for evidence of any additional migration of H_2S from the Sneed well. This monitoring data will be provided to the Commission in Austin, with copies provided to District 10 personnel, and DCP will take action required by the Commission in response to additional migration identified through such monitoring.

14. The Sneed booster facility and most of the surrounding area are already within a 500 ppm ROE for the H_2S which the Sneed booster facility generates, and in the event of a catastrophic failure of the injection line and/or the injection well, portions of public highways (County Roads 1913 and 1319) will be within the radius of exposure to gas that is at least 500 ppm H_2S. The Commission has previously found that an adequate contingency plan has been devised to warn residents, county officials, and law enforcement immediately if there is any hazardous release of sour gas and the District Office has approved this plan. The injection well, compressor and flow lines transmitting sour gas are designed to contain the sour gas, and monitoring devices will immediately shut down the system if any leakage of sour gas is detected.

15. DCP Midstream, L.P. meets all applicable Commission financial security requirements.

16. Continued use of the Sneed injection well for a limited period of time is in the public interest.

17. As permitted pursuant to the provisions stated herein and in the attached Final Order, the continued use of the Sneed injection well for a limited period of time will not significantly increase the threat of injury to any oil, gas, or other mineral formation.

18. As permitted pursuant to the terms set forth herein and in the attached Final Order, continued use of the Sneed injection well for disposal of acid gas during the time for permitting, construction and beginning of operations of an SRU does not significantly increase the risk of pollution to ground and surface fresh water.

CONCLUSIONS OF LAW

1. Proper notice was issued in accordance with all applicable statutes, regulatory codes and Commission staff requirements.

2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.

3. The application of DCP Midstream, L.P. for authority to inject fluid containing hydrogen sulfide at concentrations increased due to gas processing operation into the Sneed Plant H_2S Injection lease Well No. 1 in the Panhandle Moore County Field, Moore County, Texas, subject to the conditions imposed in the Final Order herein, complies with the applicable rules of Statewide Rules 36 and 46 (16 TEX. ADMIN. CODE §§ 3.9, 3.36 and 3.46) and all other applicable statutes and rules.

4. Permit No. 11455 issued February 8, 2001, should be cancelled.

EXAMINERS' RECOMMENDATION

The examiners recommend that Permit No. 11455 be cancelled and that the application for injection into the Sneed well be approved, pursuant to the terms and conditions set out in the attached Final Order.

Respectfully submitted,

Donna K. Chandler
Technical Examiner

James M. Doherty
Hearings Examiner