ENHANCED COAL BED METHANE PRODUCTION AND SEQUESTRATION OF CO_2 IN UNMINEABLE COAL SEAMS

FINAL TECHNICAL REPORT

Project Reporting Period:
October 2001
To
December 2015

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Abstract

The Marshall County Project was undertaken by CONSOL Energy Inc. (CONSOL) with partial funding from the U. S. Department of Energy's (DOE) Carbon Storage Program (CSP). The project, initiated in October 2001, was conducted to evaluate opportunities for carbon dioxide CO2 sequestration in an unmineable coal seam in the Northern Appalachian Basin with simultaneous enhanced coal bed methane recovery.

This report details the final results from the project that established a pilot test in Marshall County, West Virginia, USA, where a series of coal bed methane (CBM) production wells were developed in an unmineable coal seam (Upper Freeport (UF)) and the overlying mineable Pittsburgh (PIT) seam. The initial wells were drilled beginning in 2003, using slant-hole drilling procedures with a single production leg, in a down-dip orientation that provided limited success. Improved well design, implemented in the remaining wells, allowed for greater CBM production. The nearly-square-shaped project area was bounded by the perimeter production wells in the UF and PIT seams encompassing an area of 206 acres. Two CBM wells were drilled into the UF at the center of the project site, and these were later converted to serve as CO_2 injection wells through which, 20,000 short tons of CO_2 were planned to be injected at a maximum rate of 27 tons per day.

A CO_2 injection system comprised of a 50-ton liquid CO_2 storage tank, a cryogenic pump, and vaporization system was installed in the center of the site and, after obtaining a Class II underground injection permit (UIC) permit from the West Virginia Department of Environmental Protection (WVDEP), CO_2 injection, through the two center wells, into the UF was initiated in September 2009. Numerous complications limited CO_2 injection continuity, but CO_2 was injected until breakthrough was encountered in September 2013, at which point the project had achieved an injection total of 4,968 tons of CO_2.

During the injection and post-injection periods, the observed daily CBM production rates increased by more than 17% over pre-injection period production rates. An extensive multi-pronged monitoring program conducted by researchers from West Virginia University (WVU), the DOE National Energy Technology Laboratory (NETL), and CONSOL confirmed the absence of any reliable evidence of vertical migration of the injected CO_2. The breakthrough event was the only evidence of horizontal migration, and there was no evidence of migration outside of the area of review (AOR).

Current environmental regulatory conditions in the U.S. do not provide a need for CO_2 sequestration, and the currently depressed natural gas market further detracts from any economic success that could be realized from CBM production enhancements at this time; however this report does offer details on alternative scenarios that could provide for limited economic viability of this concept.

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Acronyms

AOR	Area of review
Bhp	Brake horsepower
CBM	Coal bed methane
CO2	Carbon dioxide
CONSOL	CONSOL Energy Inc., Research & Development
CSP	Carbon Storage Program
DOE	U. S. Department of Energy
EC µS/cm	Electrical conductivity, microsiemens per centimeter
ECBM	Enhanced coal bed methane
FE	Office of Fossil Energy
Fg/L	Femtograms per liter
FL/L	Femtoliters per liter
ft	Feet
GHG	Greenhouse gas
GPS	Global positioning system
lb/ft	Pounds per foot
mcf	Thousand cubic feet
mcfd	Thousand cubic feet per day

Acronyms cont.

mmcf	Million cubic feet
mg/L	Milligrams per liter
MIT	Mechanical integrity test
mL	Milliliters
NETL	National Energy Technology Laboratory
O.D.	Outside diameter
O&M	Operations and maintenance
PCO2(aq)	Stream water dissolved concentrations based on chemical equilibria
PFC	Perfluorocarbon
PIT	Pittsburgh coal seam
PMCH	Perfluoromethylcyclohexane
psi	Pounds (force) per square inch
psig	Pounds per square inch gauge, relative to atmospheric pressure
PTCH	Perfluoro-1,3,5-trimethylcyclohexane
S. U.	Standard units
SOG	Shallow oil and gas
UF	Upper Freeport coal seam
UIC	Underground Injection Control
VoIP	Voice over Internet Protocol
VPN	virtual private network
WVDEP	West Virginia Department of Environmental Protection
WVU	West Virginia University
yr	Year

Executive Summary

The availability of clean, affordable energy is essential for the prosperity and security of the United States and the world in the 21st century. Emissions of carbon dioxide (CO_2) into the atmosphere are an inherent part of electricity generation, transportation, and industrial processes that rely on fossil fuels and these sectors account for more than 80 percent of the U.S. greenhouse gas emissions, most of which are CO_2. Over the last few decades, an increased concentration of CO_2 in the earth's atmosphere has been observed. Carbon sequestration technology offers an approach to redirect CO_2 emissions into sinks (e.g., geologic formations, oceans, soils and vegetation) and potentially stabilize future atmospheric CO_2 levels. Coal seams are, potentially, attractive CO_2 sequestration sinks, due to their abundance and proximity to electricity-generation facilities. The recovery of marketable coal bed methane (CBM) could provide a value-added stream, potentially reducing the cost to sequester CO_2.

As part of the Marshall County Project, CONSOL Energy Inc. (CONSOL) conducted a program to construct and operate a coal-bed CO_2 sequestration site composed of a series of horizontally drilled wells originating at the surface and extending through two overlying coal seams. The overall goal of the project, conducted in 2001-2015, was to determine the suitability of using unmineable coal seams as sequestration sinks for CO_2 while reaping the simultaneous co-benefit of enhanced CBM production. The project was conducted as part of the U.S. Department of Energy's (DOE's) Carbon Storage Program (CSP), which is managed by its National Energy Technology Laboratory (NETL) Office of Fossil Energy (FE).

The project endeavored to:

- Establish a network of CBM production wells to successfully degas the unmineable (Upper Freeport (UF)) coal seam while also producing CBM from an overlying mineable (Pittsburgh (PIT) coal seam;
- Inject up to 20,000 short tons of CO_2 into the unmineable UF coal seam;
- Document the successful sequestration of the CO_2 in the UF seam through monitoring efforts detailing the absence of migration either vertically, to the overlying PIT seam or surface, or, horizontally, outside the area of review (AOR); and
- Observe CBM production for indications of enhanced coal bed methane (ECBM) production.

In 2003, work began on the development of the first of three CBM production sites, referred to as the North Site, where four wells were planned, two in the UF seam and two in the PIT seam and each with 3,000 foot production laterals. Drilling was attempted using a slant-hole directional technique, angling the drill bit down to the coal seam where it was then turned horizontal, following the seam the desired distance. The north wells were drilled in a southeasterly and southwesterly direction, which was in a down-dip orientation that later proved problematic for production due to the absence of any successful means for dewatering the horizontal legs. Additional complications resulted when the drillers encountered thinning of the UF seam that caused one UF well to end short of the planned 3,000 length and the loss of a drill string in the second well that was eventually abandoned and plugged.

A second CBM production site was established to the south, and a pair of production wells were drilled, one in the UF and the second in the PIT. Each production well possessed an access well through which two production laterals were drilled to intersect their corresponding production well. In each well, one production lateral was drilled in a northeasterly orientation and the second production lateral was drilled to the northwest. The northeasterly lateral of the UF well was terminated prematurely, due to a

thinning coal seam. Both the UF and PIT wells at the south site could be effectively dewatered with pump jacks.

A final site was drilled at a central location with two wells in the UF that would later be converted to injection wells for the project, following a period of CBM production. Each well was drilled with a production well and access well, each of which had two horizontal laterals in the UF.

Production of the south and central wells was initiated in January 2005, while the north wells were not turned online until April 2006, due to dewatering complications. The central wells produced CBM until work began on converting them to injectors in July 2007.

Injection equipment was installed as a part of this conversion process and, following the receipt of a Class II underground injection permit from West Virginia Department of Environmental Protection Office of Oil & Gas, CO_2 injection was initiated in September 2009, and was terminated in September 2013, following the detection of CO_2 breakthrough indicated by elevated concentrations of CO_2 in the UF-produced CBM at the south well site.

A detailed monitoring program was undertaken by CONSOL, West Virginia University researchers, and NETL scientists to verify the absence of plume migration to the surface or beyond the AOR boundaries. Monitoring work included:

- Sampling production gas from area CBM wells and annulus gas from area SOG wells,
- Sampling observation wells for CO_2 plume migration,
- Sampling produced water from area CBM wells,
- Sampling stream, shallow hydrogeological and residential waters,
- Tracer gas studies,
- Surface deflection with tiltmeters, and
- Carbon isotope monitoring,

Accomplishments of the project include:

- The determination that slant-hole drilling should not be conducted in a down-dip orientation,
- The production of just over one billion cubic feet (BCF) of CBM over the duration of the project (as of December 31, 2015) with production continuing beyond date of publication,
- The injection of 4,968 tons of CO_2 with a maximum daily rate achieved of 22.09 tons per day,
- No evidence of vertical migration or horizontal migration outside the area of review (AOR) of the injected CO_2 was observed, although there was horizontal migration from the injection wells into a production well, and
- Comparisons of CBM production rates from periods before injection initiation to the injection period show a reversal in the decline in production in the UF wells in the north and south with an annual increase in daily production rates of 18.5% and 22.3%, respectively, which we conclude is CBM production "enhanced" by the injected CO_2.

As this project was designed to investigate the implementation of, at the time of its inception, what were novel technologies in an area with limited study, economic success was not expected. Actual project costs compared to the realized benefits resulted in a selling price of gas that amounted to a $3.29 per mcf loss.

Alternative conceptual scenarios were evaluated by adjusting natural gas sales prices, costs of CO_2, and injection costs with varying results, some of which were profitable. Potential future applications of ECBM production using carbon dioxide sequestration must be evaluated separately for its location in space and time. The number of production wells and the commodity prices of methane and carbon dioxide have a significant impact on the economics. Using commercially-purchased carbon dioxide for ECBM has very limited potential profitability. Low, even negative, prices of carbon dioxide are important, and the presence of an existing carbon dioxide pipeline infrastructure would be ideal.

Introduction

NETL Carbon Storage Program Objectives (U. S. DOE, 2014)

The U. S. Department of Energy (DOE) initiated the Carbon Storage Program (CSP) in 1997. Managed under the DOE's Office of Fossil Energy (FE) and overseen by the National Energy Technology Laboratory (NETL), the program focuses on developing technologies to store carbon dioxide (CO_2) to reduce emissions without detrimentally impacting energy supply or economic growth.

The CSP has four major goals:

- Support industry's ability to predict CO_2 storage capacity in geologic formations to within ±30 percent;
- Develop and validate technologies to ensure 99 percent storage permanence;
- Develop technologies to improve reservoir storage efficiency while ensuring containment effectiveness; and
- Develop Best Practice Manuals for monitoring, verification, accounting, and assessment; site screening, selection and initial characterization; public outreach; well management activities; and risk analysis and simulation.

Project Objectives

CONSOL Energy Inc., Research & Development (CONSOL), with the support of NETL, conducted a program to construct and operate a coal-bed CO_2 sequestration site composed of a series of horizontally drilled wells originating at the surface and extending through two overlying coal seams. All of the wells were used initially to drain coal bed methane (CBM) from both the Pittsburgh (PIT, upper/mineable) and Upper Freeport (UF, lower/unmineable) coal seams. After sufficient depletion of the reservoir, centrally located wells in the lower coal seam were converted from CBM drainage wells to CO_2 injection wells, through which CONSOL planned to inject a maximum of 20,000 short tons of CO_2 into the UF coal seam.

During injection, CONSOL monitored all injected CO_2 and produced CBM from the project wells. Monitoring wells were also used to further examine horizontal and vertical migration of CO_2.

The project was developed to address the CSP goals of:

- Supporting industry's ability to predict CO_2 storage capacity in geologic formations to within ±30 percent, and
- Developing technologies to improve reservoir storage efficiency while ensuring containment effectiveness.

The technical and economic feasibility of carbon sequestration in an unmineable coal seam were evaluated by this project. Indications of minimal enhanced coal bed methane (ECBM) production were noted through monitoring of the project CBM well production records. Effective sequestration in unmineable coal was demonstrated through various monitoring activities, which were widely distributed across the site and surrounding area (Figure 1) during the injection phase and for two years after the cessation of injection activities in November 2013.

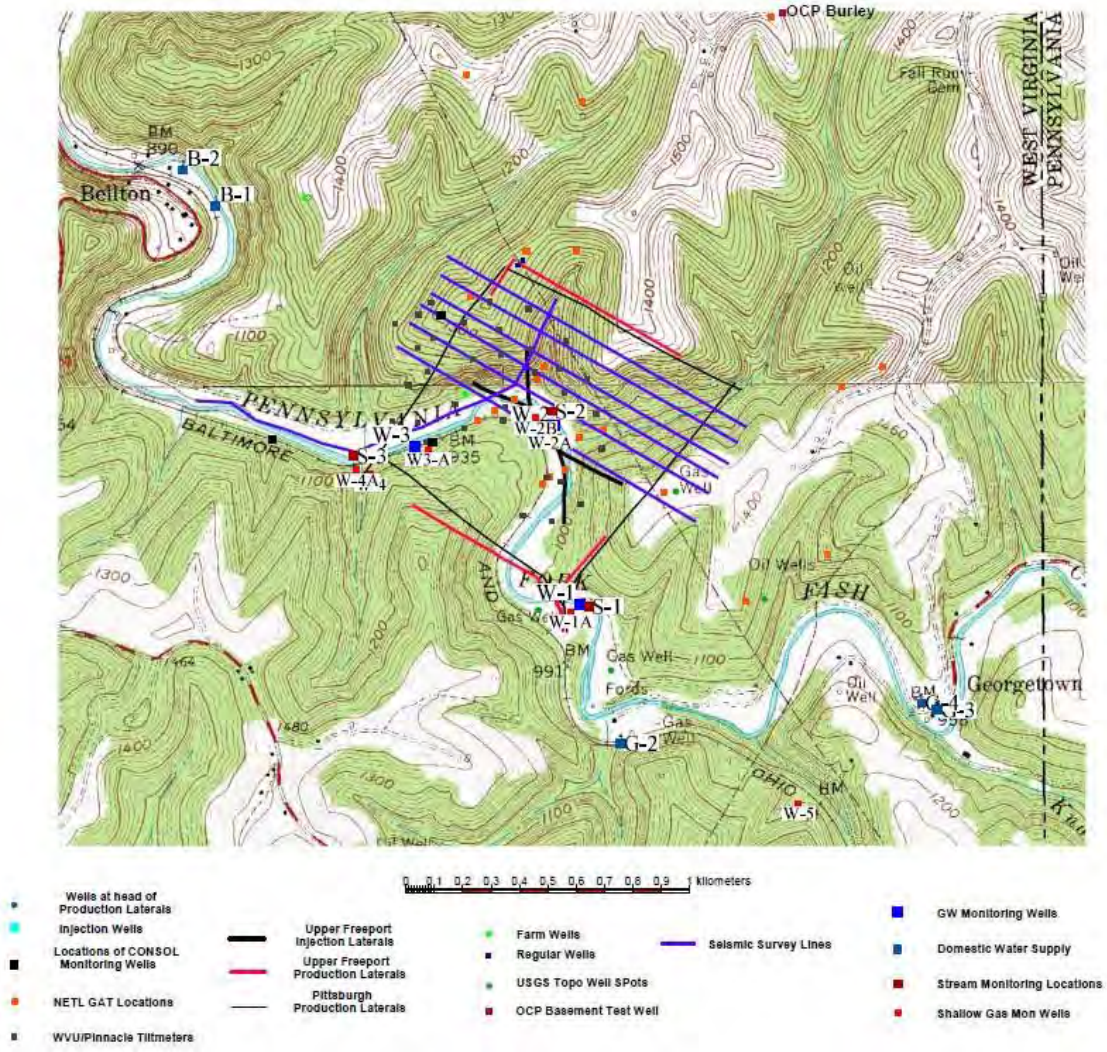

Figure 1. Site map shows location of the CO_2 pilot site between the towns of Bellton and Georgetown along Fish Creek in southern Marshall County, WV.

Project Details

Location

The CONSOL pilot site was located in the southeastern corner of the northern panhandle of West Virginia (Figure 2). Geologically, the site is composed of soil-covered, flat-lying sedimentary rock strata that are early Permian and late Pennsylvanian in age, in a valley formed by the Pennsylvania branch of Fish Creek. The stratigraphy consists of alternating layers of clastic sedimentary rocks (sandstone,

siltstone, shale, mudstone, and claystone), limestone, and coal beds. Carbon dioxide was sequestered in the Upper Freeport coal seam.

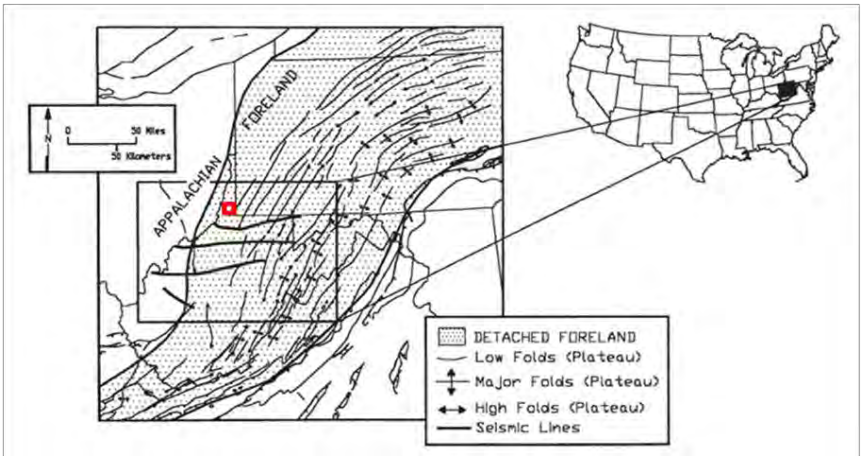

Figure 2. Red box shows the approximate location of the CONSOL Energy carbon sequestration pilot site. (Shumaker & Wilson, 1996)

Participants

CONSOL was responsible for the overall management of the project. West Virginia University (WVU) and NETL researchers worked collaboratively with CONSOL to expand monitoring and characterization activities at the site in this project. Specific roles are detailed in Table 1.

Table 1. Project responsibilities by participant.

Role/Task	Responsibility
CBM well development	CONSOL
CBM well production monitoring	CONSOL
Perfluorocarbon tracer study	NETL
Soil gas flux monitoring	NETL
Produced water monitoring	CONSOL
Surface/vadose/drinking water zone water monitoring	WVU
Surface tilt monitoring	WVU
Seismic monitoring	WVU

Timeline

The project was awarded in October 2001 and work on site selection, design, and development began immediately. Originally planned for seven years, unforeseen drilling complications, permitting delays, and injection difficulties extended the contract duration to a final end date of December 31, 2015.

Well drilling began at the North well site in 2003-Q1. Drilling was completed at the South and Center well sites in 2004-Q3. Production from the project wells was initiated, following dewatering, in October 2004, from the South and Center sites, and delayed until April 2006, at the North site, due to well tubing and dewatering problems.

As the wells were being produced, plans to convert the two wells at the Center site into CO_2 injection wells progressed with the preparation of an Underground Injection Control (UIC) permit application package. On the advice of the West Virginia Department of Environmental Protection (WVDEP), we prepared an application for a Class V UIC permit and submitted it in December 2006. After receipt of the Class V permit application, the WVDEP determined that a Class II permit would be more appropriate for our project. This determination required additional work on the application package and delayed the submittal to October 2007.

The Class II UIC permit was issued in April 2008. Work on converting the Center wells for CO_2 injection began almost immediately; however, delays due to a collapse in the vertical section on one of the injection well's access wells pushed the completion of this phase to February 2009, and, following the completion of mechanical integrity testing on both injection wells, the wells were approved for CO_2 injection. CO_2 began in September 2009.

Injection was episodic, mainly due to periodic mechanical failures of the CO_2 injection pumping system, from September 2009 to November 2013. A final monitoring period occurred for two years from the conclusion of injection to the end of the project period.

A full project timetable is available for review in Appendix A.

Budget

The initial project award budget was in the amount of $9,207,753 for the project period of October 1, 2001 to December 31, 2008, with a cost share of 75.8% DOE/24.2% CONSOL. A contract modification in May 2006 increased the budget amount to $13,216,903 with an increase in the CONSOL cost share to 32%. Modifications provided project extensions to December 31, 2015 to provide additional time to attempt completion of the CO_2 injection objective and to provide additional time to complete a two-year post-injection monitoring period that was a condition of the UIC permit. Table 2 summarizes the cost share budget amounts.

Table 2. Cost share approved budget amounts.

	Budgeted Cost	
	Original Budget	Modified Budget
DOE Share	$6,979,367	$8,983,942
CONSOL Share	$2,228,386	$4,232,961
TOTAL	$9,207,753	$13,216,903

Site Selection

Geologic Considerations

In 2001, CONSOL drilled seven exploratory core holes in northern Wetzel County and Marshall County, West Virginia. Logs obtained from those core holes were utilized to evaluate potential locations for the project. Geologic data from the Wetzel County cores indicated very thin or non-existent coal seams lower than the Pittsburgh Seam in that area; however, Marshall County was much more promising in terms of seam thickness and continuity. CONSOL identified a location near core MC-01-19, that was judged favorable for the project due to the combination of acceptable coal seam thickness, accessibility, topography, proximity to receiving natural gas pipelines, and land and mineral control by CONSOL.

CONSOL conducted desorption tests on the MC-01-19 core sample coals. The results of those analyses are shown below in Table 3.

Table 3. Analyses of CONSOL Core MC-01-19.

Coal Seam	Seam Thickness (ft)	Depth to top of Seam (ft)	CBM Content (ft^3/ton)
Sewickley	4.40	559.1	84
Pittsburgh	6.72	669.4	136
Mahoning	5.15	1210.5	205
Upper Freeport	4.25	1260.9	182
Lower Freeport	2.50	1306.15	194
Upper Kittanning	2.00	1356.5	186
Middle Kittanning	2.70	1405.0	198

The geologist log of core MC-01-19 indicates a thickness for the Mahoning coal seam of 5.15 ft.; however, other cores samples collected from the surrounding area indicated that the Mahoning seam was much thinner or absent and it was, therefore, deemed unsuitable for the project. Conversely, the Upper Freeport seam thickness remained more consistent throughout the area.

For the reasons discussed above, the area surrounding CONSOL core MC-01-19 in Marshall County was selected for the project with the Upper Freeport coal seam selected to be the “lower” or “unmineable” coal seam for the project and the Pittsburgh seam was selected as the “upper” or “mineable” coal seam for the project. A map showing the location of all area core samples referenced in this project, the complete geologist log for core MC-01-19, and stratigraphic maps compiled from the stratigraphy indicated in four other core logs collected in the area surrounding the chosen site, are included in this report as Appendix B.

Access

In addition to the coal seam and gas content rights in this area, CONSOL owns an abandoned railroad right-of–way which passes through the area surrounding core MC-01-19. The right-of-way, formerly owned by Baltimore and Ohio Railroad Company, is 100 ft. wide on average and could facilitate access into the area that is accessible via US Route 250, which can be reached from two major interstate highways.

Following the site identification, CONSOL found that approximately 85% of the land and coal rights necessary to proceed with the location had either already been secured or could be secured with minimal effort. CONSOL completed land use agreements with three separate landowners; however, the remaining property rights had been sub-divided into multiple owners through heirships. Access to these rights required a court ruling to award the outstanding coal rights to CONSOL. Once completed, all surface and subsurface property rights for the project location were secured and CONSOL was able to initiate surface construction activities for the project.

Permitting

Production Wells

Prior to commencing any drilling activity in West Virginia, including the construction of an access road to a well site, a well permit application must be prepared and approved by the WVDEP. In November 2002, well permits for the four wells planned for the north corner of the project site were approved by WVDEP. Similarly, well permits for the four wells that were planned for the south corner of the project site were approved in January 2003. The center well permits were received in June 2003.

After completing the wells at the north site and determining the original well design and drilling approach was unsatisfactory (discussed in Experimental), the planned wells at the south and center sites were redesigned, which required permit application revisions. The revised permit approvals were received in May 2004.

Injection Wells

Following a period of degassing of the UF seam, the project plans involved the conversion of the center wells from production to CO_2 injection wells. As the wells produced, plans to convert the two wells at the center site into CO_2 injection wells progressed with the preparation of a UIC permit application package. On the advice of the WVDEP, we prepared an application for a Class V UIC permit and submitted it in December 2006. After receipt of the Class V permit application, the WVDEP determined that a Class II permit, under jurisdiction of the WVDEP Office of Oil and Gas, would be more appropriate for our project. This determination required additional work on the application package and delayed the submittal to October 2007. The final Class II UIC permit was received in April 2008. Documentation is included in Appendix C.

Prior to submitting the Class II permit application, CONSOL learned the Class II permit would require the creation of observation wells, from which CO_2 concentrations would be monitored during injection and for a period of two years after injection termination. The monitoring wells would require separate permit approval that was requested in advance of the Class II permit application and granted in July 2007.

Experimental

Site Development

Geologic Considerations

As previously discussed, much work was completed to identify the area chosen for the project. Core samples provided some structural detail and allowed for the compilation of coal seam isopachs and down-dip direction determination. Figures 3 & 4 present imagery of the aforementioned structural detail, enhanced using data compiled by WVU, under direction of Dr. Thomas H. Wilson, who conducted 3D seismic surveys of the area to develop a cleat and fracture network model (Wilson, Zhu, Bajura, Winschel, & Locke, 2011).

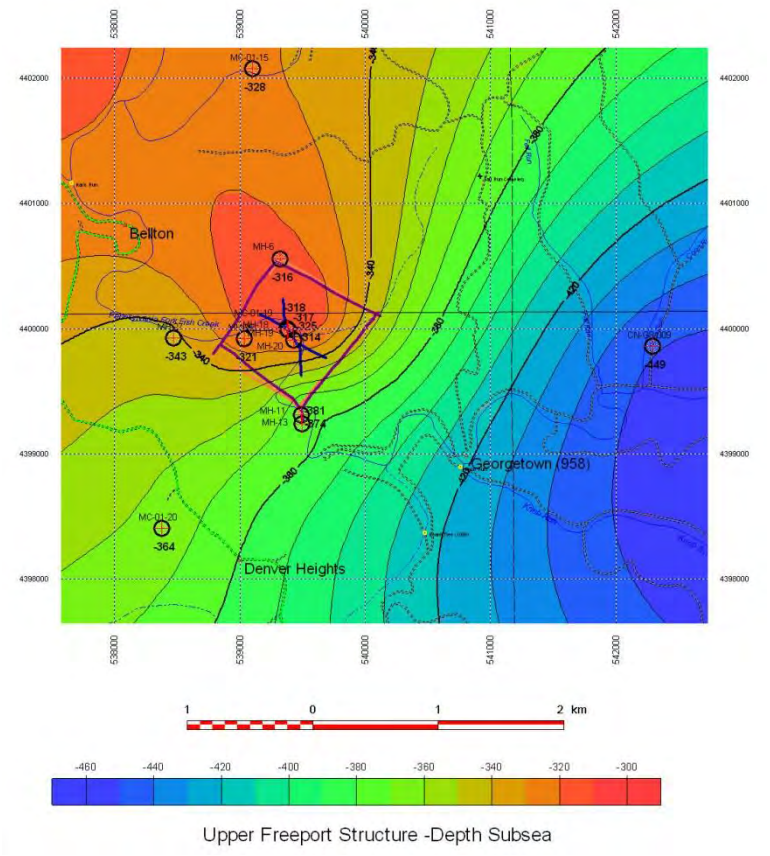

Figure 3. Depth (ft.), below mean sea level, to the surface of the Upper Freeport seam in the project area (Wilson, Zhu, Bajura, Winschel, & Locke, 2011).

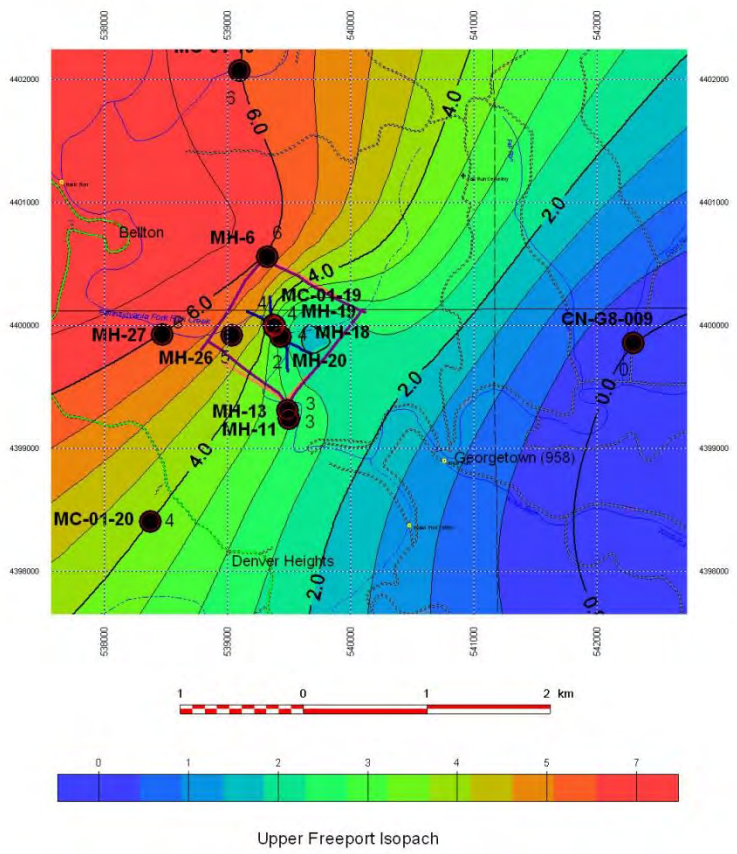

Figure 4. An isopach that details the thickness of the Upper Freeport coal seam in the project area; thickness units are feet (Wilson, Zhu, Bajura, Winschel, & Locke, 2011).

As indicated in Figures 3 and 4, the UF seam both deepens and decreases in thickness from the north-northwest to the southeast across the project area. Given this, much of the work, detailed in the following monitoring sections, was focused in the north and western sections of the project area as it was expected that the thicker coal held greater promise for the sequestration of CO_2.

Production Well Design

Proposed Design

The well design should allow for the drainage of CBM from the project site and allow for the central injection of CO_2 to store it and to enhance the generation of CBM. The initial plan involved drilling three vertical wells to intersect the mineable PIT seam and terminate in the unmineable UF seam; from these wells, horizontal laterals could be drilled in each coal seam, in wells "A" and "C," in the PIT and UF to form a boundary for the area of review in the shape of a square, each side being approximately 3,000 ft. in length, and in well "B," in the UF only, to later serve as the CO_2 injector.

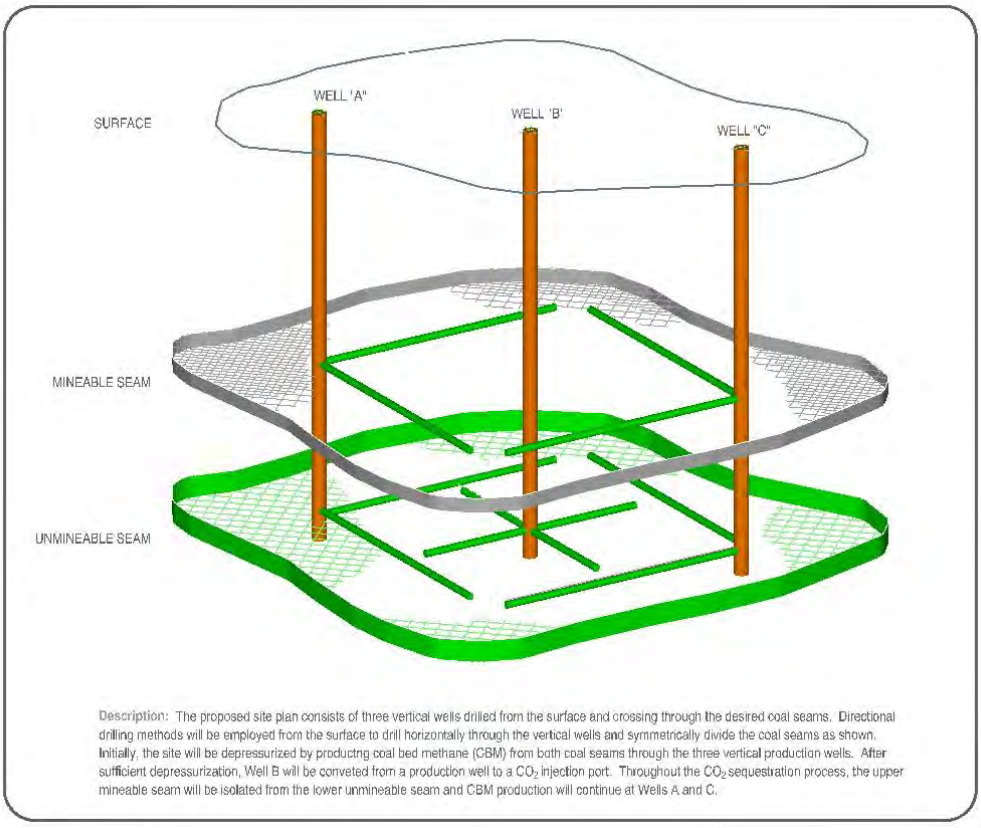

Figure 5. A schematic of the drilling plan, as originally proposed.

Drilling Plan – Revision 1

Shortly after being awarded the project, CONSOL's gas operations engineers identified an improved drilling technique that would enhance the removal of water from the well to increase CBM production. The planned site boundary was rotated 90 degrees with the three well pads located in the northern and southern points of the square and one remaining in the center. Figures 6 and 7 show the typical plan for these wells. Each of the well horizontal sections were planned to extend approximately 3,000 ft. in the selected coal seam, to form the boundary of the injection area. Revision 1 was utilized on wells at the first well pad, referred to as the "north" site.

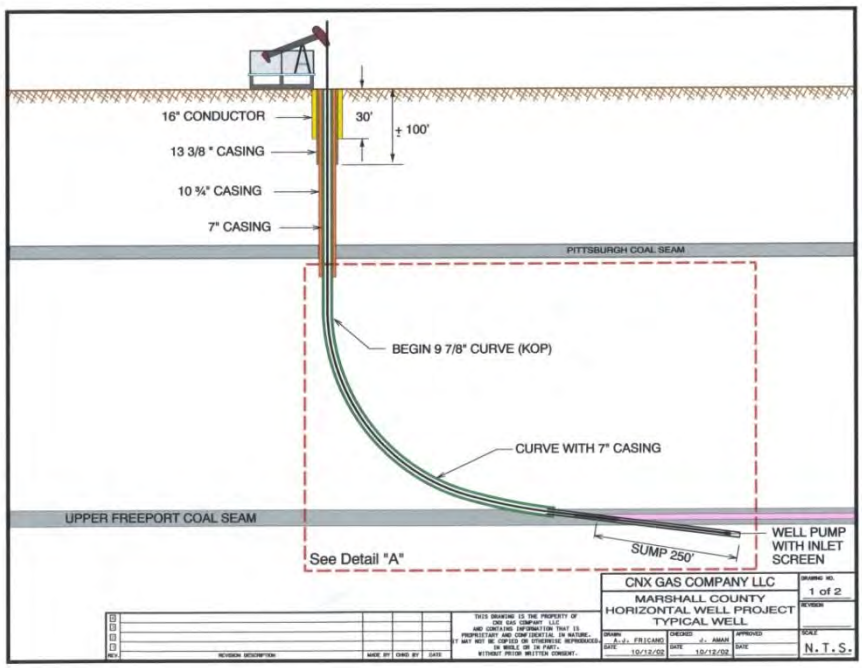

Figure 6. Typical well plan schematics planned for revision 1 and followed for the north site wells, MH-3, -4, -5, and -6.

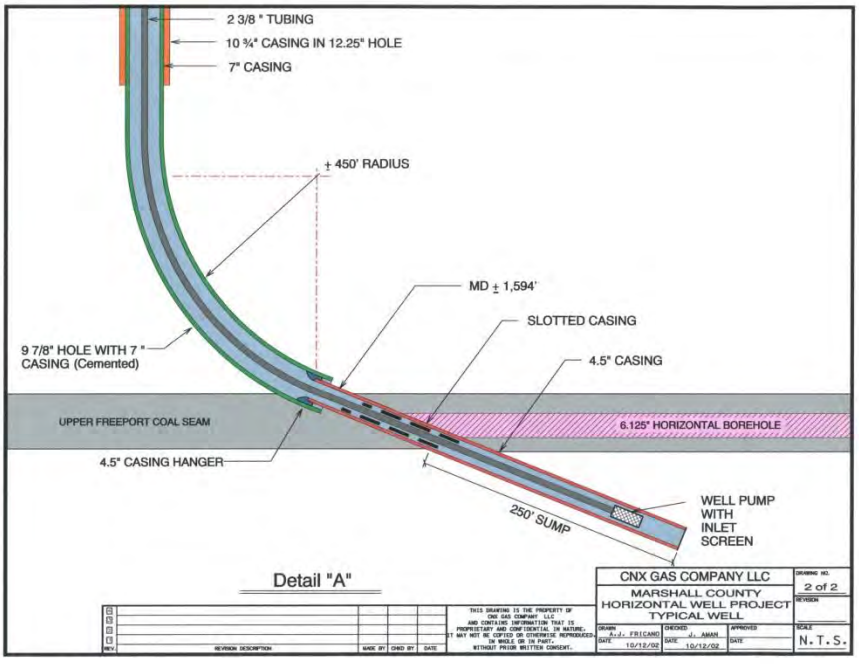

Figure 7. Well detail showing the revision 1 sump and horizontal section plans used at the north site wells.

Drilling Plan – Revision 2

Lessons learned during drilling of the north site wells provided direction for the remaining wells. Rather than a single well, through which a sump was drilled at an angle and the drill string was reversed to the kick-off point for the curve to the horizontal section, two wells would be drilled to create a single production well.

Figure 8 shows the typical cross-section arrangement of the wells at the "south" and "center" sites. In these wells, a vertical well ("production" well) is drilled to the target coal seam, which is fully penetrated, and the vertical well was extended approximately 250 ft. below the seam to create a vertical sump. A second well ("access" well) is started at approximately 300 ft. away from the production well to generate the curve and then intersect the production well when it has achieved a horizontal orientation. The access well is then continued, horizontally, beyond the production well to form the horizontal lateral. Using this procedure, multiple legs can be routed to a single production well.

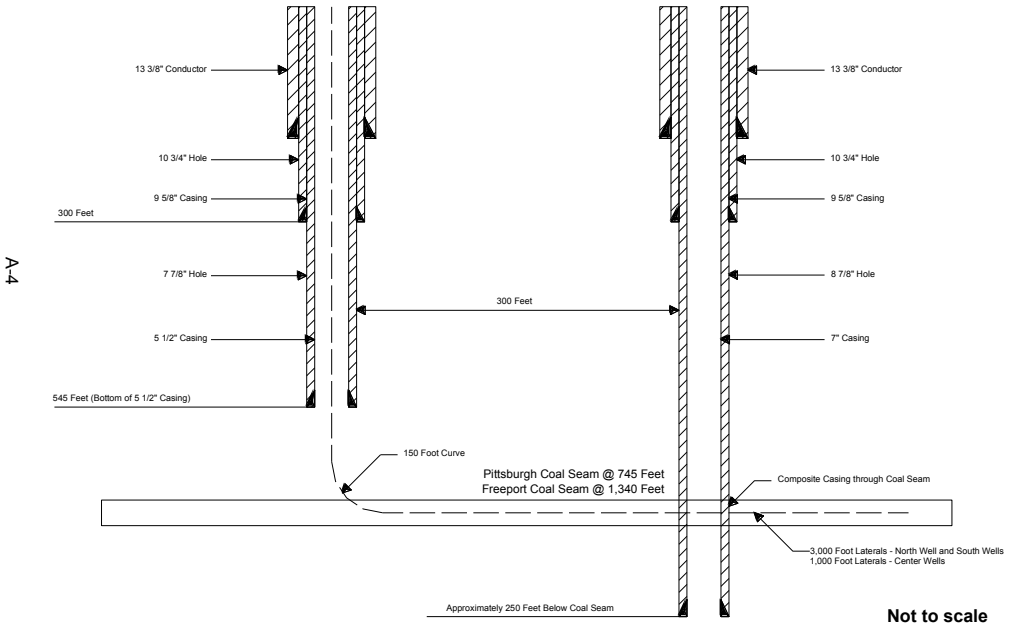

Figure 8. Final well concept, used at the south and center sites.

Drilling Results

Figure 9 shows the location of the wells described in the following subsections and Table 4 compares the actual well lateral lengths to the planned lengths.

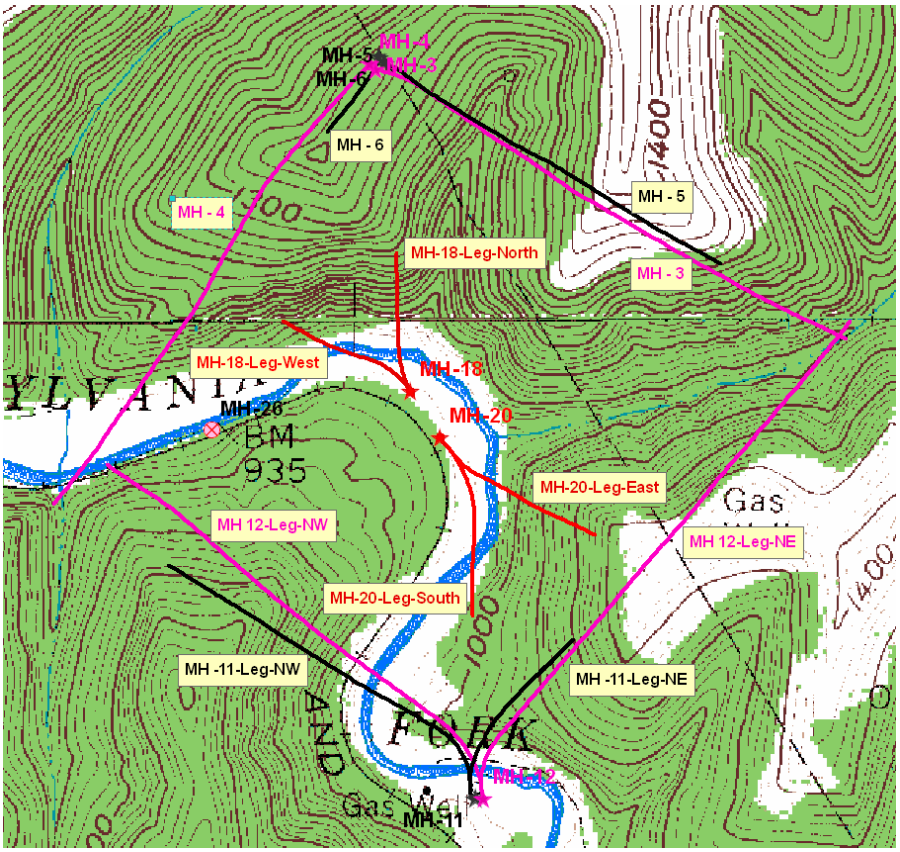

Figure 9. Final well and horizontal configuration.

Table 4. Well horizontal leg lengths.

Well ID	Leg ID	Coal seam	Planned Length, ft.	Actual Length, ft.
MH-3	NA	PIT	3,000	3,000
MH-4	NA	PIT	3,000	3,000
MH-5	NA	UF	3,000	2,200
MH-6	NA	UF	3,000	Abandoned
MH-11	NW	UF	3,000	2,500
	NE	UF	3,000	1,500
MH-12	NW	PIT	3,000	2,850
	NE	PIT	3,000	3,000
MH-18	North	UF	1,000	1,000
	West	UF	1,000	1,000
MH-20	East	UF	1,000	1,000
	South	UF	1,000	1,000

North Site Wells

Drilling of the north site wells in the PIT seam (MH-3 & MH-4) was successful, with each horizontal section measuring 3,000 ft.; however, while drilling the first UF well (MH-5), the drillers determined that, at 2,200 ft. of the horizontal section, the seam had thinned to less than 18 inches and decided to terminate drilling at that point.

In the second UF well (MH-6), the drillers encountered the UF seam much shallower than expected and had to employ countermeasures to readjust the drill curve. While cementing the well bore to aid in adjustment, the drill string became trapped in the well and was cured in place in the newly poured cement. Further attempts to complete this well were unsuccessful and well MH-6 was eventually abandoned.

In addition to the drilling difficulties, other technical and geological complications attributed to the well design impeded dewatering and limited CBM production. Design limitations included an ineffective sump orientation, the inability to effectively remove drill cuttings, and communication between the well annulus and water extraction tubing. Geologically, the down-dip direction of the coal seams (NNW to SE) allowed the south to southeasterly-oriented horizontals of these northern wells to fill with water, choking the flow of CBM. These problems delayed production from the north wells until April 2006.

Figure 10. The North Site wells, shortly after completion.

South Site Wells

Production wells MH-11 (UF) and MH-12 (PIT) were drilled at the south site using the revision 2 procedure. Each well was drilled with two horizontal legs (each leg was planned for an approximate length of 3,000 ft.) to create the remaining boundaries of the project site.

The legs of the MH-12 extended 2,850 ft. to the northwest and the complete 3,000 ft. to the northeast. In well MH-11, the drillers encountered thinning coal and stopped drilling the northwest leg at 2,500 ft. and the northeast leg at 1,500 ft. Production was initiated in January 2005.

Figure 11. The South Site wells, following completion.

Center Site Wells

The center wells, MH-18 and MH-19, were also drilled using the revision 2 procedure. Each well was completed with two-1,000 ft. horizontal legs, as planned, radiating outward, towards the north and south sites. The wells were placed into production service during January 2005.

Figure 12. The Center Site wells, during production.

UIC Permit Requirements

The final Class II UIC permit contained several stipulations that were implemented in our final approach. The permit limited our injection rate on each injection well to 0.56 tons per hour and limited the wellhead pressure on each injection well to 700 psig, both limits of which were instrumental in the establishment of our daily and project injection goals of 27 tons per day and 20,000 tons for the project. The pressure limit provided detail that was useful in the specification of our piping, valves, pump, and injection well packers; as well as our safety protocol development. Initially, the pressure was measured in the piping, near the vaporizer, immediately after the flow control valves leading to each well. As these locations were several hundred feet from the wellheads, recorded pressures occasionally exceeded 700 psi but, pressure at the wellheads was determined to be less than 700 psig when pressure drop over the pipe distance was considered. Later, these pressure transducers were relocated to the wellheads. Aside from the rate limitations, the Class II UIC permit provided several other requirements, which are detailed below.

Injection Well Modification

After 30 months of production, wells MH-18 and MH-20 were shut-in, to convert the wells into injectors. The conversion involved the installation of removable packers with two-inch stainless-steel injection tubing and two requirements of the UIC permit to plug the access wells for MH-18 and MH-20, MH-19 and MH-21, respectively, and perform a mechanical integrity test (MIT) of the injection wells to ensure the injection wells were leak-tight.

Access Well Plugging

Partial Plugging Plan

A partial plugging plan for the wells was developed and submitted to the WVDEP in September 2008, for approval. Referring to Figure 13, which depicts a cross-sectional view of an access and production well set up, it can be observed that the access wells were drilled vertically down for approximately 1,000 ft. The vertical section of the access well is cased, and the bottom casing is approximately 5.5 inches in diameter. The access well bore then curves and extends horizontally through and past the corresponding injection well. The curved/horizontal section of the access well is uncased. The depth at which the access wells become horizontal and intersect the injection well is approximately 1,260 ft. for MH-18 and 1,268 ft. for MH-20.

As per the partial plugging plan, it was intended to drill down the access well and install a packer in the Upper Freeport coal seam. The section where the packer would be installed is approximately indicated by the lines A and B in Figure 13. With the packer installed, the remaining uncased section of the access wells could be cemented, approximately 100 ft. into the 5.5 in. casing. The approximate boundary for this section is indicated by the lines B and C in Figure 13. The plan was approved by WVDEP and permits to re-drill access wells MH-19 and MH-21 were issued.

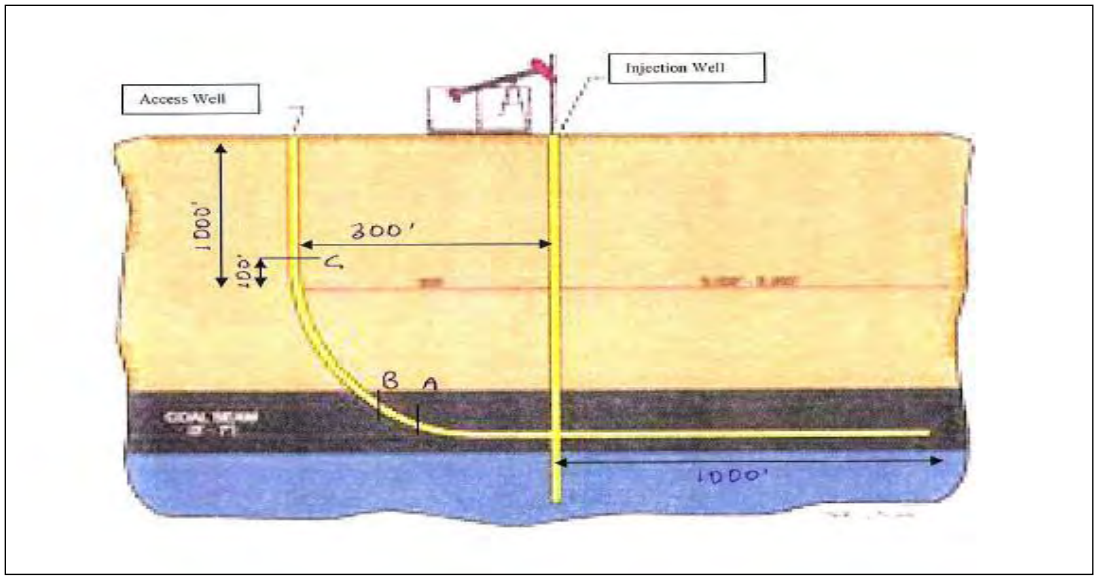

Figure 13. Partial plugging plan for access wells MH-19 and MH-21.

Access Well MH-21

Access well MH-21 was plugged in February 2009, per the approved partial plugging plan. A plugging affidavit was prepared and submitted to the WVDEP on February 24, 2009.

Access Well MH19

The initial two attempts to plug access well MH-19 failed because the access well had collapsed in places and because of the presence of a cavity in the original well bore, making it difficult to retrace the access well.

During the third attempt to plug the access well, the approach was slightly modified to intentionally deviate from the original well bore, while drilling, to avoid the cavity and the collapsed section of the well, and then attempt to reenter the original access well in the coal seam. A packer could then be placed and the well cemented to plug the access well to the satisfaction of WVDEP. However, during our attempt to plug, the drillers were successful in deviating away from the original well bore to avoid the cavity and they were also successful in intersecting the original well bore in the coal seam, but they failed to reenter the well.

An alternative plugging plan was formulated to plug the access well MH-19 at the interface of the coal and the roof shale. The proposal was submitted to the WVDEP on April 13, 2009, outlining the new approach to effectively plug MH-19. The new approach would involve drilling a new vertical well that intersects MH-19 at the exact point where it enters the UF coal seam and then setting a cement plug at this point of intersection.

The technique has been used by several companies to drill horizontal CBM wells where a vertical production well is drilled first and a hole-opening tool is then used to create a cavity in the coal seam. The access well and the horizontal laterals are drilled later, and the presence of the cavity greatly increases the likelihood that the access well will make a clean and complete intersect with the vertical well. The hole-opening tool can be used to drill cavities as wide as 72 in. In our case, a 72 in.-wide cavity would allow us to establish communication with the original access well (Figure 14). The cavity

would then be filled up with cement, plugging the original access well at the point where it enters the coal seam (Figure 15).

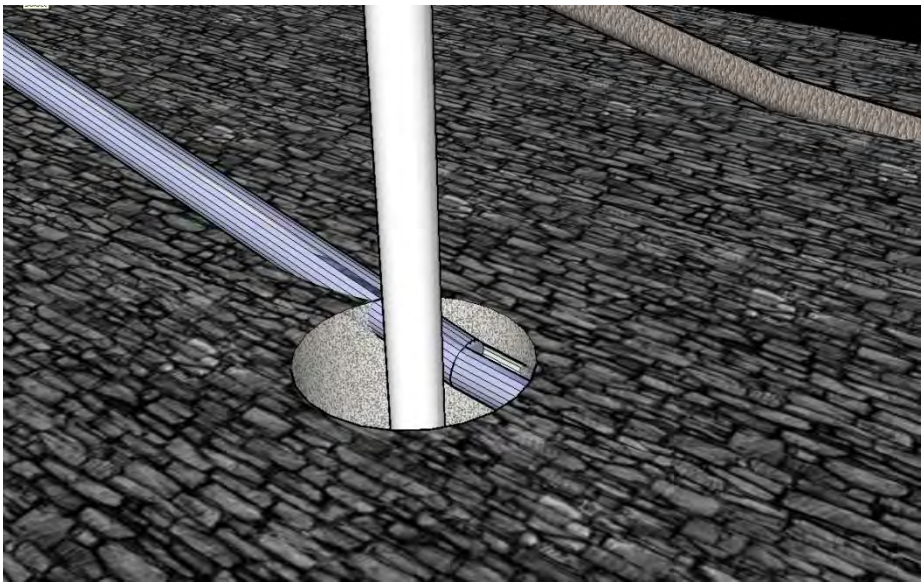

Figure 14. Cavity drilled in the coal seam to intersect the original access well.

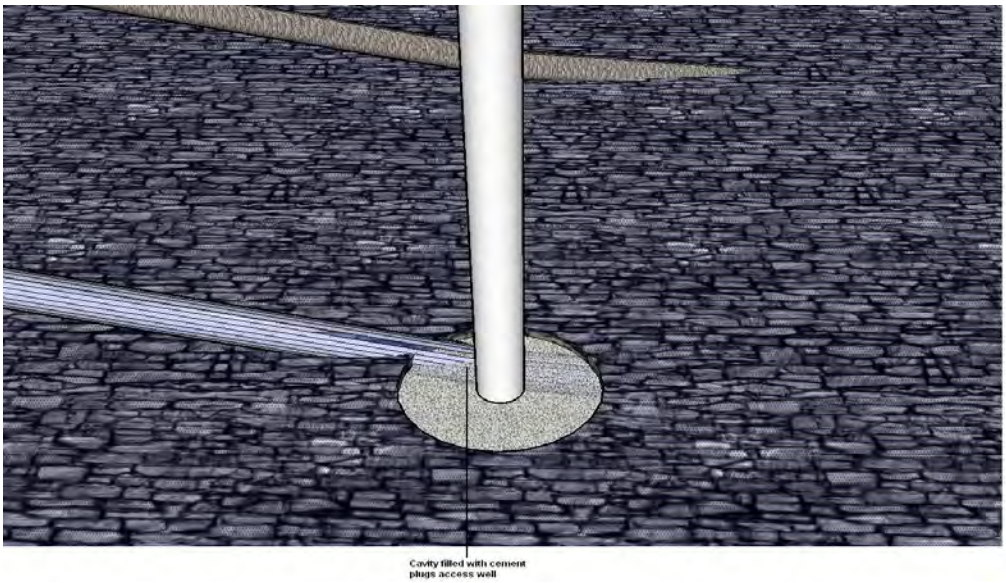

Figure 15. Cavity filled with cements plugs original access well at desired location.

The proposal to plug the access well in this manner was approved by the WVDEP in April 2009. Drilling operations began in June 2009, with drilling of the new well, MH-19-1A. All steps outlined in the proposal were successfully executed, and access well MH-19 and the newly drilled well MH-19-1A were plugged to the satisfaction of WVDEP.

Injection Tubing Installation

Once the access wells were successfully plugged, the injection tubing could be installed in wells MH-18 and MH-20.

MH-18

The injection string was installed, as follows: Carbon steel tubing (2-7/8 in.-O.D., 4.7 lb/ft) was installed to a depth of 1,230 ft; a 5.5 in.-O.D. inflatable single-set packer then extended from the depth of 1,230 ft. to 1,240 ft. and was followed by a 20 ft. joint of stainless steel tubing that extend to the depth of the injection zone in the UF at 1,260 ft.

A single-set inflatable packer, once set, is designed to provide an adequate seal and withstand back pressures of up to 3,500 psi. The maximum well-head injection pressure permitted by the UIC permit was initially established to be 700 psig, hence it was expected that the packer would provide a sufficient seal against the injected CO_2. All components used along with the packer were nickel coated to inhibit any corrosion and to prevent any consequent leakage of CO_2. All components were installed, successfully, in late June 2009.

MH-20

The MH-20 injection string consisted of 2-7/8 in.-O.D., 4.7 lb/ft carbon steel tubing extending to a depth of 1,210 ft.; a 6.40 in.-O.D. single-set, rotational-release packer then extended from the depth of 1,210 ft. to 1,220 ft.; and then a 30 ft. joint of stainless steel tubing extended close to the top of the UF injection zone at 1,265 ft.

A single-set rotational release packer, once set, is designed to provide an adequate seal and withstand back pressures of up to 5,000 psi and is expected to provide a sufficient seal against the CO_2 injected down this well. All components used along with the packer were nickel coated to inhibit any corrosion and to prevent any consequent leakage of CO_2.

During the installation of these components into MH-20, the packer could not pass beyond a depth of 1,030 ft. After several attempts to insert the packer a milling tool and a scraper, consistent with the diameter of the packer, was utilized to even and clean the inside walls of the casing and the packer and injection tubing were successfully set at the desired depth in early August 2009.

MIT

The UIC permit required demonstration of a MIT on the tubing annulus of the injection wells to establish that there are no leaks in the injection tubing and the CO_2 will not leak when it is injected under high pressure. A successful demonstration of MIT requires:

a. Filling the annular space between the injection tubing and the injection well casing with water,
b. Pressurizing the annular space up to 1050 psig to 1400 psig,
c. Monitoring and recording the annular pressure over 30 minutes,
d. Ensuring that the loss of annular pressure is less than 5% during the course of the test, and
e. Ensuring that the test is witnessed by a field inspector or permitting officer from WVDEP.

The MIT was conducted successfully conducted on both injection wells on August 6, 2009; no loss of pressure was observed during the course of the tests (Figure 16). The tests were witnessed by field inspectors and a permitting specialist from the Office of Oil and Gas at WVDEP. All necessary forms were completed and submitted to the Office of Oil and Gas on August 12, 2009; and returned to us, with approval, on August 18, 2009. The complete MIT results and permit package is included in Appendix D.

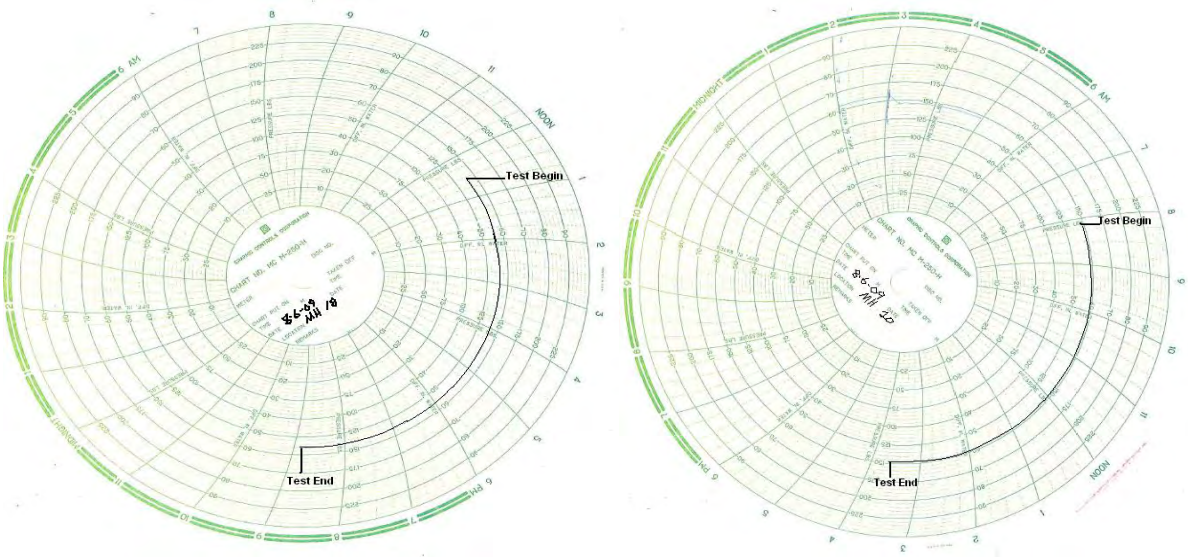

Figure 16. MIT Chart Recordings for MH-18 and MH-20.

Monitoring

To verify the absence of vertical or horizontal migration of the sequestered CO_2, the UIC permit provided several monitoring terms and conditions and established an area of review (AOR) that extended one-quarter mile beyond the boundary established by the perimeter laterals of the wells at the north and south production sites. Within the AOR, we were required to conduct pre-injection monitoring, periodic monitoring during the injection period, and then quarterly for two years following the cessation of injection activities. During injection, the UIC permit required for the suspension of injection should the monitoring results have indicated an increase in the level of CO_2 that was greater than ten percentage points above the pre-injection monitoring level. Additional detail on the monitoring requirements, along with results, is provided in the monitoring section. Figure 17 shows a map of the project site with the AOR indicated by the pink, dashed outline.

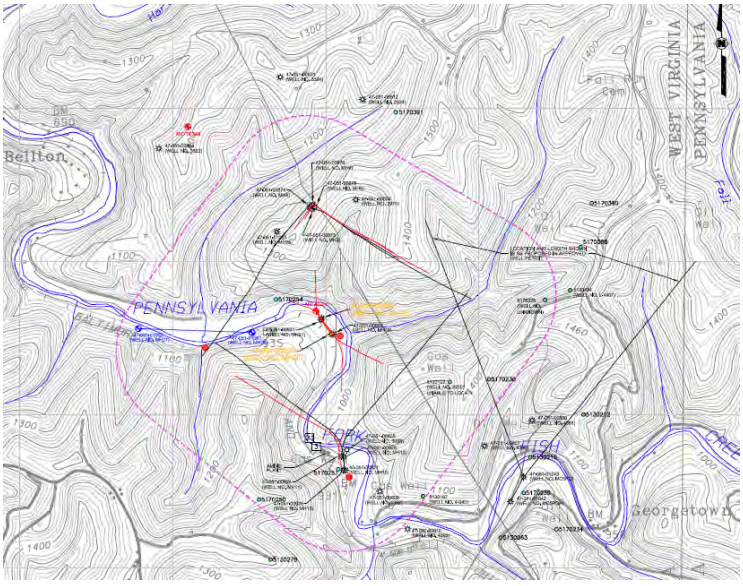

Figure 17. The project site map indicating the 1/4 mile AOR.

Injection

CO_2

Source

A vital component in the success of the project was identifying and securing an affordable, readily-available, and dependable source of CO_2. Two source options were explored; each is detailed below.

Processing Plant CO_2

Raw natural gas can be treated chemically, using various alkylamine compounds, or physically, with membrane separation, to remove or decrease concentrations of various components of the gas. In the initial phase of the project, the composition of the CBM produced from the project wells contained an average CO_2 concentration of 1.8% (vol.). The pipeline specification we were required to meet to transfer the CBM to the supply company was set 1.25% (vol.). An amine processing system was installed by CONSOL to reduce the CO_2 concentration. We evaluated the feasibility of compressing the resulting CO_2 gas stream from this facility for use in the project; however, as our initial CBM production rate averaged less than 400 mcfd, the volume of CO_2 generated was not sufficient for our injection needs.

Consideration was given to supplementing this CO_2 volume with CO_2 from another CONSOL processing plant that utilizes membrane separation. The CO_2 could be compressed and piped to the project site, using a pipeline that would have to be built, or liquefied and trucked to the site. While these options may prove effective in full-scale operations where CO_2 is acquired from a large industrial source, such as could occur where the project site is adjacent to or on the grounds of a power generation facility, neither option was considered economical for this project, as this CONSOL processing plant also produces a small volume of CO_2 and is located 12 miles via direct line or 33 miles via road, from the project site.

Purchased CO_2

CO_2 can be purchased, in bulk, from a variety of sources where it is a recovered by-product from their primary operation. Discussions with industrial bulk gas suppliers led us to dependable sources of CO_2 that could be supplied from ethanol production facilities where food-grade CO_2 is recovered and sold in liquefied form.

Proposals from three potential suppliers were reviewed and an initial bid of $130 per ton, delivered, was selected. Over the duration of our injection activities, the price increased to $148 per ton and then $168 at the end of the injection period.

Delivery and Storage

The vendor arranged truck shipments of the liquid CO_2 in 20-ton deliveries, which were coordinated with our injection needs. The liquid CO_2 was transferred to a 50-ton bulk storage tank (Figure 18), for on-site storage.

Figure 18. The 50-ton CO_2 storage tank, following installation.

Original Injection System Components

The injection system was designed to convert liquid CO_2 to a vapor and to compress it for injection into one or both of the two injection wells at the maximum permitted pressure. A 2-cylinder reciprocating pump (Figure 19) transferred the liquid CO_2 through a tube-in-shell heat exchanger (Figure 20) that was heated by a recirculating stream of hot water from a 490,000 Btu/hr, gas-fired hot-water boiler (Figure 21) to vaporize it. From the heat exchanger, the vapor-phase CO_2 was routed through a short section of pipe that split the flow of vapor-phase CO_2 to each injection well. At this point, the CO_2 was routed through a flow meter, flow control valve, and pressure transducer, before continuing to the wellhead (Figure 22).

Figure 19. Cryomec, 2-cylinder CO_2 pump.

Figure 20. CO_2 vaporizer skid with the shell-in-tube heat exchanger in the foreground.

Figure 21. CO_2 vaporizer skid with the hot water boiler in the foreground.

Figure 22. MH-20 CO2 vapor injection line (flow right-to-left) detailing the control valve and flow meter locations.

Pumping improvements

CO_2 injection began on September 8, 2009. Initially, CO_2 injection was intermittent as the injection system, while designed to operate continually, was not completely programmed for remote operation or automatic emergency shutdown, at that time. The system was operated for 14 total days, eight hours per day, as we conducted programming modifications, until January 20, 2010, when it was made fully operational, following the final modifications, which allowed the system to run while unattended.

During this preliminary period of operation, debris from the tank and liquid CO_2 lines ahead of the pump passed through the pump, damaging internal seals. To eliminate future recurrences of this, a filter system was installed upstream of the pump.

Seal and other internal failures of the pump were recurring problems, which forced shutdown delays and limited injection. Eventually the original pump was replaced with a triplex pump (Figure 23). Triplex pumps are well suited for this application and are capable of operating at higher pressures than our original pump, and they can also handle some debris in the liquid stream. The original pump was removed from service on November 3, 2010, and work began on the installation of the triplex pump and associated components, including a booster pump, which was installed upstream of the triplex pump (Figure 23) to maintain proper pressure on the supply stream and keep the CO_2 in the liquid phase.

Figure 23. The replacement triplex pump (blue in foreground) with booster pump (gold in background), shortly after installation.

Injection pressure increases

The original UIC permit specified a maximum CO_2 injection rate of 0.56 tons per hour per well and a maximum injection pressure limit of 700 psig. Within a few weeks of initiating the automated injection, we were forced to limit the injection rate to approximately 5 total tons per day to avoid exceeding the pressure limit.

To improve the injection rate beyond 10 ton/day and achieve a rate closer to our rate limit, we requested and received permission from the WVDEP to increase the maximum injection pressure to 933 psig. This new pressure limit was equal to two-thirds the pressure at which the injection well MITs had been conducted; this it allowed a higher injection pressure while still providing a substantial safety factor. On August 8, 2010, the system was shut down and piping and safety modifications to allow the pressure increase were initiated.

Even at this higher pressure, an injection rate of 20 ton/day was not sustainable; injection rates fell from 15.7 tons per day to 7 tons per day within a few months, prompting a request to WVDEP to increase the pressure limit still further, this time to 1,400 psig. To gain permission from WVDEP for this increase in allowable injection pressure, additional steps were necessary. It was necessary to conduct a step-rate test to demonstrate that the increased pressure would not part (i.e., fracture) the formation. It was also necessary to replace our original injection pump with the triplex model, because our original injection pump was not capable of injecting at 1,400 psig.

Further detail on each injection pressure increase is provided in the results section.

Monitoring

The UIC permit required a monitoring plan to outline our approach to ensure the absence of migration of CO_2 beyond the ¼- mile AOR limits. To accomplish this, a variety of monitoring techniques were employed.

Production Well Monitoring

Fifteen production wells within a quarter-mile of the AOR were sampled to determine pre-injection characteristics of the CBM and water (if available) produced. The wells included the project CBM wells;

a nearby CBM production well; and area shallow oil and gas (SOG) wells, some of which had been plugged. CBM samples were analyzed for oxygen, nitrogen, methane, ethane, higher hydrocarbons, and CO_2. Only three of the CBM wells occasionally produced enough water for analysis for pH, dissolved oxygen, oxidation-reduction potential (ORP) and conductivity, dissolved solids, and numerous anions and cations. Water temperature was also measured.

Observation Well Monitoring

Two observation wells, MH-26 and MH-27, were drilled into the UF to observe for horizontal migration of the CO_2 plume. The wells were drilled to the west of the injection site, in a region containing the greatest seam thickness. MH-26 was drilled inside the AOR to detect indications of plume migration toward the MH-5 production lateral. MH-27 was drilled outside the MH-5 production lateral "boundary" to detect migration toward the AOR boundary. Gas from the wells was sampled at the same times as the production wells, and samples were analyzed for oxygen, nitrogen, methane, ethane, higher hydrocarbons, and CO_2. The isopach in Figure 4 shows the location of the observation wells, in the western quadrant of the site, and an indication of the UF seam thickness in those locations.

Shallow hydrogeological monitoring

Additional environmental monitoring was conducted by WVU researchers on stream water, shallow ground water, and shallow vadose zone gas. Figure 1 provides the locations of these monitoring sites and Table 5 provides the tests performed at each site. These sites were located within bedrock of the Washington Formation of the middle Dunkard Group, monitoring water wells W-1, W-2, and W-3, sampled domestic wells B-1, B-2, G-1, G-3, and G-4, and domestic spring G-2); or within soil or alluvium (Fish Creek and vadose soil zone wells W-1A, W-2A, W-2B, W-3A, W-4A(4), and W-5).

The three shallow ground-water monitoring wells were 105 ft (32 m) deep. Wells W-1 and W-2 had casing that penetrated to below the water table and hence were not directly connected with the vadose zone, while well W-3 had casing that terminated above the water table.

As wells W-1 and W-2 are inadequate for sampling vadose zone gas, and well W-3 vadose gas was found to be contaminated with methane; six shallow soil vadose zone wells, W-1A, W-2A, W-2B, W-3A, W-4A(4), and W-5, were constructed in May and June of 2011. During well construction the screen annulus zone was filled with coarse sand and the casing pipe annulus zone was filled with bentonite clay to land surface. Well W-4A replaced well W-4 due to soil plugging of the latter's well screen and shutting off its connectivity with soil vadose zone gas. Figure 24 depicts WVU graduate researchers B. D. Hega and K. E. Berry sampling at the W-1 site.

Figure 24. Shallow groundwater monitoring at W-1.

Table 5. Shallow hydrogeologic sampling matrix.

Location	Analytical Parameter	
	Field	Laboratory
Stream Points: S-1, S-2, and S-3	Conductivity Temperature pH Total dissolved sulfide	Conductivity pH Cations (Ca^{+2}, Mg^{+2}, Na^{+1}, K^{+1}, Fe^{+2}, Al^{+3}, and Mn^{+2}) Anions (HCO_3^{-1}, Cl^{-1}, SO_4^{-2})
Monitoring Wells: W-1, W-2, and W-3	Conductivity Temperature pH Total dissolved sulfide CO_2 Gas CH_4	Conductivity pH Cations (Ca^{+2}, Mg^{+2}, Na^{+1}, K^{+1}, Fe^{+2}, Al^{+3}, and Mn^{+2}) Anions (HCO_3^{-1}, Cl^{-1}, SO_4^{-2})

Residential water monitoring

Seven area residential water sources, six wells and one spring, were sampled during this project, six by WVU scientists and one by CONSOL. Table 6 provides a summary of these locations and Table 7 a list of the analytes.

Table 6. Residential water supply sampling locations.

Sampling point	Sampled by	Location (WV)	Supply	Type	Depth (ft)	Use	Pump
GW	CONSOL	Georgetown	Well	Drilled	Unknown	Various outdoor	Manual
G-1	WVU	Georgetown	Well	Drilled	55	All	Electric
G-2	WVU	Georgetown	Spring	Free-flow	NA	All	None
G-3	WVU	Georgetown	Well	Hand-dug	20	Drinking	Manual
G-4	WVU	Georgetown	Well	Drilled	40	All	Electric
B-1	WVU	Bellton	Well	Drilled	34	All	Electric
B-2	WVU	Bellton	Well	Drilled	60	All	Electric

Table 7. Residential water supply sampling matrix.

Location	Analytical Parameter	
	Field	Laboratory
GW, G-1, G-2, G-3, G-4, B-1, & B-2	Conductivity, Temperature, pH, and Total dissolved sulfide (WVU locations only)	Conductivity, pH; Cations (Ca^{+2}, Mg^{+2}, Na^{+1}, K^{+1}, Fe^{+2}, Al^{+3}, and Mn^{+2}); and Anions (HCO_3^{-1}, Cl^{-1}, SO_4^{-2})

Perfluorocarbon Tracer Gas Monitoring

Injection

NETL researchers injected two vaporized liquid perfluorocarbon (PFC) tracer gases over seven days, beginning April 15, 2011, simultaneously with the CO_2 vapor through a valve on the top of the injection wellheads. Approximately 500 milliliters (mL) of liquid perfluoromethylcyclohexane (PMCH) was injected into injection well MH-18 and approximately 500 mL of liquid perfluoro-1,3,5-trimethylcyclohexane (PTCH) was injected into injection well MH-20, each at an approximate rate of 12.5 ml/ton CO_2. The tracer compounds are liquid at room temperature but, because they both have high vapor pressure, they exist in the vapor phase at injection conditions.

Monitoring

PFC monitoring occurred at several locations within the AOR, and included samples of:

- Ambient air,

- Soil gas,
- Water well headspace air, and
- Production well CBM.

The samples were collected from areas that are adjacent to all existing well bores; in areas that possess signs of possible surface fault expressions, as determined from lineament analysis; and areas showing light hydrocarbon anomalies, identified by soil-gas depth profiling (increasing methane signal with depth) or atmospheric monitoring (methane signal without corresponding heavier hydrocarbon signals). Figure 25 provides an overview of the 37 sampling locations.

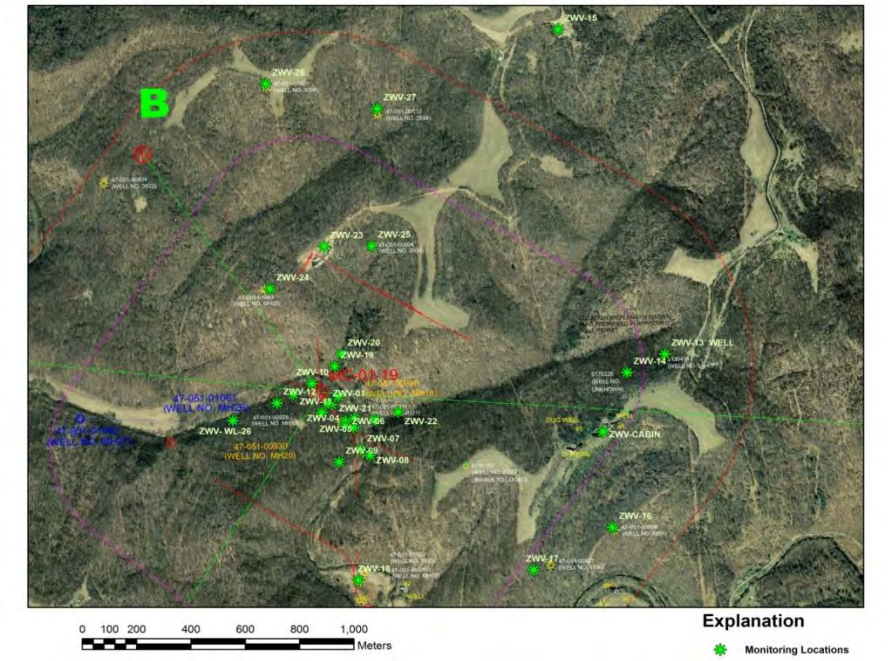

Figure 25. Satellite image of the AOR indicating the tracer gas monitoring locations.

During the tracer injection period, atmospheric PFC monitors were located at the sampling locations. Following tracer injection, the atmospheric monitors were collected and replaced, and soil-gas monitors were added. From this point, the sample exchange schedule was as follows:

- After 1 week: exchange all monitoring locations,
- After 2 weeks: exchange all monitoring locations,
- After 1 month: exchange all monitoring locations, and then
- Exchanges every other month (weather permitting).

Additionally, samples were collected weekly from the headspace of existing water monitoring wells and production gas wells. These samples were collected by drawing a 3-liter sample volume of gas through a sample tube.

Others

Carbon isotope monitoring

The difference in the ratio of the carbon-13 isotope to the carbon-12 isotope relative to a standard ($\delta^{13}C$) varies between certain plant types and certain geological materials, providing a signature the can be utilized to determine the source of the CO_2. The signature can be used to differentiate between the CBM, the injected CO_2, and vadose zone CO_2 from plant and microbial respiration and; therefore, can be used to monitor for isotopic shifts in the $\delta^{13}C$, which could indicate leakage from the targeted storage formation (Meier, 2014). The groundwater can be evaluated for $\delta^{13}C$ through the dissolved inorganic carbon ($\delta^{13}C_{DIC}$) present through the dissolution of CO_2 in the water. Bethany Meier, who at the time was a WVU graduate student working on a Master of Science in Geology, collected samples over a 12-month period, from August 2013 to August 2014, from the five CBM production wells, three WVU groundwater monitoring wells, and seven soil vadose gas sampling locations. The sampling locations are displayed in Figure 26.

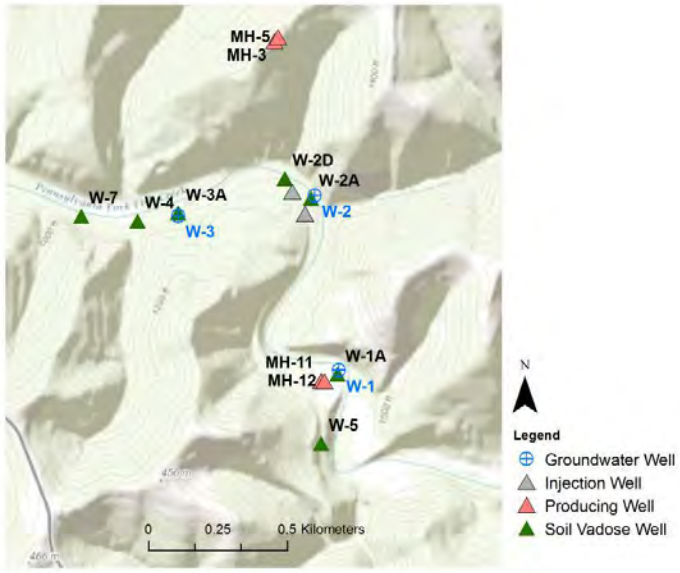

Figure 26. An overview of the isotopic sampling locations.

Samples were collected at the site during and after CO_2 injection, monthly, when possible, for the groundwater and vadose gases; CBM from the PIT wells was collected quarterly; and injected CO_2 was analyzed three times during injection to confirm isotopic consistency. Meier also collected vegetation samples for $\delta^{13}C$ analysis, in May 2014.

During each sampling trip, all samples were collected on the same day, before noon. One set of samples was collected during an extended period of injection in August 2013. The remaining sample sets were collected during times when the system was down or during the post injection-monitoring phase of the project (Meier, 2014).

Surface deflection

Thirty-six high-precision tiltmeters were installed along with two global positioning system GPS stations to measure surface deformations as a result of CO_2 injection and CBM production. The tiltmeters placed at the field site have the precision needed measure surface deformations in the sub-millimeter range.

Figure 27 shows the monitoring array of 36 tiltmeters (red dots) and 2 GPS stations (purple squares) installed at the site. Figure 28 shows a typical tiltmeter installation. The tiltmeters and two GPS receivers were calibrated during installation, prior to the injection of carbon dioxide. Tiltmeter data were collected on a daily basis by using a computer-based data collection system.

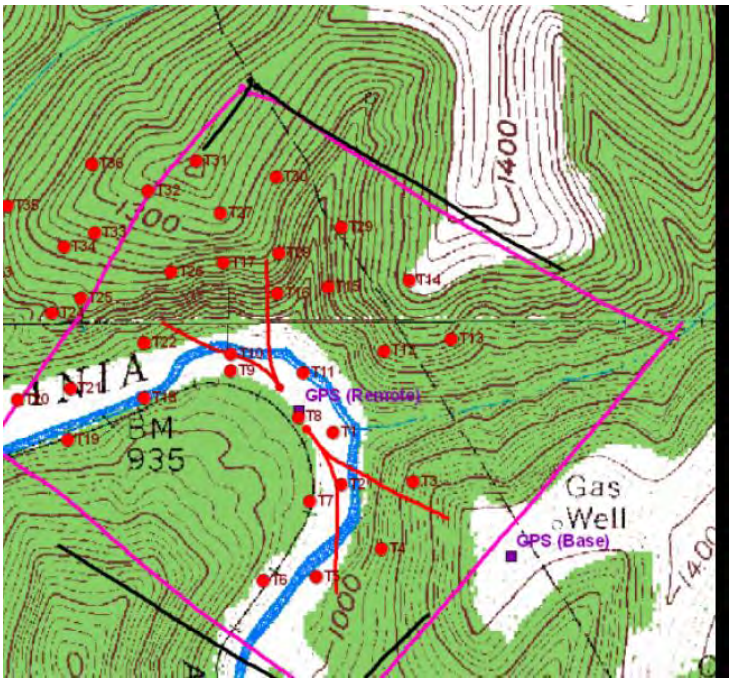

Figure 27. Locations of tiltmeters.

Figure 28. A tiltmeter monitoring location at the project site (photo courtesy of H. J. Siriwardane & R. K. Gondle, WVU).

Results

Injection

The injection period was initially planned for two years, which provided sufficient duration to meet our injection goal of 20,000 short tons while remaining below the UIC permit daily injection limit of 27 TPD. Carbon dioxide injection was initiated on September 8, 2009, and ceased on November 2, 2013, a 1,516 day period. Initially, the injection was intermittent for a total of 14, eight-hour days, from September 8, 2009, until programming for continuous remote operation and automatic emergency shutdown was completed on January 20, 2010, following these modifications, the system was allowed to operate while unattended.

Injection was interrupted by several events, including mechanical failures, weather delays, and work on area pipelines. Figure 29 provides a plot of the injection rates and pressures in each of the two injection wells for the entire duration of the injection period. The following sections offer detail on these delays.

Over the injection period, the system was in operation for a total of 12,736 hours over a total of 685 days of operation with an average operating time of 18.5 hours per operating day. Over this time, we injected a total of 4,968 tons of CO_2 with 2,690 tons injected into MH-18 and 2,278 into MH-20.

The maximum daily rate achieved was 22.09 TPD on August 9, 2013, which was within the 73-day period of injection between June 24, 2013 and September 4, 2013, that had the highest average daily injection rate of 16.42 TPD. The longest stretch of active injection was 123 days, between February 14, 2011, and June 16, 2011, during which the average daily injection rate was only 5.92 TPD. A compilation of daily injection data is contained in Appendix E.

Figure 29 shows the trending for the daily injection rates and maximum observed daily pressures for the complete project. Greater detail is provided later, in Figures 30 – 32.

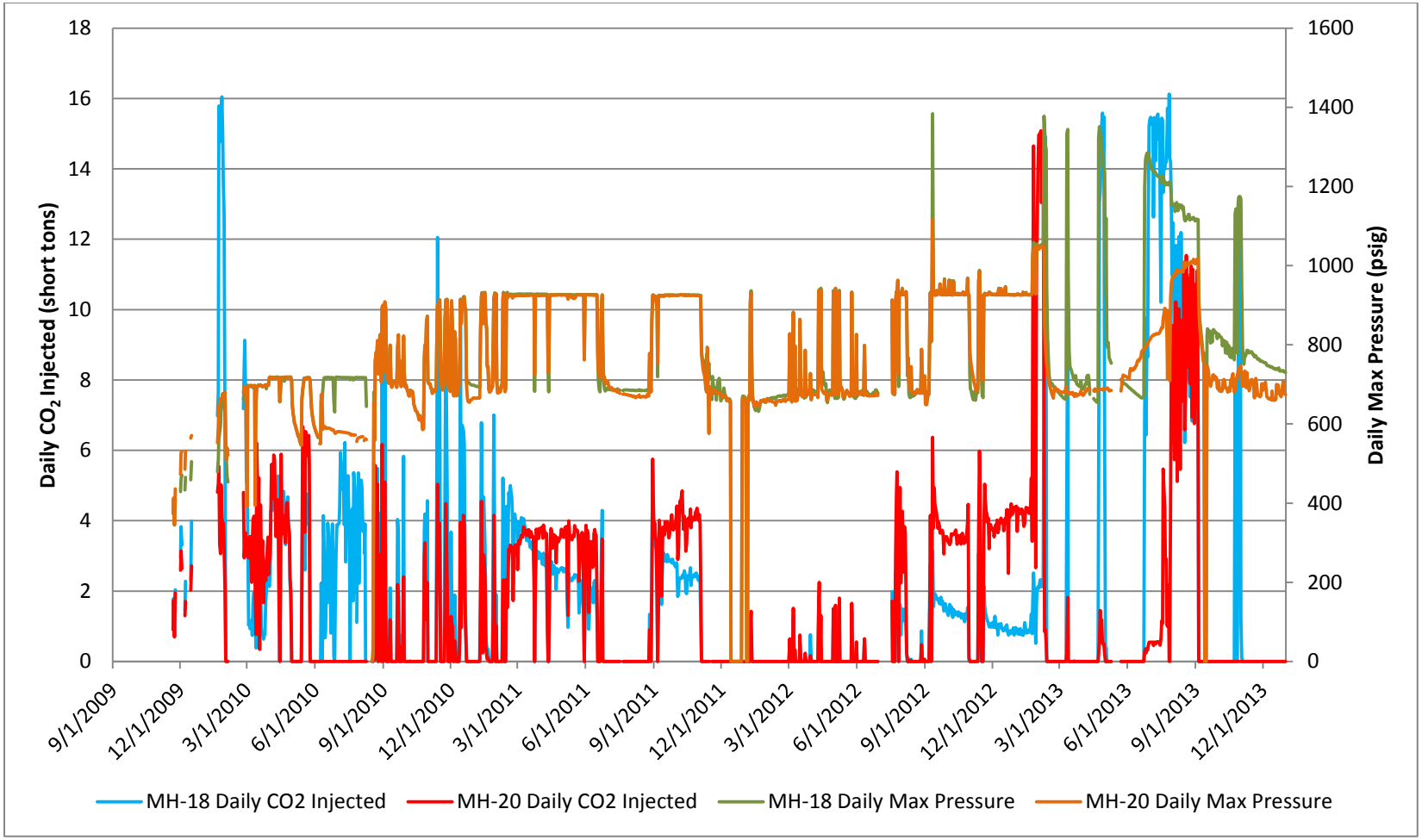

Figure 29. Daily maximum wellhead pressure and daily short tons of CO_2 injected.

Pressure increase requirements

As previously detailed, the original UIC permit injection wellhead pressure limit was 700 psig. After initiation of full-time, remote injection on January 20, 2010, at a maximum daily injection pressure of 552 psig (MH-20), the injection pressure reached the maximum limit of 700 psig by March 31, 2010. At this same time, the injection rate fell from a high of 21.3 TPD on January 23, 2010 to a daily average of 5 TPD, as we decreased the injection pump speed to stay below the pressure limit. Figure 30 shows the injection trend for the 700 psig injection period.

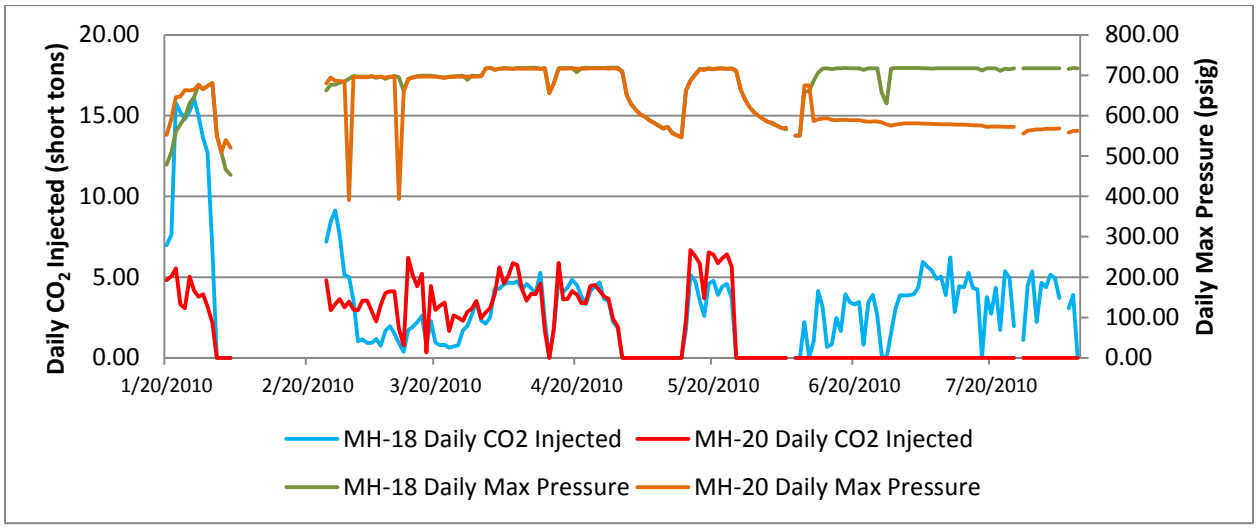

Figure 30. CO_2 Injection period 1/20/10 – 8/8/10 (700 psig limit).

700 to 933 psig

As this injection rate would not allow us to achieve our injection goal in the planned project duration, over the next several months we planned for and then submitted a request to the WVDEP an increase on the maximum injection pressure to 933 psig, at the wellhead. This new pressure limit was equal to two-thirds the pressure at which the injection well MITs had been were conducted; this allowed a higher injection pressure while still providing a substantial safety factor.

From June 9, 2010 to August 8, 2010, injection was limited to well MH-18 to provide for an increased injection rate to the area containing the most tiltmeters. The study was intended to increase the CO_2 storage in that area to generate a response from the tiltmeters. On August 8, 2010, the system was shut down and piping and safety modifications to allow the pressure increase to the 933 psig limit were initiated. Injection resumed on August 19, 2010.

Afterward, the wellhead pressure reached 900 psig by the end of August 2010 and, despite several months of repeated outages that provided short periods of injection of only a few days at a time, the new maximum pressure was achieved by mid-November as, with each outage, the pressure in the well was decreasing less and creating a higher starting pressure each time injection was resumed. Over the period of August 19, 2010 and February 13, 2011, the system was only in operation for all or portions of only 68 days, totaling 732 hours of injection. The higher pressure limit did allow for slightly increased injection rate as, on days where continual injection was possible, the rate improved to approximately 11 TPD.

Beginning on February 14, 2011, a four-month period of injection occurred where only four full days were lost to outages. During this time, while controlling near the maximum allowable injection pressure, the injection rate declined again to 5 TPD.

On June 16, 2011, and June 23 and 24, 2011, failures of the pump in quick succession left us without replacement parts, as all had been returned to the manufacturer for refurbishment, forcing a 62 day outage for return of the pump parts. The intermittent failures of the pump over the previous winter months and the declining injection rate at the higher pressure limit prompted a request to the WVDEP for another pressure limit increase to 1,400 psig.

Figure 31 includes the injection trend for the 933 psig injection period.

933 to 1,400 psig

To achieve this increase, it was necessary to replace our original injection pump with a triplex model pump, as our original injection pump was not capable of injecting at 1,400 psig. Reconfiguration of the pumping system began on November 4, 2011. Installation and reprogramming of the control logic was completed over the next two months and we began testing of the system on January 9, 2012.

The new pumping system required a great deal of testing and, eventually even required piping modifications to eliminate occurrences of vapor lock in the pump. Eventually, this condition required assistance from the manufacturer and after several improvements to the transfer piping and control logic programming.

The pumping system was returned to service on July 23, 2012, and it was operated at the previous 933 psig limit as the request for this increase to 1,400 could not be submitted until we completed a step-rate test to demonstrate that the increased pressure would not part (i.e., fracture) the formation. The step-rate test was successfully completed on September 11, 2012, and the allowable pressure increase was granted by WV DEP on January 16, 2013. Pertinent information for this increase, including step-rate testing data, is included in Appendix F.

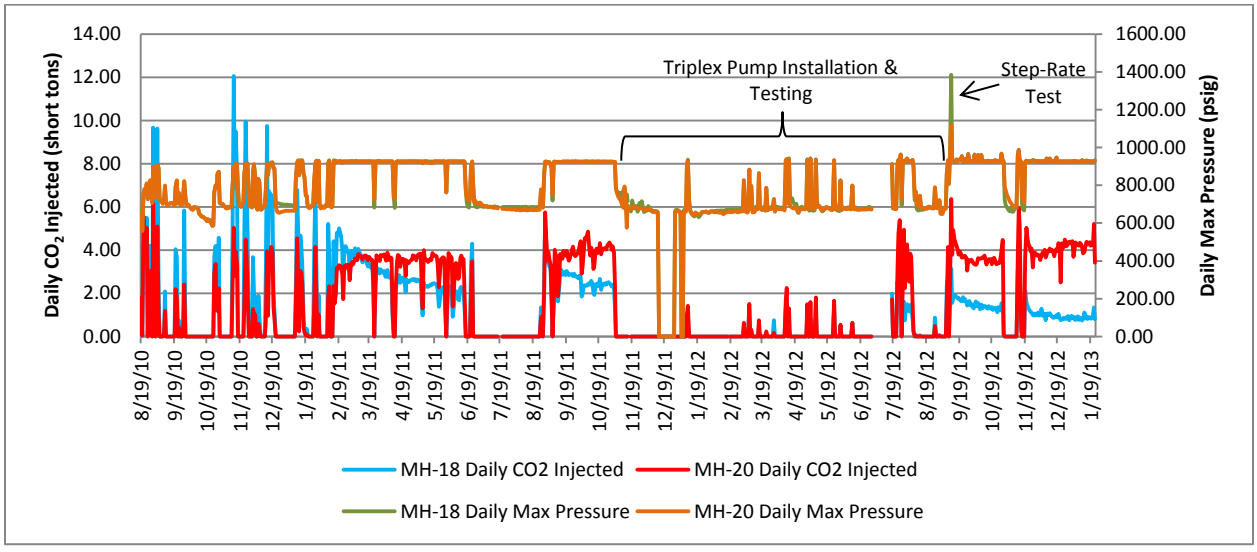

Figure 31. CO2 Injection period 8/19/10 – 1/20/13 (933 psig limit).

Operation with a 1,400 psig limit

We initiated the 1,400 psig pumping period on January 24, 2013, by gradually increasing the CO_2 pumping rate. On February 8, the maximum injection wellhead pressure in this project, 1,377 psig in MH-18, was achieved after the injection flow to MH-20 had been turned off to allow for another study on the tiltmeters where, from February 8 to July 19, when injecting, all flow was directed to MH-18 to allow for the observation of surface response in the tiltmeters located MH-18 injection area.

The new pumping system was effective, during this period, until leaks in the booster pump were encountered between February 12 and June 23, 2013, causing an additional 80 days of lost injection time. Despite these two events, the new pumping system ran at a consistently higher pressure while delivering as much as 22 TPD. Figure 32 shows the injection trend for the 1400 psig injection period.

Breakthrough

As operation continued with the new pump at the improved injection rate and higher pressure, a sample of produced CBM was collected on August 30, 2013, from coal bed methane (CBM) well MH-11 (to the south), that was found to have a CO_2 concentration of 8.9%. The well was resampled on September 4, and the concentration had risen to 21.9%. Injection was immediately suspended and the WVDEP was notified of the finding. No other well deviated significantly from pre-injection CO_2 concentrations during this time.

During the remainder of September 2013, the injection system remained idle while the MH-11 CO_2 concentration decreased, as required by WVDEP. By the end of September the concentration had fallen to 4.8% and then to 3.3% on October 21, 2013. On October 23, WVDEP granted permission to resume injection activity in injection well MH-18 only, which would direct injection away from the area of breakthrough. The agreement also required us to monitor the CO_2 concentration in the MH-11 produced CBM during injection in MH-18.

Injection resumed on October 24; however, a low level in the CO_2 storage tank required us to shut down until a reliable CO_2 delivery schedule was established. On October 28, following filling of the storage tank, injection resumed and continued until a storm caused a power loss at the site in the early-morning hours of November 1. We attempted to restart the system, following power restoration, on November 2, but noticed the injection pump had apparently been damaged by the sudden shutdown, as it had developed a substantial leak. Field efforts to correct the leak were unsuccessful. The remaining repair option would require removal of the pump and its return to the factory, likely taking us to the UIC permit expiration date of December 31, 2013; thus, we terminated injection activities at that time.

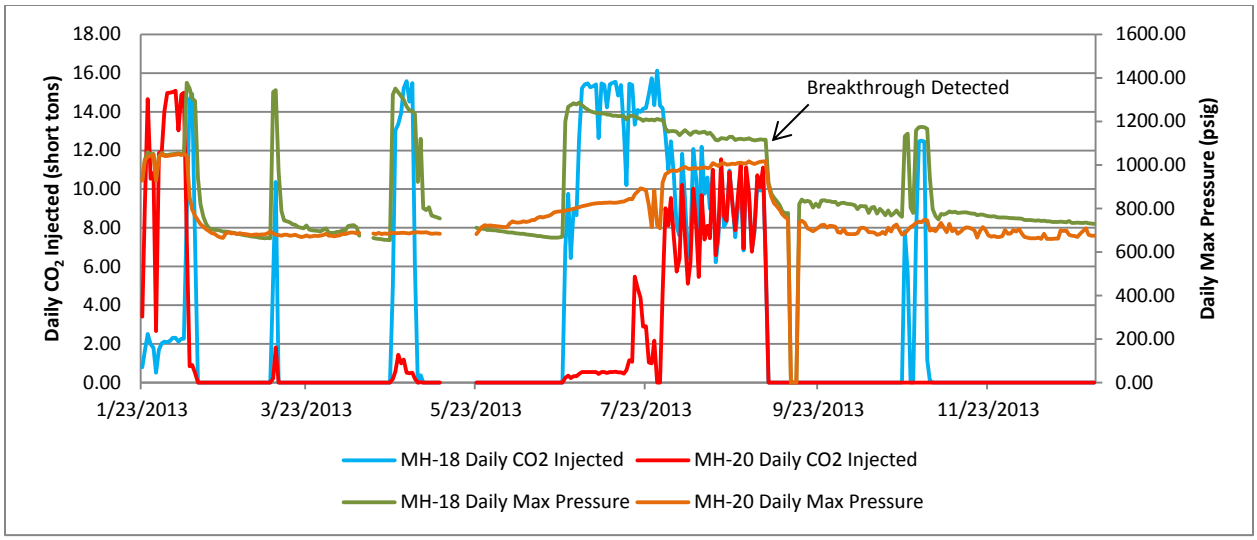

Figure 32. CO_2 Injection period 1/23/13 – 12/31/13 (1,400 psig limit).

Interruptions

The various periods of injection interruption can be identified in Figures 28 to 31 where the "daily CO_2 injected" traces trend at 0 tons. Appendix E provides a daily injection summary where each period of interruption is described and color-coded by incident type.

Pumping outages

During the initial period of manual operation, debris from the tank and liquid CO_2 lines ahead of the pump passed through the pump, damaging internal seals. To eliminate future recurrences of this, a filter system was installed upstream of the pump.

The original pumping system experienced repeated seal and discharge check valve failures (Figures 33 and 34), which forced shutdown delays and limited injection. A total of 124 injection days were lost over the course of the first 653 days of injection, following the initiation of continuous operation. Most of these days were lost awaiting the arrival of rebuilt parts from the manufacturer as the pump was custom designed for this application and not a "shelf" item. During a 62-day delay in the summer of 2011, we elected to purchase a replacement pumping system, selecting a triplex pump (Figure 20), as they are well suited for this application, are capable of operating at higher pressures than the original pump, and can also handle some debris in the liquid stream.

Figure 33. Accumulated debris with wear on an original pump cylinder and seal.

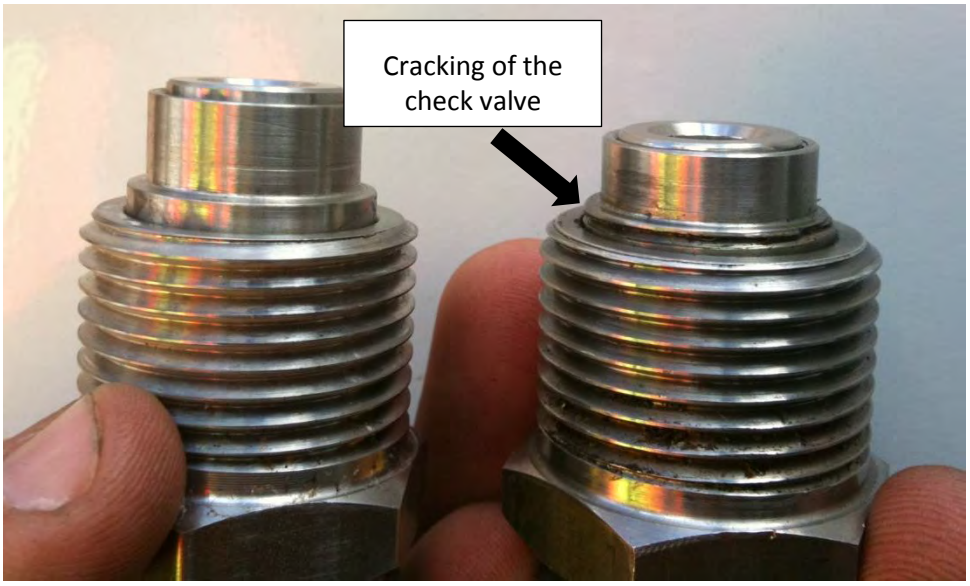

Figure 34. A new pump discharge check valve (left) compared to a failed discharge check valve (right).

The original pump was removed from service on November 3, 2011, and work began on the installation of the triplex pump and associated components, including a booster pump, which was installed upstream of the triplex pump (Figure 20) to maintain proper pressure on the supply stream and keep the CO_2 in the liquid phase.

The new pumping system required a great deal of testing and it eventually required piping modifications and reprogramming of the injection controls logic to eliminate vapor lock conditions in the triplex pump. The new pumping system was finally placed online on July 23, 2012. The new pumping system was effective until leaks in the booster pump developed and, between February 12 and June 23, 2013, an additional 80 days were lost to two leak events.

Weather and power-related outages

Storms caused frequent power outages which, given the remote location of the project site, could last for several days; for example, an extreme winter storm and snow event on February 4-5, 2010, left the site inaccessible and without power for 20 days. Various other times in the winter months, the CO_2 delivery trucks would not make deliveries due to safety concerns arising from snow and ice and the steep hill leading to the site access road. In fact, two CO_2 delivery trucks slid off the roadway while descending this hill during icy conditions.

The cold weather also forced the system to shut down several times due to interruptions in the hot water boiler fuel supply that was obtained from an adjacent gathering line fed by local wells. During the cold weather, condensation in the well heads would freeze and plug the well flow off, thus cutting off the fuel for our boiler. Generally, this situation would be corrected naturally as warming daytime temperatures and direct heating from the sun would thaw the condensation within a few hours; however, several extended periods of cold weather interrupted the boiler gas supply for several days, each.

Figure 35. Snow cover on the pumping equipment following a winter storm of February 2009.

Other outages

Other outages were generally related to boiler fuel access. On two extended occasions, the local wells that fed the gathering line were shut in by the well operators. A two-week shut-in period was required in May 2010 to allow a pipeline crew to bury the gathering line that fueled the boiler, and a 43-day shut-in started on May 11, 2013, to allow for repairs on a ruptured pipeline that, although not related to our project, was buried in the same right of way as our pipeline.

CBM production

The drilling difficulties and technical and geological complications at the north site discussed in the Drilling Results section delayed production from the north wells until April 2006; the north site wells remained poor producers for the duration of the project. The south site wells, despite being drilled considerably after those at the north site, began producing in January 2005, along with the center site wells.

CBM production from the center wells served to degas the UF in the center of the project area, prior to converting these wells to CO_2 injectors. To prepare for the conversion, wells MH-18 and MH-20 were shut in on July 17, 2007. CBM production at the north site (wells MH-3, MH-4, and MH-5) and south site (wells MH-11 and MH-12) continued through the CO_2 injection period, and the post-injection period, and they continue to produce to date. Total CBM production from all project wells through the end of 2015 was 998,000 mcf

Some periods of production interruption were encountered due to maintenance on area gathering and transmission lines that required well shut-in periods, and the wells in the north were subject to additional shut-ins, for various operational reasons. Several times, MH-4 was shut-in so that it would build pressure, in hopes that the production might increase upon reactivation. This was tried, particularly with MH-4, several times, unsuccessfully, including once for an extended period from July 2007 through April 2009.

Another extended shut-in of the north wells (MH-3, 4, & 5) took place from October 6, 2010, to March 2, 2011, after CONSOL employees discovered a leaking gas line below the north site. Unsure if this was the gathering line for the north wells, they took the precaution of shutting in the wells. We later determined that the line belonged to another gas production company with wells in the area.

Figure 36 plots the north site well CBM production that was recorded on a circular chart, providing a monthly total. As such, to determine a daily average, we divided the monthly total into the number of production days reported by the well tenders. Two items of note seen on the graph are the increase in production from PIT well MH-3, as injection occurred, and the steady increase in production from UF well MH-5, which continues even two years after the cessation of injection activities. Each of these will be detailed in the coming sections.

Since being activated nearly 10 years ago, PIT production summed from wells MH-3 and MH-4 has totaled 67,609 mcf, while the UF well, MH-5 has produced 17,809 mcf.

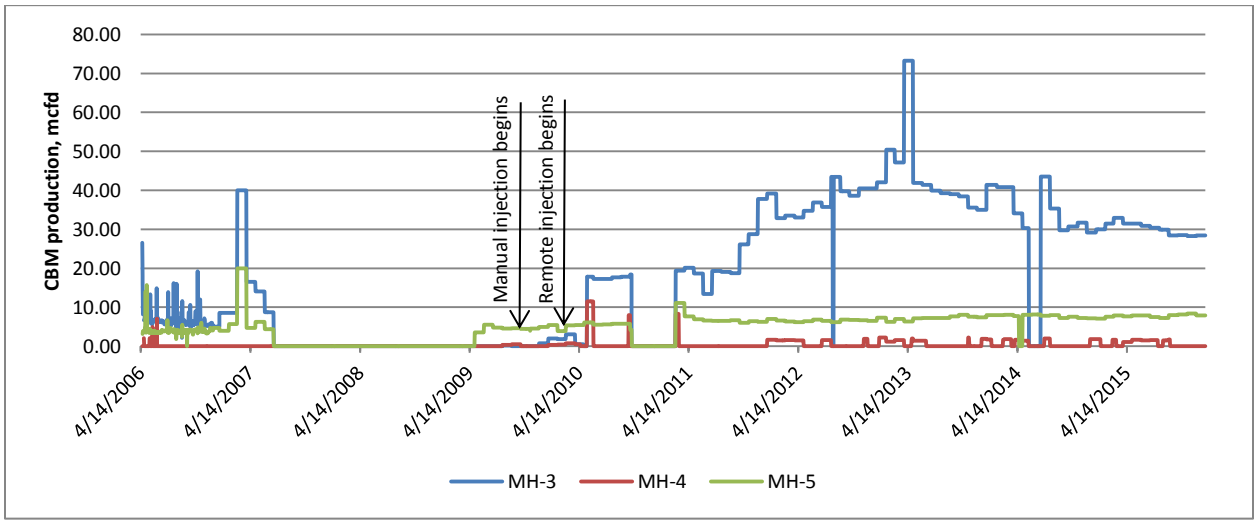

Figure 36. North Site CBM Well Production.

The south site well production data are plotted in Figure 37. In it, one can see the typical decline curve expected with CBM well production, over time, in the PIT well, MH-12. It is noteworthy that the

production data for well MH-11 show that the rate began to increase at the same time the continuous CO_2 injection began. Further discussion on this can be found in the following sections.

Total production from the wells, through December 31, 2015, has been 55,600 mcf from MH-11 (UF) and 856,676 mcf from MH-12 (PIT). The wells had been producing for more than 11 years at that date.

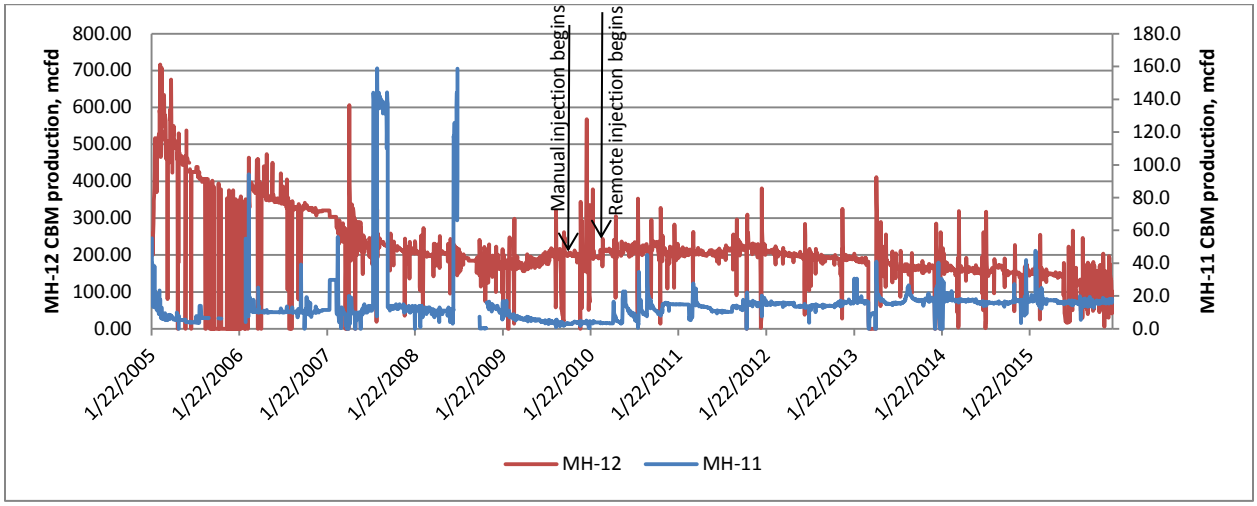

Figure 37. South Site CBM Well Production

Production from the center wells was terminated in July 2007, to convert them to injection wells, as described previously. The wells were active for 33 months, during which, wells MH-18 and MH-20 produced 17,987 mcf and 12,110 mcf, respectively (see Figure 38).

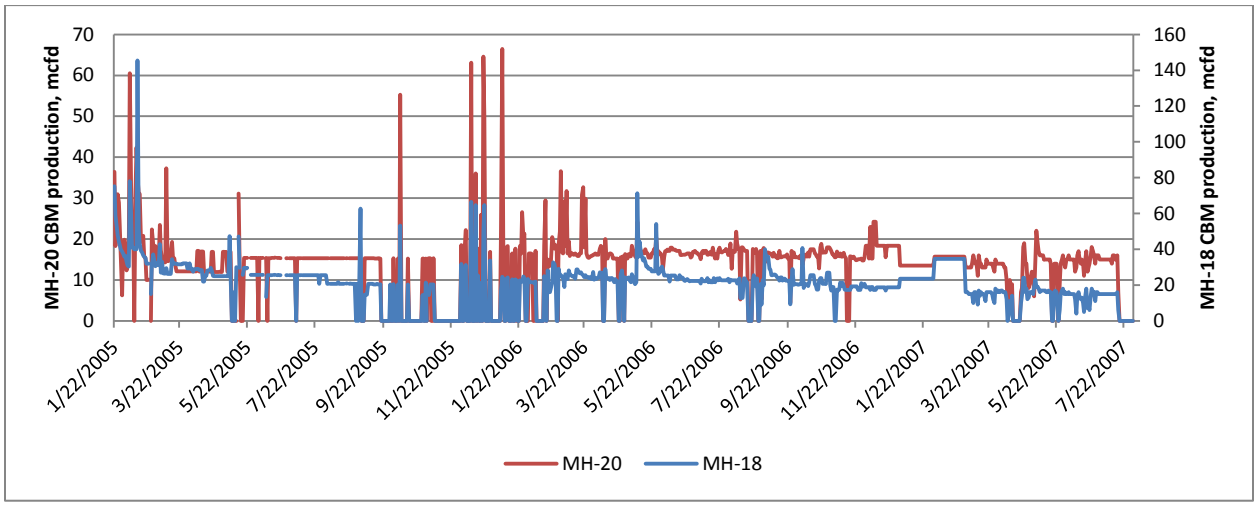

Figure 38. Center Site CBM Well Production

Pre-injection period

North wells

During the 1,244 days of the pre-injection period, at the north site, production was minimal, given the drilling difficulties previously discussed. As attempts were made to remove water from the wells, production spikes were experienced, which caused wide fluctuations in the production rates from wells

MH-3 (PIT) and MH-5 (UF); well MH-4 (PIT), as it was not completely drilled into the coal seam, was shut in for much of this period. Regardless, CBM production from MH-3 and MH-5 was less than expected and in July 2007 all three wells were shut in and remained so until May 1, 2009, in advance of the injection phase. Table 8 provides the CBM produced from these wells in total and by daily rate, not counting shut-in days.

Table 8. North wells, pre-injection production.

Well ID	Coal Seam	Actual days of Production	Total Production, mcf[a]	Production Rate, mcfd[b]
MH-3	PIT	474	4,661	9.83
MH-4	PIT	50	33	0.66
MH-5	UF	573	3,000	5.23

a thousand cubic feet
b thousand cubic feet per day of production

Center wells

Production from the center wells was consistent for the 747 days of production, before these wells were shut in for conversion to injectors. Table 9 contains the CBM production data for these wells.

Table 9. Center wells, pre-injection production.

Well ID	Coal Seam	Actual days of Production	Total Production, mcf[a]	Production Rate, mcfd[b]
MH-18	UF	747	17,987	24.08
MH-20	UF	747	12,110	16.21

a thousand cubic feet
b thousand cubic feet per day of production

South wells

The south wells were the most consistent producers in the project. The PIT well, MH-12, peaked in production within a few months of flowing, briefly above 600 mcfd, before leveling out, in CBM flow, around 200 mcfd. MH-12 flows were able to remain consistent due to the automated operation of the pump jack clearing the water from the well.

MH-11, the UF well, was erratic in its production as the pump jack that serviced it was manually operated, and on an inconsistent basis. Large spikes in flow can be seen following periods of little to no flow, which occurred when the water accumulation in the well choked the CBM flow. The spikes are the

result of the release of built-up CBM flowing when the pump was operated and the well was dewatered. Table 10 presents the CBM production data for the south wells prior to injection.

Table 10. Pre-injection CBM data from the south wells.

Well ID	Coal Seam	Actual days of Production	Total Production, mcf[a]	Production Rate, mcfd[b]
MH-11	UF	1,496	23,379	15.63
MH-12	PIT	1,605	449,576	280.1

a thousand cubic feet
b thousand cubic feet per day of production

Injection period

North wells

Minimal CBM flow from the wells at the north site continued through the injection period. Initially MH-3 (PIT) flows were diminished, but shortly returned to pre-injection levels. Following a period of shut in, from October 2010 to March 2011, CBM flows returned to typical levels, but then increases were observed in MH-3 and MH-5 (UF), as can be noted in Figure 39.

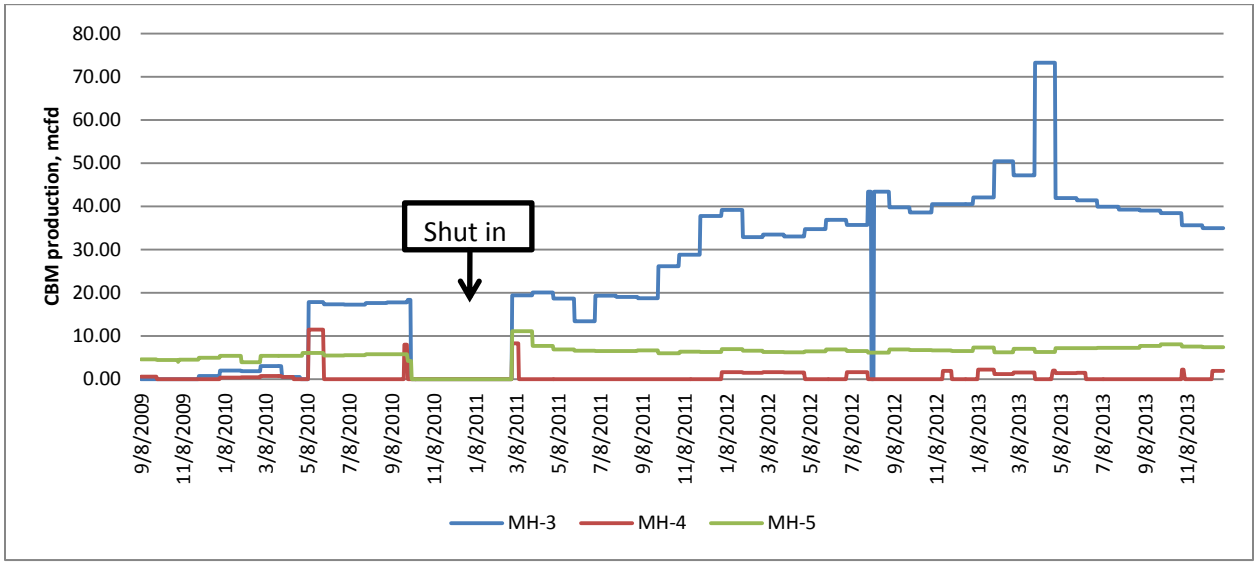

Figure 39. North site well, injection period CBM production.

The MH-3 increase, more than doubling in flow, was more noticeable than the increase in MH-5 and was most likely the result of dewatering over time. The MH-5 increase was continual throughout the period, even before the shut-in period.

Table 11. North wells, injection period CBM production.

Well ID	Coal Seam	Actual days of Production	Total Production, mcf[a]	Production Rate, mcfd[b]
MH-3	PIT	1,269	36,914	29.09
MH-4	PIT	464	920	1.98
MH-5	UF	1,369	8,786	6.42

a thousand cubic feet
b thousand cubic feet per day of production

South wells

The south wells continued with higher production than those to the north. MH-12 remained consistent throughout this period; however, this was not the case with MH-11. As with the northern UF well, an increase in production was also seen from MH-11, as the period progressed, with daily rates more than tripling from less than 5 mcfd to more than 15 mcfd, as can be distinguished from the blue trace on the graph in Figure 40.

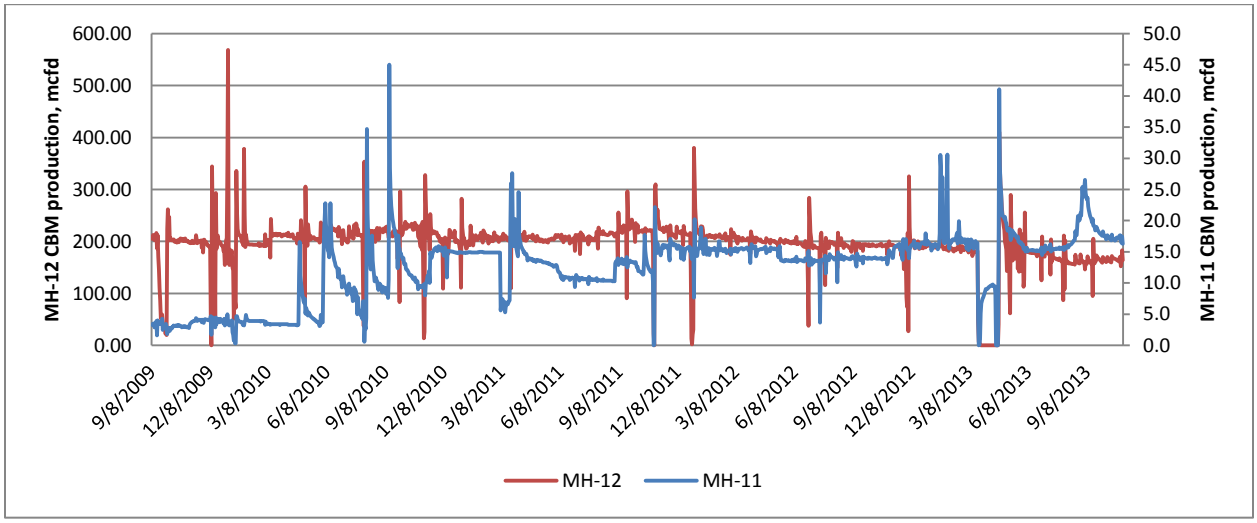

Figure 40. South site injection period CBM well production

Through 2010, the manually-operated pump jack schedule is apparent in the surging nature of the CBM flow, with increases following each time the pump was operated. By the end of 2010, a timer was installed to provide daily rather than weekly operation and the CBM flow became more constant, continuing to increase.

CBM production data are presented in Table 12. While a consistent increase in production can be seen from MH-11 in Figure 40, the daily production rate is less than that observed during the pre-injection period, as the injection period production was not impacted by the high surges in production encountered during that time.

Table 12. Injection period south well CBM production.

Well ID	Coal Seam	Actual days of Production	Total Production, mcf[a]	Production Rate, mcfd[b]
MH-11	UF	1,510	18,913	12.52
MH-12	PIT	1,498	294,477	196.6

a thousand cubic feet
b thousand cubic feet per day of production

Post-injection

CO_2 injection ended on November 3, 2013 but CBM production continued through the end of the project period (12/31/15). During this time, the UF well CBM production increased while PIT well CBM production began to decline. Figures 41 and 42 show trends of the daily CBM production and Table 13 contains data from the wells.

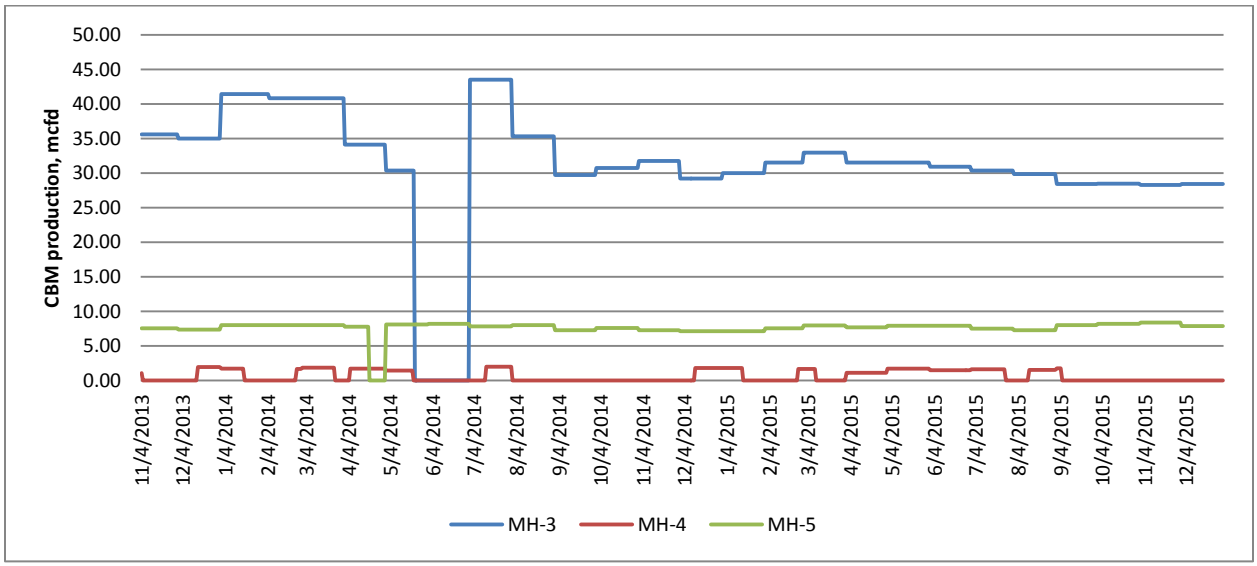

Figure 41. North site post-injection period CBM well production.

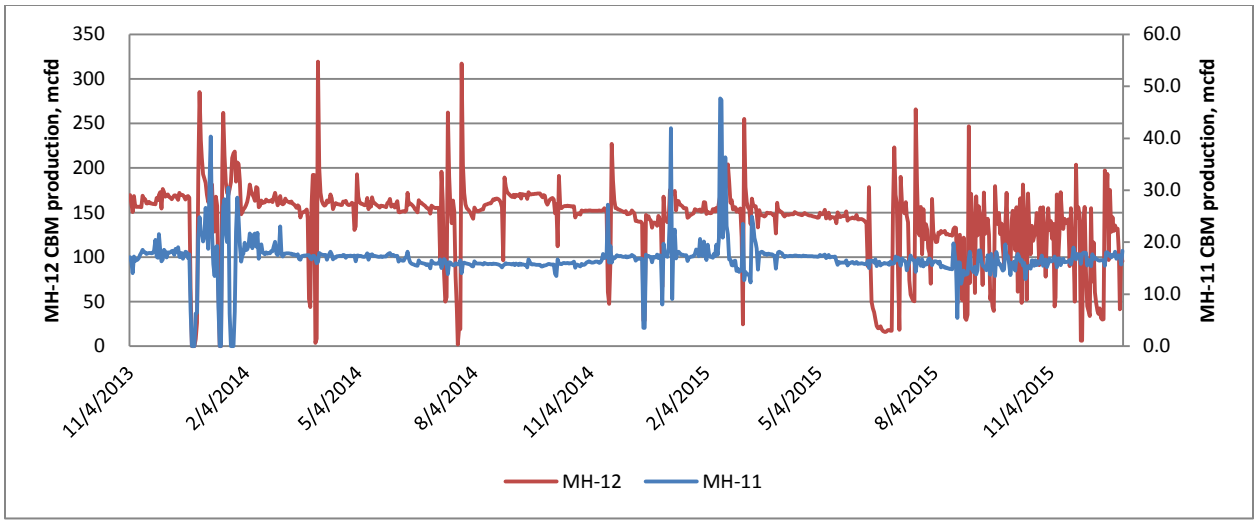

Figure 42. South site post-injection period CBM well production.

Table 13. Post-injection CBM production data.

Well ID	Coal Seam	Actual days of Production	Total Production, mcf[a]	Production Rate, mcfd[b]
MH-3	PIT	751	24,629	32.80
MH-4	PIT	319	522	1.64
MH-5	UF	779	6,023	7.73
MH-11	UF	783	13,309	17.00
MH-12	PIT	786	112,624	143.3

a thousand cubic feet
b thousand cubic feet per day of production

CBM production discussion

Nearly one billion cubic feet of CBM was produced over the duration of this project. It is likely that, given the problems encountered in drilling the north site wells, more CBM could have been produced had the drilling techniques utilized at the center and south sites been used in the north.

The PIT seam wells in this project did produce more CBM than those in the UF. Production from MH-12 was typical of that observed in other PIT CBM wells showing a high level of production, initially, followed by a rapid decline curve that tapers out to near flat-line production. The north wells, drilled down-dip using a slant-hole drilling approach, are not comparable to other PIT wells in the region, which use horizontal drilling techniques and multiple production laterals.

With only a single production leg, MH-3 should not be expected to have production values comparable to the dual-lateral MH-12. However, the MH-3 production results were unique in that they increased

significantly over time, during the injection period. Monitoring results showed no CO_2 contamination, so, the slowly increasing production from this well is most likely a result of the formation slowly dewatering down-dip to the south wells and allowing the CBM production to improve. Toward the end of the injection period, the CBM production began a slow decline that continued through the remainder of the project. MH-4 was not properly drilled into the seam; therefore, typical production results were not expected.

The production from UF wells MH-5 and MH-11 was atypical, increasing through the injection period. The UF seam is not an excessive water producer and; therefore, with routine dewatering, consistent gas flow was possible, once a pumping schedule was established on MH-11. As MH-5 was unable to be equipped with a water pump, the flow in this well suffered. Nevertheless, both wells did exhibit increased production rates and they were still increasing at the end of the project. Over the four years of injection, the average annual increase in daily production rates was 18.5% for MH-5 and 22.3% for MH-11. Figures 43 and 44 show the average daily production rates from each well and each figure contains a table of the year-on-year improvements in production.

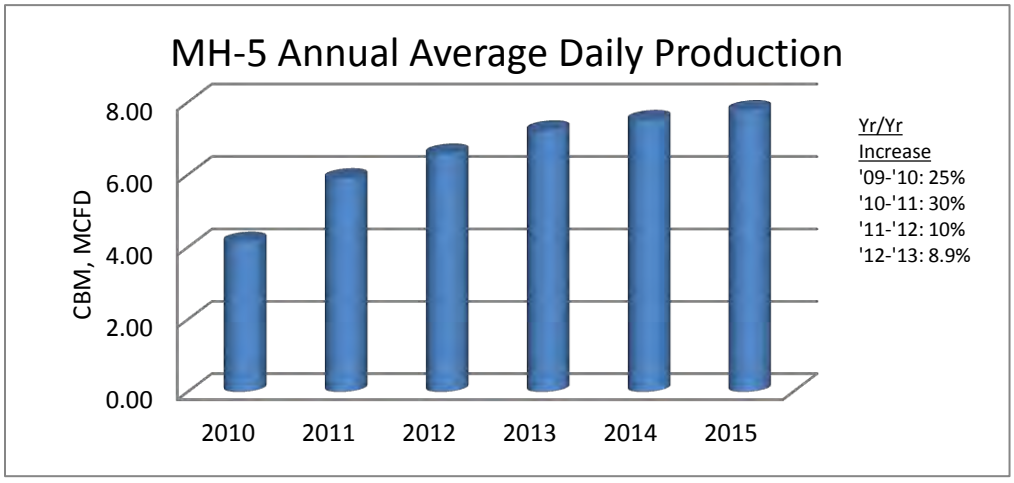

Figure 43. MH-5 annual improvement in average daily CBM production.

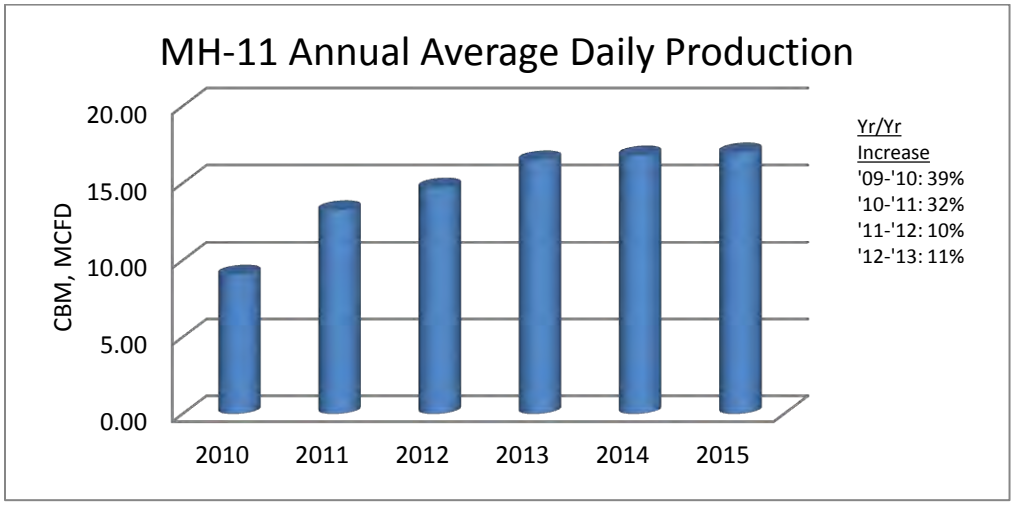

Figure 44. MH-5 annual improvement in average daily CBM production.

Monitoring

Water

Shallow hydrogeological monitoring

Stream Water

Hega conducted monitoring of Fish Creek from October 2008 until June 2013. The non-water chemical composition of Fish Creek water samples is mainly $Ca^{2+}_{(aq)}$ and $HCO_3^{1-}{}_{(aq)}$ with low variability in dissolved ion content, which is consistent with the composition of the Permian age alternating beds of sandstone, shale, and limestone the stream and its tributaries are eroding.

Tables 14 – 16 summarize the results of the Fish Creek stream water monitoring.

Table 14. Average field-measured stream water values (Hega, 2014).

Stream Location	From (date)	To (date)	Average Field pH (std units)	Average Field EC (µS/cm)	Average $PCO_{2(aq)}$ (atm)	Average Saturation index (calcite) based on Field pH
S-1	Oct-08	Jun-13	7.66	205	3.31E-03	-0.639
S-2	Oct-08	Jun-13	7.78	225	2.07E-03	-0.530
S-3	Oct-08	Jan-11	7.75	272	2.96E-03	-0.497

EC µS/cm – Electrical conductivity, microsiemens per centimeter
$PCO_{2(aq)}$ – Stream water dissolved concentrations based on chemical equilibria, atmospheres or atm

Table 15. Average stream water dissolved cations (Hega, 2014).

Stream Location	From (date)	To (date)	Average Ca^{2+} (mg/L)	Average Mg^{2+} (mg/L)	Average Na^{1+} (mg/L)	Average K^{1+} (mg/L)
S-1	Oct-08	Jun-13	25.5	4.28	6.85	1.93
S-2	Oct-08	Jun-13	25.6	4.34	8.75	1.88
S-3	Oct-08	Jan-11	29.0	5.00	15.1	2.12

mg/L – milligrams per liter

Table 16. Average stream water total anion values (Hega, 2014).

Stream Location	From (date)	To (date)	Average HCO_3^{1-} (mg/L)	Average Cl^{1-} (mg/L)	Average SO_4^{2-} (mg/L)	Average NO_3^{1-} (mg/L) as N
S-1	Oct-08	Jun-13	82	8	19.2	0.641
S-2	Oct-08	Jun-13	81	13	19.2	0.629
S-3	Oct-08	Jan-11	86	27	19.2	0.751

The ionic concentrations are inversely dependent on stream discharge rate, with lower concentrations when diluted during the wet (winter/spring) season and storm events, and higher concentrations, overall, during the summer and fall seasons. No environmental chemical impacts to stream water quality were identified as a result of $CO_{2(g)}$ injection or $CH_{4(g)}$ extraction (Hega, 2014).

Shallow ground water

Hega conducted ground water monitoring in three, 105' deep monitoring wells, designated W-1, W-2, and W-3, from October 2008 – October 2013.

Tables 17 through 19 show the average value of select ground water chemistry components of the three ground water monitoring wells.

Table 17. Average data from select test site ground water values (Hega, 2014).

Water Well Location	From (date)	To (date)	Average Field pH (std units)	Average Field EC (µS/cm)	Average H_2S (mg/L)	Average $PCO_{2(aq)}$ (atm)	Average Saturation index (calcite)
W-1	Oct-08	Oct-13	8.39	1105	0.037	1.16E-03	0.621
W-2	Oct-08	Oct-13	8.70	634	0.017	3.37E-04	0.148
W-3	Oct-08	Oct-13	9.28	829	0.005	1.84E-04	-0.017

Table 18. Average values for dissolved cations in test site ground water (Hega, 2014).

Water Well Location	From (date)	To (date)	Average Ca^{2+} (mg/L)	Average Mg^{2+} (mg/L)	Average Na^{1+} (mg/L)	Average K^{1+} (mg/L)
W-1	Oct-08	Oct-13	34.6	5.07	171	1.19
W-2	Oct-08	Oct-13	7.49	1.27	127	1.00
W-3	Oct-08	Oct-13	0.88	0.22	199	0.69

Table 19. Average values for total anions in test site ground water (Hega, 2014).

Water Well Location	From (date)	To (date)	Average HCO_3^{1-} (mg/L)	Average Cl^{1-} (mg/L)	Average SO_4^{2-} (mg/L)	Average HS^{1-}(mg/L)	Average NO_3^{1-} (mg/L)
W-1	Oct-08	Oct-13	298	157	5.59	0.531	0.114
W-2	Oct-08	Oct-13	184	95	7.93	0.473	ND
W-3	Oct-08	Oct-13	449	31	3.77	0.587	0.141

The average pH and electrical conductivity observed for these wells during the study period were:

- W-1: 8.39 Std. Units (S.U.) and 1105 µS/cm,
- W-2: 8.70 S.U. and 634 µS/cm, and
- W-3: 9.28 S.U. and 829 µS/cm (Hega, 2014).

The major cation and anion in these three wells were Na^{1+} and HCO_3^{1-}, respectively, averaging:

- W-1: 171 mg/L Na^{1+} and 298 mg/L HCO_3^{1-},

- W-2: 127 mg/L Na^{1+} and 184 mg/L HCO_3^{1-}, and
- W-3: 199 mg/L Na^{1+} and 449 mg/L HCO_3^{1-} (Hega, 2014).

In general the water quality of the samples was consistent throughout the sampling period; however, throughout the project, including pre-injection period values, well W-1 exhibited higher levels of conductivity, chloride, and more cations than what was measured in the other two ground water monitoring wells. The likely cause of this difference was a persistent water leak at the pump jack seal on CBM well MH-12. Despite repair efforts, the leak recurred frequently during the project.

Residential water

Tables 20 – 22, below, provide the average values of select residential water source samples, which were collected between October 2008 and October 2014.

Table 20. Average values for select residential water samples (adapted from (Hega, 2014)).

Sampling Point	From (date)	To (date)	pH, S. U.	Conductivity, µS/cm	H_2S, mg/L	$PCO_{2(aq)}$, atm	Average saturation index of calcite, based on pH
GW	Oct-08	Oct-14	7.0	289	NA	NA	NA
G-1	Oct-08	Apr-12	8.56	467	0.07	9.08E-04	0.277
G-2	Oct-08	Apr-12	6.85	257	NA	1.95E-02	-1.25
G-3	Oct-08	Apr-12	5.62	238	ND	5.32E-02	-3.41
G-4	Oct-08	Apr-12	7.83	591	0.73	2.99E-03	-0.121
B-1	Oct-08	Apr-12	7.09	788	0.03	2.16E-02	-0.296
B-2	Oct-08	Apr-12	7.24	794	0.03	2.05E-02	-0.043

Table 21. Average dissolved cations in residential water samples (adapted from (Hega, 2014)).

Sampling Point	From (date)	To (date)	Ca^{2+}, mg/L	Mg^{2+}, mg/L	Na^{1+}, mg/L	K^{1+}, mg/L
GW	Oct-08	Oct-14	34.7	5.9	14	10.4
G-1	Oct-08	Apr-12	8.5	1.5	103	1.0
G-2	Oct-08	Apr-12	32.4	6.2	8	1.4
G-3	Oct-08	Apr-12	16.0	4.3	10	12.7
G-4	Oct-08	Apr-12	23.5	3.3	97	1.7
B-1	Oct-08	Apr-12	73.5	13.2	67	2.0
B-2	Oct-08	Apr-12	61.7	8.6	99	2.2

Table 22. Average total anions in residential water samples (adapted from (Hega, 2014)).

Sampling Point	From (date)	To (date)	HCO_3^{1-}, mg/L	Cl^{1-}, mg/L	SO_4^{2-}, mg/L	HS^{1-}, mg/L	NO_3^{1-}, mg/L as N
GW	Oct-08	Oct-14	92	8	39.4	NA	NA
G-1	Oct-08	Apr-12	279	6	1.8	1.35	ND
G-2	Oct-08	Apr-12	104	10	22.7	NA	1.2
G-3	Oct-08	Apr-12	22	18	32.2	ND	27.2
G-4	Oct-08	Apr-12	197	75	5.2	2.83	ND
B-1	Oct-08	Apr-12	263	104	21.1	0.03	ND
B-2	Oct-08	Apr-12	365	73	1.3	0.03	ND

*ND – None detected; *NA – Non-applicable

The analyte concentrations reported for these wells remained consistent throughout the project. No known contamination occurred to these area water supplies as the result of $CO_{2(g)}$ injection or $CH_{4(g)}$ extraction at the test site (Hega, 2014).

Produced water

Samples of produced waters were collected during our routine sampling episodes, whenever water was available to collect, as not all wells produced waters. Only project wells MH-11 and MH-12, and the

adjacent PIT CBM well MC-5, produced water to allow for collection of samples. Tables 23 – 25 provide pre-injection and injection/post-injection period averages for various produced water chemistry components. A complete summary of the produced water sample results is provided in Appendix H.

Table 23. CBM well produced water averages for select data.

Well ID	pH, S. U.		Conductivity, µS/cm		TSS, mg,L		TDS, mg/L		Dissolved CO2, mg/L	
	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection
MC-5	6.6	6.1	58,797	82,586	446	696	40,371	52,718	635	614
MH-11	6.0	6.8	61,312	46,556	192	187	33,085	32,898	45.0	42.0
MH-12	6.7	7.1	20,903	19,585	124	138	12,356	11,543	613	475

Table 24. CBM well produced water cation averages.

Well ID	Total Ca^{2+}, mg/L		Dissolved Ca^{2+}, mg/L		Total Mg^{2+}, mg/L		Dissolved Mg^{2+}, mg/L	
	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection
MC-5	1,370	1,635	1,353	1,651	718	805	698	814
MH-11	1,999	1,183	1,993	1,057	434	295	515	261
MH-12	421	377	346	366	146	144	106	143
Well ID	Total Na^{1+}, mg/L		Dissolved Na^{1+}, mg/L		Total K^{1+}, mg/L		Dissolved K^{1+}, mg/L	
	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection
MC-5	15,885	18,229	15,893	18,465	326	382	321	405
MH-11	16,176	9,599	15,900	8,708	213	213	71.4	65.2
MH-12	4267	4015	3538	3910	10.0	12.4	8.5	19.5

Table 25. CBM well produced water anion averages.

Well ID	Total SO_4^{2-}, mg/L		Dissolved SO_4^{2-}, mg/L		Cl^{1-}, mg/L		CO_3^{2--}, mg/L		HCO_3^{1--}, mg/L	
	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection	Pre-injection	Post-Injection
MC-5	33.5	9.36	38.0	8.31	25000	31688	0.0	0.10	241	388
MH-11	40.6	4.83	40.1	8.10	25000	19513	0.0	22.5	1.0	187
MH-12	13.4	1.54	17.7	1.47	7113	6824	76.5	0.40	493	518

As with the shallow ground water samples, the dominant cationic components of the produced water samples were calcium and sodium. The chemical composition of these samples exhibited minor variability throughout the project and the concentrations of most dissolved components decreased over the duration of the project; however, carbonate and bicarbonate in UF well MH-11 did increase after the CO_2 breakthrough event (Table 25). Before the breakthrough, these values remained at pre-injection levels.

Gas

Fifteen production wells within a quarter-mile of the AOR were sampled to determine pre-injection characteristics of the gases produced. The wells included the project CBM wells; two project monitoring wells; a nearby CBM production well; and area shallow oil and gas (SOG) wells, some of which had been plugged. Recovered gas samples were analyzed for oxygen, nitrogen, methane, ethane, higher hydrocarbons, and CO_2.

Weekly samples were collected, prior to the start of injection, from October 10, 2008, to December 10, 2008, for comparison during the injection and post-injection phases of the project. Given the delay between the end of this first set of pre-injection samples and the start of injection, one additional round of pre-injection samples were collected on August 25, 2009, to verify the original data set was still representative. The UIC permit incorporated the pre-injection CO_2 values to define a "breakthrough limit" such that if, during injection, a CO_2 concentration was found to be in excess of ten percentage points greater than the pre-injection value, we were to immediately cease injection. The sampling frequency was monthly for the injection monitoring period (September 2009 through November 2013), and then quarterly for the two-year post-injection monitoring period, starting with the November 2013 samples and ending in December 2015.

With the exception of the MH-11 CO_2 breakthrough event of September 2013, the measured gas composition was typical for CBM production wells in this area. An increase in CO_2 was noticed in the PIT wells as is typical in CBM wells over time, as the methane is depleted. The CO_2 levels measured in the annulus of area SOG wells, as well as gas from the two project observation wells (MH-26 and MH-27), did not deviate from pre-injection values (Locke & Winschel, 2015).

Trends of the CO_2 concentrations in the UF and PIT CBM gases through the project are provided in Figures 45 and 46, respectively, while trends of CO_2 levels measured in SOG annulus' and observation wells are shown in Figure 47. Appendix I is a summary of the gas compositional analyses.

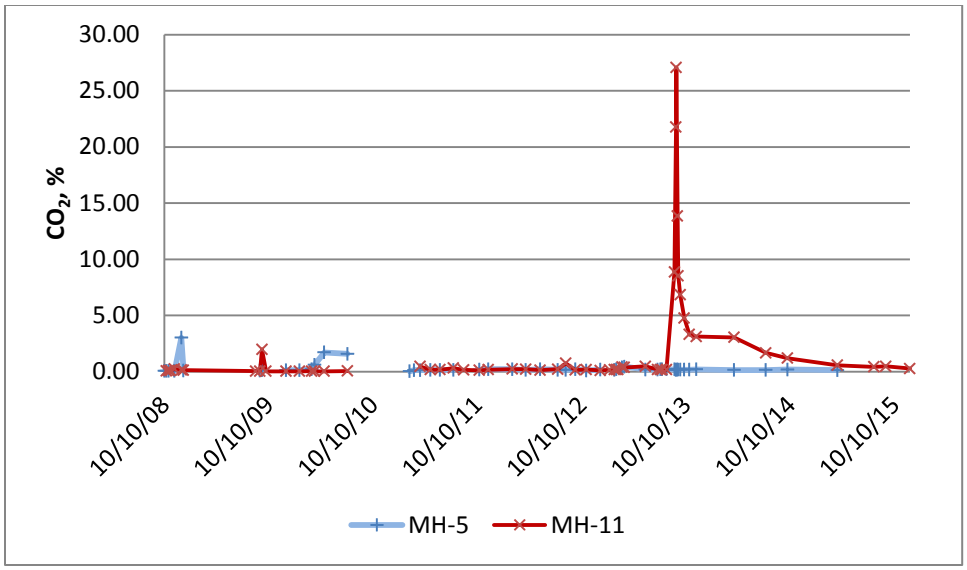

Figure 45. The Upper Freeport CBM well CO_2 concentration trend (Locke & Winschel, 2015).

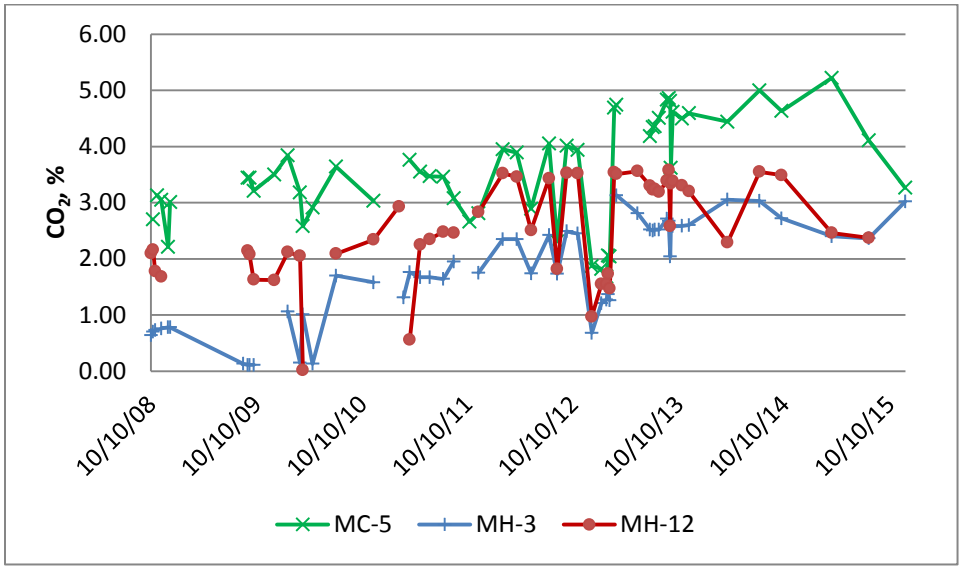

Figure 46. Pittsburgh Seam Production Well CO_2 Concentrations (Locke & Winschel, 2015).

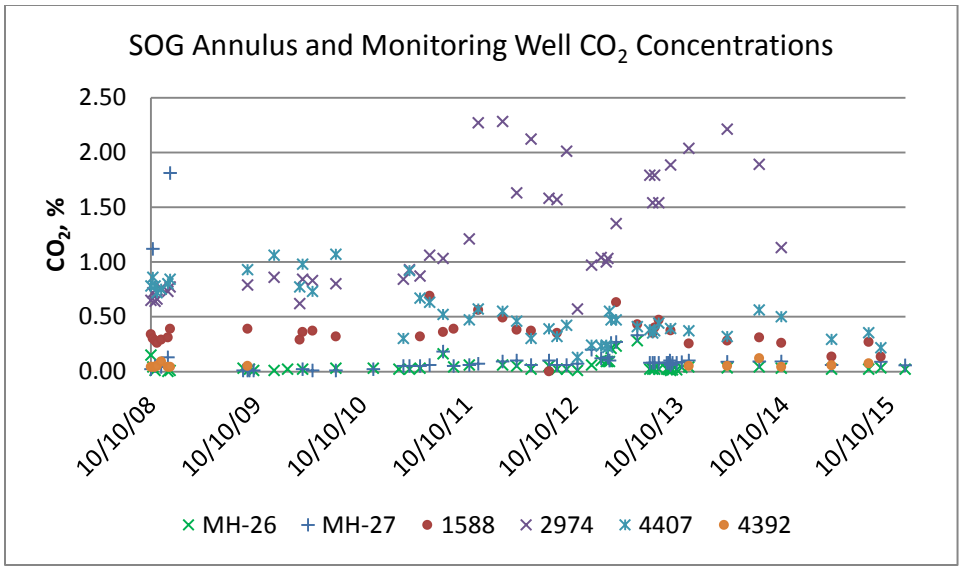

Figure 47. SOG well annulus and observation well CO2 monitoring trends.

With the exception of the breakthrough event indicated in MH-11 where the CO_2 concentration reached as high as 27% in the days immediately following its discovery, CO_2 concentrations in all wells were found to be within the expected levels. Upper Freeport wells had low CO_2 concentrations that remained at or near pre-injection concentrations (the MH-11 CO_2 concentration decreased to below 1% within the two-year post-injection monitoring period); PIT well CO_2 concentrations increased gradually, over time, as the CBM was extracted; and the SOG annulus concentrations were variable, but remained comparable to pre-injection levels throughout the project.

Tracers

Researchers from NETL injected two vaporized liquid perfluorocarbon (PFC) tracer gases over seven days, beginning April 15, 2011, simultaneously with the CO_2 vapor through a valve on the top of the injection wellheads. Approximately 500 milliliters (mL) of liquid perfluoromethylcyclohexane (PMCH) was injected into injection well MH-18 and approximately 500 mL of liquid perfluoro-1,3,5-trimethylcyclohexane (PTCH) was injected into injection well MH-20.

Prior to the PFC injection, background monitoring was conducted to determine if any of the tracer gases could be detected in the AOR ambient air. Ambient air and soil gas samples were collected and analyzed and a pre-injection baseline was established. The average concentration of the background samples was less than 3.9 femtoliters of PMCH vapor per liter of air (fL/L).

Following the PFC tracer injection, samples were collected from an array of 37 sample locations for analysis to determine the migration rate of the compounds through the coal seam. The sample locations, as detailed in the methodology section, included:

- Ambient air,
- Soil gas,
- Water well headspace air, and
- Production well CBM.

Figures 48 – 50 provide trended plots of the results in units of femtograms per liter (fg/L) from PFC sampling in CBM wells MH-11 and MH-12, which were the only sample locations where PFC was

detected above pre-injection values (personal communications with A. Wells, NETL). As PFC was not detected at any of the other locations, it is reasonable to declare the absence of any vertical CO_2 migration pathways.

Detection of the PTCH tracer from injection well MH-18 (UF) in production well MH-12 (PIT) within the first week following PFC injection was investigated. The potential of a plug failure in the MH-18 access well, MH-19, was considered, given the difficulties encountered in the plugging process as detailed earlier. If the rapid appearance of tracer in MH-12 indicates a significant leak, it would certainly seem that it should allow injected CO_2 to migrate nearly, if not as quickly as the PFC, yet no significant increase in CO_2, above what should be expected, was ever observed. Additionally, Figure 47 shows the rapid detection of PTCH in MH-12, beginning on day 11, after the tracer injection, with the first sample collected, peaking, a week later, with the second sample and returning to near- pre-injection concentrations within 70 days. PFC was not detected in MH-11 until the sample collected there on day 249, after the tracer injection. Both PFC concentrations trended higher over the final 242 days of sample collection with a spike in PTCH at day 327 and PMCH spiking at day 390. Thus, we are unable to explain the rapid detection and disappearance of tracer in well MH-12.

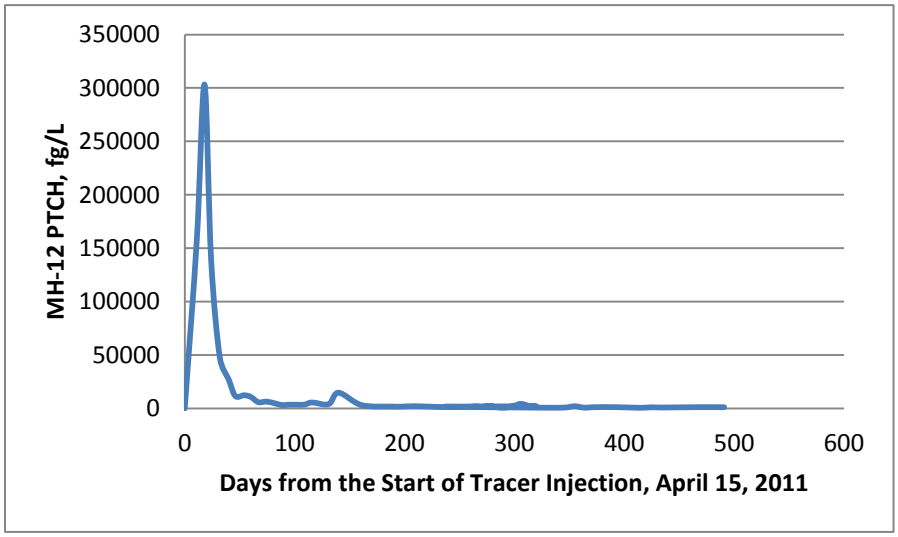

Figure 48. PTCH detection in MH-12, over time, beginning April 15, 2011.

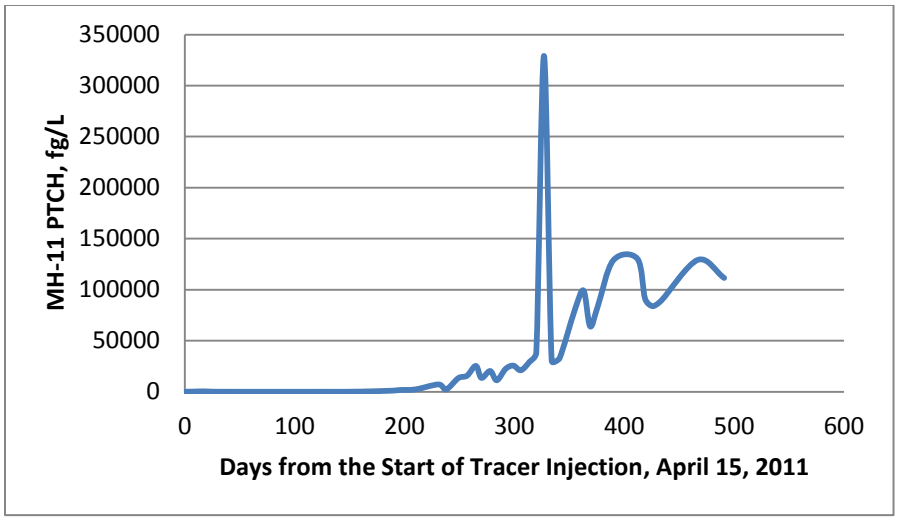

Figure 49. PTCH detection in MH-11, over time, beginning April 15, 2011.

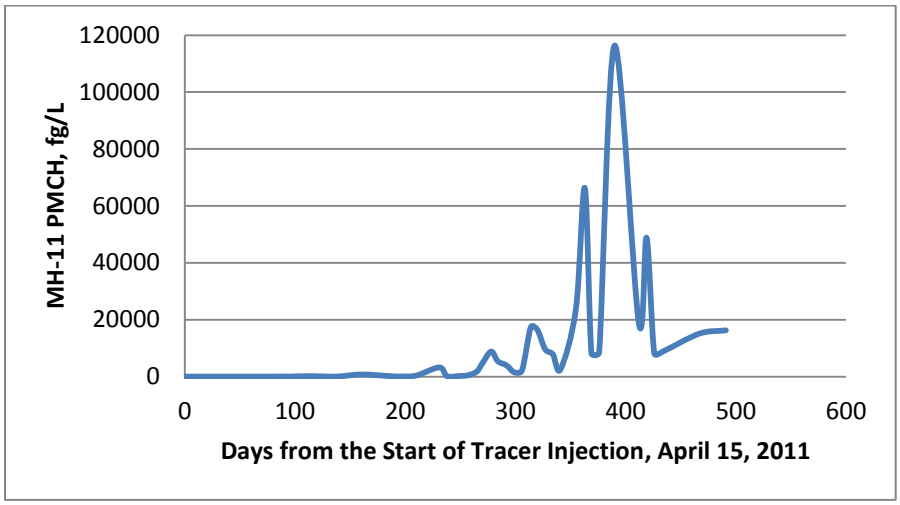

Figure 50. PMCH detection in MH-11, over time, beginning April 15, 2011.

Others

Carbon isotopes

Samples of the injected CO_2, CBM, vadose-zone gas and surrounding vegetation, and shallow ground water were collected by Meier (2014) for isotopic analysis over a 12-month period (August 2013-August 2014). The gases were analyzed for $\delta^{13}C$ of the CO_2 ($\delta^{13}C_{CO2}$), while the groundwater was analyzed for $\delta^{13}C$ of the dissolved inorganic carbon ($\delta^{13}C_{DIC}$). One sample of vegetation surrounding each of the seven vadose-zone sampling sites was collected in May 2014 and analyzed for $\delta^{13}C$.

Table 26 provides a summary of the average $\delta^{13}C$ of the CO_2 measured in the samples, reported in units of per mil (‰). The overlying Pittsburgh coal seam has very enriched $\delta^{13}C_{CO2}$ values (+19.1‰ to +23.1‰) compared to injected CO_2 (-11.4‰); however, the $\delta^{13}C_{CO2}$ values remained very consistent throughout the monitoring period indicating no detectable leakage of injected CO_2 had occurred from the underlying Upper Freeport coal bed during this monitoring period. The average and the range of the injected CO_2 $\delta^{13}C$ are not comparable with the averages or the ranges of the $\delta^{13}C$ reported

of any other sample. These data confirm that the injected CO_2 did not migrate vertically from the target injection zone (Meier, 2014).

Table 26. A comparison of average $\delta^{13}C$ values of the CO_2 fraction of the CBM, groundwater and vadose gas samples (Meier, 2014).

Sample Location	Average $\delta^{13}C$, ‰	$\delta^{13}C$ range, ‰
Injection CO_2	-11.6	-12.1 to -11.0
Groundwater		
W-1	-16.4	-18.2 to -15.8
W-2	-16.6	-16.9 to -16.3
W-3	-16.8	-17.9 to -16.1
Vadose CO_2		
W1A	-24.2	-26.5 to -21.8
W2A	-24.1	-25.6 to -22.9
W2D	-25.9	-27.5 to -25.3
W3A	-24.3	-27.8 to -21.0
W4	-25.3	-29.2 to -22.7
W5	-26.4	-28.5 to -21.0
W7	-25.4	-27.4 to -22.3
CBM, PIT		
MH-3	23.1	21.1 to 25.4
MC-5	23.1	22.7 to 23.5
MH-12	22.3	19.1 to 23.3
Vegetation (single sample, May 2014)		
W1A	-28.8	
W2A	-30.6	
W2D	-30.0	
W3A	-28.4	
W4	-17.0	
W5	-31.2	
W7	-25.6	

Surface deflection

WVU researchers installed 36 high-precision tiltmeters and 2 GPS receivers at the field site (Figure 27) to monitor surface deformation during CO_2 injection. On a regular basis, a central processing unit situated at the test site collected tiltmeter data and elevation changes. Project data, such as production rates and injection rates, were integrated with tilt data to interpret the monitoring results and analyze ground deformations. (H.J. Siriwardane, 2014)

From the beginning of CO_2 injection (September 8, 2009) until the end of August, 2010, some ground displacements (uplift) were observed along the injection well laterals with a maximum uplift of 3.3 mm (0.13″). Increases in formation fluid pressure or coal swelling could have caused this uplift. Figure 51 is a graphical representation of the ground deformation with positive deflection to the east and south, particularly along the southerly-oriented lateral of MH-20, and negative deflection to the north and west.

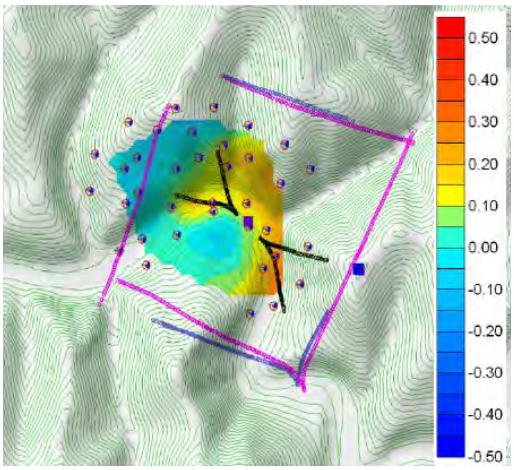

Figure 51. A graphical depiction of the tiltmeter movement that represents ground deformation (H.J. Siriwardane, 2014).

Injection system operations experience

For the purposes of this report, we have focused this section on the injection operations experiences, as these details are most relevant to the commercialization of these systems.

Labor

Below we have detailed the labor involvement required in three main injection system operations functional areas for operations and maintenance experiences.

General

General labor includes the basic operation of the system and the maintenance required to keep the system accessible and running.

Operations

The injection system was controlled remotely via a satellite communication connection, as the remote location did not enjoy the luxury of high-speed telecommunications services. Through the satellite connection, we were afforded remote communications with the control system and view real-time operations data through a virtual private network (VPN) connection that allowed us to make adjustments to the process, as necessary, and eliminate the need for on-site personnel. Figure 52 is an image of the satellite communications dish at the site.

Since the area was remote and unattended, security cameras were added after minor thefts were incurred. The cameras allowed us to view the area and focus on specific pieces of equipment that may have been indicating operational problems through the data.

Figure 52. The satellite communications dish at the project site.

Maintenance

Aside from occasional software upgrades, little general maintenance was required during the project. Access to the site; however, was a constant concern. The access road to the injection pad required frequent grading and pot-hole filling to minimize hazards for the CO_2 deliveries. The remote and wooded area of the project site was also a source of concern. Following each storm, it was necessary to inspect the access road for blockage by fallen trees, rockslides, and/or downed electrical wires. Work on the access road was completed by a local general contractor who also plowed snow from the access road.

Pumping

Operations

The original cryogenic pumping system showed limited success. The pumping system was originally designed to withstand a maximum injection pressure of 700 psig. As the injection proceeded and the pressure increased, more time was spent observing the process as, when the pressure increased, it was necessary to increase the pump speed to maintain an acceptable injection rate. Conversely, when the maximum injection pressure was achieved, it was necessary to decrease the pump speed to maintain the injection pressure below the limit.

The triplex pump required less operational interaction as, during the installation period, we incorporated an operations loop in the programming that allowed the control logic to maintain a desired injection pressure by automatically controlling the pump speed to a user-selected maximum pump speed. The programming significantly decreased the process observation time.

Maintenance

Maintenance requirements on the pumping system decreased when the original system was replaced with the triplex pumping system. As detailed previously, the original system was subject to frequent mechanical failure requiring unplanned visits to the site to rebuild the pump. Additionally, the original pump required adjustments to the cylinder lubrication system and the filtration system that required

filter media replacement every two weeks to several months, depending on the duration of active injection. The triplex pump system featured a self-oiling crankcase that kept the cylinders lubricated. The oil was changed after 500 hours of operation and another change was unnecessary during the remainder of the project.

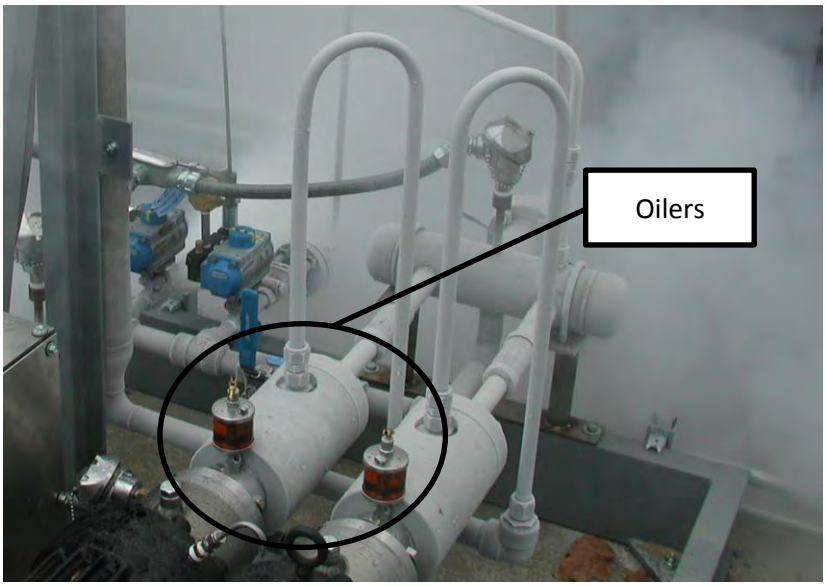

Figure 53. The original pump heads, showing the oilers (circled).

Vaporization operations and maintenance

Vaporization occurred in a shell-in-tube heat exchanger that was heated with water circulated through a hot water boiler. The vaporizer required no operational labor. Temperatures of the vaporizer were controlled with the injection control logic. Initially, the hot water boiler incorporated a safety feature the prevented the boiler from relighting after a fault in the system until a manual reset button was pressed to ensure an inspection of the system was performed before the unit could be repowered.

The faults we encountered with the boiler involved fuel quality and availability; leaks were not a concern as we could remotely determine the presence of a leak by observing the fuel gas pressure provided by the control system. Other pressures and temperatures that would provide indication of a problem with the system were also provided by the control system. Given this level of remote detail, we eliminated the manual reset button and created an electronic version of it in the control logic. Having the ability to reset the boiler saved many four-hour round trips to the site to simply press a button.

As mentioned above, fuel quality and availability were the primary faults affecting the vaporization system. Availability was occasionally restricted by local gas gathering operations work but, most often, it was interrupted by water in the fuel that would impact combustion and, during periods of cold weather, create blockages by freezing in the lines. An inline gas polishing system provided particulate filtration and desiccation, improving the reliability of the vaporization system.

Utilities

The utilities necessary for the site were minimal. Water was unnecessary and, since telephone service was not available at the site, communications occurred via satellite connections by satellite phone or through the VPN connection using an instant messaging application or, later as mobile phone

technology improved, using web-based telecommunications applications. The following sections provide detail on the utilities that were necessary for the operation of the injection system.

Liquid CO_2 supply

The most critical need for the injection process was the supply of liquid CO_2. The logistics of this supply were complicated by our uncertain operations. During periods of consistent injection we were required to schedule more frequent 20-ton deliveries to ensure an adequate supply in our onsite 50-ton storage tank. Delivery ranged from one every three to four days, during the early phase of injection with the original pumping system, to one per day with two deliveries every two to three days when we were able to achieve injection rates that were in excess of 20 tons per day with the triplex pumping system. A total of 258 hours of injection were lost to unplanned interruptions in the CO_2 supply.

Vaporized CO_2 was not only injected, we also utilized it to power the pneumatically-controlled valves in the injection system. Vaporized CO_2 was fed from the headspace of the storage tank to a receiving tank. Utilizing this pressure source eliminated the need for an air compressor that would have added to the installation and operations and maintenance costs.

Boiler Fuel

As discussed earlier, the hot water boiler was fired with CBM, provided by project production wells, through a gathering line that passed through the project site and was adjacent to the injection pad. As detailed above, the fuel was not pipeline quality but it was readily available and sufficient for our needs. One-thousand thirty-six hours of injection time were lost due to interruptions in the gas supply.

Electricity

A 220-volt power supply was provided to the site by the local power company. Electricity in this area is provided with overhead power lines and, given the rural and wooded nature of the location, was subject to frequent storm-related power interruptions. Downed power lines servicing the site were responsible for 652 hours of lost injection time.

While an emergency generator would have been a workable solution for the project, we did not want to cause additional draw on the gathering line that serviced our hot water boiler. Additionally, should we have chosen to use propane to fuel an emergency generator for the site, the power provided by the generator would have only lasted as long as the fuel supply and, as was the case in most of the power outages at the site, the power outage was generally associated with storm damage in the area that may have also prohibited access to the site by a propane delivery service.

Figure 54. Inclement weather, downed trees, frequent site inaccessibility, and electrical service interruptions were limiting factors for the injection rate.

Injection challenges and solutions

The challenges to the successful completion of this project can be grouped into two categories: those resulting from the location of the project site and those limiting the injection.

Location

The remote location of the chosen project site coupled with the rugged topography provided several challenges.

Communications

With the utilization of satellite communications, we were able to eliminate the need for full-time operations personnel. At any point, project personnel had the ability to log into the operations program, remotely via a computer or wireless device, to view conditions and change settings, even shut down or restart the process, if needed. Initially, the satellite connection speed was slow but, over the duration of the project, continuing improvements to the communications technology and Voice over Internet Protocol (VoIP) applications by the service and applications providers made the use of web-based communications practical and eliminated the need for land-based communications.

Electrical service

The remote location and utilization of overhead power supply cables impacted the reliability of the electrical service. A generator may be beneficial for sites with a reliable and adequate gas supply or reliable accessibility for propane deliveries. As our site was most frequently without power due to conditions that also limited accessibility, a generator was not a practical solution.

CO_2 deliveries

Liquid CO_2 deliveries were impacted by scheduling and accessibility that was occasionally limited by weather. Frequent monitoring of tank levels allowed us to foresee the need for deliveries and schedule shipments when needed; however, we did encounter episodes when trucks were unavailable on the

desired delivery date and we were forced to shut down due to low levels in the on-site storage tank. This occurred most frequently during periods of intermittent injection when we could not accurately predict our injection rates. With the revised pumping system, we were able to create weekly delivery schedules and prevent these shutdowns.

Injection continuity

Several problems were encountered that prevented us from maintaining a consistent injection rate and prolonged the injection period. The root causes of the inconsistency are detailed in the following sections.

Fuel limitations

Provided our project wells were producing, we enjoyed a consistent supply of fuel gas to vaporize our liquid CO_2 supply; however, multiple interruptions of the gas supply forced the system offline. While the maintenance work that occurred on the area gathering lines on two occasions were unavoidable, we were able to limit interruptions caused by freezing with the installation of electric heat tracing by our operations group, at the wellheads and also along our supply line to the boiler. The installation of a gas supply desiccation system also improved the reliability of the boiler operation by removing impurities in the gas supply and further reducing moisture to prevent freezing in the smaller boiler fuel supply lines.

Pump failures

Failure of the original pumping system reduced our injection time and eventually forced us to fall short of our total CO_2 injection goal. A total of 562 lost days of injection can be attributed to failures in the pumping system, which occurred under both the original and replacement pumping systems. While we did incur failures with the triplex pump, the need for repair was reduced.

Pressure limitation

Two hundred ninety-one of the days offline were spent either modifying the original injection system to allow for operation at the 933 psig level or installing and troubleshooting the triplex pumping system. Had we opted for triplex pumping system initially, much of the delay time would have occurred in advance of the start of injection. The triplex pump would have provided us with greater flexibility and the injection system would have been designed to operate at a higher rate than we had initially expected would be necessary.

Loss of injectivity

At the lower injection pressures, the observed injection rate declined over time to approximately 6 tons per day. Initially, increasing the allowable injection pressure from 700 psig to 933 psig did provide a period of improved injection rate; however, over time, the daily injection rate again declined to about 6 tons per day. It wasn't until we increased the injection pressure to operate under the 1,400 psig limit that we observed a higher rate of injection that was sustained at a level of 16 tons per day, in a single well (MH-18), when conducting a study to see if this would result in an increased tiltmeter response from June 24, 2013, to July 16, 2013; and 22 tons per day, while injecting in both wells after that time. Table 27 provides the average daily injection rates at each injection pressure limit while Figures 58 – 58 show the trends of the injection rates over time.

Water in the coal seam can restrict CO_2 injection. While the UF does transmit water, the seam is not a tremendous producer of water; e.g., UF well MH-11 required pumping only once daily, while PIT well MH-12 required a routine pumping schedule of several times per day to maintain consistent CBM flow.

Another impediment to successful injection is swelling of the coal induced by the CO_2 injection, itself. Several reports have reported decreased permeability in the coal during injection. As the CO_2 is taken into the seam, it not only adsorbs to the surfaces of the coal, it also penetrates the coal, causing it to swell (Sloss, 2015).

The swelling of the coal was the likely source of the observed decreased injectivity over time at lower pressures. Each of the stoppages we encountered occurred with the injection laterals containing pressurized CO_2. When the system shut down, the valves to the wells would close, trapping the CO_2 in the injection lateral. The CO_2 would then "soak" in the well until the injection resumed. Over time, during each stoppage, we observed the pressure decreasing as the CO_2 likely worked into the coal seam by differential pressure. The increased interaction time between the CO_2 and the coal at the interior surface of the injection laterals allowed greater opportunity for swelling at that surface and, over time, with more and longer stoppages, the permeability of the coal at the interior surface of the injection lateral eventually became so decreased that higher pressure was required to meet the desired injection rate.

Once the triplex pump was placed in service and initially operated under the limit of 933 psig, we observed a continued decrease in the injection rate, below that observed with the original pumping system. When we increased the pump pressure to observe the limit of 1,400 psig, the pressure and rate quickly responded, moving to a maximum pressure of 1,350 psig and a rate of approximately 16 tons per day as we injected into MH-18 only, while conducting a study with the tiltmeters. Within two weeks of operation, the pressure fell to an average of 1,230 psig and the injection rate remained consistent at approximately 16 tons per day. When the tiltmeter study concluded and we opened flow to MH-20, the pressure in MH-18 dropped to approximately 1,100 psig, over the following month, while the pressure in MH-20 climbed from an initial 830 psig to its maximum level of 1,017 psig. With both wells in service, the injection rate consistently achieved a daily rate of 22 tons per day. The 100-200 psig increase allowed for a consistently higher injection rate.

Table 27. Observed injection rates at the various injection pressure limits.

Injection pressure limit, psig	Hours of injection	Total tons of CO_2 injected	Injection rate	
			Tons per hour	Tons per day[c]
700	2,162	912	0.42	10.1
933[a]	4,649	1,592	0.34	8.21
933[b]	3,048	698	0.22	5.28
1,400	2,122	1,609	0.76	18.2

a – Using the original injection system

b – Using the triplex pump injection system

c – assumed 24-hour time weighted average (TWA), based on ton per hour rate

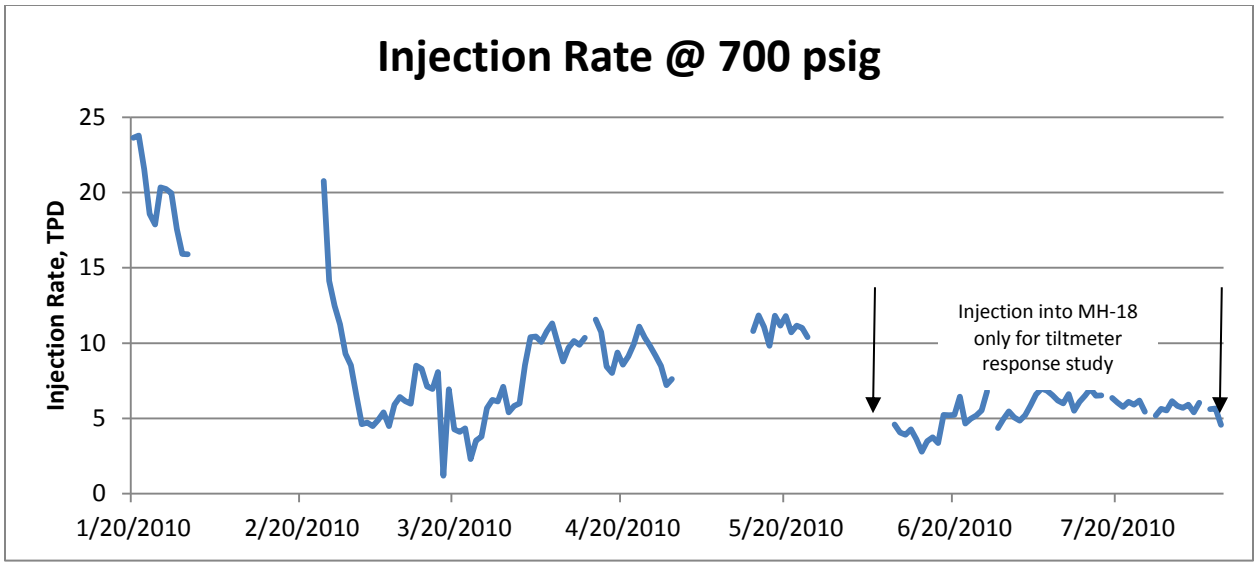

Figure 55. Daily, 24-hr TWA, injection rates during the 700 psig injection limit period.

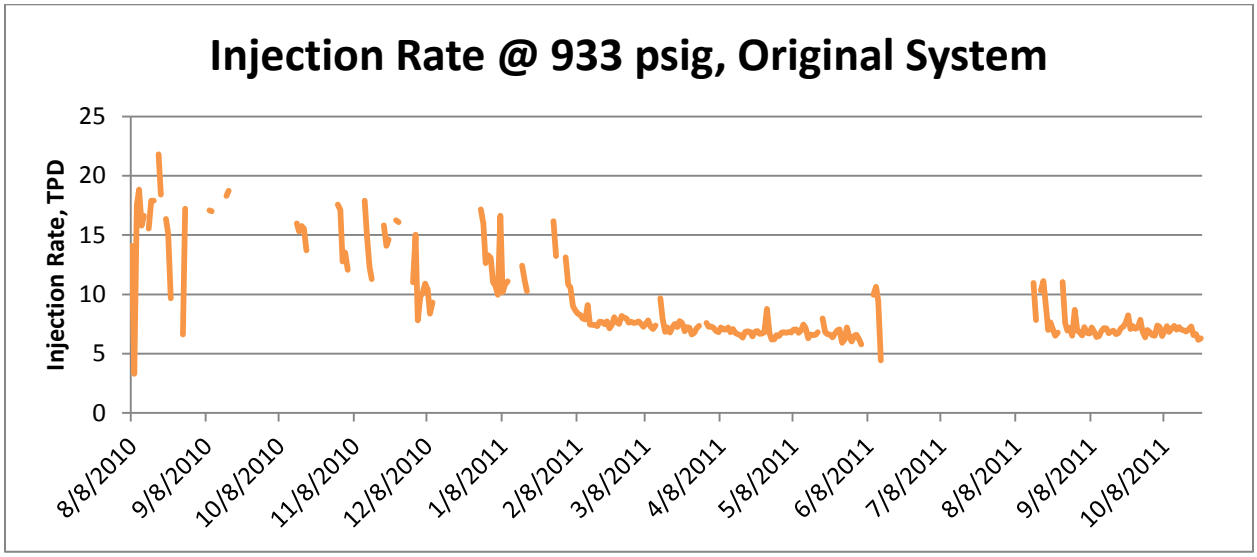

Figure 56. Daily, 24-hr TWA, injection rates with the original injection system, during the 933 psig injection limit period.

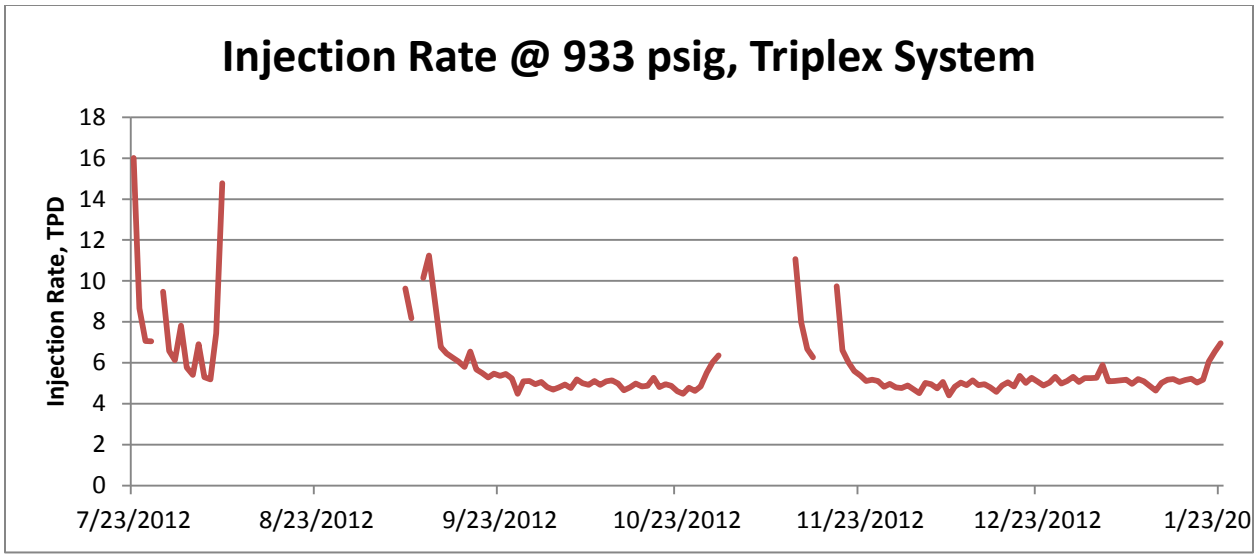

Figure 57. Daily, 24-hr TWA, injection rates with the triplex pump injection system, during the 933 psig injection limit period.

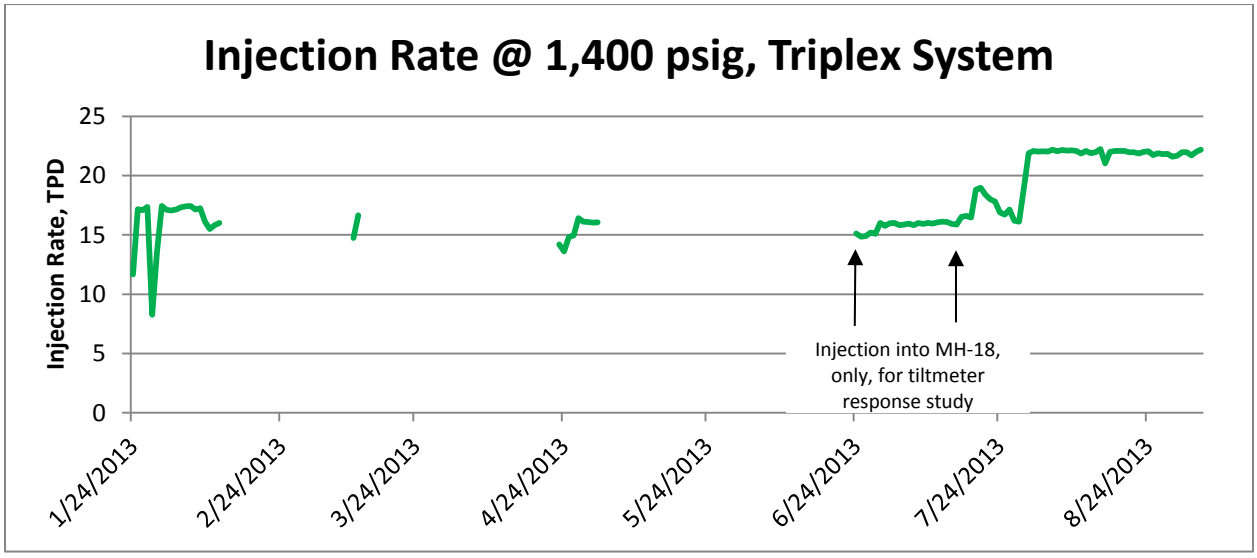

Figure 58. Daily, 24-hr TWA, injection rates with the triplex pump injection system, during the 1,400 psig injection limit period.

Conceptual Economics

To evaluate the economics of sequestering carbon dioxide into unmineable coal seams, the costs for this demonstration project were summarized, and the unit costs and performance were translated into various conceptual future commercial scenarios. Each scenario was built sequentially and identified technical improvements that could improve the economics. Sensitivity analysis was conducted on the different scenarios by changing the costs of methane and carbon dioxide. The following scenarios were evaluated:

1) Demonstration project evaluation

2) Conceptual brownfield case using unit costs from demonstration project

   2a) Convert three production wells to injection wells, six production wells

3) Conceptual brownfield cases with technical improvements

   Increase area of impact,

   3a) Convert three production wells to injection wells, six production wells

   3b) Drill three new injection wells, six production wells

      3bi) Reduce drilling costs for three new injection wells

Demonstration Project Capital Costs

To determine the actual capital costs of the demonstration project, the contractor invoices were sorted and grouped to account for spending in specific categories. Some costs were not available because they were not invoiced to the project and were estimated to provide a comprehensive economic analysis. A categorized breakdown, provided in Table 28, provides total costs as well as calculated costs per foot, per site, and per well type.

CONSOL's drilling costs included access road construction, site preparation, water-pumping systems, and drilling. Access road construction costs were approximately $65,000 per site. Each production site consisted of two or three wells; the north site had two wells in the mineable (PIT) seam and one well in the unmineable (UF) seam, the center site had two wells in the UF, and the south site had one well in each seam. The center site wells were later converted to injection wells. The costs for site preparation include clearing the land and leveling an area to accommodate the drilling rig and other site infrastructure at an estimated cost of $225,000 per site. Pumping systems for water extraction cost an estimated $18,000 per well. The available costs included drilling UF and PIT production wells MH-3, MH-4, MH-5, MH-6, MH-11, MH-12, MH-18, and MH-20and converting wells MH-18 and MH-20 to injection wells. Even though MH-6 was abandoned, the costs incurred for that well were included in the total contractor invoices utilized in this evaluation and were, therefore, possible to subtract it out. The drilling costs do not include the costs incurred to drill the MH-26 and MH-27 observation wells. Drilling costs were estimated to be $1,126,000 per well or $107 per foot drilled (total drilled length was 39,347 ft.); of which; were 17,297 ft. of vertically drilled sections and 22,050 ft. of horizontally drilled sections. For simplification of this analysis, the term production well or injection well is used as a functional description and may include several separate wells that were co-located.

Table 28. Capital Costs for ECBM Demonstration Project

Capital Cost Component	Price	Unit price
Access Roads	$ 195,000	$65,000/site
Drilling	$ 4,218,000	$107/ft drilled $1,294,000/ injection well $958,000/ production well
Site Prep	$ 675,000	$225,000/site
Pumping System	$ 72,000	$18,000/well
Subtotal	$ 5,161,000	
Production facilities and field infrastructure costs		
CO_2 injection system & piping	$331,000	$64,000/well
Gas compression facilities	$197,000	$39,000/well
Subtotal	$528,000	
Total	$5,689,000	

The combined drilling cost per production well is $958,000, as shown in Table 28. The injection well cost was slightly more, $1,294,000, due to an increased amount of drilling of 9,360 feet compared to an average 7,497 feet for the production wells. Drilling length includes both the vertical distance to reach the coal seam as well as the horizontal lateral in the coal seam. Even though there were two separate wells drilled as injection wells into the deeper UF coal seam, this analysis treats the combination as a single injection site. The average drilled length for a production well was obtained by averaging the wells drilled, including the access wells; refer to the conceptual perspective view of the wells in Figures 6 and 7 for an illustration.

The methane gas from the production wells goes to a production facility and then to a commercial pipeline as sales gas. The infrastructure required includes transport piping, a compression system, and gas processing plant. Typical treatment units at a gas processing plant for CBM include a dehydration system to remove water and an amine system to remove CO_2. The costs for this equipment are usually the responsibility of the midstream company and would not be included in the sequestration project costs. Costs may be incurred as temporary equipment is needed before the midstream infrastructure is available from the well. Temporary compression and pipeline was added to the demonstration project costs for the first-year-and-a-half. Raw CBM from the production sites was piped to a compressor that compressed the CBM to commercial pipeline pressure of 1000 psig. The pipe diameter priced was based

on the maximum gas volume that would be produced from the wells. A factor of $20,000/in-mile was used to estimate the total cost of the pipe and installation as actual costs are unavailable. The cost for the compressors was based on a unit cost of dollars per brake horsepower ($/bhp).

The CO_2 injection system included the storage tank, vaporizer, and injection pumps. The size of the piping was based on the desired maximum injection rate of CO_2. A multiplier of $20,000/in-mile was used to estimate the total cost of the pipe and installation since actual costs were unavailable. The capital cost for installation of piping for CO_2 transport is calculated to be $10,000 per injection well. The overall capital cost for the injection and production wells with the auxiliary equipment and piping was $5,689,000.

Annual O&M

The annual operating and maintenance (O&M) costs used for this analysis were a combination of actual field costs and unit costs used by Reeves (Reeves S. R., 2004). Table 29 summarizes the values used in the economic evaluation. The monthly well O&M costs are based on the actual time spent at the well sites. Assuming the operator will visit the production site for one hour per week and spend five hours per week at the injection site, the O&M costs would be $217/production site per month and $1,083/injection site per month.

O&M costs were also required for the pipeline, temporary compressor, and temporary processing plant. Since CONSOL's equipment was already being used for other gas wells in the area so, these costs were not charged specifically to project. The method used to determine the O&M costs for pipeline was based on Reeves study (Reeves S. R., 2004) using a unit cost per thousand cubic feet of gas and multiplying by the maximum production rate. An inflation component was added to the prices to reflect an average cost over the project period. The O&M costs for the temporary equipment were only accounted for a short period of time in the beginning of the project when it was used.

Additional operating costs associated with an injection well include safety and monitoring and verification. The cost used, $10,000/injector/yr, is taken from Reeves (Reeves S. R., 2004).

Table 29. Operating Costs for Gas Wells for CO2 Sequestration.

Description	**Cost/Unit**
New Production Wells	$217/site/month 2 production wells
New Injection Wells	$1083/site/month 1 injection well
Pipeline Maintenance	$0.011/mcf
Compression	$0.33/mcf
Gas Processing-CO_2	$0.56/mcf
Safety, Monitoring and Verification	$10,000/injector/yr

Water disposal costs are a significant O&M cost in the Northern Appalachia coal region where the project site was located. It was expected that dewatering volume would peak the first year and then follow a steep decline curve, continuing at a low rate for the life of the production well. The water production from the Pittsburgh coal seam did not follow this pattern. Daily field data were available from 2005 through 2008 which showed a trend of increasing water collection from well MH-12 to increase from 130 barrels per day to 260 barrels per day over time, as shown in Figure 59. Additional field data were available from 2015 when the rate had dropped to around 30 barrels per day. Water production data was not collected between 2008 and 2015.

The assumption made to determine the total costs of water disposal was that the water production stabilized over two years after 2008, and then declined to 55 barrels per day by the end of 2011. Figure 59 shows the decline that was used for this analysis.

The quantity of water produced from the Freeport seam wells was negligible, and it was not impacted by the injection of carbon dioxide. UF well MH-11 produced about 1 barrel per day in 2006 and then stopped producing water.

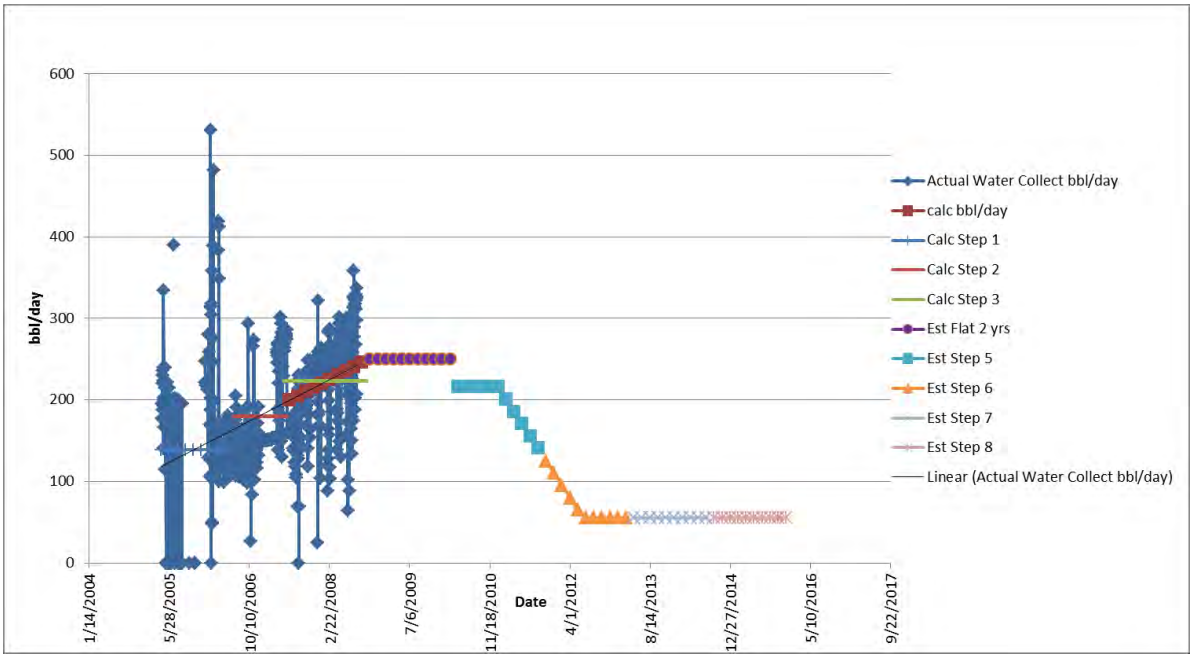

Figure 59. Water Production Rates for MH-12 Well over Time (Actual and Estimated).

Water disposal costs include hauling the water by truck to a treatment site, and disposal. The disposal costs ranged from $0.08/gal to $0.12/gal, or $3.36/barrel to $5.04/barrel, depending on the distance the water had to be trucked. Disposal costs were not obtained from the gas company since the contractor invoices did not show the quantity of water that was hauled for the given cost. As previously stated, the volume of water collected was tracked in the beginning of the project but the disposal unit price was estimated. The estimated overall water costs ranged from $68,000/yr the first year to $332,000/yr between year two and year five, and $186,000 during the injection period, as shown in Table 30. Water disposal costs were not charged to the actual project; however, we include them here for what would normally be considered a typical cost.

Table 30. Water Disposal Costs for CBM and ECBM Wells.

Period of Time	Costs per year
Water Disposal - yr 1	$68,000/ yr
Water Disposal after yr 1	$332,000/ yr
Water Disposal – during ECBM	$186,000/ yr

Methane Production and CO_2 Injectivity

The area of coal that was drained of gas was determined by using the actual drilled lateral lengths in each of the coal seams. The assumed gas production volumes for these calculations include CBM from the region within the AOR, as well as from an area extending half the distance of each perpendicular well lateral beyond the AOR. For the Pittsburgh seam it was assumed the drainage or production area was 6,000 feet by 5,849 feet, or the equivalent of 806 acres, of coal measuring 6-feet thick. Assuming 136 cubic feet of gas per ton of coal (ft^3/ton) contained in the Pittsburgh seam (based on the core analysis as summarized in Table 3), yields 1,180 million cubic feet (mmcf) of methane present in the coal. The project produced a total of 915 mmcf of methane from the Pittsburgh seam over the 4,031 days, which calculates to 77.6% recovery of gas. Typical recovery experienced in CBM wells is around 55% before they are shut-in; so this is a higher recovery than expected and could indicate the area of drainage may be greater than what was assumed.

For the UF seam, we assumed the drainage area was 1,500 feet by 4,700 feet (162 acres) of coal averaging 4.5-feet thick, with a range from two feet in the southeast to six feet in the northwest. Assuming 182 ft^3/ton of gas contained in the UF seam (based on Table 3), yields 238 mmcf of methane present in the coal. The project extracted 56 mmcf of CBM during conventional recovery and 46 mmcf of CBM during enhanced methane recovery using carbon dioxide injection, which is only a 42.8% overall recovery of the methane, with 23.6% collected conventionally and 19.2% enhanced with carbon dioxide injection.

The average rate of depletion during conventional drainage of the Pittsburgh seam was 227.2 mcf/day, while the average rate for the UF seam was 31.6 mcf/day. The average rate of injection of the carbon dioxide into the Freeport seam was 56.3 mcf per day, overall, but the average was 161.5 mcf per day on actual injection days. This equates to 9.36 tons of CO_2/day, on average, during the injection days. On specific days, toward the end of the project, the measured injection rate increased to 22 tons/day. The rate of methane that was extracted during the calendar injection days was 20.3 mcf/day, providing a volumetric ratio of carbon dioxide injected to methane produced of 1.88.

The observed ratio is lower than expected, based on studies done by Reeves (Reeves S. R., 2003), where the rank of the coal was compared with the sorption capacity for carbon dioxide and methane. Reeves found that less CO_2 will replace the methane, or be adsorbed on the coal, on a volume to volume basis, as the rank of the coal increases. With a high-volatile A bituminous coal such as the UF, a 3:1 replacement ratio of CO_2 to methane on a volume basis is predicted.

Commodity Prices

The price of natural gas has a significant impact on the economics of ECBM production. Higher natural gas sales prices allow for greater investment on drilling, operation, and the purchase price of carbon dioxide (if any). The daily Henry Hub spot price of natural gas ranged from $15.39/mcf to $1.85/mcf over the life of the project (2005 to 2015.) Over this period of time, the price of natural gas steadily declined. The range of gas sales prices over the duration of the project was $10.17/mcf to $1.50/mcf. The overall average sales price of CONSOL's gas was $5.726/mcf.

The price of carbon dioxide also has a significant impact on the economics of a sequestration project. The carbon dioxide used in this project was purchased at a range from $148/ton to $168/ton, with the average cost at $151.84/ton. In the future there is potential to obtain a disposal fee to take the carbon dioxide as a waste product, should emission regulations be implemented.

Economic Evaluation of Demonstration Project

Appendix J shows the total cost analysis of CO_2 sequestration for this project. Table 31 is a summary of the key parameters of the analysis. The total project cost was $9.31 MM, while the total revenue was only $5.82 MM which generated a loss of $3.48 MM. The project costs include the capital expenses, commercial carbon dioxide purchase, and operating and maintenance costs for the duration of the project. The capital cost portion was $5.69 MM, or 61% of the project costs. The operating and maintenance costs were $3.62 MM for CO_2 sequestration. The revenue is the value of selling the methane produced. This analysis does not account for the value of the land and resource, depreciation of the capital, or any taxes.

Table 31. Summary of Demonstration Project Economics.

Variable	**Marshall County Gas Field With CO_2 Sequestration**
Cost	$9.31 MM
Benefit	-$3.48 MM
Gas produced, mcf	1,017,365
Cost of gas produced, $/mcf	$9.15
Quantity of CO_2 sequestered, ton	4968
Cost of CO_2 sequestered, $/ton	-$700.95
Years of production/injection & post injection	11.04/6.17
Methane selling price, $/mcf	$5.726
CO2 purchase price, $/ton	$151.84

The cost of gas production can be expressed in dollars per thousand cubic feet of gas by dividing the total cost by the gas produced. The cost of CO_2 sequestration can be expressed in dollars per ton of CO_2 by dividing the monetary benefit by the amount of CO_2 injected. The monetary benefit is calculated by subtracting the revenue generated by the gas production from the total capital and operating costs. The table shows that the cost of this demonstration project was $9.15 per mcf of gas produced. Selling the gas at $5.73/mcf resulted in a loss of $3.42 per 1000 cubic feet of gas.

Since this was a demonstration project and horizontal drilling for CBM was in its infancy when the project was started, the project was not expected to generate income. The objective was to determine the feasibility of the concept.

Conceptual Future Projects in Unmineable Coal Seams

Future CO_2 sequestration and ECBM projects in unmineable coal seams in Northern Appalachia can utilize the lessons learned from this demonstration project and transfer them to a brownfield site, with existing wells, to reduce capital costs.

A brownfield site, in this application, would be categorized as an existing CBM field with declining gas production nearing the end of its economic life as a gas project. The partially drained unmineable coal seams would become CO_2 reservoirs for sequestration and produce additional gas (i.e., ECBM). This approach allows sequestration to take maximum advantage of acquired land, site access development, site preparation, and other infrastructure originally developed for the CBM operation.

The least amount of capital would be spent if both the injection well and the production well exist. Unlike the project detailed herein, the future concept would not have the benefit of a production well from a mineable coal seam. The concept plan would have one injection well for every two production wells and the project would include three sets of this combination; therefore, six total production wells and three injection wells. The injection wells would be converted from production wells after three to five years from their first production when their production had declined.

The project can take advantage of existing infrastructure, assuming the existing gathering and methane processing systems will function properly and no additional capital will be required to accommodate the change from CBM production to ECBM production, other than the conversion of the production well to an injection well.

The one new infrastructure item to be capitalized is a carbon dioxide injection system. Since, at this time, there are no commercial carbon dioxide pipelines available in the Northern Appalachian basin, the carbon dioxide delivery system would be similar to what was designed in the demonstration project. The concept would utilize a centralized location with a large carbon dioxide storage tank and pumping system, similar to that used for this project. Injection piping would have to be run from this central location to each of the injection wells. A centralized storage system would be easier for deliveries of commercially sourced carbon dioxide, due to the topography of the Appalachian area. The additional capital was added to the economic evaluation for piping to transfer the carbon dioxide to the injection wells.

The O&M costs for this scenario would be the same unit costs per well and piping as was determined for the demonstration project. Because the production wells have already been producing in a brownfield scenario, it is assumed that the water collection would reflect the lowest volumes demonstrated in the field; i.e., 55 bbl/day.

We also assumed that the enhanced production rate of methane and the injection rate of carbon dioxide would remain the same as what was measured in the demonstration project, 20.3 mcf

CH_4/day/well and 56.3 mcf CO_2/day/well, which is equivalent to injecting a total of only 13.2 tons of carbon dioxide per day in the unmineable coal seam. It was also assumed the unmineable coal seam would contain the same amount of methane as the UF seam and the ECBM recovery of 19.2% would be obtainable for each well. Using these constraints, the amount of time to recover the ECBM would be 6.17 years.

Economics of a Conceptual Brownfield Site

The conceptual brownfield scenario described here does not generate a profit. Appendix J shows the total cost analysis of CO_2 sequestration in the Brownfield Northern Appalachia CBM scenario. Table 32 is a summary of the key parameters of the analysis showing a cost of $6.04 MM to sequester CO_2 and produce methane in this scenario; including capital and O&M costs for 6.17 years. The total capital cost was significantly reduced by $3 MM, compared to the demonstration project, because there were no wells drilled; however, there was also 743,000 mcf less methane produced, compared to the demonstration project. The scenario in this simplified analysis shows a loss of $4.47mm when gas sells at $5.726/mcf and carbon dioxide is purchased at $151.84/ton.

Table 32. Summary of Economics for Brownfield.

Variable	Appalachia Brownfield Gas Field With CO_2 Sequestration
Cost	$6.04mm
Benefit	-$4.47mm
Gas produced, mcf	274,000
Cost of gas produced, $/mcf	$22.04
Quantity of CO_2 sequestered, ton	14,905
Cost of CO_2 sequestered, $/ton	-$300.04
Years of production/injection	6.17/6.17
Methane selling price, $/mcf	$5.726
CO2 purchase price, $/ton	$151.84

Opportunities for Improvement

One area of opportunity for improvement to the economics is to increase the amount of coal area from which the gas will be drained. In the demonstration project, the Freeport seam was thin and the drilling of the laterals was terminated short of the desired length so the area of depletion was only 162 acres (compare to the area drained in Pittsburgh seam, 806 acres). If a future drilling plan reflects an area with characteristics that are similar to the Pittsburgh seam, a sequestration project would have a better chance of being economical.

Expanding the production footprint increases the amount of gas that is available for extraction. The model assumes that the amount of ECBM that would be produced was 19.2% of the available gas and the volume ratio of CO_2-to-CH_4 remained at 1.88 and that the rate of CO_2 injection would be at the a maximum of 27 tons/day or 466 mcf/day, resulting in 4.95 years for sequestration and ECBM activities. This scenario also results in a financial loss (-$7.86mm) when the price of CO_2 was at the average price paid in the demonstration project, $151.84/ton, and the gas selling price was at the average price of $5.726/mcf. The details are in Table 33.

The table shows that methane produced from a brownfield site in Northern Appalachia costs $10.05 per mcf of gas produced; selling the gas at $5.726/mcf results in a net loss of $4.32 per mcf of gas. At a gas sales price of $5.726/mcf, the breakeven point is achieved when the operator pays $72.76/ton for CO_2.

A sensitivity analysis was completed by varying the sales price of the gas and the price of the carbon dioxide. The gas sales prices were varied from $11.00/mcf to $1.00/mcf, based on the actual price changes that were experienced over the project period. The carbon dioxide prices were varied from $151/ton to -$50/ton, to reflect the purchase price of carbon dioxide to what a utility company might be willing to pay to dispose of captured carbon dioxide emissions. Figure 60 shows when the cost of carbon dioxide is $151/ton, the price of methane has to be above $10/mcf for the project to become economical. When the price of carbon dioxide is $0/ton, the project is profitable when gas is above $1.80/mcf; in this situation, a power plant gives the delivered carbon dioxide to the gas producer. When the gas price is at $5.73/mcf the price of the carbon dioxide has to be less than $70/ton for the project to have a positive monetary benefit.

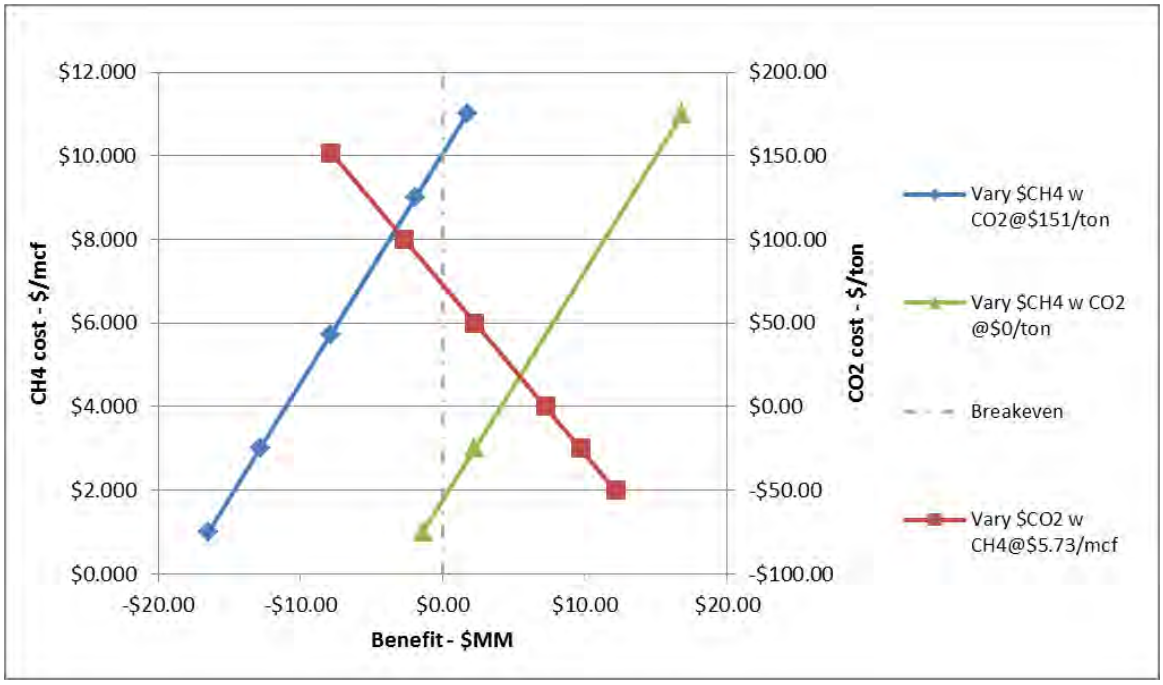

Figure 60. Variation in monetary benefit as methane and carbon dioxide prices change.

Clearly, it is unlikely that ECBM can be profitable if it is necessary to purchase commercial carbon dioxide at $151/ton; therefore, we reduced the carbon dioxide price range in further evaluations to $30/ton and -$12/ton. The $12/ton value is roughly equivalent to the current allowance price for carbon dioxide credits traded on the California Climate Exchange. Figure 61 shows when the cost of the

carbon dioxide is within this range, the project can have a positive benefit when the gas price is above $3.50/mcf.

Further analysis was then done using the cost of carbon dioxide at $30/ton. Table 33 shows improved economics compared to the scenario with carbon dioxide at $151.84/ton. The project costs dropped to $6.17 MM which resulted in an economic benefit of $4.25 MM. The methane produced at these lower carbon dioxide costs was $3.39/mcf.

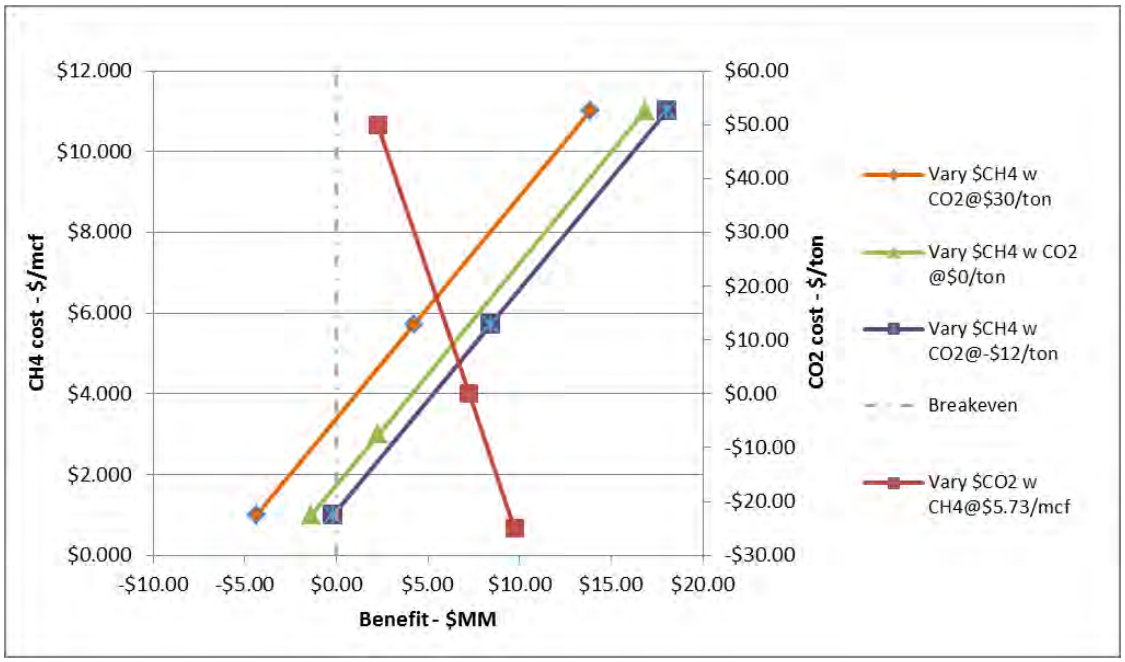

Figure 61. Variation in monetary benefit as methane selling price varies from $1/mcf to $11/mcf and carbon dioxide cost varies from -$12/ton to $30/ton.

One of the constraints in the previous scenarios is the limited amount of methane that is extracted from the coal seam. One method of improving production is to drill new injection wells instead of converting a depleted production well into an injection well. This would allow gas production before the sequestration period started. The economics showed that when considering paying $30/ton of carbon dioxide and selling methane at $5.726/mcf; there was an improvement of monetary benefit to $12.03 MM, as seen in Table 33.

Even with the additional cost of drilling the injection wells, the cost to produce methane decreased to $2.76 per mcf and the project can pay up to $121.12/ton of CO_2 and remain profitable. The additional 3.9 years of pre-injection gas production from the new wells helps defray the new drilling costs.

Improving drilling costs could make the scenario profitable. As seen in the demonstration project, there was an improvement in the drilling costs after the north wells were drilled. The cost improvements were incorporated into the analysis to see how much improvement could be realized. The capital costs were reduced by $1.2 MM, and this generates a greater monetary benefit of $13.22mm, as seen in Table 33.

Table 33. Summary of Scenario Analysis for CBM and ECBM Wells at Increased Gas Drainage Area.

Variable	Converted CO2 Injection, $151.84/ton CO_2	Converted CO2 Injection, $30.00/ton CO_2	Drilled New CO2 Injection Wells, $30.00/ton CO_2	Drilled New CO2 Injection Wells at Lower Cost, $30.00/ton CO_2
Cost	$18.27 MM	$6.17 MM	$11.18 MM	$9.99 MM
Benefit	-$7.86 MM	$4.25 MM	$12.03 MM	$13.22 MM
Gas produced, mcf	1,819,000	1,819,000	4,055,000	4,055,000
Cost of gas produced, $/mcf	$10.05	$3.39	$2.76	$2.46
Quantity of CO_2 sequestered, ton	99,334	99,334	99,334	99,334
Cost of CO_2 sequestered, $/ton (adjustment from $/ton CO2 used in calc)	-$79.08	$42.76	$121.12	$133.12
Years of production/injection	4.95/4.95	4.95/4.95	8.85/4.95	8.85/4.95
Methane selling price, $/mcf	$5.726	$5.726	$5.726	$5.726
CO2 purchase price, $/ton	$151.84	$30.00	$30.00	$30.00

An additional sensitivity analysis was conducted on the improved case of drilling the injection wells first. Figure 62 is a graphical representation of the difference between not drilling injection wells, and drilling the injection wells, when there is no cost for carbon dioxide. As the sales price of the gas goes up, it is more profitable to drill the well instead of just converting a depleted production well into an injection well. Figure 62 shows that whether there is pre-drainage or no pre-drainage from the injection wells, the project becomes profitable around $2.00/mcf of methane when there is no cost for the carbon dioxide. The monetary benefit curve increases to greater values when there is pre-drainage with a new well.

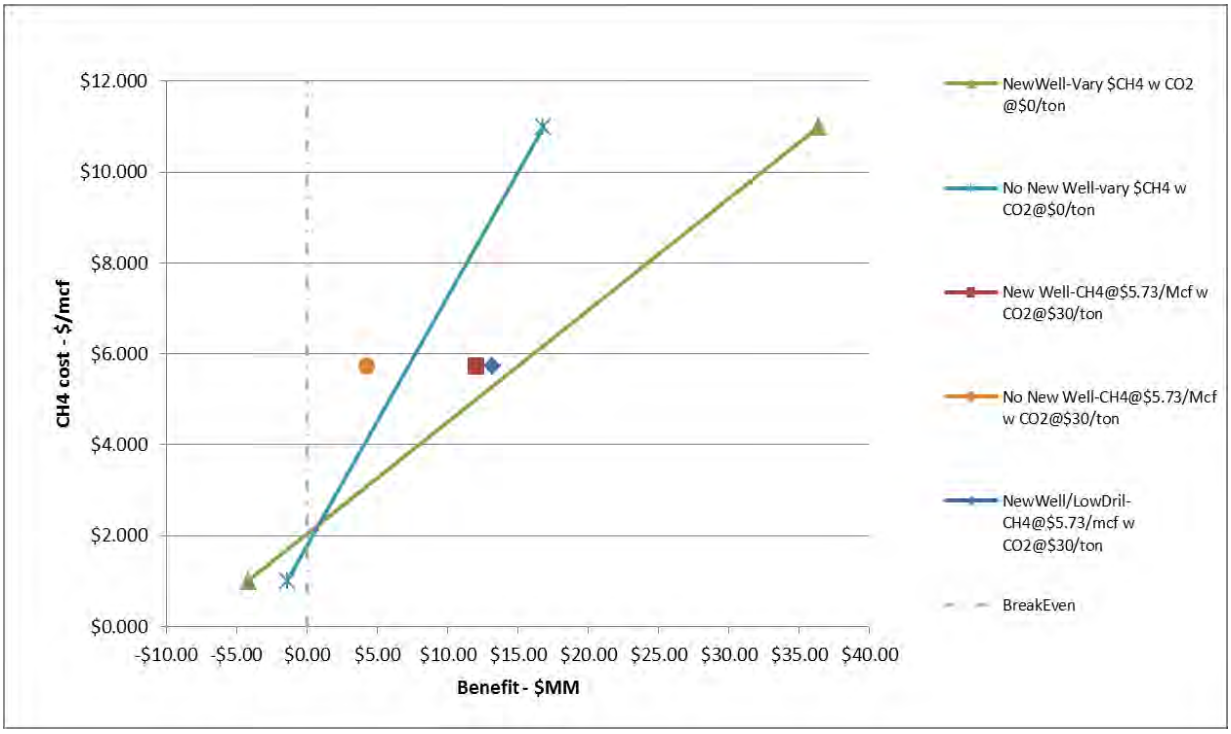

Figure 62. Impact on profit of drilling injection wells as methane and carbon dioxide prices change.

The last set of scenarios was used to analyze a situation that would be most relevant for a sequestration project in the near future. In today's market, $3/mcf for gas is a high price. Also, it is more reasonable to assume that the delivered carbon dioxide would come from a regulated entity, free of charge to the gas company. As in the other scenarios, carbon dioxide distribution piping, and operating and maintenance costs would still be required. Table 34 shows the results from evaluating the same three cases: not drilling injection wells (i.e., using depleted producers), drilling new injection wells at high costs, and drilling new injection wells at low cost. The results show that there is more benefit with greater gas production, but the cost of sequestering a ton of CO_2 is lowest if no drilling is done. When no injection well is drilled, the cost of gas produced is at $1.75/mcf, which is less than the assumed market price of $3.00/mcf, so a profit is realized. The cost of carbon dioxide sequestration is $22.84/ton, which means the supplier could potentially be paid a small amount for the carbon dioxide. The highest net present value is obtained when new injection wells are drilled at lower costs since the money for the additional gas produced would be obtained at the beginning of the project.

Table 34. Summary of Scenario Analysis for CBM and ECBM Wells at $3.00/mcf CH4 and $0.00/ton CO_2.

Variable	Converted CO2 Injection	Drilled New CO2 Injection Wells	Drilled New CO2 Injection Wells at Lower Cost
Cost	$3.19 MM	$8.20 MM	$7.01mm
Benefit	$2.27 MM	$3.96 MM	$5.15mm
NPV at Discount Rate 12.1	$1.51 MM	$1.33 MM	$2.39mm
Gas produced, mcf	1,819,000	4,055,000	4,055,,000
Cost of gas produced, $/mcf	$1.75	$2.02	$1.73
Quantity of CO_2 sequestered, ton	99,334	99,334	99,334
Cost of CO_2 sequestered, $/ton	$22.84	$39.85	$51.85
Years of production/injection	4.95/4.95	8.85/4.95	8.85/4.95
$/mcf methane	$3.00	$3.00	$3.00
$/ton CO2	$0.00	$0.00	$0.00

Summary of the Economic Evaluation

For future applications of ECBM production using carbon dioxide sequestration, it is important to evaluate each case separately. For example, the number of wells available for methane production will have an impact on the economics. The commodity prices of methane and carbon dioxide are also significant. Commercially-purchased carbon dioxide allows for limited profitability. Low or negative prices for delivered carbon dioxide are beneficial**.**

Summary Conclusions and Recommendations

The Marshall County Project developed and operated a coal-bed CO_2 sequestration site composed of a series of horizontally drilled wells into two overlying coal seams. The overall goal of the project, conducted in 2001-2015, was to determine the suitability of using unmineable coal seams as sequestration sinks for CO_2 while reaping the simultaneous co-benefit of enhanced CBM production. The project was conducted as part of the U.S. Department of Energy's (DOE's) Carbon Storage Program (CSP), which is managed by its National Energy Technology Laboratory (NETL) Office of Fossil Energy (FE). Principle conclusions of the project are as follows:

- When drilling new production wells, it is imperative the wells be developed in a manner that will provide for effective water extraction to allow for adequate CBM production. The first wells drilled in this project were poor producers because they could not be effectively dewatered. The CBM could have been more effectively drained, perhaps allowing more CO_2 to be sequestered, had the north site wells been better producers.
- The technology appears to be economically feasible only in situations with high natural gas selling prices and negative or zero costs for delivered CO_2.
- Over a period of four years, we injected nearly 5,000 tons of CO_2 into the target coal seam stopping, upon CO_2 breakthrough, short of our 20,000 ton goal. Maintaining the desired injection rate is crucial to the success of the project. Maintaining the injection rate would have reduced the amount of operation time and associated expenses before experiencing breakthrough, and may have allowed for greater injection volumes.
- Selecting injection system components that are readily available will reduce the downtime experienced during malfunctions and may also provide cost savings for the purchase of the more plentiful equipment. In this project, the original injection pump was the only one of its kind and we were required to return components to the vendor for refurbishment after each failure. This step would have been eliminated had these components been available for replacement.
- An intensive monitoring program based on a wide variety of monitoring methods provided no credible evidence that the injected CO_2 migrated vertically out of the UF seam, and no credible evidence that the injected CO_2 migrated horizontally outside of the area of review (AOR). A intensive and extensive environmental monitoring program provides a high level of confidence that the injected CO_2 remains within the area of review (AOR), except for the CO_2 produced upon breakthrough.
- Typical CBM production curves show declining production either in very short time or after at most a few years of active production. The UF wells in this project exhibited increased production rates following the initiation of CO_2 injection, and their production rates were still increasing at the end of the project, two years after the cessation of injection. We consider this increase to be “enhanced” production, likely caused by the CO_2 injection. Over the four years of injection, the average annual increase in daily production rates was 18.5% for MH-5 and 22.3% for MH-11.

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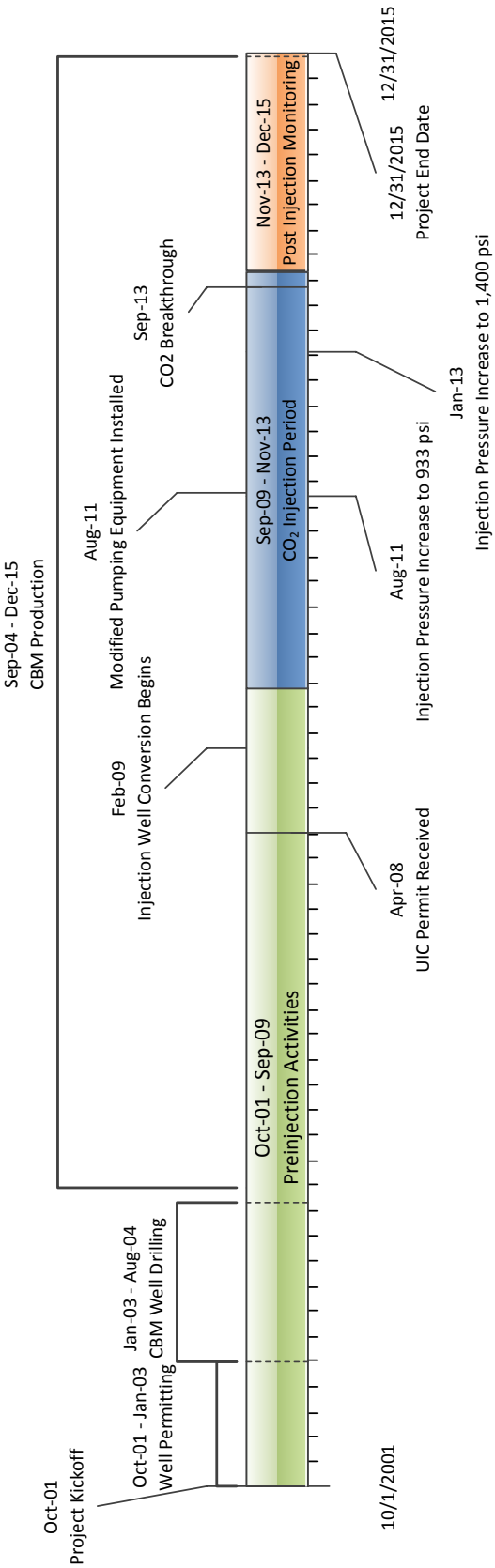
Appendices

Appendix A

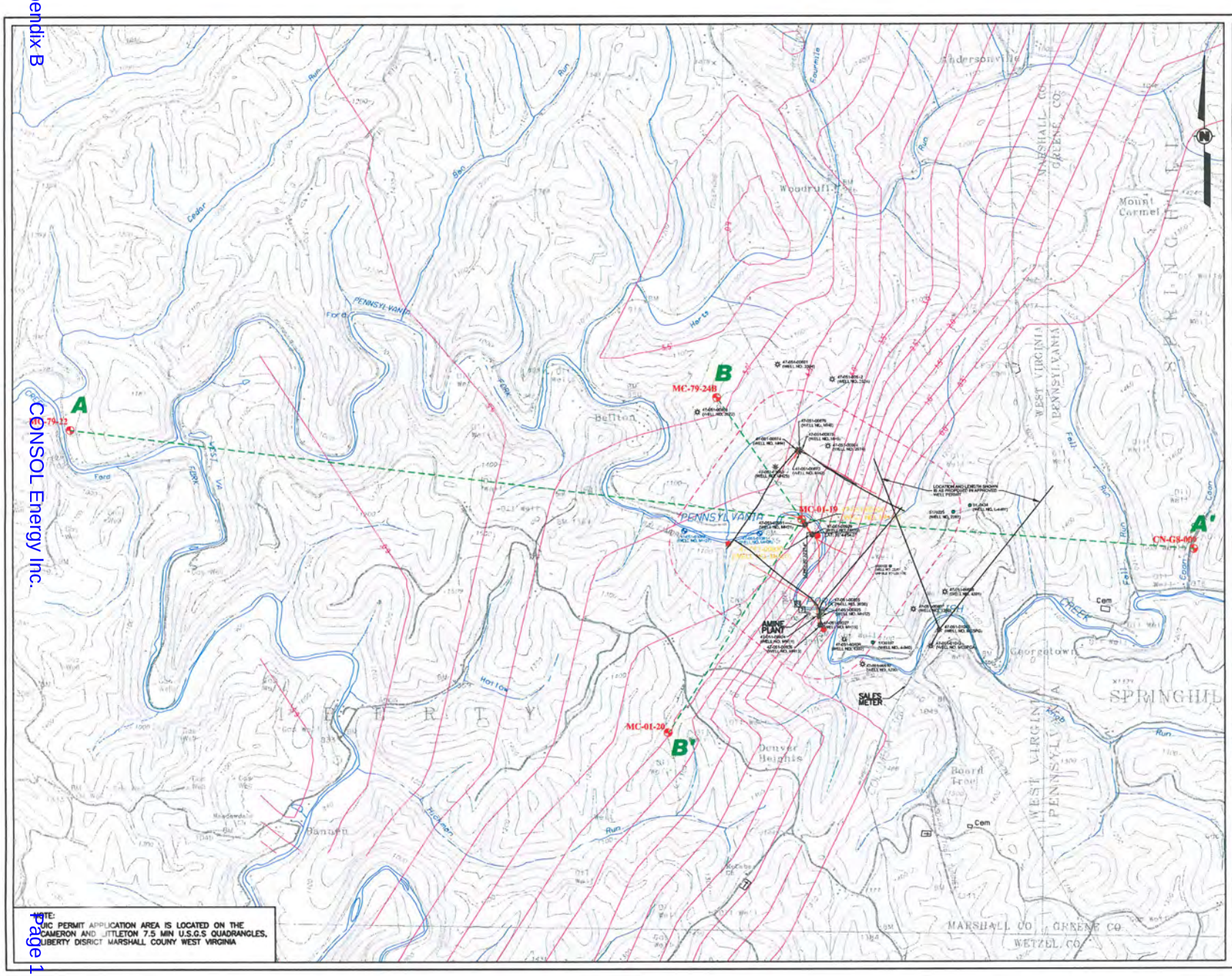
Project Timetable

PROJECT TIMELINE

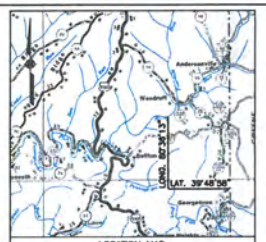


Appendix B

Core Logs and Associated Stratigraphic Cross-Sections



NOTE:
UIC PERMIT APPLICATION AREA IS LOCATED ON THE CAMERON AND LITTLETON 7.5 MIN U.S.G.S QUADRANGLES, LIBERTY DISRICT MARSHALL COUNY WEST VIRGINIA



LOCATION MAP
WV DEPT. OF HIGHWAYS
LIBERTY DISTRICT OF MARSHALL COUNTY
CAMERON AND LITTLETON QUADRANGLES
SCALE : 1" = 1 MILE

LEGEND

21	COMPRESSOR STATION
	WATER TANKS
	HORIZONTAL LATERAL IN UPPER FREEPORT SEAM
	HORIZONTAL LATERAL IN PITTSBURGH SEAM
0.5'	UPPER FREEPORT SEAM THICKNESS
47-051-00712	ACTIVE GAS WELL
47-051-01083	PLUGGED GAS WELL
5130102	WELL DRILLED PRIOR TO THE ONSET OF PERMITTING REQUIREMENTS IN 1929 AND ABANDONED AFTER 1929; IDENTIFIED BY WVDEP AS THE ABANDONED SERIES OF WELL PERMIT NUMBERS;
5170230	"BY-FARM" WELLS, GENERALLY DRILLED PRIOR TO 1929, WITH NO OFFICIAL PERMIT NUMBER; SOME WELLS MAY HAVE BEEN DRILLED AFTER 1929, BUT HAVE INCOMPLETE OR INACCURATE INFORMATION ON THE LOG HEADER;
	CO_2 INJECTION WELL
	MONITORING WELL
	CONSOL COAL COREHOLE
	MONITORING WELLS (WVU) 100' DEEP
	1/4 MILE AREA OF REVIEW
A--A'	GEOLOGIC CROSS SECTION

SCALE
1000 0 1000 2000 FEET

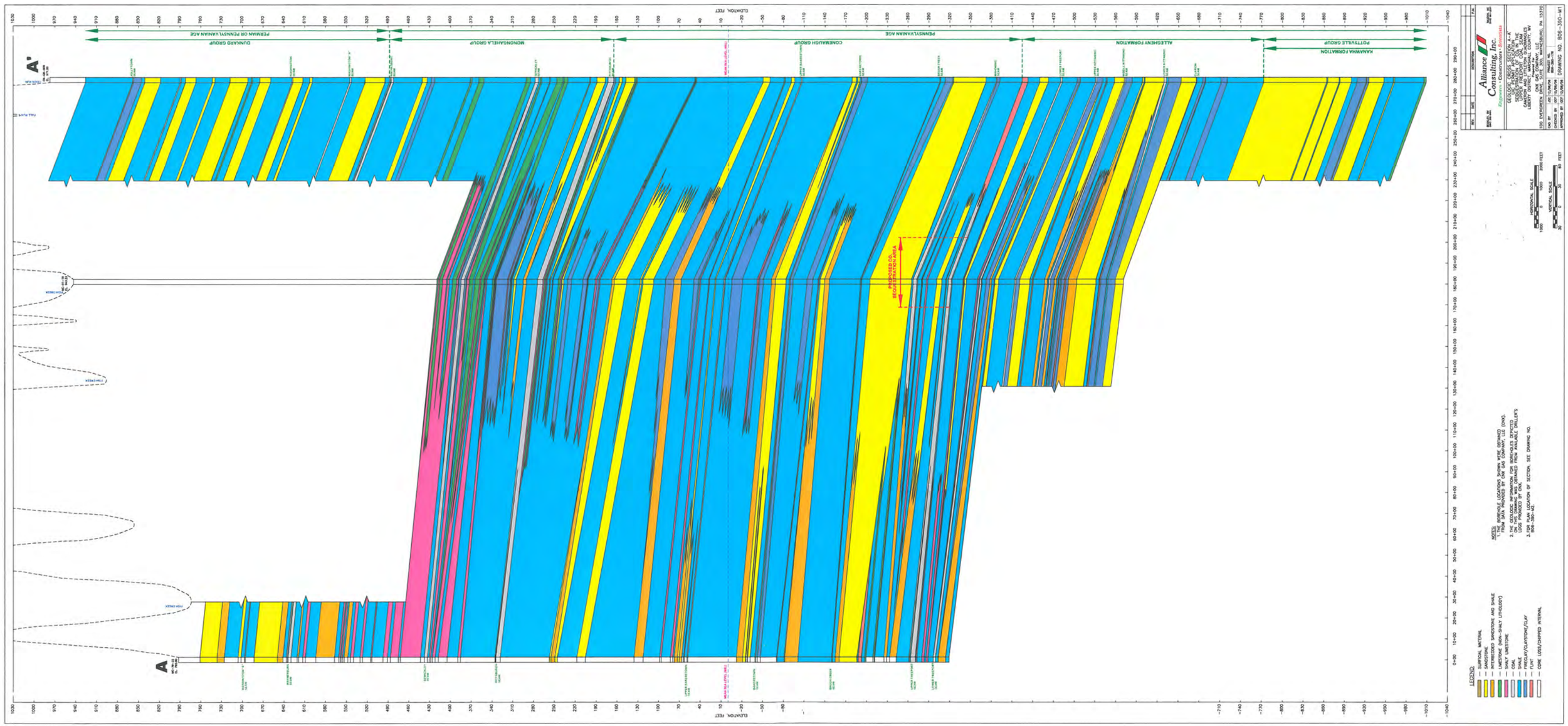
REV.	DATE	DESCRIPTION	P.M.
6	03/09/09	CORRECTED LOCATIONS OF MH19 AND MH21	GWB
5	01/17/08	REMOVED 1/2 MILE LIMIT AND REVISE LOCATION OF WELL 5130102	GWB
4	10/05/07	REVISED GASWELL AND MONITORING WELL LOCATIONS	GWB
3	05/01/07	REVISED GASWELL AND MONITORING WELL LOCATIONS	CEY
2	01/29/07	ADDED GAS WELL LOCATIONS	CEY

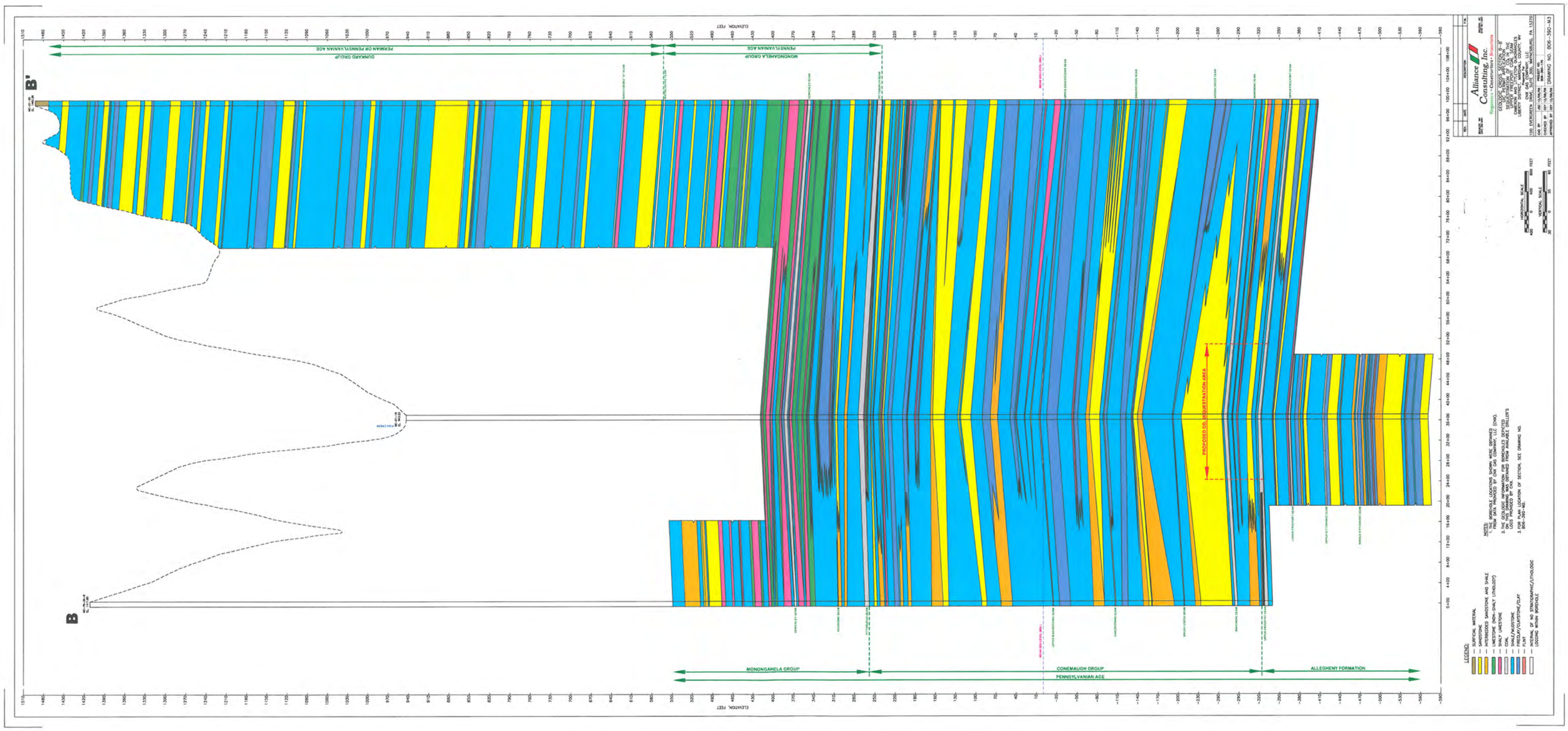
BECKLEY, WV (304) 252-6441
Alliance Consulting, Inc.
Engineers • Constructors • Scientists
HOUSTON, PA (724) 503-1042

CLASS II UIC PERMIT APPLICATION
GENERAL SITE FEATURES MAP
SEQUESTRATION OF CO_2 IN UPPER FREEPORT COAL SEAM
NEAR CAMERON, MARSHALL COUNTY, WEST VIRGINIA

Prepared For
CNX GAS COMPANY, LLC
1800 WASHINGTON ROAD PITTSBURGH, PA 15241-1421

CAD BY	JWD	10/31/06	PROJECT NO. B06-390-176
CHECKED BY	LKL	12/18/06	
APPROVED BY	CEY	12/18/06	DRAWING NO. B06-390-M4


A
A'
ELEVATION, FEET
KANAWHA FORMATION
POTTSVILLE GROUP
ALLEGHENY FORMATION
CONEMAUGH GROUP
PENNSYLVANIAN AGE
MONONGAHELA GROUP
DUNKARD GROUP
PERMIAN OR PENNSYLVANIAN AGE
REGISTERED DA
REGISTERED AREA
HORIZONTAL SCALE
1000 0 1000 2000 FEET
VERTICAL SCALE
50 0 50 100 FEET
LEGEND:
— SURFICIAL MATERIAL
— WEATHERED SANDSTONE AND SHALE
— SANDSTONE
— LIMESTONE (NON-SHALY LITHOLOGY)
— SHALY LIMESTONE
— COAL
— SHALE
— FIRECLAY/CLAYSTONE/CLAY
— FLINT
— CORE LOSS/DRIPPED INTERVAL
NOTES:
1. THE BOREHOLE LOCATIONS SHOWN WERE DERIVED FROM SURVEY DATA PROVIDED BY CNX GAS COMPANY, LLC (CNX).
2. THE GEOLOGY SHOWN IS BASED ON CORE DRILLED ON THIS DRAWING WAS OBTAINED FROM AVAILABLE DRILLER'S LOGS AND CORE DESCRIPTIONS.
3. FOR PLAN LOCATION OF SECTION, SEE DRAWING NO. 806-390-M2.
Alliance Consulting, Inc.
Engineers • Constructors • Specialists
GEOLOGIC CROSS SECTION A-A'
SEGREGATED POINT OF COAL IN THE
CANTON AND LITTLETON QUADRANGLES
LIBERTY AND WAYNE DISTRICTS
CNX GAS COMPANY, LLC
100 EXECUTIVE DRIVE, SUITE 300, WAYNESBURG, PA 15370
DRAWING NO. 806-390-M1


B
B'
ELEVATION / FEET
DUNKARD GROUP
PERMIAN OR PENNSYLVANIAN AGE
MONONGAHELA GROUP
PENNSYLVANIAN AGE
PROPOSED DA SEDIMENTATION AREA
MONONGAHELA GROUP
CONEMAUGH GROUP
ALLEGHENY FORMATION
PENNSYLVANIAN AGE
LEGEND:
SURFICIAL MATERIAL
SANDSTONE
INTERBEDDED SANDSTONE AND SHALE
SHALE (OR SILTSTONE OR CLAYEY LIMOLOGY)
SHALY LIMESTONE
COAL
SHALE/MUDSTONE
FIRECLAY/CLAYSTONE/CLAY
FLINT
MATERIAL OF NO STRATIGRAPHIC/LITHOLOGIC LOGGING WERE AVAILABLE
NOTES:
1. THE BOREHOLE LOCATIONS SHOWN WERE OBTAINED FROM DATA PROVIDED BY CNX GAS COMPANY, LLC (CNX).
2. THIS DRAWING WAS DEPICTED FROM AND ARE STELLEN'S ON THE DRAWING BY CNX.
3. FOR LOCATION OF SECTION, SEE DRAWING NO. BOS-39G-M3.
HORIZONTAL SCALE
VERTICAL SCALE
Alliance Consulting, Inc.
Engineers • Surveyors
GEOLOGIC CROSS SECTION B-B'
STONE PERMIT AREA
CAMERON AND LIBERTY TOWNSHIPS
MARSHALL COUNTY, WEST VIRGINIA
CNX GAS Company LLC
1000 CONSOL ENERGY DRIVE, SUITE 200, CANONSBURG, PA 15317
DRAWING NO. BOS-39G-M3

PTt 6.72
UF 4.25

Center

□(8U□(s0p16.67h8.5v0s0b0T□&18d□&a12L

Actual ~39°44' [illegible]
80°33' [illegible]

CONSOLIDATION COAL COMPANY
UNKNOWN
DEEP HOLES (000)

*** GEOLOGIST LOG ***
HOLE NO = MC-01- 19

Lat 39.749056770
Lg 80.5403807[illegible]

STATE = W.VIRGINIA COUNTY = MARSHALL TWP = RANGE = SECT =

S ELEV = 943.23 HOW DET = EDM USGS QUAD = LITTLETON USGS SIZE = 71/2 MIN

N-COOR = 163808. E-COOR = 1215411. SOURCE = STATE LOC CODE = SURVEYED ELOG = 13

MERIDIAN = SECT-NUM = CONTR = L.J. HUGHES DRILLER = J. HAMRICK DRILL CODE = CNT CORE

FLUID = WATER FLOW = NONE CEMENTED = .0 - 1780.0 WRAPPING = UNKNOWN CONTAINER =UNKNOWN

CORE COND. = SEE CHR UNITS = ENGLISH SURFACE AZIMUTH DEG = [illegible] .00 SURFACE INC DEG = .00

INSPECTOR = E. THOMAS DATE DRILLED = TO
DATA SOURCE = CONSOL

West Virginia NAD 27
easting → 1707419
northing → 456600
According to Russ Lipps, values are "original" coordinates

COMMENTS = DRILLER'S LOG ONLY TO 524'

*** DATA ENTERED IN TO-DEPTHS ***

STRATA ELEV (TOP)	STRATA DEPTH FROM	STRATA DEPTH TO	STRATA THICK	SEAM CODE	LITHOLOGY	CHARACTERISTICS AND COMMENTS
943.23	.00	524.00	524.00		SURFACE	CASING,OVERBURDEN
419.23	524.00	524.30	.30	BN	SHALE,GREEN	MOT
418.93	524.30	525.40	1.10	BN	LIMESTONE,FINE-GRAINED,MASSIVE	LIT GRY
417.83	525.40	525.80	.40	BN	SHALE,GRAY	LIM MAS
417.43	525.80	527.90	2.10	BN	INTERBEDDED LIMESTONE AND SHALE	LIT GRY
415.33	527.90	531.40	3.50	BN	LIMESTONE,FINE-GRAINED,MOSAIC	LBR HRD SLY
411.83	531.40	531.70	.30	BN	SHALE,GRAY	LIM
411.53	531.70	537.60	5.90	BN	SHALY LIMESTONE,FGR,MOZ	GRY SHS
405.63	537.60	538.90	1.30	BN	SHALE,GREEN	LIM CAS SPC
404.33	538.90	541.50	2.60	BN	SHALY LIMESTONE,FGR,MOZ	GRY VRY SHY

401.73	541.50	546.20	4.70	BN	MUDSTONE GRY GRN LIM MAS
397.03	546.20	552.00	5.80	BN	LIMESTONE,FINE-GRAINED,MASSIVE LBR SLY HRD
391.23	552.00	554.40	2.40	BN	SHALY LIMESTONE,FGR,MAS GRY
388.83	554.40	555.20	.80		MUDSTONE DRK GRY LIM MOT
388.03	555.20	558.70	3.50		CLAYSTONE DRK GRY CLY SLK BKN PYT
384.53	558.70	559.10	.40		BLACK SHALE PYS
384.13	559.10	563.50	4.40	SW	COMMON BANDED COAL
379.73	563.50	564.30	.80		CLAYSTONE DRK GRY FRM
378.93	564.30	565.90	1.60		CLAYSTONE,GREEN MOT DRK SGT CLY SPC
377.33	565.90	566.70	.80		BLACK SHALE LIM WBD FRM
376.53	566.70	569.20	2.50	SL	SHALY LIMESTONE,FGR,MAS GRY BRN SLY
374.03	569.20	570.30	1.10	SL	INTERBEDDED LIMESTONE AND SHALE DRK SHS SSS SPC
372.93	570.30	576.00	5.70	SL	LIMESTONE,FINE-GRAINED,MASSIVE LBR SLY HRD
367.23	576.00	576.50	.50	SL	SHALE,DARK GRAY LIM FRM
366.73	576.50	577.60	1.10	SL	SHALE,GREEN CLY HSS
365.63	577.60	578.50	.90	SL	SHALE,DARK GRAY LIM FRM SPC
364.73	578.50	585.00	6.50	SL	LIMESTONE,FINE-GRAINED,MASSIVE LBR HRD SLY SHS SPC
358.23	585.00	587.00	2.00	SL	SHALY LIMESTONE,FGR,W/LS NOD GRY BRN SHS SPC
356.23	587.00	587.20	.20	SL	SHALE,DARK GRAY LIM
356.03	587.20	591.70	4.50	SL	LIMESTONE,FINE-GRAINED,MASSIVE LBR SLY HRD SPC
351.53	591.70	592.60	.90	SL	SHALY LIMESTONE,FGR,W/LS NOD GRY MOT GLC
350.63	592.60	594.20	1.60		SHALE,GRAY WBD GRN FRM LIM SPC
349.03	594.20	595.60	1.40		SHALY LIMESTONE,FGR,MAS MOT VRY SHY GLC
347.63	595.60	596.90	1.30		SHALE,GRAY,W/LIMESTONE NODULES CAN ABT SGT CLY
346.33	596.90	602.20	5.30		SHALE,GRAY,W/LIMESTONE NODULES SLY PYT WBD FRM
341.03	602.20	604.00	1.80		SHALE,DRK GRY,W/LS NOD TBD FRM
339.23	604.00	606.10	2.10	FL	LIMESTONE,FINE-GRAINED,MASSIVE LIT GRY SLY HRD SPC
337.13	606.10	606.80	.70	FL	SHALY LIMESTONE,FGR,MAS GRY
336.43	606.80	607.90	1.10	FL	CLAYSTONE,GRN,W/LS NOD LIM CLS
335.33	607.90	608.50	.60	FL	SHALY LIMESTONE,FGR,MAS GRY SPC
334.73	608.50	609.30	.80		SHALE,DARK GRAY MOT FRM SPC

CONSOLIDATION COAL COMPANY
UNKNOWN
DEEP HOLES (000)

HOLE NO = MC-01- 19

DRILL CONTR = L.J. HUGHES

STRATA ELEV (TOP)	STRATA DEPTH FROM	TO	STRATA THICK	SEAM CODE	LITHOLOGY AND COMMENTS
333.93	609.30	611.00	1.70		CLAYSTONE DRK GRN MOT SLK FRK
332.23	611.00	625.30	14.30		CLAYSTONE,GRN,W/LS NOD SLK BKN GLC
317.93	625.30	626.80	1.50		SHALY LIMESTONE,FGR,W/LS NOD LIT GRY SPC
316.43	626.80	629.50	2.70		CLAYSTONE,GREEN MOT DRK SLK
313.73	629.50	630.20	.70		FLINTCLAY,BRECCIATED TAN GRN BRC
313.03	630.20	631.30	1.10		SHALE,GRAY,W/DISRUPTED BEDDING CFF CLS MOT SPC
311.93	631.30	632.00	.70		CLAY GRY SFT HVS
311.23	632.00	634.80	2.80		SHALE W/SS STK,GRAY WBD SLY CAN FEW SPC
308.43	634.80	635.40	.60		CARBONATE CEMENTED SANDSTONE FGR SPC
307.83	635.40	637.80	2.40		SANDSTONE,GRAY,W/SHALE STREAKS FGR RIP GLC
305.43	637.80	639.40	1.60		SHALE,GRAY SLY WBD SPC
303.83	639.40	645.60	6.20		SHALE,GRAY,W/DISRUPTED BEDDING IPY ABT CAN FEW FRM
297.63	645.60	648.20	2.60		SHALE,DARK GRAY SLY WBD FRM SPC
295.03	648.20	652.30	4.10		INTBD SANDSTONE & SHALE,DRK GRY TBD RIP GLC
290.93	652.30	659.50	7.20		SHALE W/SS STK,DRK GRY TBD SLY PLT CPF GLC
283.73	659.50	664.40	4.90		SHALE,DARK GRAY TBD SMO FRM GLC
278.83	664.40	668.70	4.30		BLACK SHALE CAR SMO FIS
274.53	668.70	669.00	.30		FIRECLAY,BLACK PLT SLK DBD
274.23	669.00	669.30	.30	RCZ	COAL WITH SHALE STREAKS
273.93	669.30	669.40	.10	DS	SHALE,GRAY CLE
273.83	669.40	673.10	3.70	PG	COMMON BANDED COAL
270.13	673.10	673.15	.05	PG	SHALE,DARK GRAY
270.08	673.15	676.12	2.97	PG	COMMON BANDED COAL

6.72

267.11	676.12	676.40	.28		SHALE,DARK GRAY CLN FRM
266.83	676.40	678.20	1.80		SHALY LIMESTONE,FGR,MAS GRY SHB
265.03	678.20	680.30	2.10		LIMESTONE,FINE-GRAINED,MASSIVE LIT GRY SPC
262.93	680.30	681.50	1.20		INTERBEDDED LIMESTONE AND SHALE LIT GRY SHS SPC
261.73	681.50	682.90	1.40		CLAYSTONE GRY GRN MOT SLK SPC
260.33	682.90	686.30	3.40		SHALE W/SS STK,GRAY SLY WBD GLC
256.93	686.30	687.20	.90	LPS	SANDSTONE,GRAY,W/SHALE STREAKS FGR FUP SPC
256.03	687.20	689.60	2.40		SHALE,GRAY FRM TBD GLC
253.63	689.60	690.40	.80		SHALE,GRAY TBD CLS WEK
252.83	690.40	691.00	.60		SHALY LIMESTONE,FGR,MAS GRY MOT
252.23	691.00	698.90	7.90		SANDY SHALE,GRAY,W/LS NOD WBD SSS NBM
244.33	698.90	701.30	2.40		LIMESTONE,FINE-GRAINED,MASSIVE LBR SLY SPC
241.93	701.30	703.20	1.90		SHALY LIMESTONE,FGR,W/LS NOD LIT GRY SPC
240.03	703.20	704.00	.80		SHALE,GREEN WBD FRM
239.23	704.00	706.30	2.30		SANDSTONE,GRAY,CHURNED VFG GLC
236.93	706.30	712.10	5.80		SANDY SHALE,GRAY,MASSIVE WBD ISP FEW SSS GLC
231.13	712.10	717.60	5.50		CLAYSTONE,RED-GREEN MOT CLS SLK WEK
225.63	717.60	725.10	7.50		SANDY SHALE,GRAY,W/LS NOD WBD SSB IKY SPC
218.13	725.10	727.20	2.10		SHALE,GRAY,W/LIMESTONE NODULES IKY SLY SDR ABT
216.03	727.20	727.40	.20		SHALE,RED-GREEN
215.83	727.40	731.30	3.90		SHALE,GRAY SLY WBD IKY
211.93	731.30	734.00	2.70		SHALE,RED-GREEN CLY SFT HSS WEK SPC
209.23	734.00	740.10	6.10		CLAYSTONE,RED-GREEN CLY SFT HSS WEK SPC
203.13	740.10	740.50	.40		SHALE,GREEN SLY LIM
202.73	740.50	741.50	1.00		SHALY LIMESTONE,FGR,W/LS NOD GRY VRY SHY
201.73	741.50	746.70	5.20		SHALE,GREEN,W/LIMESTONE NODULES SLY WBD FRM SDR NBM
196.53	746.70	751.80	5.10		SHALE,RED-GREEN MOT YEL SLK FRK NBM SPC
191.43	751.80	753.90	2.10		SHALY LIMESTONE,FGR,MOZ LIT GRY SHB
189.33	753.90	757.10	3.20		CLAYSTONE,RED-GREEN CLS CLY SLK BKN WEK
186.13	757.10	758.50	1.40		SHALY LIMESTONE,FGR,W/LS NOD LIT

CONSOLIDATION COAL COMPANY
UNKNOWN
DEEP HOLES (000)

HOLE NO = MC-01- 19

DRILL CONTR = L.J. HUGHES

STRATA ELEV (TOP)	STRATA DEPTH FROM	TO	STRATA THICK	SEAM CODE	LITHOLOGY AND COMMENTS
184.73	758.50	760.00	1.50		SHALE,GRAY,W/LIMESTONE NODULES MOT YEL CLS SLK
183.23	760.00	766.10	6.10		SANDY SHALE,GRAY,W/LS NOD WBD IKY SSB GLC
177.13	766.10	775.60	9.50		SANDY SHALE,GRAY,MASSIVE WBD SSS GLC
167.63	775.60	779.00	3.40		INTBD SANDSTONE & SHALE,GRAY TBD SSB SPC
164.23	779.00	789.30	10.30		SANDSTONE,GRAY,MASSIVE MGR CGR HOM DIR CLE
153.93	789.30	789.50	.20		IRONSTONE,MASSIVE DBR
153.73	789.50	796.80	7.30		SANDSTONE,GRAY,MASSIVE MGR DIR DRK ZNS SPC
146.43	796.80	800.00	3.20		SHALE,GRAY,W/LIMESTONE NODULES MOT DRK SLY WBD
143.23	800.00	802.10	2.10		SHALE,GRAY,W/LIMESTONE NODULES CAN ABT LIM FRM
141.13	802.10	816.20	14.10		SANDY SHALE,GRAY,W/LS NOD SSB SHY NTP
127.03	816.20	818.30	2.10		SANDSTONE,GRAY,W/SHALE STREAKS FGR MGR
124.93	818.30	820.60	2.30		SANDY SHALE,GRAY,MASSIVE SLY WBD
122.63	820.60	835.80	15.20		SANDSTONE,GRAY,MASSIVE MGR CGR DIR SHS FEW SPC
107.43	835.80	845.70	9.90		SANDY SHALE,GRAY,W/LS NOD WBD SSS NBM GLC
97.53	845.70	851.60	5.90		SHALE,GRAY SLY WBD RED RAR PYT GLC
91.63	851.60	853.00	1.40		SHALE,RED-GREEN CLY HSS SFT SPC
90.23	853.00	857.30	4.30		CLAYSTONE,RED-GRN,W/LS NOD LIM SLK FRM GLC
85.93	857.30	865.10	7.80		CLAYSTONE,RED,W/LS NOD LIM SFT CLY
78.13	865.10	875.50	10.40		INTBD SANDSTONE & SHALE,GRAY CAN NTP WBD SDY GLC
67.73	875.50	887.40	11.90		SHALE W/SS STK,GRAY TBD SLY IPY FEW GLC
55.83	887.40	894.10	6.70		SHALE,GRAY FRM TBD SLK BKN RED RAR

49.13	894.10	898.00	3.90		CLAYSTONE,RED-GREEN
MOT YEL LIM SLK BKN RED RAR					
45.23	898.00	900.70	2.70		CLAYSTONE,RED-GREEN
CLY SFT HSS HVS SPC					
42.53	900.70	902.30	1.60		SHALE,DRK GRY,W/LS NOD
WBD FRM					
40.93	902.30	903.80	1.50		SHY LIMESTONE,FGR,W/LS
NOD & FOS LIT GRY SPC					
39.43	903.80	910.10	6.30		SHALE,DRK GRY,W/LS NOD
WBD LIM FRM GLC					
33.13	910.10	914.00	3.90		SHALE,DRK GRY,W/LS NOD
LIM CLS CAB WEK					
29.23	914.00	915.30	1.30		SHALE,DRK GRY,W/LS NOD
& FSL LIM FRM					
27.93	915.30	916.00	.70	AM	SHY LIMESTONE,FGR,W/LS
NOD & FOS LIT GRY SPC					
27.23	916.00	919.70	3.70		SHALE,GRAY
WBD SLY FRM GLC					
23.53	919.70	924.00	4.30		SANDY
SHALE,GRAY,MASSIVE SHY					
19.23	924.00	925.30	1.30		SANDSTONE,GRAY,W/SHALE
STREAKS FGR CAN GLC					
17.93	925.30	927.30	2.00		SHALE W/SS STK,GRAY
TBD RIP GLC					
15.93	927.30	930.80	3.50		SHALE,DARK GRAY
TBD FRM GLC					
12.43	930.80	934.30	3.50		SHALE W/SS STK,DRK GRY
TBD FLT GLC					
8.93	934.30	936.90	2.60		SHALE,GRAY
TBD PYT FRM SPC					
6.33	936.90	937.05	.15		BLACK SHALE
CAR					
6.18	937.05	938.25	1.20	UB	COMMON BANDED COAL
4.98	938.25	939.00	.75		FIRECLAY,DARK GRAY
RTD WBD FRM GLC					
4.23	939.00	948.40	9.40		SHALE,GRAY,W/LIMESTONE
NODULES LIM SLK BKN FRK					
-5.17	948.40	957.00	8.60		CLAYSTONE,RED-GRN,W/LS
NOD LIM CLY SLK FRK WEK					
-13.77	957.00	963.30	6.30		CLAYSTONE,RED-GRN,W/LS
NOD CLY WEK HSS MOT					
-20.07	963.30	964.10	.80		CLAYSTONE,GREEN
CLY HSS SFT					
-20.87	964.10	969.40	5.30		SHALE,GREEN
TBD MOT FRM RED NOD SPC					
-26.17	969.40	972.30	2.90		SHALE,RED-GREEN
TBD CLY SFT HSS					
-29.07	972.30	973.60	1.30		SHALE,GRAY
SLY SDR ABT FRM					
-30.37	973.60	975.10	1.50		SHALE,GREEN
CLY SFT HSS WEK SPC					
-31.87	975.10	977.30	2.20		SHALE,GREEN
WBD PYT ABT HRD DNS SPC					
-34.07	977.30	978.00	.70		SHALE,RED-GREEN
CLY SFT HSS					
-34.77	978.00	983.20	5.20		SHALE,RED-GREEN
TBD FRM MOT SPC					
-39.97	983.20	985.10	1.90		SHALE,GRAY,W/LIMESTONE
NODULES SLY WBD LIM					
-41.87	985.10	987.30	2.20		SHALY
LIMESTONE,FGR,W/LS NOD LIT GRY SLK					

-44.07 987.30 988.40 1.10 FLINTCLAY
TAN HRD MAS SPC

3

CONSOLIDATION COAL COMPANY
UNKNOWN
DEEP HOLES (000)

HOLE NO = MC-01- 19

DRILL CONTR = L.J. HUGHES

STRATA ELEV (TOP)	STRATA DEPTH FROM	TO	STRATA THICK	SEAM CODE	LITHOLOGY AND COMMENTS
-45.17	988.40	994.10	5.70		CLAYSTONE,RED-GRN,W/LS NOD LIM SLY FRM GLC
-50.87	994.10	1006.00	11.90		SANDY SHALE,GRAY,W/LS NOD WBD SSS NBM GLC
-62.77	1006.00	1011.30	5.30		INTBD SANDSTONE & SHALE,GRAY TBD RIP GLC
-68.07	1011.30	1016.40	5.10		SANDSTONE,GRAY,W/SHALE STREAKS FGR VER VNS LIM GAS
-73.17	1016.40	1026.60	10.20		SANDSTONE,GRAY,MASSIVE MGR FGR STK SPC
-83.37	1026.60	1031.60	5.00		SHALE,DARK GRAY TBD FRM GLC
-88.37	1031.60	1031.75	.15		BLACK SHALE CAR PYN SPC
-88.52	1031.75	1032.90	1.15	BK	COAL WITH SHALE LAYERS
-89.67	1032.90	1036.40	3.50		FIRECLAY GRY RTD SLK BKN
-93.17	1036.40	1037.00	.60		CLAY GRY VRY SFT
-93.77	1037.00	1040.60	3.60		SHALE,GRAY SLY WBD CLS FEW
-97.37	1040.60	1044.70	4.10		SHALE,RED-GREEN TBD CLY SFT HSS GLC
-101.47	1044.70	1051.50	6.80		SHALE,GREEN WBD FRM PYT NTP SSS ABT NBM
-108.27	1051.50	1057.10	5.60		SANDY SHALE,GREEN,MASSIVE WBD SDR ABT HRD SHY GLC
-113.87	1057.10	1061.00	3.90		CLAYSTONE,RED-GREEN CLY SFT HSS HVS MOT
-117.77	1061.00	1065.40	4.40		CLAYSTONE,RED-GREEN MOT SLK FRK BKN DRK NOD
-122.17	1065.40	1065.90	.50		SHALE,RED-GREEN,W/FOSSIL SHELLS LIM CAN FOS ABT
-122.67	1065.90	1071.20	5.30		SHALE,RED,WITH LIMESTONE NODULES WBD FRM GLC
-127.97	1071.20	1073.10	1.90		SHALE,DARK GRAY,W/FOSSIL SHELLS GRN TBD FRM
-129.87	1073.10	1074.40	1.30		SHY LIMESTONE,FGR,W/LS NOD & FOS LIT GRY
-131.17	1074.40	1076.10	1.70		SANDY SHALE,GRAY,MASSIVE TBD SSS GLC
-132.87	1076.10	1082.50	6.40		SANDSTONE,GRAY,W/SHALE

STREAKS FGR RIP SPC
-139.27 1082.50 1089.40 6.90 INTBD SANDSTONE &
SHALE,GRAY THB CUP GLC
-146.17 1089.40 1092.50 3.10 SHALE W/SS STK,GRAY
TBD SLY GLC
-149.27 1092.50 1104.20 11.70 SHALE W/SS STK,DRK GRY
SLY TBD SSB FEW PLT FRM
-160.97 1104.20 1119.50 15.30 SANDY SHALE,DARK
GRAY,MASSIVE SHY SSS MBD GLC
-176.27 1119.50 1123.80 4.30 SHALE W/SS STK,DRK GRY
SLY TBD FRM PLT MAR FEW
-180.57 1123.80 1132.20 8.40 SHALE,DARK GRAY
TBD FRM ISP MAR FEW GLC
-188.97 1132.20 1134.20 2.00 SHALE,DARK
GRAY,W/FOSSIL SHELLS TBD FRM BLK SPC
-190.97 1134.20 1134.40 .20 BC COMMON BANDED COAL
-191.17 1134.40 1135.60 1.20 FIRECLAY
GRY BRN RTD SLK GLC
-192.37 1135.60 1141.10 5.50 SHALE,GRAY,W/LIMESTONE
NODULES MOT GRY SLY SLK BKN MID GLC
-197.87 1141.10 1144.10 3.00 SANDY SHALE,GRAY,W/LS
NOD MAS GLC
-200.87 1144.10 1147.70 3.60 SHALE,GRAY
SLY WBD GLC
-204.47 1147.70 1151.00 3.30 SANDSTONE,GRAY,W/SHALE
STREAKS VFG SHY GLC
-207.77 1151.00 1155.40 4.40 CARBONATE CEMENTED
SANDSTONE FGR HRD SPC
-212.17 1155.40 1177.10 21.70 SANDSTONE,GRAY,MASSIVE
MGR SPC
-233.87 1177.10 1183.70 6.60 SANDSTONE,GRAY,MASSIVE
CGR QTZ SPC
-240.47 1183.70 1195.10 11.40 SANDSTONE,GRAY,MASSIVE
MGR LIM ZNS SPC
-251.87 1195.10 1195.90 .80 SANDSTONE,GRAY,W/SHALE
STREAKS FGR SPC
-252.67 1195.90 1199.10 3.20 SANDSTONE,GRAY,MASSIVE
MGR SPC
-255.87 1199.10 1200.20 1.10 SANDSTONE,GRAY,W/SHALE
STREAKS VFG SPC
-256.97 1200.20 1201.60 1.40 SANDSTONE,GRAY,MASSIVE
CGR GLC
-258.37 1201.60 1208.10 6.50 SANDSTONE,GRAY,W/SHALE
STREAKS VFG SHY LIM ZNS
-264.87 1208.10 1210.50 2.40 SHALE,DARK GRAY
SLY TBD
-267.27 1210.50 1210.95 .45 MA COMMON BANDED COAL
-267.72 1210.95 1211.55 .60 MA COAL WITH SHALE STREAKS
-268.32 1211.55 1214.80 3.25 MA COMMON BANDED COAL
-271.57 1214.80 1214.95 .15 MA BLACK SHALE WITH COAL
STREAKS
-271.72 1214.95 1215.65 .70 MA COMMON BANDED COAL
-272.42 1215.65 1217.00 1.35 FIRECLAY
GRY RTD FRM GLC
-273.77 1217.00 1221.90 4.90 SANDY
SHALE,GRAY,MASSIVE RTD CAN FEW GLC
-278.67 1221.90 1222.70 .80 SHALE,DARK GRAY
CLS WBD

CONSOLIDATION COAL COMPANY
UNKNOWN
DEEP HOLES (000)

HOLE NO = MC-01- 19

DRILL CONTR = L.J. HUGHES

STRATA ELEV (TOP)	STRATA DEPTH FROM	TO	STRATA THICK	SEAM CODE	LITHOLOGY AND COMMENTS
-279.47	1222.70	1223.30	.60		IRONSTONE,MASSIVE SDR HRD BRN
-280.07	1223.30	1224.00	.70		FIRECLAY WBD RTD FRM GRY GLC
-280.77	1224.00	1229.30	5.30		SHALE,DARK GRAY SMO FRM TBD IPY ABT SPC
-286.07	1229.30	1231.40	2.10		SHALY LIMESTONE,FGR,MAS GRY BRN MOT GLC
-288.17	1231.40	1232.90	1.50		SHALE,DARK GRAY WBD SDR FRM SLY
-289.67	1232.90	1233.10	.20		SHALY LIMESTONE,FGR,MAS GRY BRN
-289.87	1233.10	1241.50	8.40		SHALE,DRK GRY,W/LS NOD SLY IKY ABT WBD CAN ABT GLC
-298.27	1241.50	1244.10	2.60		SANDY SHALE,GRAY,W/LS NOD MAS GLC
-300.87	1244.10	1251.40	7.30		SANDSTONE,GRAY,W/SHALE STREAKS VFG SHY IPY GLC
-308.17	1251.40	1255.70	4.30		SANDY SHALE,GRAY,MASSIVE SSS WBD SPC
-312.47	1255.70	1257.00	1.30		SLUMPED SANDY SHALE GRY SSS AGL SPC
-313.77	1257.00	1257.50	.50		SHALE,DARK GRAY CLY HSS
-314.27	1257.50	1258.00	.50		IRONSTONE,MASSIVE BRN HRD
-314.77	1258.00	1259.10	1.10		SHALE,DARK GRAY CLY HSS SFT BLK STK
-315.87	1259.10	1260.90	1.80		BLACK SHALE SMO BNY PYN SPC
-317.67	1260.90	1261.70	.80	UF	COMMON BANDED COAL FRK BKN
-318.47	1261.70	1261.75	.05	UF	BONE
-318.52	1261.75	1265.15	3.40	UF	COMMON BANDED COAL FRK BKN
-321.92	1265.15	1266.40	1.25		FIRECLAY GRY BRN RTD FRM GLC
-323.17	1266.40	1277.00	10.60		SANDY SHALE,GRAY,MASSIVE BRN RTD SDY GLC
-333.77	1277.00	1282.10	5.10		SHALE,DARK GRAY SLY FRM
-338.87	1282.10	1283.20	1.10		SHALY LIMESTONE,FGR,MAS

4.25

GRY HRD SLY
-339.97 1283.20 1283.90 .70 CLAYSTONE,GREEN
CLY HSS
-340.67 1283.90 1286.60 2.70 SANDSTONE,GRAY,CHURNED
FGR SHS GLC
-343.37 1286.60 1298.10 11.50 SHALE W/SS STK,GRAY
ISP FEW FLT TBD FRM SLY
-354.87 1298.10 1302.80 4.70 BLACK SHALE
PYN FIS FRM SPC
-359.57 1302.80 1304.90 2.10 SHALY
LIMESTONE,FGR,W/LS NOD DRK GRY MOT GLC
-361.67 1304.90 1306.00 1.10 FIRECLAY,DARK GRAY
CLN SLK SGT CLY
-362.77 1306.00 1306.15 .15 CLAY
GRN GRY CLY HVS
-362.92 1306.15 1308.65 2.50 LF COMMON BANDED COAL
-365.42 1308.65 1309.50 .85 FIRECLAY
RTD PLT CLS GLC
-366.27 1309.50 1315.30 5.80 SHALE,GRAY
GRN SLY WBD FRM ISP FEW
-372.07 1315.30 1321.10 5.80 CLAYSTONE,GRN,W/LS NOD
MAS FRM SPC
-377.87 1321.10 1323.30 2.20 INTBD SANDSTONE &
SHALE,GRAY CAN WBD RIP
-380.07 1323.30 1326.10 2.80 SHALE W/SS STK,GRAY
TBD SLY
-382.87 1326.10 1326.70 .60 SHALE,GRAY
TBD FRM SPC
-383.47 1326.70 1327.00 .30 SHALE W/SS STK,DRK GRY
TBD SPC
-383.77 1327.00 1328.20 1.20 FIRECLAY,DARK GRAY
BRN RTD FRM SPC
-384.97 1328.20 1330.00 1.80 SANDSTONE,GRAY,CHURNED
FGR BUR
-386.77 1330.00 1333.30 3.30 SANDSTONE,GRAY,MASSIVE
FGR SHS FEW
-390.07 1333.30 1341.70 8.40 SANDY
SHALE,GRAY,MASSIVE WBD IPY SHY GLC
-398.47 1341.70 1345.80 4.10 BLACK SHALE
SLY TBD GLC
-402.57 1345.80 1346.90 1.10 BLACK SHALE WITH FOSSIL
SHELLS FOS SLY FRM TBD GLC
-403.67 1346.90 1356.50 9.60 BLACK SHALE
TBD SLY FOS FEW
-413.27 1356.50 1358.50 2.00 UK COMMON BANDED COAL
-415.27 1358.50 1362.70 4.20 FIRECLAY
GRY BRN RTD FRM DRK NBM
-419.47 1362.70 1364.00 1.30 SANDY FIRECLAY
GRY BRN RTD GLC
-420.77 1364.00 1373.70 9.70 SANDSTONE,GRAY,W/SHALE
STREAKS FGR FLT
-430.47 1373.70 1378.40 4.70 SANDSTONE,GRAY,MASSIVE
MGR HOM SPC
-435.17 1378.40 1381.70 3.30 SHALE,DARK GRAY
SLY WBD ISP SPC
-438.47 1381.70 1382.00 .30 IRONSTONE,MASSIVE
BRN HRD SLY
-438.77 1382.00 1383.30 1.30 FLINTCLAY,BRECCIATED
TAN DRK SPC
-440.07 1383.30 1388.80 5.50 SHALE,DARK GRAY
FRM WBD SLY GLC

CONSOLIDATION COAL COMPANY
UNKNOWN
DEEP HOLES (000)

HOLE NO = MC-01- 19

DRILL CONTR = L.J. HUGHES

STRATA ELEV (TOP)	STRATA DEPTH FROM	TO	STRATA THICK	SEAM CODE	LITHOLOGY	CHARACTERISTICS AND COMMENTS
-445.57	1388.80	1398.50	9.70		SHALE,DARK GRAY	ISP TBD FRM GLC
-455.27	1398.50	1399.90	1.40		BLACK SHALE	CAR SMO SPC
-456.67	1399.90	1403.80	3.90		INTBD SANDSTONE &	SHALE,DRK GRY ILA RIP ISP
-460.57	1403.80	1405.00	1.20		SHALE W/SS STK,DRK GRY	TBD BLK NBM SPC
-461.77	1405.00	1405.20	.20		COMMON BANDED COAL	
-461.97	1405.20	1405.80	.60		SHALE,DARK GRAY,W/COAL	STREAKS BRC FRM
-462.57	1405.80	1408.30	2.50	MK	COMMON BANDED COAL	
-465.07	1408.30	1409.00	.70		CLAYSTONE	DRK GRY MOT CLS WEK GLC
-465.77	1409.00	1413.70	4.70		SANDY FIRECLAY	GRY BRN RTD MAS GLC
-470.47	1413.70	1417.10	3.40		INTBD SANDSTONE &	SHALE,GRAY LIT GRN WBD SDR MOT GLC
-473.87	1417.10	1419.50	2.40		SLUMPED SANDY SHALE	GRY GRN BRC AGL
-476.27	1419.50	1420.30	.80		FLINTCLAY,MASSIVE	GRN MAS SPC
-477.07	1420.30	1422.40	2.10		FIRECLAY	GRY BRN DRK SDR ABT RTD
-479.17	1422.40	1424.00	1.60		SHALE,DARK GRAY	SLY TBD GLC
-480.77	1424.00	1424.10	.10		BLACK SHALE	CAR RED STK
-480.87	1424.10	1428.10	4.00		FIRECLAY	GRN SLY RTD FRM
-484.87	1428.10	1430.20	2.10		FLINTCLAY,BRECCIATED	GRN BRC MOZ HRD SPC
-486.97	1430.20	1430.60	.40		CLAYSTONE	GRY BRN CLY SFT HSS
-487.37	1430.60	1434.00	3.40		SANDY FIRECLAY	BRN RTD MAS GLC
-490.77	1434.00	1446.00	12.00		INTBD SANDSTONE &	SHALE,GRAY BRN SDY TBD IPY FEW DRK NBM
-502.77	1446.00	1449.70	3.70		SANDSTONE,GRAY,W/SHALE	STREAKS MGR BRN HRD QTZ
-506.47	1449.70	1474.00	24.30		SANDSTONE,GRAY,MASSIVE	MGR BRN HRD OIL SCB

-530.77	1474.00	1474.90	.90		SANDY SHALE,DARK GRAY,MASSIVE SHY WBD SPC
-531.67	1474.90	1475.60	.70		BLACK SHALE CAR TBD.
-532.37	1475.60	1476.55	.95		BLACK SHALE WITH COAL STREAKS BNY PYN COL PLT
-533.32	1476.55	1478.50	1.95		BLACK SHALE CLS WBD PYN GLC
-535.27	1478.50	1479.00	.50		FIRECLAY GRY BRN RTD CLY SPC
-535.77	1479.00	1480.60	1.60		FLINTCLAY,BRECCIATED TAN BRC CLS WEK
-537.37	1480.60	1481.70	1.10		FIRECLAY BRN CLY SFT RTD GLC
-538.47	1481.70	1489.60	7.90		SANDY FIRECLAY GRY BRN RTD MAS SDR ZNS GLC
-546.37	1489.60	1491.10	1.50		SHALE,DARK GRAY TBD SLY FRM
-547.87	1491.10	1491.50	.40	LK	BLACK SHALE WITH COAL STREAKS BNY CAR
-548.27	1491.50	1494.00	2.50		FIRECLAY GRY BRN MAS CLS WEK GLC
-550.77	1494.00	1502.00	8.00		SANDY FIRECLAY GRY BRN RTD WBD SSS GLC
-558.77	1502.00	1514.00	12.00		SANDSTONE,GRAY,W/SHALE STREAKS FGR MGR XBD
					BOTTOM HOLE
-570.77		1514.00			

□E

Appendix C

UIC Permit Documentation

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Joe Manchin III, Governor
Randy C. Huffman, Cabinet Secretary
www.wvdep.org

UIC Permit

CNX GAS COMPANY LLC
1800 WASHINGTON ROAD
PITTSBURGH, PA 15241-

Dear Applicant:

Enclosed you will find Underground Injection Control Permit Number UIC2R05101AP dated May 02, 2008. Be advised that the duration of the permit is for a period of five (5) years or as is stipulated in section 15 of the permit.

Also be advised that all conditions established by UIC Permit Number UIC2R05101AP either expressly or incorporated by reference, must be strictly adhered to. All monitoring forms shall be submitted to the Office of Oil and Gas in the manner and frequency prescribed. The monitoring forms will be compared with the scope of permitted activity to verify compliance.

Please review the permit carefully and be aware of all permit conditions. Compliance of all permit conditions will be strictly enforced.

The operation of this injection well facility in general, including maintenance of all related surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of the state.

James Martin
Chief,
Office of Oil and Gas

Enclosures as stated

PERMIT NO. UIC2R05101AP
ECBM\CO2 SEQESTRATION MARSHALL COUNTY WV PROJECT

UNDERGROUND INJECTION CONTROL PERMIT
FOR
DEPARTMENT OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS AND DIVISION OF WATER AND WASTE MANAGEMENT

FOR
CLASS II SECONDARY RECOVERY

This document consists of the Underground Injection Control (UIC) Permit required by the Department of Environmental Protection, Office of Oil and Gas, and the Division of Water and Waste Management. The permittee is allowed to engage in underground injection in accordance with the terms and conditions of this permit based upon an approved UIC Permit. The purpose of this permit (project) is to sequester carbon dioxide (CO2), a greenhouse gas, in an unmineable (Upper Freeport) coal seam while simultaneously enhancing coalbed methane production

The Underground Injection Control Permit No. **UIC2R05101AP** consists of Forms WW-3A and WW-3B and the terms and conditions below:

1. The underground injection activity authorized by this permit shall not allow the movement of fluid, as per (47CSR13-2.26) into any subsurface area other than that which is specified and may not cause a violation of any primary drinking water regulation promulgated under 40 CFR Chapter 1, Part 141 or any water quality standard promulgated by the Department of Environmental Protection.

2. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.

3. All reports required by this permit shall be submitted to the Office of Oil and Gas with exception to paragraph 4 below.

4. The following activities require the immediate cessation of facility operations and prompt notification of the Director of Water and Waste Management. 47CSR13.06 and 47CSR13.12.1.

   (a) Any monitoring or other information which indicates that any contaminant has caused or may cause an endangerment to an underground source of drinking water;

   (b) Any non-compliance with a permit condition or any malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water; and

   (c) Any non-compliance which may endanger health or environment.

5. The permittee must satisfy the requirement of the Office of Oil and Gas regarding any

corrective action needed on all known wells penetrating the injection zone within the area of review. Corrective action will be in the form of "monitoring" for each well within the ¼ mile review area. This area and the wells involved are shown on Attachment A.

6. This permit authorizes injection of only gaseous CO2 into the Upper Freeport coal seam for the enhanced recovery of coalbed methane and sequestration of the CO2. On occasion, small quantities of perfluorocarbon tracer compounds may be added to help detect any possible leakage of CO2 from the subsurface. The field boundary (horizontal laterals in the Pittsburgh coal seam) for the injection operations is shown on Attachment A. Injection is approved for wells MH-18 (47-051-0928) and MH-20 (47-051-0930). Production will be through wells MH-5 (47-051-0875) and MH-11 (47-051-0924).

7. The maximum wellhead injection pressure is established as 700 psig.

8. The permittee shall conduct an MIT (Mechanical Integrity Test) on the tubing annulus of the injection wells. The test pressure shall be between 1050 psig and 1400 psig. Authorization to inject is contingent upon submission and approval of the Office of Oil and Gas Form WR-37 for each injection well. Construction modifications from the proposed work plan (O&G Form WW-3) and mechanical integrity will be evaluated at this time. Operational conditions will be finalized at this time. Upon approval of Form WR-37, conditions established on this form are incorporated by reference as conditions of this permit. FORM WR-37 SHALL BE SUBMITTED WITHIN 30 DAYS AFTER THE EFFECTIVE DATE OF THE UIC PERMIT.

9. A well head pressure gauge shall be installed and maintained on the injection tubing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported monthly on Form WR-40. This form shall be submitted to the Office of Oil and Gas.

10. The permittee shall monitor any open casing annuli, on the injection wells, with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection of any leaks from the injection zone or tubing. The results of such monitoring shall be reported monthly on Form WR-40 to the Office of Oil and Gas.

11. All gas injection lines shall be inspected, maintained, operated and monitored to allow early detection of any leakage and so that the occurrence of leaks will be minimized.

12. The Permittee shall develop a plan to monitor the movement of the CO2. Wells have already been established for monitoring and are listed in the Table labeled as Attachment B. The plan shall also include the Upper Freeport production wells/laterals and the Pittsburgh wells/laterals as monitoring points. The Office of Oil and Gas shall approve such plan prior to any injection activities and the monitoring results will be submitted at a frequency approved by the Office of Oil and Gas.

13. West Virginia University plans to drill three groundwater monitoring wells within the permitted area. These wells will be one hundred feet deep and their approximate locations are shown on Attachment A. The Office of Oil and Gas shall be notified if CO2 levels, in any of the wells, become elevated by 10% over baseline (i.e., when the

concentration of CO2 in the coalbed methane produced from any of the wells being monitored increases by 10 percentage points over its baseline concentration).

14. Prior to any injection operations the permittee shall gather baseline CO2 levels in all of the wells planned for monitoring, including the three groundwater monitoring wells provided in Item 13 above. This will also include monitoring of the meadow area and water wells on the Gilmore property.

15. The permittee shall temporarily cease injection if CO2 concentrations in any monitoring well increases 10% above established baseline levels (i.e., when the concentration of CO2 from any of the wells being monitored attains a sustained increase of 10 percentage points over its baseline concentration). The Office of Oil and Gas will be notified immediately and discussions will ensue as to the course of action to be taken in regard to the permitted activities.

    The permittee shall permanently cease injection when the CO2 levels attain a sustained increase of 10% for a period of 90 days (i.e., when the concentration of CO2 from any of the wells being monitored attains a sustained increase of 10 percentage points over its baseline concentration).

    This permit will expire two years after injection is permanently ceased. This time will be used for continued monitoring and scientific data collection. The permittee at this point will apply for plugging permits, through the Office of Oil and Gas, for all of the Upper Freeport access, injection, observation and production wells.

16. The Permittee shall fulfill the requirements of the Office of Oil and Gas regarding maintaining financial responsibility and resources to close, plug, and abandon permitted wells.

17. The permittee must satisfy the requirement of the Office of Oil and Gas for plugging and abandonment of permitted injection wells in such a manner as to ensure that no fluid movement, which includes gas, occurs either from the injection zone into an underground source of drinking water or from one underground source of drinking water to another.

18. All fluids produced within the boundary of the permitted area shall be gathered and contained in an Office of Oil & Gas approved diked holding tank(s), as per Office of Oil and Gas requirements. Fluids will be hauled to an approved facility for proper disposal.

19. Haulers of liquid CO2 and produced fluids shall have the necessary licenses and/or permits.

20. The permittee or its affiliates currently operates a gathering system including a scrubber plant (or other CO2 removal system) to collect and treat all coalbed methane produced. Any CO2 removed in this plant may be piped and injected into either of the two injection wells, thus reducing the volume needing to be delivered.

21. The permittee shall provide security for all operations including, but not limited to the CO2 holding tank, gathering system, wells and injection operations.

22. Permittee shall post a $50,000 bond from the Office of Oil and Gas prior to the permit issuance date. The bond shall remain in effect until the permittee has fulfilled all of the requirements of the Office of Oil and Gas in regard to this permit and its activities.

23. The herein-described activity is to be extended, modified, added to, made, enlarged, acquired, constructed or installed, and operated, used and maintained strictly in accordance with the terms and conditions of this permit; with the information submitted with the Permit Application No. **2R05101AP** with the plan of maintenance and method of operation thereof submitted with such application(s); and with any applicable rules and regulations promulgated by the Department of Environmental Protection.

24. Failure to comply with the terms and conditions of this permit, with the plans and specifications submitted with the Permit Application No. **2R05101AP** and with the plan of maintenance and method of operation thereof submitted with such application(s) shall constitute grounds for the revocation or suspension of this permit and for the invocation of all the enforcement procedures set forth in Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.

25. The operation of this injection well facility in general, including maintenance of all unrelated surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the air, or the surface or ground waters of this State.

FORM WW-3 (A)
10/07

1) Date: October 5, 2007
2) Operator's Well No. MH18
3) API Well No.: 47 - 051 - 00928
State County Permit
4) UIC Permit No.

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OF WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS,

5) Surface Owner(S) To Be Served
(a) Name: Consolidation Coal Company
Address: 1800 Washington Road
Pittsburgh, PA 15241-1421
(b) Name: David M. & Kristin Gilmore
Address: R.D. #5, Box 473
Cameron, WV 26033
(c) Name:
Address:

6) Inspector: Bill Hatfield
Address: P.O. Box 522
Buckhannon, WV 25201
Telephone: (304) 767-1828

7) (a) Coal Operator
Name: None
Address:

7) (b) Coal Owner(S) With Declaration Of Record
Name: Consolidation Coal Company
Address: 1800 Washington Road
Pittsburgh, PA 15241-1421
Name:
Address:

7) (c) Coal Lessee with Declaration Of Record
Name: None
Address:

TO THE PERSONS NAMED ABOVE: You should have received this form and the following documents

(1) The Application For A Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work;
(2) The plat (surveyor's map) showing the well location on Form WW-6; and
(3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is December 1 20 07 .

THE REASON YOU HAVE RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION [(FORM WW-3(B)] DESIGNATED TO YOU. HOWEVER YOU ARE NOT REQUIRED TO TAKE ACTION AT ALL.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of the mailing or delivery to the Chief.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: CNX Gas Company, LLC
Address: 1800 Washington Road
Pittsburgh, PA 15241-1421
By: Randall M Albert
Its: Vice President
Signature: Randall M. Albert

FORM WW-3 (B)
10/07

1) Date: January 25, 2008
2) Operator's Well No. MH18
3) API Well No.: 47 - 051 - 00928
State County Permit
4) UIC Permit No.

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection ____ / Gas Injection (not storage) ____ / Waste Disposal ____ / CO_2 Sequestration X
6) LOCATION: Elevation: 930' Watershed: Pennsylvania Fork Fish Creek
District: Liberty County Marshall Quadrangle Littleton
7) WELL OPERATOR: CNX Gas Company, LLC
Address 1800 Washington Road
Pittsburgh, PA 15241-1421
8) DESIGNATED AGENT John H. Johnston
Address P.O. Box 1588
Charleston, WV 25326-1588
9) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Bill Hatfield
Address P.O. Box 522
Buckhannon, WV 26201
10) DRILLING CONTRACTOR
Name N/A -- Injection Well Is Already Drilled
Address
11) PROPOSED WELL WORK Drill ____ / Drill deeper ____ / Redrill ____ / Stimulate ____
Plug off old formation ____ / Perforate new formation ____ Convert ____
Other physical change in well (specify) Well To Be Used for Sequestration of CO_2 Gas
12) GEOLOGIC TARGET FORMATION Upper Freeport Coal Seam Depth 1258 Feet (top) to 1261 Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 1525 Feet
14) Approximate water strata depths: Fresh 200 Feet Salt N/A Feet
15) Approximate coal seam depths: 597', 665', 1204' and 1260'
16) Is coal being mined in the area? Yes ____ No X
17) Virgin reservoir pressure in target formation 50 psig Source Methane
18) Estimated reservoir fracture pressure 3000 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 0.56 tons Bottom hole pressure 700 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES CO_2 gas
21) FILTERS (IF ANY) N/A
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL N/A
23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor	13-3/8"	.250 LIM	37#/ft	X		30'	30'	--	Kinds IPP SSRR Single
Fresh Water	9-5/8"	.250 LIM	26#/ft	X		300'	300'	100 sks	Set Rotational Release
Coal	7"	.231 LIM	17#/ft	X		1520.8'	1520.8'	235 sks	Sizes 7" diameter
Intermediate									
Production									Depths set approximately
Tubing	2-3/8" CS	R-2	4.7 #/ft	X			1230'		1210-1220'
Tubing	2-3/8" SS	Sch 40 Grade 304		X			30' bottom		Perforations
Liners									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Northern Reserve Coal Company & Southern Reserve Coal Company
by deed X / lease ____ / other contract ____ / dated August 31, 1966 of record in the
Marshall County Clerk's office in Moundsville, WV Book 387 Pages 116,121,131

CS = Carbon Steel
SS = Stainless Steel

FORM WW-3 (A)
10/07

1) Date: **October 5, 2007**
2) Operator's Well No. **MH20**
3) API Well No.: **47** - **051** - **00930**
State County Permit
4) UIC Permit No. _____

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OF WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS,

5) Surface Owner(S) To Be Served
(a) Name **Consolidation Coal Company**
Address **1800 Washington Road**
Pittsburgh, PA 15241-1421
(b) Name **David M. & Kristin Gilmore**
Address **R.D. #5, Box 473**
Cameron, WV 26033
(c) Name _____
Address _____

6) Inspector **Bill Hatfield**
Address **P.O. Box 522**
Buckhannon, WV 25201
Telephone **(304) 767-1828**

7) (a) Coal Operator
Name **None**
Address _____

7) (b) Coal Owner(S) With Declaration Of Record
Name **Consolidation Coal Company**
Address **1800 Washington Road**
Pittsburgh, PA 15241-1421
Name _____
Address _____

7) (c) Coal Lessee with Declaration Of Record
Name **None**
Address _____

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(3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is **December 1** 20 **07** .

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The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator **CNX Gas Company, LLC**
Address **1800 Washington Road**
Pittsburgh, PA 15241-1421
By: Randall M Albert
Its: Vice President
Signature: Randall M. Albert

FORM WW-3 (B)
10/07

1) Date: January 25, 2008
2) Operator's Well No. MH20
3) API Well No.: 47 - 051 - 00930
State County Permit
4) UIC Permit No.

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection ____ / Gas Injection (not storage) ____ / Waste Disposal ____ / CO_2 Sequestration X
6) LOCATION: Elevation: 930' Watershed: Pennsylvania Fork Fish Creek
District: Liberty County Marshall Quadrangle Littleton
7) WELL OPERATOR: CNX Gas Company, LLC 8) DESIGNATED AGENT John H. Johnston
Address 1800 Washington Road Address P.O. Box 1588
Pittsburgh, PA 15241-1421 Charleston, WV 25326-1588
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name Bill Hatfield Name N/A -- Injection Well Is Already Drilled
Address P.O. Box 522 Address
Buckhannon, WV 26201
11) PROPOSED WELL WORK Drill ____ / Drill deeper ____ / Redrill ____ / Stimulate ____
Plug off old formation ____ / Perforate new formation ____ Convert ____
Other physical change in well (specify) Well To Be Used for Sequestration of CO_2 Gas
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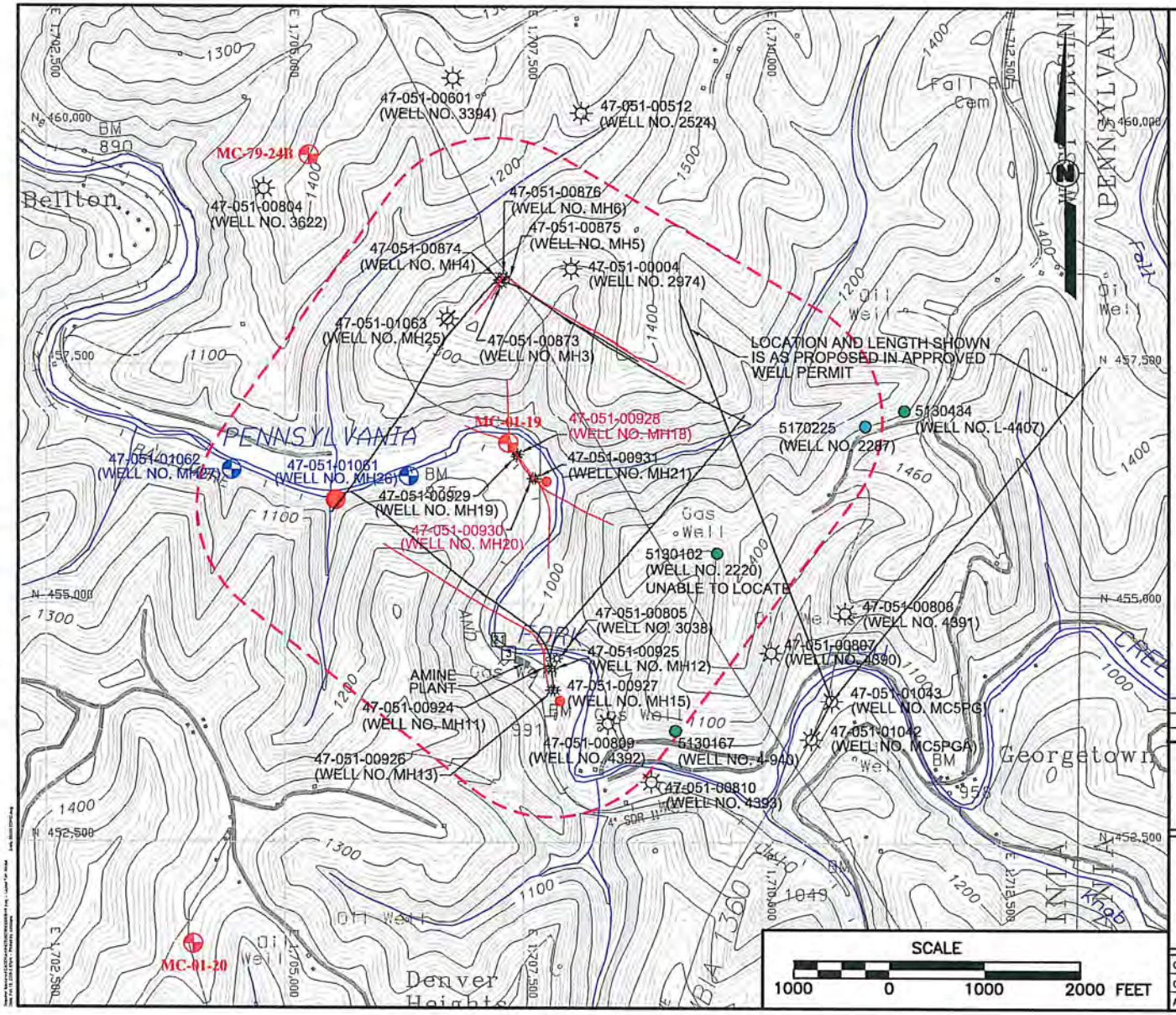
15) Approximate coal seam depths: 597', 665', 1204' and 1260'
16) Is coal being mined in the area? Yes ____ No X
17) Virgin reservoir pressure in target formation 50 psig Source Methane
18) Estimated reservoir fracture pressure 3000 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 0.56 tons Bottom hole pressure 700 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES CO_2 gas
21) FILTERS (IF ANY) N/A
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL N/A
23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor	13-3/8"	.250 LIM	37#/ft	X		30'	30'	--	Kinds IPP SSRR Single
Fresh Water	9-5/8"	.250 LIM	26#/ft	X		300'	300'	100 sks	Set Rotational Release
Coal	7"	.231 LIM	17#/ft	X		1520.8'	1520.8'	235 sks	Sizes 7" diameter
Intermediate									
Production									Depths set approximately
Tubing	2-3/8" CS	R-2	4.7 #/ft	X			1230'		1210-1220'
Tubing	2-3/8" SS	Sch 40 Grade 304		X			30' bottom		Perforations
									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Northern Reserve Coal Company & Southern Reserve Coal Company
by deed X / lease ____ / other contract ____ / dated August 31, 1966 of record in the
Marshall County Clerk's office in Moundsville, WV Book 387 Pages 116,121,131

CS = Carbon Steel
SS = Stainless Steel



LEGEND

- 47-051-00712 — ACTIVE GAS WELL
- 47-051-01063 — PLUGGED GAS WELL
- 5130102 — WELL DRILLED PRIOR TO THE ONSET OF PERMITTING REQUIREMENTS IN 1929 AND ABANDONED AFTER 1929; IDENTIFIED BY WVDEP AS THE ABANDONED SERIES OF WELL PERMIT NUMBERS;
- 5170230 — "BY-FARM" WELLS, GENERALLY DRILLED PRIOR TO 1929, WITH NO OFFICIAL PERMIT NUMBER; SOME WELLS MAY HAVE BEEN DRILLED AFTER 1929, BUT HAVE INCOMPLETE OR INACCURATE INFORMATION ON THE LOG HEADER;
- 47-051-00930 (WELL NO. MH20) — CO_2 INJECTION WELL
- MONITORING WELL
- CONSOL COAL COREHOLE
- 1/4 MILE AREA OF REVIEW
- PROPOSED MONITORING WELLS (WVU) 100' DEEP
- HORIZONTAL LATERAL IN UPPER FREEPORT SEAM
- HORIZONTAL LATERAL IN PITTSBURGH SEAM

ATTACHMENT A

REV.	DATE	DESCRIPTION	P.M.
1	02/13/08	ADDED TITLE ATTACHMENT A	

BECKLEY, WV (304) 255-0401 — HOUSTON, PA (724) 503-7242

Alliance Consulting, Inc.
Engineers · Constructors · Scientists

CLASS II UIC PERMIT APPLICATION

GAS WELL LOCATION MAP

SEQUESTRATION OF CO_2 IN UPPER FREEPORT COAL SEAM
NEAR CAMERON, MARSHALL COUNTY, WEST VIRGINIA

Prepared For

CNX GAS COMPANY, LLC
1800 WASHINGTON ROAD PITTSBURGH, PA 15241-1421

CAD BY	JWD	01/31/08	PROJECT NO. B06-390-176	
CHECKED BY	GWB	01/31/08		
APPROVED BY	GWB	01/31/08	DRAWING NO. B06-390-B1	

ATTACHMENT B

Known Wells Located Within The 1/4 Mile Area Of Review

API No.	Well No.	Latutude	Longitude	Well Operator	Status			Purpose of Well				
					Active	Plugged	Abandoned	Gas Production	CBM Production-Pittsburgh Seam	CBM Production-Freeport Seam	Injection	Monitoring
47-051-00873	MH3	39°45'14"	80°32'28"	CNX Gas Company LLC	X				X			X
47-051-00874	MH4	39°45'14"	80°32'29"	CNX Gas Company LLC	X				X			X
47-051-00875	MH5	39°45'14"	80°32'28"	CNX Gas Company LLC	X					X		X
47-051-00876	MH6	39°45'14"	80°32'28"	CNX Gas Company LLC		X						
47-051-00004	2974	39°45'15"	80°32'19"	Leatherwood, Inc.	X			X				X
47-051-01063	MH25	39°45'10"	80°32'36"	Consolidation Coal Company		X						
051-70225	2287	39°45'00"	80°31'39"	Manufacturers Light & Heat Company		X	X					X
47-051-00928	MH18	39°44'56"	80°32'26"	CNX Gas Company LLC	X					previous	X	
47-051-00929	MH19	39°44'56"	80°32'26"	CNX Gas Company LLC		temporary						
47-051-00930	MH20	39°44'54"	80°32'24"	CNX Gas Company LLC	X					previous	X	
47-051-00931	MH21	39°44'53"	80°32'24"	CNX Gas Company LLC		temporary						
47-051-01061	MH26	39°44'54"	80°32'40"	Consolidation Coal Company	X							X
47-051-01062	MH27	39°44'54"	80°33'04"	Consolidation Coal Company	X							X
051-30102	2220	39°44'46"	80°31'59"	Manufacturers Light & Heat Company		X						
47-051-00805	3038	39°44'35"	80°32'20"	Leatherwood, Inc.	X			X				X
47-051-00924	MH11	39°44'34"	80°32'21"	CNX Gas Company LLC	X					X		X
47-051-00925	MH12	39°44'34"	80°32'21"	CNX Gas Company LLC	X				X			X

Known Wells Located Within The 1/4 Mile Area Of Review

API No.	Well No.	Latutude	Longitude	Well Operator	Status			Purpose of Well				
					Active	Plugged	Abandoned	Gas Production	CBM Production-Pittsburgh Seam	CBM Production-Freeport Seam	Injection	Monitoring
47-051-00926	MH13	39°44'32"	80°32'21"	CNX Gas Company LLC	X					access		
47-051-00927	MH15	39°44'32"	80°32'21"	CNX Gas Company LLC	X				access			
051-30167	4-940	39°44'28"	80°32'04"	Carnegie Natural Gas		X						
47-051-00809	4392	39°44'28"	80°32'13"	Leatherwood, Inc.	X			X				X

Other Wells Of Interest Located Outside Of The 1/4 Mile Area Of Review

API No.	Well No.	Latutude	Longitude	Well Operator	Status			Purpose of Well				
					Active	Plugged	Abandoned	Gas Production	CBM Production-Pittsburgh Seam	CBM Production-Freeport Seam	Injection	Monitoring
47-051-00601	3394	39°45'35"	80°32'34"	Leatherwood, Inc.	X			X				
47-051-00512	2524	39°45'32"	80°32'17"	Leatherwood, Inc.	X			X				
47-051-00804	3622	39°45'14"	80°32'28"	Leatherwood, Inc.	X			X				proposed
51-30434	L-4407	39°45'01"	80°31'34"	Manufacturers Light & Heat Company		X						proposed
47-051-00808	4391	39°44'40"	80°31'42"	Leatherwood, Inc.	X			X				
47-051-00807	4390	39°44'36"	80°31'52"	Leatherwood, Inc.	X			X				
47-051-00810	4393	39°44'22"	80°32'07"	Leatherwood, Inc.	X			X				
47-051-01042	MC5PGA	39°44'27"	80°31'46"	CNX Gas Company LLC	X				access			
47-051-01043	MC5PG	39°44'31"	80°31'43"	CNX Gas Company LLC	X				X			X

Appendix D

Mechanical Integrity Test Information

WW-3B
10/07

1) Date: August 07, 2009
2) Operator's Well No. MH-20
3) API Well No.: 47 (State) 051 (County) 00930 (Permit)
4) UIC Permit No. UIC2R05101AP

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection ____ / Gas Injection (not storage) ____ / Waste Disposal ____ / CO_2 Sequestration X
6) LOCATION: Elevation: 930' Watershed: Pennsylvania Fork Fish Creek
District: Liberty County Marshall Quadrangle Littleton
7) WELL OPERATOR: CNX Gas Company
Address 1000 Consol Energy Drive
Canonsburg, PA 15317
8) DESIGNATED AGENT John Johnston
Address PO Box 1588
Charleston, WV 1588
9) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Tristan Jenkins
Address 2310 Williams Avenue
Clarksburg, WV 26301
10) DRILLING CONTRACTOR
Name N/A Injection well is already drilled
Address

11) PROPOSED WELL WORK Drill ____ / Drill deeper ____ / Redrill ____ / Stimulate ____
Plug off old formation ____ / Perforate new formation ____ Convert ____
Other physical change in well (specify) Well to be used for sequestration of CO_2 Gas
12) GEOLOGIC TARGET FORMATION Upper Freeport Coal Seam Depth 1258 Feet (top) to 1261 Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 1550 Feet
14) Approximate water strata depths: Fresh 200 Feet Salt ____ Feet
15) Approximate coal seam depths: 597',665',1204',1260'
16) Is coal being mined in the area? Yes ____ No X
17) Virgin reservoir pressure in target formation 50 psig Source Methane
18) Estimated reservoir fracture pressure 3000 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 1.125 tons Bottom hole pressure 700 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES CO_2 Gas
21) FILTERS (IF ANY) N/A
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL N/A
23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor	13-3/8"	.250LIM	37#/ft	X		30'	30'	--	Kinds IPP SSRR Single
Fresh Water	9-5/8"	.250LIM	26#/ft	X		300'	300'	100 sks	Set Rotational Release
Coal	7"	.231LIM	17#/ft	X		1520.8'	1520.8'	235 sks	Sizes 7" Diameter
Intermediate									
Production									Depths set Approximately 1210'
Tubing	2-3/8" CS	R-2	4.7#/ft	X			1230'		
Tubing	2-3/8" SS	Sch 40	Grade 304	X			30'		Perforations
									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Northern Resevr Coal Company & Southern Reserve Coal Company
by deed X / lease ____ / other contract ____ / dated August 31, 1966 of record in the
Marshall County Clerk's office in Moundsville, WV Book 387 Page(s) 116,121,131

WR-37
(REV. 5/01

Date: August 07 2009
Operator's
Well No. MH-20
API No. 47 - 051 - 00930

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL

WELL OPERATOR CNX Gas Company
Address 1000 Consol Energy Drive
Canonsburg, PA 15317

DESIGNATED AGENT John Johnston
Address PO Box 1588
Charleston, WV 25326-1588

GEOLOGICAL TARGET FORMATION Upper Freeport Coal Seam Depth 1258 feet(top) to 1261 feet(bottom)
Virgin reservoir pressure in target formation 50 psig
Source of information on virgin reservoir pressure:
Perforation intervals 1260' Open-hole intervals Well is cased to the bottom

MAXIMUM PERMITTED INJECTION OPERATIONS
Well head injection pressure: 700 psig psig Bottom hole pressure: 700 psig
Volume per hour: 1.125 Tons/Hr

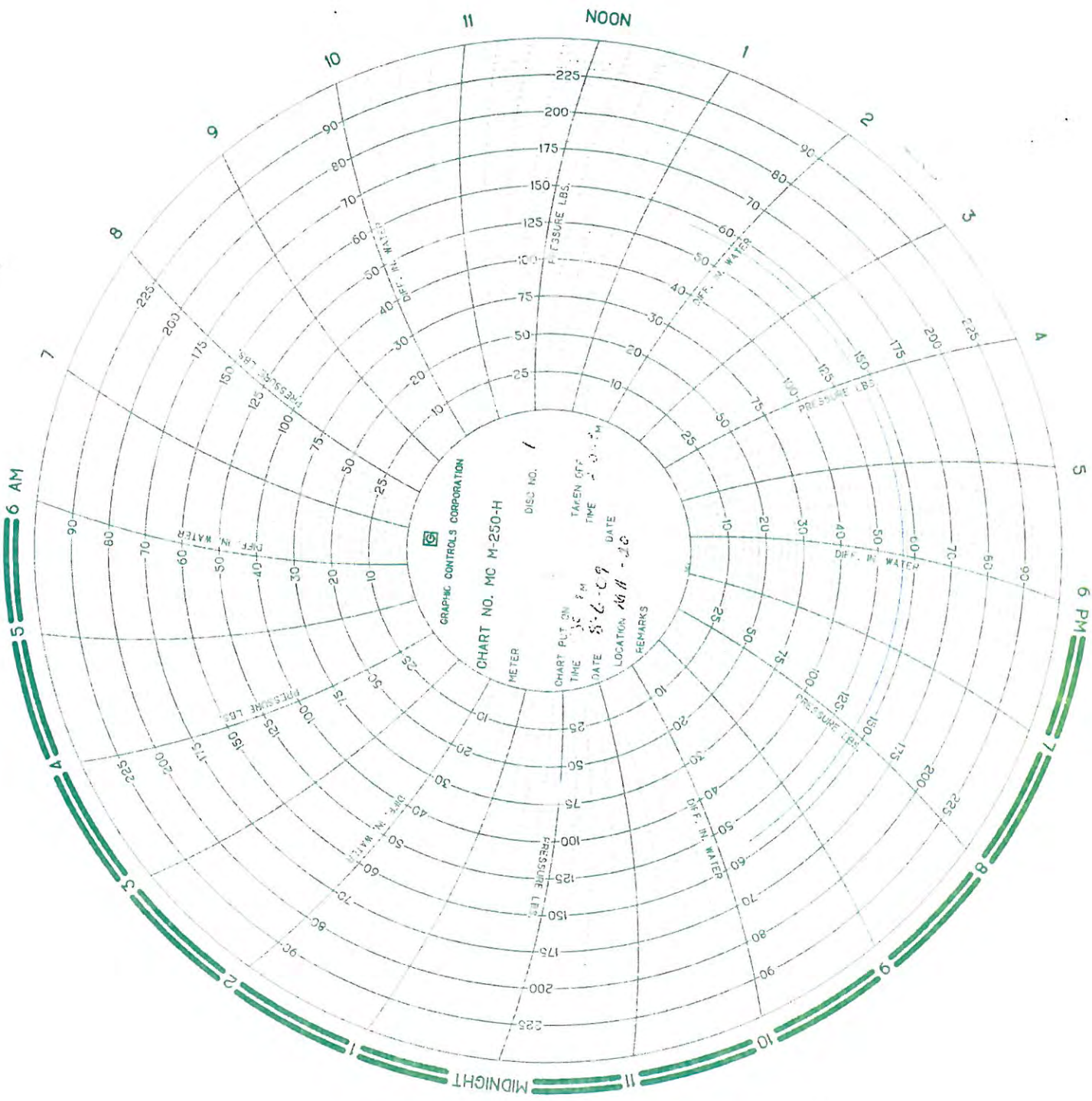
DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED
Liquids to be injected for oil recovery: CO_2 Gas
Wastes to be disposed of: N/A
Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.) N/A

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Packer was nickel coated to inhibit corrosion, stainless steel tubing/components were used below the packer

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE, DEPTH SET)
CONDUCTOR	13-3/8"	.250 LIM	37#/Ft	X		30'	30'	--	
FRESH WATER	9-5/8"	.250 LIM	26#/Ft	X		300'	300'	100 sks	Kind: IPP SSRR
COAL	7"	.231 LIM	17#/Ft	X		1520.8'	1520.8'	235 sks	Singleset
INTERMEDIATE									Rotational Release
PRODUCTION									Sixe 7" Diameter
TUBING	2-3/8" CS	R-2	4.7#/Ft	X			1230'	--	Depth 1210'
TUBING	2-3/8" SS	Sch 40	Grade 304	X			30'	--	


NOON
MIDNIGHT
6 AM
6 PM
GRAPHIC CONTROLS CORPORATION
CHART NO. MC M-250-H
METER
DISC NO.
CHART PUT ON
TIME
DATE
TAKEN OFF
TIME
DATE
LOCATION
REMARKS
PRESSURE LBS.
DIFF. IN. WATER

WW-3B
10/07

1) Date: August 07, 2009
2) Operator's Well No. MH-18
3) API Well No.: 47 (State) 051 (County) 00928 (Permit)
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STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
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13) Estimated Depth of Completed Well, (or actual depth of existing well): 1525 Feet
14) Approximate water strata depths: Fresh 200 Feet Salt ____ Feet
15) Approximate coal seam depths: 597',665',1204',1260'
16) Is coal being mined in the area? Yes ____ No X
17) Virgin reservoir pressure in target formation 50 psig Source Methane
18) Estimated reservoir fracture pressure 3000 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 1.125 tons Bottom hole pressure 700 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES CO_2 Gas
21) FILTERS (IF ANY) N/A
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL N/A
23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor	13-3/8"	.250LIM	37#/ft	X		30'	30'	--	Kinds Singleset Inflatable Packer
Fresh Water	9-5/8"	.250LIM	26#/ft	X		300'	300'	100 sks	
Coal	7"	.231LIM	17#/ft	X		1520.8'	1520.8'	235 sks	Sizes 5.5" OD inflated to 7"
Intermediate									
Production									Depths set Approximately 1235'
Tubing	2-3/8" CS	R-2	4.7#/ft	X			1230'		
Tubing									Perforations
									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Northern Reserv Coal Company & Southern Reserve Coal Company
by deed X / lease ____ / other contract ____ / dated August 31, 1966 of record in the
Marshall County Clerk's office in Moundsville, WV Book 387 Page(s) 116,121,131

WR-37
(REV. 5/01

Date: August 07 2009
Operator's
Well No. MH-18
API No. 47 - 051 - 00928

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL

WELL OPERATOR CNX Gas Company
Address 1000 Consol Energy Drive
Canonsburg, PA 15317

DESIGNATED AGENT John Johnston
Address PO Box 1588
Charleston, WV 25326-1588

GEOLOGICAL TARGET FORMATION Upper Freeport Coal Seam Depth 1258 feet(top) to 1261 feet(bottom)
Virgin reservoir pressure in target formation 50 psig
Source of information on virgin reservoir pressure:
Perforation intervals 1260' Open-hole intervals Well is cased to the bottom

MAXIMUM PERMITTED INJECTION OPERATIONS
Well head injection pressure: 700 psig psig Bottom hole pressure: 700 psig
Volume per hour: 1.125 Tons/Hr

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED
Liquids to be injected for oil recovery: CO_2 Gas
Wastes to be disposed of: N/A

Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.) N/A

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Packer was nickel coated to inhibit corrosion, stainless steel tubing/components were used below the packer

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE, DEPTH SET)
CONDUCTOR	13-3/8"	.250 LIM	37#/Ft	X		30'	30'	--	
FRESH WATER	9-5/8"	.250 LIM	26#/Ft	X		300'	300'	100 sks	Kind: Inflatable
COAL	7"	.231 LIM	17#/Ft	X		1520.8'	1520.8'	235 sks	Singleset
INTERMEDIATE									Sixe 5.5" OD
PRODUCTION									Inflated to 7" OD
TUBING	2-3/8" CS	R-2	4.7#/Ft	X			1230'	--	Depth 1230'
TUBING	2-3/8" SS	Sch 40	Grade 304	X			30'	--	

FORM-WR37
(REVERSE)

MECHANICAL INTEGRITY TEST

Test Method: Space between the 2-3/8" injection tubing and the 7" casing of the injection well was filled up with water, and then using a water pump the tubing annulus was pressurized to 1400 psi. Water pump was then turned off and the pressure readings were monitored and recorded using a chart recorder for a period of 30 minutes.

The undersigned certifies that the test was performed on August 06, 2009 and demonstrated mechanical integrity of the well. The test was witnessed by Tristan Jenkins and Bernardo Garcia representing the Office of Oil and Gas.

CNX Gas Company LLC
Well Operator

08/12/09
Date

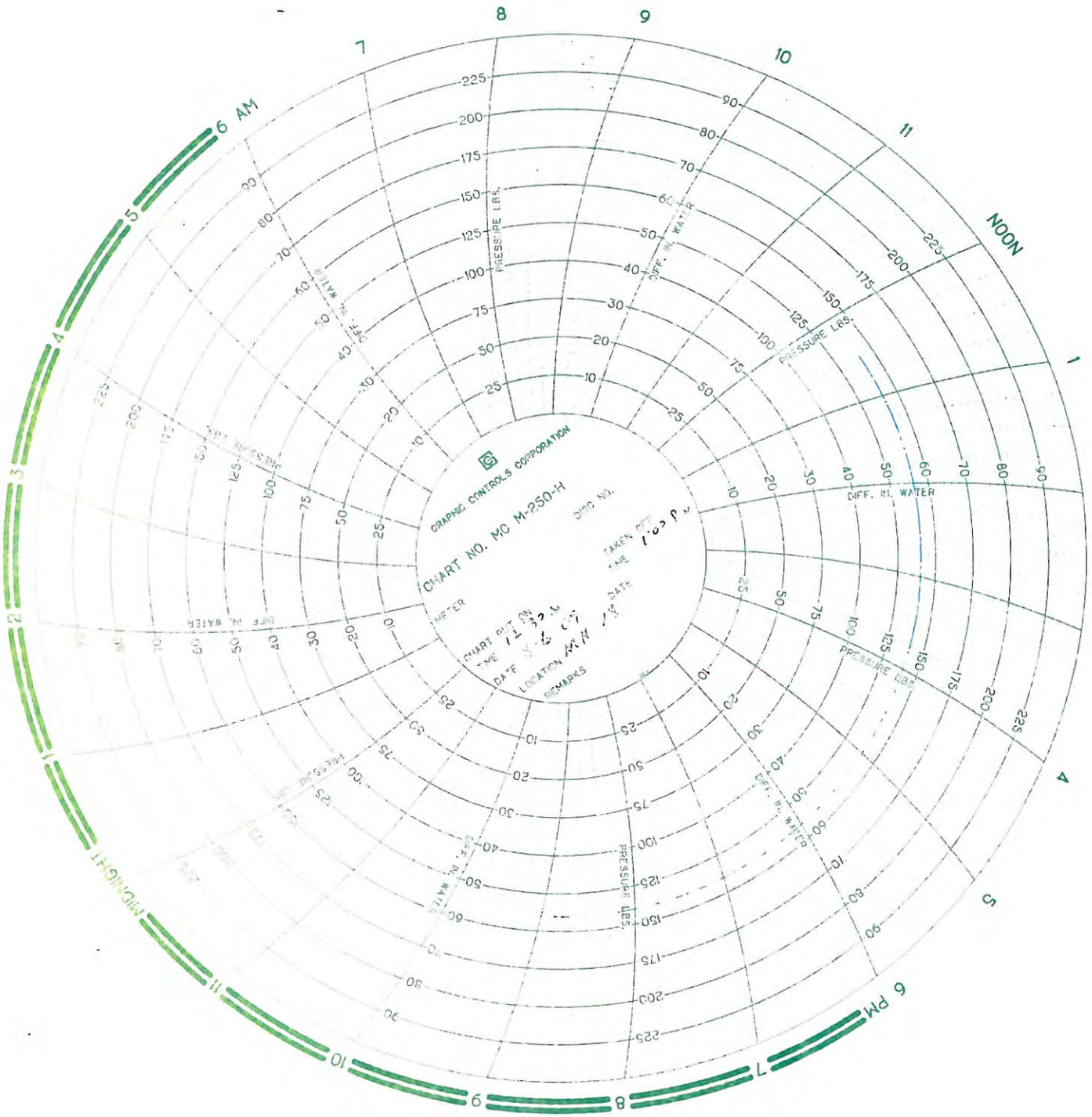
THIS WELL IS AUTHORIZED FOR INJECTION.

Signed _____ UIC PROGRAM DIRECTOR

Date 8/18/09

[NOTE: That the mechanical integrity of this well must be demonstrated again within ninety (90) days of five years from this date in order for injection to continue. Please notify the state inspector 24 hours in advance of the test].

CNX Gas Company LLC
Well Operator
By: Samuel McLaughlin
Its Vice President


GRAPHIC CONTROLS CORPORATION
CHART NO. MC M-250-H
METER
DISC. NO.
TAKEN OFF
TIME
DATE
CHART PUT ON
TIME
DATE
LOCATION
REMARKS
PRESSURE LBS.
DIFF. IN. WATER
6 AM
NOON
6 PM
MIDNIGHT

Appendix E

CO_2 Injection Data

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
9/1/2009	0.00					0.00						0.00				0.00
9/2/2009	0.00					0.00						0.00				0.00
9/3/2009	0.00					0.00						0.00				0.00
9/4/2009	0.00					0.00						0.00				0.00
9/5/2009	0.00					0.00						0.00				0.00
9/6/2009	0.00					0.00						0.00				0.00
9/7/2009	0.00					0.00						0.00				0.00
9/8/2009	8.00		280.00	0.00	0.00	0.00	0.00		397.00	3.37	6740.00	3.37	0.01	3.37	6740.00	3.37
9/9/2009	0.00					0.00						3.37				3.37
9/10/2009	0.00					0.00						3.37				3.37
9/11/2009	0.00					0.00						3.37				3.37
9/12/2009	0.00					0.00						3.37				3.37
9/13/2009	0.00					0.00						3.37				3.37
9/14/2009	8.00		359.00	1.86	3720.00	1.86	0.01		352.00	2.05	4100.00	5.42	0.01	3.91	7820.00	7.28
9/15/2009	0.00					1.86						5.42				7.28
9/16/2009	8.00		429.00	3.12	6240.00	4.98	0.01		459.00	3.20	6400.00	8.62	0.01	6.32	12640.00	13.60
9/17/2009	0.00					4.98						8.62				13.60
9/18/2009	0.00					4.98						8.62				13.60
9/19/2009	0.00					4.98						8.62				13.60
9/20/2009	0.00					4.98						8.62				13.60
9/21/2009	0.00					4.98						8.62				13.60
9/22/2009	0.00					4.98						8.62				13.60
9/23/2009	0.00					4.98						8.62				13.60
9/24/2009	0.00					4.98						8.62				13.60
9/25/2009	0.00					4.98						8.62				13.60
9/26/2009	0.00					4.98						8.62				13.60
9/27/2009	0.00					4.98						8.62				13.60
9/28/2009	0.00					4.98						8.62				13.60
9/29/2009	0.00					4.98						8.62				13.60
9/30/2009	0.00					4.98						8.62				13.60
10/1/2009	0.00					4.98						8.62				13.60
10/2/2009	0.00					4.98						8.62				13.60
10/3/2009	0.00					4.98						8.62				13.60
10/4/2009	0.00					4.98						8.62				13.60
10/5/2009	0.00					4.98						8.62				13.60
10/6/2009	0.00					4.98						8.62				13.60
10/7/2009	0.00					4.98						8.62				13.60
10/8/2009	0.00					4.98						8.62				13.60
10/9/2009	0.00					4.98						8.62				13.60
10/10/2009	0.00					4.98						8.62				13.60
10/11/2009	0.00					4.98						8.62				13.60
10/12/2009	0.00					4.98						8.62				13.60
10/13/2009	0.00					4.98						8.62				13.60
10/14/2009	0.00					4.98						8.62				13.60
10/15/2009	0.00					4.98						8.62				13.60
10/16/2009	0.00					4.98						8.62				13.60
10/17/2009	0.00					4.98						8.62				13.60
10/18/2009	0.00					4.98						8.62				13.60
10/19/2009	0.00					4.98						8.62				13.60
10/20/2009	0.00					4.98						8.62				13.60
10/21/2009	0.00					4.98						8.62				13.60
10/22/2009	0.00					4.98						8.62				13.60
10/23/2009	0.00					4.98						8.62				13.60
10/24/2009	0.00					4.98						8.62				13.60
10/25/2009	0.00					4.98						8.62				13.60
10/26/2009	0.00					4.98						8.62				13.60
10/27/2009	0.00					4.98						8.62				13.60
10/28/2009	0.00					4.98						8.62				13.60
10/29/2009	0.00					4.98						8.62				13.60
10/30/2009	0.00					4.98						8.62				13.60
10/31/2009	0.00					4.98						8.62				13.60
11/1/2009	0.00					4.98						8.62				13.60
11/2/2009	0.00					4.98						8.62				13.60
11/3/2009	0.00					4.98						8.62				13.60
11/4/2009	0.00					4.98						8.62				13.60
11/5/2009	0.00					4.98						8.62				13.60
11/6/2009	0.00					4.98						8.62				13.60
11/7/2009	0.00					4.98						8.62				13.60
11/8/2009	0.00					4.98						8.62				13.60
11/9/2009	0.00					4.98						8.62				13.60
11/10/2009	0.00					4.98						8.62				13.60
11/11/2009	0.00					4.98						8.62				13.60
11/12/2009	0.00					4.98						8.62				13.60
11/13/2009	0.00					4.98						8.62				13.60
11/14/2009	0.00					4.98						8.62				13.60
11/15/2009	0.00					4.98						8.62				13.60
11/16/2009	0.00					4.98						8.62				13.60
11/17/2009	0.00					4.98						8.62				13.60
11/18/2009	0.00					4.98						8.62				13.60
11/19/2009	0.00					4.98						8.62				13.60
11/20/2009	0.00					4.98						8.62				13.60
11/21/2009	8.00		373.00	0.89	1780.00	5.87	0.00		393.00	0.91	1820.00	9.53	0.00	1.80	3600.00	15.40
11/22/2009	8.00		391.00	1.79	3580.00	7.66	0.00		413.00	1.73	3460.00	11.26	0.00	3.52	7040.00	18.92
11/23/2009	8.00		345.00	0.73	1460.00	8.39	0.00		346.00	0.70	1400.00	11.96	0.00	1.43	2860.00	20.35
11/24/2009	8.00		410.00	2.04	4080.00	10.43	0.00		436.00	1.95	3900.00	13.91	0.00	3.99	7980.00	24.34
11/25/2009	0.00					10.43						13.91				24.34
11/26/2009	0.00					10.43						13.91				24.34
11/27/2009	0.00					10.43						13.91				24.34
11/28/2009	0.00					10.43						13.91				24.34
11/29/2009	0.00					10.43						13.91				24.34
11/30/2009	0.00					10.43						13.91				24.34
12/1/2009	8.00		429.00	2.93	5860.00	13.36	0.01		472.00	2.59	5180.00	16.50	0.01	5.52	11040.00	29.86
12/2/2009	8.00		461.00	3.83	7660.00	17.19	0.01		526.00	3.14	6280.00	19.64	0.01	6.97	13940.00	36.83
12/3/2009	8.00		471.00	3.31	6620.00	20.50	0.01		530.00	2.64	5280.00	22.28	0.00	5.95	11900.00	42.78
12/4/2009	0.00					20.50						22.28				42.78
12/5/2009	0.00					20.50						22.28				42.78
12/6/2009	0.00					20.50						22.28				42.78
12/7/2009	8.00		433.00	1.46	2920.00	21.96	0.00		486.00	1.30	2600.00	23.58	0.00	2.76	5520.00	45.54
12/8/2009	8.00		485.00	2.28	4560.00	24.24	0.00		531.00	1.71	3420.00	25.29	0.00	3.99	7980.00	49.53
12/9/2009	0.00					24.24						25.29				49.53
12/10/2009	0.00					24.24						25.29				49.53
12/11/2009	0.00					24.24						25.29				49.53

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
12/12/2009	0.00					24.24						25.29				49.53
12/13/2009	0.00					24.24						25.29				49.53
12/14/2009	0.00					24.24						25.29				49.53
12/15/2009	8.00		459.00	2.31	4620.00	26.55	0.01		564.00	2.00	4060.00	27.29	0.00	4.34	8680.00	53.87
12/16/2009	8.00		505.00	3.99	7980.00	30.54	0.01		571.00	2.72	5440.00	30.04	0.00	6.71	13420.00	60.58
12/17/2009	0.00					30.54						30.04				60.58
12/18/2009	0.00					30.54						30.04				60.58
12/19/2009	0.00					30.54						30.04				60.58
12/20/2009	0.00					30.54						30.04				60.58
12/21/2009	0.00					30.54						30.04				60.58
12/22/2009	0.00					30.54						30.04				60.58
12/23/2009	0.00					30.54						30.04				60.58
12/24/2009	0.00					30.54						30.04				60.58
12/25/2009	0.00					30.54						30.04				60.58
12/26/2009	0.00					30.54						30.04				60.58
12/27/2009	0.00					30.54						30.04				60.58
12/28/2009	0.00					30.54						30.04				60.58
12/29/2009	0.00					30.54						30.04				60.58
12/30/2009	0.00					30.54						30.04				60.58
12/31/2009	0.00					30.54						30.04				60.58
1/1/2010	0.00					30.54						30.04				60.58
1/2/2010	0.00					30.54						30.04				60.58
1/3/2010	0.00					30.54						30.04				60.58
1/4/2010	0.00					30.54						30.04				60.58
1/5/2010	0.00					30.54						30.04				60.58
1/6/2010	0.00					30.54						30.04				60.58
1/7/2010	0.00					30.54						30.04				60.58
1/8/2010	0.00					30.54						30.04				60.58
1/9/2010	0.00					30.54						30.04				60.58
1/10/2010	0.00					30.54						30.04				60.58
1/11/2010	0.00					30.54						30.04				60.58
1/12/2010	0.00					30.54						30.04				60.58
1/13/2010	0.00					30.54						30.04				60.58
1/14/2010	0.00					30.54						30.04				60.58
1/15/2010	0.00					30.54						30.04				60.58
1/16/2010	0.00					30.54						30.04				60.58
1/17/2010	0.00					30.54						30.04				60.58
1/18/2010	0.00					30.54						30.04				60.58
1/19/2010	0.00					30.54						30.04				60.58
1/20/2010	11.98	431.73	478.95	6.98	13962.86	37.52	0.02	483.48	552.33	4.81	9623.57	34.85	0.01	11.79	23586.43	72.37
1/21/2010	12.79	477.71	509.63	7.64	15274.29	45.16	0.02	559.05	592.04	5.04	10086.43	39.90	0.01	12.68	25360.71	85.05
1/22/2010	23.76	537.04	560.67	15.79	31570.71	60.94	0.03	615.87	646.27	5.54	11089.29	45.44	0.01	21.33	42660.00	106.38
1/23/2010	23.92	565.40	578.44	15.21	30413.57	76.15	0.03	641.05	647.68	3.32	6634.29	48.76	0.01	18.52	37047.86	124.91
1/24/2010	23.95	587.43	594.78	14.77	29545.71	90.92	0.03	655.80	663.29	3.07	6132.86	51.82	0.00	17.84	35678.57	142.75
1/25/2010	23.96	609.99	631.03	15.28	30567.86	106.2	0.03	653.49	662.44	5.02	10047.86	56.85	0.01	20.31	40615.71	163.05
1/26/2010	23.96	640.07	646.08	16.05	32091.43	122.25	0.03	659.58	664.00	4.16	8312.14	61.00	0.01	20.20	40403.57	183.26
1/27/2010	22.56	653.40	675.35	14.97	29931.43	137.22	0.02	667.14	676.78	3.79	7579.29	64.79	0.01	18.76	37510.71	202.01
1/28/2010	23.96	660.88	665.83	13.61	27212.14	150.83	0.02	660.84	665.19	3.93	7868.57	68.73	0.01	17.54	35080.71	219.55
1/29/2010	23.96	669.53	673.97	12.73	25457.14	163.55	0.02	668.48	673.89	3.16	6325.71	71.89	0.00	15.89	31782.86	235.44
1/30/2010	13.42	672.81	680.88	6.71	13420.00	170.26	0.01	671.71	680.58	2.18	4360.00	74.07	0.00	8.89	17780.00	244.33
1/31/2010	0.00	0.00	552.20	0.00	0.00	170.26		0.00	550.26	0.00	0.00	74.07		0.00	0.00	244.33
2/1/2010	0.00	0.00	509.68	0.00	0.00	170.26		0.00	508.71	0.00	0.00	74.07		0.00	0.00	244.33
2/2/2010	0.00	0.00	466.34	0.00	0.00	170.26		0.00	539.81	0.00	0.00	74.07		0.00	0.00	244.33
2/3/2010	0.00	0.00	453.29	0.00	0.00	170.26		0.00	520.67	0.00	0.00	74.07		0.00	0.00	244.33
2/4/2010	0.00	No Data: Power Outage (Winter Storm)				170.26						74.07				244.33
2/5/2010	0.00					170.26						74.07				244.33
2/6/2010	0.00					170.26						74.07				244.33
2/7/2010	0.00					170.26						74.07				244.33
2/8/2010	0.00					170.26						74.07				244.33
2/9/2010	0.00					170.26						74.07				244.33
2/10/2010	0.00					170.26						74.07				244.33
2/11/2010	0.00					170.26						74.07				244.33
2/12/2010	0.00					170.26						74.07				244.33
2/13/2010	0.00					170.26						74.07				244.33
2/14/2010	0.00					170.26						74.07				244.33
2/15/2010	0.00					170.26						74.07				244.33
2/16/2010	0.00					170.26						74.07				244.33
2/17/2010	0.00					170.26						74.07				244.33
2/18/2010	0.00					170.26						74.07				244.33
2/19/2010	0.00					170.26						74.07				244.33
2/20/2010	0.00					170.26						74.07				244.33
2/21/2010	0.00					170.26						74.07				244.33
2/22/2010	0.00					170.26						74.07				244.33
2/23/2010	0.00					170.26						74.07				244.33
2/24/2010	13.86	594.48	662.77	7.18	14368.33	177.45	0.01	609.19	679.90	4.81	9610.78	78.88	0.01	11.99	23979.11	256.32
2/25/2010	19.31	648.47	676.97	8.44	16880.58	185.89	0.01	669.86	694.55	2.94	5889.25	81.82	0.00	11.38	22769.83	267.71
2/26/2010	23.96	670.41	677.08	9.13	18256.92	195.02	0.01	677.84	686.42	3.33	6652.14	85.15	0.00	12.45	24909.06	280.16
2/27/2010	23.95	676.75	681.24	7.57	15140.03	202.59	0.01	682.07	685.12	3.65	7308.10	88.80	0.01	11.22	22448.13	291.39
2/28/2010	21.29	675.66	684.71	5.11	10229.76	207.70	0.01	678.68	684.85	3.13	6265.73	91.93	0.00	8.25	16495.49	299.63
3/1/2010	23.95	688.35	691.41	5.01	10021.22	212.71	0.01	687.81	390.64	3.50	6992.04	95.43	0.01	8.51	17013.26	308.14
3/2/2010	23.95	692.42	697.90	3.54	7080.96	216.25	0.01	691.09	696.02	2.99	5970.93	98.41	0.00	6.53	13051.89	314.67
3/3/2010	20.64	689.68	696.36	1.03	2059.72	217.28	0.00	689.11	695.91	2.94	5886.47	101.36	0.00	3.97	7946.19	318.64
3/4/2010	23.81	690.31	696.56	1.14	2280.18	218.42	0.00	688.80	695.32	3.54	7083.34	104.90	0.01	4.68	9363.53	323.32
3/5/2010	23.95	690.57	696.53	0.93	1855.16	219.35	0.00	688.46	695.03	3.55	7098.22	108.45	0.01	4.48	8953.38	327.80
3/6/2010	16.74	690.46	697.66	0.93	1854.75	220.28	0.00	690.31	697.16	2.89	5784.19	111.34	0.00	3.82	7638.94	331.62
3/7/2010	15.20	679.11	693.49	1.17	2347.29	221.45	0.00	683.54	695.86	2.25	4499.04	113.59	0.00	3.42	6846.33	335.04
3/8/2010	21.49	685.86	696.97	0.75	1494.55	222.20	0.00	687.87	696.25	3.28	6556.84	116.87	0.00	4.03	8051.39	339.07
3/9/2010	23.14	684.99	691.38	1.68	3355.36	223.88	0.00	685.35	693.97	4.03	8061.07	120.90	0.01	5.71	11416.43	344.78
3/10/2010	22.77	687.25	695.98	1.97	3938.41	225.85	0.00	686.09	696.24	4.13	8261.34	125.03	0.01	6.10	12199.75	350.87
3/11/2010	21.96	691.74	698.06	1.50	3008.21	227.35	0.00	691.74	696.66	4.12	8244.36	129.15	0.01	5.63	11252.57	356.50
3/12/2010	10.91	692.44	695.37	0.91	1825.30	228.26	0.00	691.35	394.15	1.80	3601.92	130.95	0.00	2.71	5427.22	359.21
3/13/2010	3.23	638.75	660.71	0.38	761.28	228.64	0.00	637.93	659.44	0.77	1531.16	131.72	0.00	1.15	2292.44	360.36
3/14/2010	22.96	685.41	691.30	1.72	3449.64	230.37	0.00	684.33	690.24	6.21	12416.66	137.93	0.01	7.93	15866.30	368.29
3/15/2010	23.76	691.87	695.25	1.93	3859.00	232.30	0.00	690.80	694.55	5.13	10256.21	143.05	0.01	7.06	14115.20	375.35
3/16/2010	22.88	692.40	698.39	2.20	4405.52	234.50	0.00	691.23	696.69	4.44	8872.71	147.49	0.01	6.64	13278.23	381.99
3/17/2010	23.24	692.08	698.76	2.62	5232.32	237.12	0.00	690.85	696.41	5.22	10433.72	152.71	0.01	7.83	15666.03	389.82
3/18/2010	22.98	693.76	698.76	0.81	1610.76	237.92	0.00	692.51	696.39	0.35	692.63	153.05	0.00	1.15	2303.39	390.98
3/19/2010	23.27	692.63	698.86	2.27	4540.00	240.19	0.00	691.44	696.55	4.45	8900.00	157.50	0.01	6.72	13440.00	397.70
3/20/2010	22.06	683.31	697.00	0.96	1920.00	241.15	0.00	682.19	696.85	2.97	5940.00	160.47	0.00	3.93	7860.00	401.63
3/21/2010	23.53	686.45	695.83	0.80	1600.00	241.95	0.00	685.74	695.10	3.23	6460.00	163.70	0.00	4.03	8060.00	405.66
3/22/2010	23.37	691.47	694.[illegible]	0.81	1620.00	242.76	0.00	690.83	693.31	3.43	6860.00	167.13	0.00	4.24	8480.00	409.90
3/23/2010	23.88	693.00	[illegible]	0.63	1260.00	243.39	0.00	691.17	695.80	1.67	3340.00	168.80	0.00	2.30	4600.00	412.20
3/24/2010	22.75	691.88	697.04	0.72	1440.00	244.11	0.00	690.79	695.43	2.63	5260.00	171.43	0.00	3.35	6700.00	415.55
3/25/2010	20.75	690.38	698.50	0.77	1540.00	244.88	0.00	689.22	696.82	2.50	5000.00	173.93	0.00	3.27	6540.00	418.82
3/26/2010	16.88	690.12	698.87	1.71	3410.16	246.59	0.00	688.38	696.58	2.29	4587.63	176.23	0.00	4.00	7997.79	422.81
3/27/2010	18.63	691.84	688.67	1.98	3960.00	248.57	0.00	690.20	696.61	2.86	5720.00	179.09	0.00	4.84	9680.00	427.65

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
3/28/2010	22.41	694.89	698.84	2.67	5348.84	251.24	0.00	693.21	696.67	3.05	6109.93	182.14	0.00	5.73	11458.77	433.38
3/29/2010	23.77	689.62	698.17	3.50	7006.62	254.74	0.01	688.31	696.78	3.53	7068.38	185.68	0.01	7.04	14075.00	440.42
3/30/2010	21.29	693.23	697.88	2.33	4654.73	257.07	0.00	691.83	697.51	2.46	4927.84	188.14	0.00	4.79	9582.57	445.21
3/31/2010	20.34	702.67	717.01	2.13	4259.12	259.20	0.00	701.40	716.78	2.81	5611.77	190.95	0.00	4.94	9870.89	450.15
4/1/2010	22.34	712.77	718.86	2.49	4983.03	261.69	0.00	711.98	718.96	3.09	6170.92	194.03	0.00	5.58	11153.94	455.73
4/2/2010	22.99	701.41	713.81	4.28	8560.00	265.97	0.01	701.09	713.24	3.90	7800.00	197.93	0.01	8.18	16360.00	463.91
4/3/2010	22.79	711.30	716.05	4.28	8560.00	270.25	0.01	710.97	715.53	5.60	11200.00	203.53	0.01	9.88	19760.00	473.79
4/4/2010	21.08	707.25	718.16	4.55	9100.00	274.80	0.01	706.67	716.40	4.62	9240.00	208.15	0.01	9.17	18340.00	482.96
4/5/2010	23.20	708.65	717.29	4.67	9340.00	279.47	0.01	708.15	716.52	5.07	10140.00	213.22	0.01	9.74	19480.00	492.70
4/6/2010	23.33	712.97	716.41	4.61	9220.00	284.08	0.01	713.02	715.39	5.87	11740.00	219.09	0.01	10.48	20960.00	503.18
4/7/2010	22.29	714.81	717.87	4.76	9520.00	288.84	0.01	714.84	716.65	5.75	11500.00	224.84	0.01	10.51	21020.00	513.69
4/8/2010	20.36	715.27	718.03	4.25	8500.00	293.09	0.01	714.33	716.68	4.25	8500.00	229.09	0.01	8.50	17000.00	522.19
4/9/2010	22.19	716.08	718.28	4.57	9140.00	297.66	0.01	714.39	716.49	3.55	7100.00	232.64	0.00	8.12	16240.00	530.31
4/10/2010	20.51	712.09	718.82	4.32	8640.00	301.98	0.01	710.85	716.52	3.97	7940.00	236.61	0.01	8.29	16580.00	538.60
4/11/2010	18.83	712.39	718.63	4.00	8000.00	305.98	0.01	711.69	716.54	3.95	7900.00	240.56	0.01	7.95	15900.00	546.55
4/12/2010	23.95	711.25	716.04	5.27	10540.00	311.25	0.01	710.45	715.42	4.60	9200.00	245.16	0.01	9.87	19740.00	556.42
4/13/2010	9.34	714.90	717.91	2.34	4680.00	313.59	0.00	713.39	716.46	1.69	3380.00	246.85	0.00	4.03	8060.00	560.45
4/14/2010	0.00	0.00	656.11	0.00	0.00	313.59		0.00	655.69	0.00	0.00	246.85		0.00	0.00	560.45
4/15/2010	7.47	651.64	680.09	1.85	3700.00	315.44	0.00	651.38	678.98	1.75	3500.00	248.60	0.00	3.60	7200.00	564.05
4/16/2010	23.82	699.66	717.21	4.77	9540.00	320.21	0.01	699.15	716.38	5.89	11780.00	254.49	0.01	10.66	21320.00	574.71
4/17/2010	21.92	714.75	718.08	4.09	8180.00	324.30	0.01	713.34	716.27	3.63	7260.00	258.12	0.01	7.72	15440.00	582.43
4/18/2010	23.92	715.88	718.06	4.35	8700.00	328.65	0.01	714.22	716.62	3.64	7280.00	261.76	0.01	7.99	15980.00	590.42
4/19/2010	22.98	715.28	717.72	4.84	9680.00	333.49	0.01	714.24	716.93	4.14	8280.00	265.90	0.01	8.98	17960.00	599.40
4/20/2010	23.67	715.01	707.47	4.52	9040.00	338.01	0.01	713.96	716.67	3.93	7860.00	269.83	0.01	8.45	16900.00	607.85
4/21/2010	18.94	711.70	717.26	3.82	7640.00	341.83	0.01	710.43	716.65	3.38	6760.00	273.21	0.00	7.20	14400.00	615.05
4/22/2010	16.18	713.41	718.49	3.32	6640.00	345.15	0.00	712.53	716.49	3.38	6760.00	276.59	0.00	6.70	13400.00	621.75
4/23/2010	18.59	713.56	718.33	4.13	8260.00	349.28	0.01	712.93	716.98	4.46	8920.00	281.05	0.01	8.59	17180.00	630.34
4/24/2010	20.64	714.55	718.31	4.42	8840.00	353.70	0.01	714.02	717.09	4.51	9020.00	285.56	0.01	8.93	17860.00	639.27
4/25/2010	21.64	714.19	718.19	4.68	9360.00	358.38	0.01	713.97	717.06	4.16	8320.00	289.72	0.01	8.84	17680.00	648.11
4/26/2010	19.49	715.08	718.35	3.65	7300.00	362.03	0.01	714.05	717.20	3.80	7600.00	293.52	0.01	7.45	14900.00	655.56
4/27/2010	20.36	712.92	718.42	3.53	7060.00	365.56	0.00	711.65	716.56	3.66	7320.00	297.18	0.01	7.19	14380.00	662.75
4/28/2010	15.44	710.28	718.57	2.23	4460.00	367.79	0.00	708.54	716.98	2.41	4820.00	299.59	0.00	4.64	9280.00	667.39
4/29/2010	11.95	712.84	718.82	1.85	3700.00	369.64	0.00	711.22	716.73	1.94	3880.00	301.53	0.00	3.79	7580.00	671.18
4/30/2010	0.00	0.00	709.91	0.00	0.00	369.64		0.00	708.06	0.00	0.00	301.53		0.00	0.00	671.18
5/1/2010	0.00	0.00	651.20	0.00	0.00	369.64		0.00	650.02	0.00	0.00	301.53		0.00	0.00	671.18
5/2/2010	0.00	0.00	628.08	0.00	0.00	369.64		0.00	627.49	0.00	0.00	301.53		0.00	0.00	671.18
5/3/2010	0.00	0.00	613.90	0.00	0.00	369.64		0.00	613.27	0.00	0.00	301.53		0.00	0.00	671.18
5/4/2010	0.00	0.00	603.35	0.00	0.00	369.64		0.00	602.19	0.00	0.00	301.53		0.00	0.00	671.18
5/5/2010	0.00	0.00	596.82	0.00	0.00	369.64		0.00	597.41	0.00	0.00	301.53		0.00	0.00	671.18
5/6/2010	0.00	0.00	588.68	0.00	0.00	369.64		0.00	587.74	0.00	0.00	301.53		0.00	0.00	671.18
5/7/2010	0.00	0.00	581.48	0.00	0.00	369.64		0.00	581.54	0.00	0.00	301.53		0.00	0.00	671.18
5/8/2010	0.00	0.00	575.40	0.00	0.00	369.64		0.00	574.93	0.00	0.00	301.53		0.00	0.00	671.18
5/9/2010	0.00	0.00	569.01	0.00	0.00	369.64		0.00	567.64	0.00	0.00	301.53		0.00	0.00	671.18
5/10/2010	0.00	0.00	571.85	0.00	0.00	369.64		0.00	571.90	0.00	0.00	301.53		0.00	0.00	671.18
5/11/2010	0.00	0.00	558.01	0.00	0.00	369.64		0.00	556.48	0.00	0.00	301.53		0.00	0.00	671.18
5/12/2010	0.00	0.00	551.91	0.00	0.00	369.64		0.00	550.98	0.00	0.00	301.53		0.00	0.00	671.18
5/13/2010	0.00	0.00	546.72	0.00	0.00	369.64		0.00	545.83	0.00	0.00	301.53		0.00	0.00	671.18
5/14/2010	9.07	627.83	662.50	1.74	3489.71	371.39	0.00	627.73	661.95	2.34	4679.94	303.87	0.00	4.08	8169.65	675.26
5/15/2010	23.94	672.26	687.24	5.13	10254.35	376.51	0.01	672.05	686.34	6.68	13353.42	310.55	0.01	11.80	23607.77	687.06
5/16/2010	23.95	688.86	702.34	4.76	9510.39	381.27	0.01	688.52	701.56	6.29	12582.89	316.84	0.01	11.05	22093.29	698.11
5/17/2010	22.98	711.28	715.63	3.57	7135.10	384.84	0.01	710.33	714.75	5.84	11686.02	322.68	0.01	9.41	18821.12	707.52
5/18/2010	12.73	703.18	714.67	2.60	5199.32	387.44	0.00	702.27	713.59	3.68	7352.55	326.36	0.01	6.28	12551.87	713.80
5/19/2010	23.95	712.23	716.85	4.60	9191.71	392.03	0.01	711.47	716.13	6.54	13070.48	332.90	0.01	11.13	22262.19	724.93
5/20/2010	22.73	711.72	715.77	4.77	9548.64	396.81	0.01	711.49	714.76	6.40	12800.95	339.30	0.01	11.17	22349.59	736.10
5/21/2010	21.88	714.94	717.29	3.91	7817.48	400.72	0.01	714.45	716.62	5.86	11718.21	345.15	0.01	9.77	19535.69	745.87
5/22/2010	22.84	712.76	717.37	4.45	8892.30	405.16	0.01	712.37	716.71	6.19	12376.96	351.34	0.01	10.63	21269.26	756.51
5/23/2010	23.95	714.02	716.18	4.57	9134.73	409.73	0.01	714.04	715.41	6.42	12846.37	357.77	0.01	10.99	21981.11	767.50
5/24/2010	21.57	714.51	717.50	3.69	7378.14	413.42	0.01	714.44	716.70	5.85	11304.56	363.42	0.01	9.34	18682.71	776.84
5/25/2010	0.00	0.00	711.56	0.00	0.00	413.42		0.00	710.76	0.00	0.00	363.42		0.00	0.00	776.84
5/26/2010	0.00	0.00	664.94	0.00	0.00	413.42		0.00	664.18	0.00	0.00	363.42		0.00	0.00	776.84
5/27/2010	0.00	0.00	639.80	0.00	0.00	413.42		0.00	639.14	0.00	0.00	363.42		0.00	0.00	776.84
5/28/2010	0.00	0.00	621.08	0.00	0.00	413.42		0.00	620.50	0.00	0.00	363.42		0.00	0.00	776.84
5/29/2010	0.00	0.00	607.79	0.00	0.00	413.42		0.00	607.18	0.00	0.00	363.42		0.00	0.00	776.84
5/30/2010	0.00	0.00	598.92	0.00	0.00	413.42		0.00	598.26	0.00	0.00	363.42		0.00	0.00	776.84
5/31/2010	0.00	0.00	591.56	0.00	0.00	413.42		0.00	590.98	0.00	0.00	363.42		0.00	0.00	776.84
6/1/2010	0.00	0.00	584.69	0.00	0.00	413.42		0.00	584.99	0.00	0.00	363.42		0.00	0.00	776.84
6/2/2010	0.00	0.00	579.09	0.00	0.00	413.42		0.00	581.35	0.00	0.00	363.42		0.00	0.00	776.84
6/3/2010	0.00	0.00	575.46	0.00	0.00	413.42		0.00	574.93	0.00	0.00	363.42		0.00	0.00	776.84
6/4/2010	0.00	0.00	569.71	0.00	0.00	413.42		0.00	569.13	0.00	0.00	363.42		0.00	0.00	776.84
6/5/2010	0.00	0.00	565.46	0.00	0.00	413.42		0.00	569.71	0.00	0.00	363.42		0.00	0.00	776.84
6/6/2010	0.00	No data: Power Outage				413.42						363.42				776.84
6/7/2010	0.00	0.00	551.11	0.00	0.00	413.42		0.00	550.18	0.00	0.00	363.42		0.00	0.00	776.84
6/8/2010	0.00	0.00	550.62	0.00	0.00	413.42		0.00	550.48	0.00	0.00	363.42		0.00	0.00	776.84
6/9/2010	11.63	628.45	659.57	2.23	4454.36	415.65	0.00	639.78	674.25	0.00	0.00	363.42	0.00	2.23	4454.36	779.06
6/10/2010	0.20	659.91	660.29	0.03	68.66	415.68	0.00	674.72	675.18	0.00	0.00	363.42	0.00	0.03	68.66	779.10
6/11/2010	6.23	658.73	686.48	1.02	2032.98	416.70	0.00	579.67	586.20	0.00	0.00	363.42	0.00	1.02	2032.98	780.12
6/12/2010	23.31	687.90	706.22	4.15	8292.76	420.84	0.01	588.29	590.82	0.00	0.00	363.42	0.00	4.15	8292.76	784.26
6/13/2010	20.83	708.09	716.65	3.15	6294.40	423.99	0.00	592.05	592.78	0.00	0.00	363.42	0.00	3.15	6294.40	787.41
6/14/2010	5.81	712.15	716.99	0.67	1349.93	424.66	0.00	592.85	593.24	0.00	0.00	363.42	0.00	0.67	1349.93	788.08
6/15/2010	5.90	673.11	714.47	0.86	1717.03	425.52	0.00	585.11	589.75	0.00	0.00	363.42	0.00	0.86	1717.03	788.94
6/16/2010	15.83	712.13	716.92	2.47	4939.81	427.99	0.00	587.92	588.73	0.00	0.00	363.42	0.00	2.47	4939.81	791.41
6/17/2010	11.91	712.00	717.43	1.67	3340.32	429.66	0.00	589.16	589.63	0.00	0.00	363.42	0.00	1.67	3340.32	793.08
6/18/2010	18.04	692.46	717.89	3.94	7871.65	433.60	0.01	588.85	589.91	0.00	0.00	363.42	0.00	3.94	7871.65	797.02
6/19/2010	15.78	712.21	717.50	3.43	6868.29	437.03	0.00	588.53	589.03	0.00	0.00	363.42	0.00	3.43	6868.29	800.45
6/20/2010	15.16	712.10	717.26	3.31	6621.16	440.34	0.00	588.48	589.01	0.00	0.00	363.42	0.00	3.31	6621.16	803.76
6/21/2010	12.90	709.88	717.53	3.47	6938.08	443.81	0.00	588.38	588.78	0.00	0.00	363.42	0.00	3.47	6938.08	807.23
6/22/2010	4.16	673.51	713.24	0.81	1619.77	444.62	0.00	582.48	586.75	0.00	0.00	363.42	0.00	0.81	1619.77	808.04
6/23/2010	16.62	673.51	717.01	3.45	6902.99	448.07	0.01	584.23	584.99	0.00	0.00	363.42	0.00	3.45	6902.99	811.49
6/24/2010	18.09	702.60	717.18	3.91	7813.96	451.98	0.01	584.62	585.32	0.00	0.00	363.42	0.00	3.91	7813.96	815.40
6/25/2010	11.32	711.60	717.42	2.61	5214.52	454.59	0.00	584.89	585.35	0.00	0.00	363.42	0.00	2.61	5214.52	818.01
6/26/2010	0.45	627.60	655.80	0.13	257.23	454.72	0.00	578.98	583.17	0.00	0.00	363.42	0.00	0.13	257.23	818.14
6/27/2010	0.00	0.00	630.16	0.00	0.00	454.72		0.00	578.77	0.00	0.00	363.42		0.00	0.00	818.14
6/28/2010	8.47	672.36	716.56	1.54	3080.23	456.26	0.00	573.98	575.70	0.00	0.00	363.42	0.00	1.54	3080.23	819.68
6/29/2010	14.93	707.58	717.65	3.08	6160.76	459.34	0.00	576.85	577.80	0.00	0.00	363.42	0.00	3.08	6160.76	822.76
6/30/2010	17.03	711.78	718.39	3.89	7772.60	463.22	0.01	578.95	579.50	0.00	0.00	363.42	0.00	3.89	7772.60	826.64
7/1/2010	18.36	710.91	717.97	3.87	7742.88	467.10	0.01	579.98	580.63	0.00	0.00	363.42	0.00	3.87	7742.88	830.51
7/2/2010	19.22	701.14	717.78	3.89	7783.74	470.99	0.01	579.98	580.91	0.00	0.00	363.42	0.00	3.89	7783.74	834.41
7/3/2010	18.13	709.68	717.83	3.94	7878.91	474.93	0.01	580.13	580.86	0.00	0.00	363.42	0.00	3.94	7878.91	838.35
7/4/2010	17.83	705.81	718.22	4.36	8716.75	479.29	0.01	579.99	580.71	0.00	0.00	363.42	0.00	4.36	8716.75	842.70
7/5/2010	21.59	706.15	716.95	5.94	11870.71	485.22	0.01	579.56	580.17	0.00	0.00	363.42	0.00	5.94	11870.71	848.64
7/6/2010	19.46	710.80	717.12	5.65	11303.33	490.87	0.01	579.22	579.76	0.00	0.00	363.42	0.00	5.65	11303.33	854.29
7/7/2010	18.86	712.58	716.71	5.38	10764.99	496.25	0.01	579.04	579.53	0.00	0.00	363.42	0.00	5.38	10764.99	859.67
7/8/2010	17.89	711.51	717.17	4.89	9772.96	501.14	0.01	578.79	579.28	0.00	0.00	363.42	0.00	4.89	9772.96	864.56
7/9/2010	19.51	710.95	716.95	5.03	10054.73	506.17	0.01	578.47	578.85	0.00	0.00	363.42	0.00	5.03	10054.73	869.59
7/10/2010	15.55	711.80	717.29	3.88	7763.42	510.05	0.01	578.29	578.73	0.00	0.00	363.42	0.00	3.88	7763.42	873.47
7/11/2010	22.55	705.11	716.93	6.22	12437.79	516.27	0.01	577.98	578.63	0.00	0.00	363.42	0.00	6.22	12437.79	879.69
7/12/2010	12.33	710.73	717.31	2.83	5660.26	519.10	0.00	577.40	577.88	0.00	0.00	363.42	0.00	2.83	5660.26	882.52
7/13/2010	17.48	712.69	717.04	4.45	8891.22	523.54	0.01	577.34	577.60	0.00	0.00	363.42	0.00	4.45	8891.22	886.96

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell)	No Data Collected	tank over pressurizing	New Pump & Logic Install
	Manual Injection Period	Gas Supply Problems	Communication Loss
	Unidentified Interruption	Cold End	Injection Pressure Upgrades
	Boiler Trip	Power Loss	Pump Drive Skid Rebuild
	Water Pump Failure	Low CO2 Tank Level	Check Valve Installation
		Booster pump failure	high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
7/14/2010	16.14	707.21	717.25	4.38	8763.87	527.93	0.01	577.00	577.58	0.00	0.00	363.42	0.00	4.38	8763.87	891.35
7/15/2010	18.12	712.35	716.87	5.28	10553.38	533.20	0.01	576.67	577.09	0.00	0.00	363.42	0.00	5.28	10553.38	896.62
7/16/2010	15.94	696.88	716.96	4.32	8644.38	537.53	0.01	575.73	576.53	0.00	0.00	363.42	0.00	4.32	8644.38	900.94
7/17/2010	15.52	706.52	717.12	4.23	8461.95	541.76	0.01	575.57	576.07	0.00	0.00	363.42	0.00	4.23	8461.95	905.18
7/18/2010	0.00	0.00	717.42	0.00	0.00	541.76		0.00	575.18	0.00	0.00	363.42		0.00	0.00	905.18
7/19/2010	14.18	700.24	716.88	3.76	7512.31	545.51	0.01	570.89	571.88	0.00	0.00	363.42	0.00	3.76	7512.31	908.93
7/20/2010	10.85	707.27	716.96	2.73	5456.72	548.24	0.00	572.15	573.03	0.00	0.00	363.42	0.00	2.73	5456.72	911.66
7/21/2010	18.04	710.58	716.84	4.34	8677.37	552.58	0.01	572.60	573.06	0.00	0.00	363.42	0.00	4.34	8677.37	916.00
7/22/2010	6.78	677.10	710.70	1.72	3448.61	554.30	0.00	570.47	572.78	0.00	0.00	363.42	0.00	1.72	3448.61	917.72
7/23/2010	21.75	705.85	716.35	5.36	10726.10	559.67	0.01	571.25	571.79	0.00	0.00	363.42	0.00	5.36	10726.10	923.09
7/24/2010	19.16	696.49	714.66	4.95	9901.26	564.62	0.01	571.61	572.10	0.00	0.00	363.42	0.00	4.95	9901.26	928.04
7/25/2010	8.65	705.38	717.04	1.96	3926.17	566.58	0.00	571.20	571.85	0.00	0.00	363.42	0.00	1.96	3926.17	930.00
7/26/2010	24.00	No Power: Storm				566.58						363.42				930.00
7/27/2010	5.14	692.26	717.01	1.11	2224.77	567.69	0.00	553.53	555.52	0.00	0.00	363.42	0.00	1.11	2224.77	931.11
7/28/2010	19.11	708.64	717.47	4.50	8996.85	572.19	0.01	560.25	562.36	0.00	0.00	363.42	0.00	4.50	8996.85	935.61
7/29/2010	23.29	706.82	717.18	5.36	10724.18	577.55	0.01	563.66	564.59	0.00	0.00	363.42	0.00	5.36	10724.18	940.97
7/30/2010	8.68	699.04	717.59	2.22	4443.72	579.78	0.00	564.59	565.74	0.00	0.00	363.42	0.00	2.22	4443.72	943.19
7/31/2010	19.20	709.97	717.06	4.66	9324.02	584.44	0.01	565.34	566.05	0.00	0.00	363.42	0.00	4.66	9324.02	947.86
8/1/2010	18.37	711.45	717.34	4.37	8748.51	588.81	0.01	566.70	567.15	0.00	0.00	363.42	0.00	4.37	8748.51	952.23
8/2/2010	20.89	709.90	717.25	5.16	10312.60	593.97	0.01	567.12	567.70	0.00	0.00	363.42	0.00	5.16	10312.60	957.39
8/3/2010	21.86	714.39	717.20	4.93	9854.86	598.90	0.01	567.40	567.66	0.00	0.00	363.42	0.00	4.93	9854.86	962.31
8/4/2010	14.70	713.52	716.96	3.70	7401.65	602.60	0.01	567.80	568.11	0.00	0.00	363.42	0.00	3.70	7401.65	966.02
8/5/2010	0.00	No power: Storm			0.00	602.60				0.00	0.00	363.42		0.00	0.00	966.02
8/6/2010	13.14	700.67	716.01	3.08	6156.90	605.68	0.00	555.78	556.05	0.00	0.00	363.42	0.00	3.08	6156.90	969.09
8/7/2010	16.59	711.78	717.61	3.91	7812.57	609.58	0.01	560.62	561.77	0.00	0.00	363.42	0.00	3.91	7812.57	973.00
8/8/2010	0.14	716.80	717.59	0.03	54.99	609.61	0.00	561.75	562.54	0.00	0.00	363.42	0.00	0.03	54.99	973.03
8/9/2010	0.00	0.00	644.10	0.00	0.00	609.61		0.00	560.24	0.00	0.00	363.42		0.00	0.00	973.03
8/10/2010	0.00	No Power: Site modifications				609.61						363.42				973.03
8/11/2010	0.00					609.61						363.42				973.03
8/12/2010	0.00					609.61						363.42				973.03
8/13/2010	0.00					609.61						363.42				973.03
8/14/2010	0.00					609.61						363.42				973.03
8/15/2010	0.00					609.61						363.42				973.03
8/16/2010	0.00					609.61						363.42				973.03
8/17/2010	0.00	0.00	2.57	0.00	0.00	609.61		0.00	0.28	0.00	0.00	363.42		0.00	0.00	973.03
8/18/2010	0.00	0.00	15.01	0.00	0.00	609.61		0.00	33.30	0.00	0.00	363.42		0.00	0.00	973.03
8/19/2010	4.55	567.41	680.58	0.86	1725.04	610.47	0.00	531.86	653.71	1.81	3616.86	365.23	0.00	2.67	5341.90	975.70
8/20/2010	0.55	527.55	559.30	0.03	59.94	610.50	0.00	527.13	558.44	0.05	90.34	365.27	0.00	0.08	150.27	975.77
8/21/2010	13.59	709.00	758.21	4.35	8704.13	614.85	0.01	707.83	757.34	5.57	11140.83	370.84	0.01	9.92	19844.96	985.70
8/22/2010	10.54	769.62	780.67	3.93	7866.32	618.79	0.01	768.87	780.12	4.33	8660.85	375.17	0.01	8.26	16529.18	993.96
8/23/2010	11.72	752.42	772.71	3.99	7977.26	622.78	0.01	753.80	774.13	3.72	7442.73	378.89	0.00	7.71	15419.99	1001.67
8/24/2010	15.19	791.25	807.78	5.49	10974.34	628.26	0.01	792.63	810.30	5.04	10071.24	383.93	0.01	10.52	21045.58	1012.19
8/25/2010	0.00	0.00	727.16	0.00	0.00	628.26		0.00	726.37	0.00	0.00	383.93		0.00	0.00	1012.19
8/26/2010	9.25	756.34	782.40	3.40	6797.43	631.66	0.00	759.61	785.71	2.60	5194.82	386.53	0.00	6.00	11992.25	1018.19
8/27/2010	9.71	794.64	820.38	4.21	8411.05	635.87	0.01	798.57	825.27	3.03	6068.58	389.56	0.00	7.24	14479.63	1025.43
8/28/2010	6.83	795.05	821.41	3.03	6065.07	638.90	0.00	799.45	826.45	2.06	4114.12	391.62	0.00	5.09	10179.19	1030.52
8/29/2010	0.00	0.00	719.91	0.00	0.00	638.90		0.00	705.41	0.00	0.00	391.62		0.00	0.00	1030.52
8/30/2010	17.43	833.55	891.78	9.68	19350.71	648.58	0.01	836.85	895.25	6.16	12323.85	397.78	0.01	15.84	31674.56	1046.36
8/31/2010	11.04	891.44	897.61	5.46	10915.01	654.03	0.01	893.15	899.90	3.01	6026.53	400.79	0.00	8.47	16941.54	1054.83
9/1/2010	0.00	0.00	732.60	0.00	0.00	654.03		0.00	731.81	0.00	0.00	400.79		0.00	0.00	1054.83
9/2/2010	9.70	804.83	848.12	4.14	8288.89	658.18	0.01	806.70	849.54	2.47	4935.52	403.26	0.00	6.61	13224.40	1061.44
9/3/2010	23.41	874.87	905.97	9.63	19266.20	667.81	0.01	876.03	908.49	5.09	10177.43	408.35	0.01	14.72	29443.63	1076.16
9/4/2010	8.54	824.75	892.10	2.29	4570.97	670.10	0.00	892.10	892.57	1.16	2313.54	409.51	0.00	3.44	6884.51	1079.60
9/5/2010	0.00	0.00	733.78	0.00	0.00	670.10		0.00	733.54	0.00	0.00	409.51		0.00	0.00	1079.60
9/6/2010	0.00	0.00	717.31	0.00	0.00	670.10		0.00	717.15	0.00	0.00	409.51		0.00	0.00	1079.60
9/7/2010	0.00	0.00	713.84	0.00	0.00	670.10		0.00	713.84	0.00	0.00	409.51		0.00	0.00	1079.60
9/8/2010	0.00	0.00	702.96	0.00	0.00	670.10		0.00	702.49	0.00	0.00	409.51		0.00	0.00	1079.60
9/9/2010	1.02	717.00	726.69	0.16	322.98	670.26	0.00	716.74	726.69	0.12	238.20	409.63	0.00	0.28	561.18	1079.88
9/10/2010	4.56	762.97	792.41	2.09	4183.40	672.35	0.00	771.07	799.19	1.18	2365.82	410.81	0.00	3.27	6549.22	1083.16
9/11/2010	0.00	0.00	710.22	0.00	0.00	672.35		0.00	709.90	0.00	0.00	410.81		0.00	0.00	1083.16
9/12/2010	0.00	0.00	693.51	0.00	0.00	672.35		0.00	692.33	0.00	0.00	410.81		0.00	0.00	1083.16
9/13/2010	0.00	0.00	702.10	0.00	0.00	672.35		0.00	701.63	0.00	0.00	410.81		0.00	0.00	1083.16
9/14/2010	0.00	0.00	700.44	0.00	0.00	672.35		0.00	699.89	0.00	0.00	410.81		0.00	0.00	1083.16
9/15/2010	0.00	0.00	705.96	0.00	0.00	672.35		0.00	705.09	0.00	0.00	410.81		0.00	0.00	1083.16
9/16/2010	0.00	0.00	706.75	0.00	0.00	672.35		0.00	705.57	0.00	0.00	410.81		0.00	0.00	1083.16
9/17/2010	0.00	0.00	704.78	0.00	0.00	672.35		0.00	703.67	0.00	0.00	410.81		0.00	0.00	1083.16
9/18/2010	0.00	0.00	704.30	0.00	0.00	672.35		0.00	703.91	0.00	0.00	410.81		0.00	0.00	1083.16
9/19/2010	0.00	0.00	693.19	0.00	0.00	672.35		0.00	691.85	0.00	0.00	410.81		0.00	0.00	1083.16
9/20/2010	8.74	759.84	788.78	4.04	8070.70	676.38	0.01	761.86	790.36	2.19	4375.49	413.00	0.00	6.22	12446.20	1089.38
9/21/2010	7.72	806.95	824.40	3.67	7339.39	680.05	0.00	808.30	825.51	1.80	3602.71	414.80	0.00	5.47	10942.10	1094.85
9/22/2010	0.00	0.00	705.96	0.00	0.00	680.05		0.00	704.54	0.00	0.00	414.80		0.00	0.00	1094.85
9/23/2010	1.68	737.64	756.32	0.74	1479.22	680.79	0.00	740.14	759.23	0.42	840.30	415.22	0.00	1.16	2319.52	1096.01
9/24/2010	0.00	0.00	700.60	0.00	0.00	680.79		0.00	699.66	0.00	0.00	415.22		0.00	0.00	1096.01
9/25/2010	0.00	0.00	695.32	0.00	0.00	680.79		0.00	694.61	0.00	0.00	415.22		0.00	0.00	1096.01
9/26/2010	0.00	0.00	699.89	0.00	0.00	680.79		0.00	699.02	0.00	0.00	415.22		0.00	0.00	1096.01
9/27/2010	1.51	727.45	743.39	0.77	1538.67	681.56	0.00	730.72	746.39	0.38	755.66	415.60	0.00	1.15	2294.33	1097.16
9/28/2010	10.55	779.11	819.52	5.83	11656.95	687.39	0.01	782.65	822.59	2.41	4811.38	418.00	0.00	8.23	16468.33	1105.39
9/29/2010	0.00	0.00	733.78	0.00	0.00	687.39		0.00	732.28	0.00	0.00	418.00		0.00	0.00	1105.39
9/30/2010	0.00	0.00	694.77	0.00	0.00	687.39		0.00	693.67	0.00	0.00	418.00		0.00	0.00	1105.39
10/1/2010	0.00	0.00	699.97	0.00	0.00	687.39		0.00	699.34	0.00	0.00	418.00		0.00	0.00	1105.39
10/2/2010	0.00	0.00	695.56	0.00	0.00	687.39		0.00	694.85	0.00	0.00	418.00		0.00	0.00	1105.39
10/3/2010	0.00	0.00	685.86	0.00	0.00	687.39		0.00	684.68	0.00	0.00	418.00		0.00	0.00	1105.39
10/4/2010	0.00	0.00	681.14	0.00	0.00	687.39		0.00	679.95	0.00	0.00	418.00		0.00	0.00	1105.39
10/5/2010	0.00	0.00	673.18	0.00	0.00	687.39		0.00	671.92	0.00	0.00	418.00		0.00	0.00	1105.39
10/6/2010	0.00	0.00	671.13	0.00	0.00	687.39		0.00	669.95	0.00	0.00	418.00		0.00	0.00	1105.39
10/7/2010	0.42	681.81	685.63	0.01	11.83	687.40	0.00	681.10	684.84	0.00	8.68	418.01	0.00	0.01	20.51	1105.40
10/8/2010	0.00	0.00	683.03	0.00	0.00	687.40		0.00	682.79	0.00	0.00	418.01		0.00	0.00	1105.40
10/9/2010	0.00	0.00	682.00	0.00	0.00	687.40		0.00	681.77	0.00	0.00	418.01		0.00	0.00	1105.40
10/10/2010	0.00	0.00	682.48	0.00	0.00	687.40		0.00	682.00	0.00	0.00	418.01		0.00	0.00	1105.40
10/11/2010	0.00	0.00	674.36	0.00	0.00	687.40		0.00	673.65	0.00	0.00	418.01		0.00	0.00	1105.40
10/12/2010	0.00	0.00	649.85	0.00	0.00	687.40		0.00	648.83	0.00	0.00	418.01		0.00	0.00	1105.40
10/13/2010	0.00	0.00	643.70	0.00	0.00	687.40		0.00	643.23	0.00	0.00	418.01		0.00	0.00	1105.40
10/14/2010	0.00	0.00	634.25	0.00	0.00	687.40		0.00	633.85	0.00	0.00	418.01		0.00	0.00	1105.40
10/15/2010	0.00	0.00	633.77	0.00	0.00	687.40		0.00	633.14	0.00	0.00	418.01		0.00	0.00	1105.40
10/16/2010	0.00	0.00	631.09	0.00	0.00	687.40		0.00	630.46	0.00	0.00	418.01		0.00	0.00	1105.40
10/17/2010	0.00	0.00	625.97	0.00	0.00	687.40		0.00	625.26	0.00	0.00	418.01		0.00	0.00	1105.40
10/18/2010	0.00	0.00	621.32	0.00	0.00	687.40		0.00	620.61	0.00	0.00	418.01		0.00	0.00	1105.40
10/19/2010	0.00	0.00	611.31	0.00	0.00	687.40		0.00	610.29	0.00	0.00	418.01		0.00	0.00	1105.40
10/20/2010	0.00	0.00	620.85	0.00	0.00	687.40		0.00	620.14	0.00	0.00	418.01		0.00	0.00	1105.40
10/21/2010	0.00	0.00	610.68	0.00	0.00	687.40		0.00	610.05	0.00	0.00	418.01		0.00	0.00	1105.40
10/22/2010	0.00	0.00	615.65	0.00	0.00	687.40		0.00	615.41	0.00	0.00	418.01		0.00	0.00	1105.40
10/23/2010	0.00	0.00	601.07	0.00	0.00	687.40		0.00	600.68	0.00	0.00	418.01		0.00	0.00	1105.40
10/24/2010	0.00	0.00	586.10	0.00	0.00	687.40		0.00	585.39	0.00	0.00	418.01		0.00	0.00	1105.40
10/25/2010	0.00	0.00	588.07	0.00	0.00	687.40		0.00	587.20	0.00	0.00	418.01		0.00	0.00	1105.40
10/26/2010	9.94	741.89	763.72	3.70	7396.33	691.10	0.00	745.22	762.86	2.92	5835.15	420.92	0.00	6.62	13231.48	1112.02
10/27/2010	11.85	775.98	798.56	4.19	8388.47	695.29	0.01	774.90	799.19	3.36	6729.92	424.29	0.00	7.56	15118.40	1119.58
10/28/2010	6.80	758.02	784.92	2.83	5661.45	698.12	0.00	758.01	785.24	1.64	3277.30	425.93	0.00	4.47	8938.75	1124.05
10/29/2010	5.40	855.02	860.73	2.31	4619.43	700.43	0.00	853.89	859.71	1.19	2375.81	427.12	0.00	3.50	6995.23	1127.55

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
10/30/2010	11.90	859.44	872.32	4.57	9138.28	705.00	0.01	857.85	870.82	2.24	4473.15	429.35	0.00	6.81	13611.43	1134.35
10/31/2010	0.00	0.00	707.85	0.00	0.00	705.00		0.00	706.04	0.00	0.00	429.35		0.00	0.00	1134.35
11/1/2010	0.00	0.00	702.96	0.00	0.00	705.00		0.00	702.18	0.00	0.00	429.35		0.00	0.00	1134.35
11/2/2010	0.00	0.00	702.89	0.00	0.00	705.00		0.00	702.16	0.00	0.00	429.35		0.00	0.00	1134.35
11/3/2010	0.00	0.00	700.60	0.00	0.00	705.00		0.00	699.73	0.00	0.00	429.35		0.00	0.00	1134.35
11/4/2010	0.00	0.00	691.54	0.00	0.00	705.00		0.00	690.12	0.00	0.00	429.35		0.00	0.00	1134.35
11/5/2010	0.00	0.00	687.76	0.00	0.00	705.00		0.00	686.18	0.00	0.00	429.35		0.00	0.00	1134.35
11/6/2010	0.00	0.00	678.46	0.00	0.00	705.00		0.00	677.12	0.00	0.00	429.35		0.00	0.00	1134.35
11/7/2010	0.00	0.00	680.35	0.00	0.00	705.00		0.00	679.40	0.00	0.00	429.35		0.00	0.00	1134.35
11/8/2010	0.00	0.00	686.42	0.00	0.00	705.00		0.00	685.55	0.00	0.00	429.35		0.00	0.00	1134.35
11/9/2010	0.00	0.00	682.16	0.00	0.00	705.00		0.00	681.45	0.00	0.00	429.35		0.00	0.00	1134.35
11/10/2010	0.00	0.00	684.63	0.00	0.00	705.00		0.00	683.97	0.00	0.00	429.35		0.00	0.00	1134.35
11/11/2010	0.00	0.00	687.05	0.00	0.00	705.00		0.00	686.49	0.00	0.00	429.35		0.00	0.00	1134.35
11/12/2010	9.42	759.83	794.93	4.72	9437.03	709.72	0.01	761.17	796.27	2.18	4362.45	431.53	0.00	6.90	13799.48	1141.25
11/13/2010	23.95	858.72	899.11	12.05	24102.61	721.77	0.01	859.27	899.43	5.04	10073.68	436.57	0.01	17.09	34176.28	1158.34
11/14/2010	18.25	861.84	903.68	6.88	13766.97	728.65	0.01	860.74	903.45	2.82	5636.68	439.39	0.00	9.70	19403.65	1168.04
11/15/2010	23.83	906.36	913.61	9.49	18989.15	738.15	0.01	905.20	913.30	3.94	7877.02	443.33	0.00	13.43	26866.17	1181.47
11/16/2010	21.69	905.98	914.01	7.56	15119.86	745.71	0.01	904.48	912.74	3.35	6700.08	446.68	0.00	10.91	21819.94	1192.38
11/17/2010	0.00	0.00	784.84	0.00	0.00	745.71		0.00	783.35	0.00	0.00	446.68		0.00	0.00	1192.38
11/18/2010	0.00	0.00	698.55	0.00	0.00	745.71		0.00	696.74	0.00	0.00	446.68		0.00	0.00	1192.38
11/19/2010	0.00	0.00	689.96	0.00	0.00	745.71		0.00	688.86	0.00	0.00	446.68		0.00	0.00	1192.38
11/20/2010	0.00	0.00	686.73	0.00	0.00	745.71		0.00	685.55	0.00	0.00	446.68		0.00	0.00	1192.38
11/21/2010	0.00	0.00	698.71	0.00	0.00	745.71		0.00	697.68	0.00	0.00	446.68		0.00	0.00	1192.38
11/22/2010	0.00	0.00	709.58	0.00	0.00	745.71		0.00	708.64	0.00	0.00	446.68		0.00	0.00	1192.38
11/23/2010	8.55	800.55	864.83	4.94	9879.40	750.65	0.01	803.25	864.99	1.43	2865.05	448.11	0.00	6.37	12744.45	1198.76
11/24/2010	23.14	904.57	913.85	9.95	19901.06	760.60	0.01	903.20	912.74	4.49	8972.24	452.60	0.00	14.44	28873.30	1213.19
11/25/2010	21.85	905.65	914.56	7.50	15001.14	768.10	0.01	904.04	913.30	3.73	7458.38	456.33	0.00	11.23	22459.52	1224.42
11/26/2010	14.69	906.52	915.03	4.78	9563.20	772.88	0.01	904.33	913.06	2.13	4261.11	458.46	0.00	6.91	13824.31	1231.34
11/27/2010	0.00	0.00	727.67	0.00	0.00	772.88		0.00	726.29	0.00	0.00	458.46		0.00	0.00	1231.34
11/28/2010	0.00	0.00	689.17	0.00	0.00	772.88		0.00	688.23	0.00	0.00	458.46		0.00	0.00	1231.34
11/29/2010	0.00	0.00	691.77	0.00	0.00	772.88		0.00	690.75	0.00	0.00	458.46		0.00	0.00	1231.34
11/30/2010	0.00	0.00	683.34	0.00	0.00	772.88		0.00	681.85	0.00	0.00	458.46		0.00	0.00	1231.34
12/1/2010	7.51	798.70	868.14	3.67	7343.16	776.55	0.00	808.36	872.63	1.28	2552.98	459.73	0.00	4.95	9896.14	1236.28
12/2/2010	5.32	888.33	909.04	2.05	4107.74	778.61	0.00	890.66	911.72	1.07	2144.06	460.80	0.00	3.13	6251.80	1239.41
12/3/2010	4.07	778.29	844.58	1.47	2939.96	780.08	0.00	777.84	846.94	1.01	2016.87	461.81	0.00	2.48	4956.82	1241.89
12/4/2010	0.00	0.00	692.88	0.00	0.00	780.08		0.00	691.38	0.00	0.00	461.81		0.00	0.00	1241.89
12/5/2010	0.00	0.00	671.99	0.00	0.00	780.08		0.00	670.26	0.00	0.00	461.81		0.00	0.00	1241.89
12/6/2010	3.65	774.74	831.34	1.89	3779.56	781.96	0.00	779.93	833.70	0.58	1167.79	462.40	0.00	2.47	4947.35	1244.36
12/7/2010	1.80	759.15	812.90	0.91	1816.91	782.87	0.00	763.15	815.42	0.30	591.91	462.69	0.00	1.20	2408.82	1245.57
12/8/2010	0.00	0.00	672.70	0.00	0.00	782.87		0.00	670.97	0.00	0.00	462.69		0.00	0.00	1245.57
12/9/2010	0.00	0.00	672.15	0.00	0.00	782.87		0.00	671.13	0.00	0.00	462.69		0.00	0.00	1245.57
12/10/2010	0.00	0.00	680.11	0.00	0.00	782.87		0.00	678.30	0.00	0.00	462.69		0.00	0.00	1245.57
12/11/2010	0.00	0.00	686.97	0.00	0.00	782.87		0.00	685.63	0.00	0.00	462.69		0.00	0.00	1245.57
12/12/2010	0.00	0.00	697.76	0.00	0.00	782.87		0.00	696.27	0.00	0.00	462.69		0.00	0.00	1245.57
12/13/2010	7.77	736.51	768.22	2.87	5740.21	785.74	0.00	739.69	776.81	0.70	1391.97	463.39	0.00	3.57	7132.19	1249.13
12/14/2010	21.87	872.07	914.87	9.74	19486.34	795.49	0.01	874.83	912.43	3.96	7917.61	467.35	0.00	13.70	27403.95	1262.83
12/15/2010	10.32	806.96	856.16	2.40	4792.86	797.88	0.00	804.54	852.77	0.96	1918.30	468.31	0.00	3.36	6711.16	1266.19
12/16/2010	24.00	885.75	910.77	6.72	13431.51	804.60	0.01	882.48	908.02	3.10	6209.32	471.41	0.00	9.82	19640.84	1276.01
12/17/2010	23.95	904.84	915.74	6.61	13210.98	811.20	0.01	901.86	912.74	3.48	6969.91	474.90	0.00	10.09	20180.89	1286.10
12/18/2010	23.59	913.63	921.02	6.57	13130.85	817.77	0.01	910.39	918.10	4.15	8297.91	479.04	0.00	10.71	21428.76	1296.81
12/19/2010	23.21	912.83	922.04	6.18	12365.09	823.95	0.01	910.07	919.13	3.87	7749.01	482.92	0.00	10.06	20114.10	1306.87
12/20/2010	9.71	844.14	891.15	2.01	4019.14	825.96	0.00	841.56	888.31	1.37	2747.11	484.29	0.00	3.38	6766.25	1310.25
12/21/2010	5.30	846.53	890.36	1.24	2471.68	827.20	0.00	841.56	888.31	0.82	1645.11	485.12	0.00	2.06	4116.79	1312.31
12/22/2010	0.00	0.00	706.27	0.00	0.00	827.20		0.00	699.73	0.00	0.00	485.12		0.00	0.00	1312.31
12/23/2010	0.00	0.00	707.77	0.00	0.00	827.20		0.00	696.87	0.00	0.00	485.12		0.00	0.00	1312.31
12/24/2010	0.00	0.00	706.27	0.00	0.00	827.20		0.00	657.10	0.00	0.00	485.12		0.00	0.00	1312.31
12/25/2010	0.00	0.00	704.78	0.00	0.00	827.20		0.00	655.37	0.00	0.00	485.12		0.00	0.00	1312.31
12/26/2010	0.00	0.00	702.96	0.00	0.00	827.20		0.00	654.82	0.00	0.00	485.12		0.00	0.00	1312.31
12/27/2010	0.00	0.00	700.68	0.00	0.00	827.20		0.00	657.89	0.00	0.00	485.12		0.00	0.00	1312.31
12/28/2010	0.00	0.00	699.26	0.00	0.00	827.20		0.00	660.80	0.00	0.00	485.12		0.00	0.00	1312.31
12/29/2010	0.00	0.00	698.32	0.00	0.00	827.20		0.00	661.51	0.00	0.00	485.12		0.00	0.00	1312.31
12/30/2010	0.00	0.00	697.61	0.00	0.00	827.20		0.00	662.30	0.00	0.00	485.12		0.00	0.00	1312.31
12/31/2010	0.00	0.00	697.61	0.00	0.00	827.20		0.00	665.69	0.00	0.00	485.12		0.00	0.00	1312.31
1/1/2011	0.00	0.00	697.60	0.00	0.00	827.20		0.00	665.80	0.00	0.00	485.12		0.00	0.00	1312.31
1/2/2011	0.00	0.00	697.20	0.00	0.00	827.20		0.00	665.20	0.00	0.00	485.12		0.00	0.00	1312.31
1/3/2011	0.00	0.00	695.80	0.00	0.00	827.20		0.00	664.50	0.00	0.00	485.12		0.00	0.00	1312.31
1/4/2011	0.00	0.00	695.20	0.00	0.00	827.20		0.00	665.30	0.00	0.00	485.12		0.00	0.00	1312.31
1/5/2011	0.00	0.00	695.10	0.00	0.00	827.20		0.00	665.00	0.00	0.00	485.12		0.00	0.00	1312.31
1/6/2011	0.00	0.00	694.60	0.00	0.00	827.20		0.00	665.60	0.00	0.00	485.12		0.00	0.00	1312.31
1/7/2011	0.00	0.00	694.38	0.00	0.00	827.20		0.00	665.53	0.00	0.00	485.12		0.00	0.00	1312.31
1/8/2011	0.00	0.00	694.22	0.00	0.00	827.20		0.00	665.22	0.00	0.00	485.12		0.00	0.00	1312.31
1/9/2011	0.00	0.00	693.19	0.00	0.00	827.20		0.00	665.61	0.00	0.00	485.12		0.00	0.00	1312.31
1/10/2011	5.81	778.70	841.27	2.49	4983.92	829.69	0.00	778.29	839.93	1.66	3329.23	486.78	0.00	4.16	8313.15	1316.47
1/11/2011	17.05	893.92	922.36	6.79	13571.29	836.48	0.01	891.82	919.28	4.55	9105.71	491.33	0.01	11.34	22677.00	1327.81
1/12/2011	14.93	917.25	931.74	4.93	9866.90	841.41	0.01	914.48	929.92	2.92	5840.43	494.25	0.00	7.85	15707.32	1335.66
1/13/2011	1.54	790.84	853.40	0.61	1228.84	842.02	0.00	791.51	853.25	0.24	477.54	494.49	0.00	0.85	1706.39	1336.52
1/14/2011	14.15	908.66	931.74	4.68	9357.91	846.70	0.01	907.69	930.00	3.03	6063.51	497.52	0.00	7.71	15421.42	1344.23
1/15/2011	15.44	916.56	931.42	4.19	8379.78	850.89	0.00	915.00	930.24	2.92	5833.99	500.44	0.00	7.11	14213.77	1351.33
1/16/2011	12.99	915.27	932.13	3.33	6663.12	854.22	0.00	912.75	929.61	2.45	4899.84	502.89	0.00	5.78	11562.96	1357.11
1/17/2011	3.01	810.17	861.52	0.81	1615.67	855.03	0.00	808.60	858.45	0.44	884.41	503.33	0.00	1.25	2500.09	1358.36
1/18/2011	0.87	784.22	841.35	0.42	839.54	855.45	0.00	791.26	841.19	0.18	365.32	503.52	0.00	0.60	1204.86	1358.97
1/19/2011	0.54	713.36	745.99	0.17	337.68	855.62	0.00	712.58	744.73	0.06	123.77	503.58	0.00	0.23	461.45	1359.20
1/20/2011	0.99	710.30	743.63	0.35	695.97	855.97	0.00	710.32	745.28	0.10	203.15	503.68	0.00	0.45	899.12	1359.65
1/21/2011	0.19	674.39	685.86	0.07	148.24	856.04	0.00	673.98	691.62	0.01	26.24	503.69	0.00	0.09	174.47	1359.73
1/22/2011	0.00	0.00	682.16	0.00	0.00	856.04		0.00	680.58	0.00	0.00	503.69		0.00	0.00	1359.73
1/23/2011	0.00	0.00	682.40	0.00	0.00	856.04		0.00	681.14	0.00	0.00	503.69		0.00	0.00	1359.73
1/24/2011	0.00	0.00	686.18	0.00	0.00	856.04		0.00	684.92	0.00	0.00	503.69		0.00	0.00	1359.73
1/25/2011	0.00	0.00	694.77	0.00	0.00	856.04		0.00	693.11	0.00	0.00	503.69		0.00	0.00	1359.73
1/26/2011	0.00	0.00	694.93	0.00	0.00	856.04		0.00	691.46	0.00	0.00	503.69		0.00	0.00	1359.73
1/27/2011	9.86	770.61	819.20	3.76	7528.33	859.81	0.00	770.55	817.23	1.34	2678.67	505.03	0.00	5.10	10207.00	1364.84
1/28/2011	23.95	889.25	917.71	7.00	14001.02	866.81	0.01	886.19	914.24	4.15	8299.24	509.18	0.00	11.15	22300.26	1375.99
1/29/2011	12.91	919.17	930.79	3.43	6869.02	870.24	0.00	915.60	926.93	2.08	4155.65	511.26	0.00	5.51	11024.67	1381.50
1/30/2011	0.00	0.00	713.45	0.00	0.00	870.24		0.00	712.11	0.00	0.00	511.26		0.00	0.00	1381.50
1/31/2011	4.23	869.43	929.92	1.90	3806.20	872.14	0.00	870.51	928.74	1.01	2028.05	512.27	0.00	2.92	5834.24	1384.42
2/1/2011	0.00	0.00	704.23	0.00	0.00	872.14		0.00	702.57	0.00	0.00	512.27		0.00	0.00	1384.42
2/2/2011	0.00	0.00	680.51	0.00	0.00	872.14		0.00	677.75	0.00	0.00	512.27		0.00	0.00	1384.42
2/3/2011	0.00	0.00	685.71	0.00	0.00	872.14		0.00	683.18	0.00	0.00	512.27		0.00	0.00	1384.42
2/4/2011	0.00	0.00	689.10	0.00	0.00	872.14		0.00	685.08	0.00	0.00	512.27		0.00	0.00	1384.42
2/5/2011	0.00	0.00	682.40	0.00	0.00	872.14		0.00	679.56	0.00	0.00	512.27		0.00	0.00	1384.42
2/6/2011	0.00	0.00	686.26	0.00	0.00	872.14		0.00	683.26	0.00	0.00	512.27		0.00	0.00	1384.42
2/7/2011	0.00	0.00	697.13	0.00	0.00	872.14		0.00	694.30	0.00	0.00	512.27		0.00	0.00	1384.42
2/8/2011	0.00	0.00	695.01	0.00	0.00	872.14		0.00	692.64	0.00	0.00	512.27		0.00	0.00	1384.42
2/9/2011	10.40	828.71	917.87	5.21	10411.25	877.35	0.01	829.08	915.19	1.80	[illegible]	514.07	0.00	7.00	14006.65	1391.42
2/10/2011	11.34	912.35	932.60	3.92	7849.35	881.27	0.00	909.28	928.51	[illegible]	[illegible]19	516.39	0.00	6.24	12489.53	1397.67
2/11/2011	0.00	0.00	736.93	0.00	0.00	881.27		0.00	734.41	0.00	0.00	516.39		0.00	0.00	1397.67
2/12/2011	0.00	0.00	683.74	0.00	0.00	881.27		0.00	681.29	0.00	0.00	516.39		0.00	0.00	1397.67
2/13/2011	0.00	0.00	690.75	0.00	0.00	881.27		0.00	688.31	0.00	0.00	516.39		0.00	0.00	1397.67
2/14/2011	12.34	871.36	930.95	4.41	8823.63	885.69	0.01	869.71	928.19	2.34	4675.60	518.73	0.00	6.75	13499.22	1404.42

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
Tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
High CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
2/15/2011	8.73	917.57	932.52	2.41	4816.49	888.09	0.00	914.42	928.58	1.53	3061.10	520.26	0.00	3.94	7877.59	1408.35
2/16/2011	11.54	884.34	921.65	3.11	6210.32	891.20	0.00	882.46	919.44	1.99	3979.75	522.25	0.00	5.10	10190.07	1413.45
2/17/2011	21.31	914.79	927.32	4.79	9589.09	895.99	0.01	912.27	924.56	3.19	6371.88	525.44	0.00	7.98	15960.97	1421.43
2/18/2011	21.83	916.69	926.54	4.70	9394.71	900.69	0.01	914.50	924.64	3.13	6254.67	528.56	0.00	7.82	15649.38	1429.26
2/19/2011	23.78	921.10	927.56	5.00	9997.41	905.69	0.01	918.10	924.17	3.31	6611.90	531.87	0.00	8.30	16609.31	1437.56
2/20/2011	23.49	922.29	928.43	4.82	9648.78	910.51	0.01	919.14	924.96	3.27	6548.85	535.14	0.00	8.10	16197.63	1445.66
2/21/2011	23.86	906.94	926.69	4.68	9363.01	915.20	0.01	903.94	924.01	3.25	6498.55	538.39	0.00	7.93	15861.57	1453.59
2/22/2011	20.99	912.48	921.81	4.02	8042.05	919.22	0.00	908.96	918.02	2.88	5750.75	541.27	0.00	6.90	13792.79	1460.49
2/23/2011	10.36	897.09	927.01	2.20	4390.91	921.41	0.00	894.18	923.30	1.73	3460.46	543.00	0.00	3.93	7851.38	1464.41
2/24/2011	23.59	915.12	927.48	4.08	8154.87	925.49	0.00	911.33	923.23	3.25	6503.20	546.25	0.00	7.33	14658.07	1471.74
2/25/2011	23.73	909.67	927.56	4.19	8387.79	929.68	0.00	905.74	923.86	3.16	6319.67	549.41	0.00	7.35	14707.46	1479.09
2/26/2011	23.92	918.73	926.30	4.08	8162.40	933.77	0.00	915.01	922.67	3.31	6626.69	552.72	0.00	7.39	14789.09	1486.49
2/27/2011	23.38	919.01	927.80	3.89	7771.99	937.65	0.00	915.94	924.64	3.23	6465.09	555.96	0.00	7.12	14237.07	1493.61
2/28/2011	22.66	913.74	926.85	3.96	7919.16	941.61	0.00	910.48	924.25	3.31	6628.22	559.27	0.00	7.27	14547.38	1500.88
3/1/2011	17.54	913.03	928.27	2.99	5978.71	944.60	0.00	909.52	925.35	2.61	5217.37	561.88	0.00	5.60	11196.08	1506.48
3/2/2011	23.07	920.01	928.19	3.87	7735.30	948.47	0.00	916.49	924.88	3.31	6624.20	565.19	0.00	7.18	14359.50	1513.66
3/3/2011	23.03	921.07	928.58	3.97	7931.61	952.43	0.00	917.37	925.51	3.44	6873.27	568.63	0.00	7.40	14804.88	1521.06
3/4/2011	23.63	919.65	928.03	3.69	7371.57	956.12	0.00	916.36	924.41	3.34	6676.34	571.97	0.00	7.02	14047.90	1528.09
3/5/2011	23.77	916.32	927.40	3.86	7711.05	959.98	0.00	913.04	924.01	3.46	6917.01	575.42	0.00	7.31	14628.06	1535.40
3/6/2011	22.89	917.07	928.03	4.09	8173.05	964.06	0.00	913.41	924.01	3.61	7211.62	579.03	0.00	7.69	15384.67	1543.09
3/7/2011	22.97	921.39	928.35	3.79	7589.69	967.86	0.00	917.86	925.04	3.54	7085.39	582.57	0.00	7.34	14675.08	1550.43
3/8/2011	23.14	922.33	928.03	3.69	7386.93	971.55	0.00	918.99	924.33	3.53	7065.48	586.11	0.00	7.23	14452.41	1557.66
3/9/2011	23.11	917.19	927.80	4.06	8116.34	975.61	0.00	913.56	924.25	3.83	7650.16	589.93	0.00	7.88	15766.50	1565.54
3/10/2011	22.86	917.50	927.64	3.90	7808.34	979.51	0.00	914.07	924.33	3.76	7518.82	593.69	0.00	7.66	15327.16	1573.20
3/11/2011	22.69	921.23	927.72	3.81	7610.53	983.32	0.00	917.43	924.01	3.74	7472.75	597.43	0.00	7.54	15083.28	1580.74
3/12/2011	22.93	922.18	928.03	3.60	7209.52	986.92	0.00	919.02	925.12	3.67	7342.34	601.10	0.00	7.28	14551.86	1588.02
3/13/2011	21.82	921.88	927.95	3.44	6875.74	990.36	0.00	918.27	924.41	3.57	7138.23	604.67	0.00	7.01	14013.97	1595.03
3/14/2011	22.95	922.37	927.95	3.55	7096.99	993.91	0.00	919.04	925.04	3.72	7434.43	608.38	0.00	7.27	14531.42	1602.29
3/15/2011	22.98	921.60	928.03	3.55	7094.98	997.46	0.00	918.13	924.56	3.75	7491.31	612.13	0.00	7.29	14586.29	1609.59
3/16/2011	22.46	921.88	927.95	3.48	6955.03	1000.93	0.00	918.64	924.41	3.74	7483.11	615.87	0.00	7.22	14438.14	1616.80
3/17/2011	22.36	921.33	927.95	3.38	6753.14	1004.31	0.00	918.36	924.72	3.65	7307.60	619.52	0.00	7.03	14060.75	1623.83
3/18/2011	22.32	920.85	927.17	3.24	6485.53	1007.55	0.00	918.64	924.96	3.52	7044.89	623.05	0.00	6.77	13530.41	1630.60
3/19/2011	22.60	922.10	927.95	3.39	6778.63	1010.94	0.00	919.19	925.35	3.69	7371.79	626.73	0.00	7.08	14150.43	1637.68
3/20/2011	21.06	919.87	928.03	3.24	6474.11	1014.18	0.00	916.94	925.51	3.61	7222.51	630.34	0.00	6.85	13696.62	1644.52
3/21/2011	22.11	919.34	927.56	3.18	6357.69	1017.36	0.00	916.98	924.49	3.55	7093.85	633.89	0.00	6.73	13451.54	1651.25
3/22/2011	23.07	920.90	927.48	3.26	6513.45	1020.62	0.00	918.44	924.64	3.54	7084.98	637.43	0.00	6.80	13598.43	1658.05
3/23/2011	15.17	920.56	927.48	2.19	4375.64	1022.80	0.00	918.13	925.51	2.48	4950.55	639.91	0.00	4.66	9326.19	1662.71
3/24/2011	0.00	0.00	682.48	0.00	0.00	1022.80		0.00	724.24	0.00	0.00	639.91		0.00	0.00	1662.71
3/25/2011	12.23	899.87	927.72	2.32	4642.19	1025.12	0.00	896.75	924.25	2.60	5209.63	642.51	0.00	4.93	9851.82	1667.64
3/26/2011	20.78	917.90	927.95	3.12	6248.25	1028.25	0.00	914.45	924.96	3.76	7521.17	646.27	0.00	6.88	13769.41	1674.52
3/27/2011	23.68	919.70	927.64	3.15	6294.96	1031.40	0.00	916.18	924.33	3.60	7204.97	649.88	0.00	6.75	13499.93	1681.27
3/28/2011	22.42	921.88	928.51	3.09	6180.27	1034.49	0.00	918.23	925.51	3.64	7286.52	653.52	0.00	6.73	13466.79	1688.01
3/29/2011	22.68	918.49	928.35	2.92	5838.77	1037.41	0.00	914.91	925.04	3.50	6993.43	657.02	0.00	6.42	12832.20	1694.42
3/30/2011	22.84	921.43	927.95	3.11	6211.25	1040.51	0.00	917.74	924.09	3.78	7556.53	660.79	0.00	6.88	13767.78	1701.31
3/31/2011	21.57	920.37	927.80	3.01	6013.32	1043.52	0.00	916.56	924.17	3.73	7459.81	664.52	0.00	6.74	13473.13	1708.04
4/1/2011	22.17	921.14	927.72	2.95	5900.89	1046.47	0.00	917.83	924.41	3.74	7473.93	668.26	0.00	6.69	13374.82	1714.73
4/2/2011	21.17	918.11	927.72	3.04	6076.32	1049.51	0.00	914.57	924.49	3.81	7618.55	672.07	0.00	6.85	13694.87	1721.58
4/3/2011	20.32	918.69	928.03	2.78	5555.05	1052.28	0.00	915.55	925.2	3.65	7309.33	675.73	0.00	6.43	12864.38	1728.01
4/4/2011	21.86	913.76	927.56	2.76	5519.28	1055.04	0.00	911.23	925.67	3.50	7009.40	679.23	0.00	6.26	12528.68	1734.27
4/5/2011	23.09	916.23	927.80	3.08	6160.05	1058.12	0.00	912.82	924.09	3.88	7761.78	683.11	0.00	6.96	13921.83	1741.23
4/6/2011	21.86	920.47	928.03	2.83	5650.31	1060.95	0.00	917.41	924.72	3.72	7445.56	686.83	0.00	6.55	13095.87	1747.78
4/7/2011	22.71	918.84	927.72	2.72	5438.00	1063.67	0.00	916.31	925.67	3.54	7081.70	690.38	0.00	6.26	12519.70	1754.04
4/8/2011	22.97	917.97	927.64	2.80	5608.31	1066.47	0.00	915.29	924.56	3.65	7305.84	694.03	0.00	6.46	12914.15	1760.50
4/9/2011	21.34	920.25	927.64	2.72	5431.97	1069.19	0.00	917.71	925.12	3.63	7255.97	697.66	0.00	6.34	12687.94	1766.84
4/10/2011	7.18	921.40	927.72	0.93	1854.58	1070.11	0.00	918.32	924.64	1.27	2537.82	698.92	0.00	2.20	4392.40	1769.04
4/13/2011	13.56	859.90	920.15	2.09	4170.16	1072.20	0.00	858.63	918.18	2.20	4400.93	701.13	0.00	4.29	8571.09	1773.33
4/14/2011	20.08	914.95	926.93	2.61	5214.70	1074.81	0.00	913.50	925.98	3.47	6941.38	704.60	0.00	6.08	12156.08	1779.40
4/15/2011	21.64	920.26	926.93	2.79	5578.17	1077.60	0.00	919.01	925.98	3.78	7555.09	708.37	0.00	6.57	13133.26	1785.97
4/16/2011	21.91	918.76	926.22	2.84	5677.96	1080.44	0.00	917.23	925.12	3.72	7432.55	712.09	0.00	6.56	13110.51	1792.53
4/17/2011	19.80	913.44	926.46	2.48	4962.50	1082.92	0.00	911.88	925.12	3.22	6440.96	715.31	0.00	5.70	11403.47	1798.23
4/18/2011	21.09	916.79	926.69	2.54	5088.71	1085.46	0.00	915.38	925.83	3.45	6895.76	718.76	0.00	5.99	11984.46	1804.22
4/19/2011	21.04	919.18	926.54	2.72	5442.28	1088.18	0.00	917.71	925.12	3.60	7206.29	722.36	0.00	6.32	12648.57	1810.54
4/20/2011	20.99	919.82	926.38	2.66	5316.13	1090.84	0.00	918.49	925.43	3.51	7010.17	725.87	0.00	6.16	12326.30	1816.71
4/21/2011	21.26	920.23	926.61	2.64	5286.36	1093.48	0.00	918.71	925.59	3.57	7133.15	729.43	0.00	6.21	12419.51	1822.92
4/22/2011	16.11	918.95	926.54	2.04	4085.64	1095.53	0.00	917.28	924.72	2.80	5600.30	732.23	0.00	4.84	9685.94	1827.76
4/23/2011	21.76	918.77	926.54	2.64	5285.07	1098.17	0.00	917.51	925.51	3.53	7051.51	735.76	0.00	6.17	12336.58	1833.93
4/24/2011	20.32	920.15	927.01	2.56	5124.75	1100.73	0.00	918.74	925.51	3.43	6867.52	739.19	0.00	6.00	11992.27	1839.92
4/25/2011	21.14	920.50	926.85	2.52	5044.20	1103.25	0.00	919.34	925.98	3.40	6801.80	742.59	0.00	5.92	11846.00	1845.85
4/26/2011	21.92	922.27	926.93	2.59	5170.61	1105.84	0.00	921.09	926.22	3.47	6945.61	746.07	0.00	6.06	12116.22	1851.90
4/27/2011	22.36	922.33	926.77	2.60	5201.48	1108.44	0.00	921.12	926.14	3.52	7037.24	749.58	0.00	6.12	12238.71	1858.02
4/28/2011	23.40	920.80	926.61	2.64	5280.45	1111.08	0.00	919.49	925.35	3.55	7095.52	753.13	0.00	6.19	12375.97	1864.21
4/29/2011	22.52	921.86	926.61	2.66	5319.09	1113.74	0.00	920.13	924.88	3.76	7515.89	756.89	0.00	6.42	12834.98	1870.63
4/30/2011	21.87	922.14	926.85	2.60	5202.19	1116.34	0.00	920.54	925.83	3.68	7351.20	760.57	0.00	6.28	12553.39	1876.91
5/1/2011	22.41	921.31	926.93	2.66	5312.32	1119.00	0.00	919.73	925.43	3.72	7443.04	764.29	0.00	6.38	12755.36	1883.28
5/2/2011	22.57	920.86	926.93	2.54	5083.21	1121.54	0.00	919.61	925.35	3.52	7049.95	767.81	0.00	6.07	12133.16	1889.35
5/3/2011	22.40	914.91	926.54	2.64	5282.40	1124.18	0.00	913.36	925.2	3.72	7446.12	771.54	0.00	6.36	12728.51	1895.71
5/4/2011	22.21	920.93	926.61	2.58	5161.83	1126.76	0.00	919.45	925.51	3.81	7616.19	775.34	0.00	6.39	12778.01	1902.10
5/5/2011	23.06	921.96	926.54	2.60	5191.82	1129.36	0.00	920.55	925.35	3.82	7644.63	779.17	0.00	6.42	12836.45	1908.52
5/6/2011	23.09	922.55	926.54	2.61	5216.52	1131.96	0.00	921.12	925.67	3.84	7679.35	783.01	0.00	6.45	12896.87	1914.97
5/7/2011	14.73	919.37	926.61	1.67	3332.59	1133.63	0.00	917.99	925.83	2.51	5019.02	785.52	0.00	4.18	8351.61	1919.16
5/8/2011	6.22	891.21	917.08	0.97	1942.91	1134.60	0.00	889.73	915.03	1.30	2607.66	786.82	0.00	2.28	4550.57	1921.42
5/9/2011	23.17	922.56	926.77	2.49	4984.27	1137.09	0.00	921.27	925.43	4.00	7996.80	790.82	0.00	6.49	12981.06	1927.91
5/10/2011	22.71	919.40	926.69	2.28	4559.67	1139.37	0.00	918.16	925.9	3.58	7156.14	794.40	0.00	5.86	11715.81	1933.77
5/11/2011	22.89	922.41	926.69	2.35	4691.08	1141.72	0.00	921.43	925.51	3.57	7143.52	797.97	0.00	5.92	11834.60	1939.69
5/12/2011	21.48	921.68	926.61	2.34	4683.32	1144.06	0.00	920.71	925.75	3.54	7082.39	801.51	0.00	5.88	11765.71	1945.57
5/13/2011	21.30	919.70	926.46	2.30	4592.16	1146.36	0.00	918.77	918.77	3.45	6906.63	804.96	0.00	5.75	11498.78	1951.32
5/14/2011	20.73	920.47	926.54	2.34	4675.26	1148.69	0.00	919.54	919.54	3.51	7018.01	808.47	0.00	5.85	11693.27	1957.17
5/15/2011	21.16	921.09	926.30	2.40	4791.38	1151.09	0.00	920.06	920.06	3.59	7186.87	812.06	0.00	5.99	11978.25	1963.15
5/16/2011	20.99	917.72	926.22	2.36	4727.44	1153.45	0.00	918.69	916.69	3.54	7089.54	815.61	0.00	5.91	11816.98	1969.06
5/17/2011	22.24	921.16	926.46	2.46	4927.90	1155.92	0.00	919.92	919.92	3.86	7723.84	819.47	0.00	6.33	12651.74	1975.39
5/18/2011	21.93	920.31	926.54	2.46	4914.74	1158.38	0.00	919.22	919.22	3.74	7484.43	823.21	0.00	6.20	12399.17	1981.59
5/19/2011	21.12	921.36	926.69	2.45	4900.88	1160.83	0.00	920.13	925.35	3.74	7479.71	826.95	0.00	6.19	12380.59	1987.78
5/20/2011	21.08	921.41	926.69	2.44	4878.10	1163.26	0.00	920.21	925.75	3.74	7477.79	830.69	0.00	6.18	12355.89	1993.96
5/21/2011	21.63	922.46	927.17	2.38	4763.38	1165.65	0.00	921.44	926.46	3.71	7413.62	834.40	0.00	6.09	12177.00	2000.05
5/22/2011	19.24	921.12	927.09	2.18	4354.92	1167.82	0.00	920.15	926.3	3.38	6760.10	837.78	0.00	5.56	11115.02	2005.60
5/23/2011	11.77	914.29	926.38	1.38	2753.18	1169.20	0.00	913.34	925.67	2.28	4561.92	840.06	0.00	3.66	7315.10	2009.26
5/24/2011	15.27	916.00	926.69	1.69	3373.68	1170.89	0.00	914.99	925.75	2.87	5730.67	842.93	0.00	4.55	9104.35	2013.81
5/25/2011	21.69	918.17	926.46	2.17	4332.23	1173.05	0.00	917.26	925.43	3.58	7152.01	846.50	0.00	5.74	11484.24	2019.55
5/26/2011	21.31	922.00	926.85	2.25	4503.36	1175.31	0.00	921.09	926.22	3.63	7250.80	850.13	0.00	5.88	11754.15	2025.43
5/27/2011	21.84	922.29	926.61	2.30	4599.51	1177.60	0.00	921.25	925.35	3.67	7331.71	853.79	0.00	5.97	11931.22	2031.40
5/28/2011	21.51	922.34	926.93	2.28	4556.69	1179.88	0.00	921.37	926.14	3.62	7241.94	857.41	0.00	5.90	11798.63	2037.30
5/29/2011	8.51	918.43	926.46	0.93	1869.06	1180.82	0.00	917.33	925.27	1.48	2956.74	858.89	0.00	2.41	4825.80	2039.71
5/30/2011	24.00	0.00	762.62	0.00	0.00	1180.82		0.00	761.67	0.00	0.00	858.89		0.00	0.00	2039.71
5/31/2011	11.50	894.66	926.69	1.57	3143.99	1182.39	0.00	893.90	925.35	2.25	4490.43	861.14	0.00	3.82	7634.42	2043.53
6/1/2011	21.94	922.60	927.09	2.36	4725.71	1184.75	0.00	921.49	926.38	3.67	7335.89	865.00	0.00	6.23	12461.60	2049.76
6/2/2011	21.69	920.64	926.85	2.31	4618.47	1187.06	0.00	919.50	926.22	3.70	7406.29	868.71	0.00	6.01	12024.76	2055.77

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
6/3/2011	21.78	922.33	926.93	2.28	4565.38	1189.34	0.00	921.13	925.98	3.72	7433.84	872.43	0.00	6.00	11999.22	2061.77
6/4/2011	22.04	922.75	927.01	2.22	4433.62	1191.56	0.00	921.67	926.46	3.63	7264.96	876.06	0.00	5.85	11698.58	2067.62
6/5/2011	8.30	922.42	926.46	0.91	1827.69	1192.48	0.00	921.25	925.27	1.39	2783.39	877.45	0.00	2.31	4611.07	2069.92
6/6/2011	12.17	895.22	926.69	1.42	2836.83	1193.89	0.00	894.32	925.2	2.11	4218.92	879.56	0.00	3.53	7055.75	2073.45
6/7/2011	17.92	916.85	926.77	2.00	3999.42	1195.89	0.00	915.52	925.43	3.27	6530.32	882.82	0.00	5.26	10529.73	2078.72
6/8/2011	22.34	914.16	926.85	2.09	4175.52	1197.98	0.00	913.18	926.22	3.41	6819.82	886.23	0.00	5.50	10995.34	2084.21
6/9/2011	21.19	914.13	926.38	2.09	4181.51	1200.07	0.00	913.15	925.43	3.34	6683.30	889.58	0.00	5.43	10864.81	2089.65
6/10/2011	14.64	906.99	926.69	1.74	3472.38	1201.81	0.00	905.91	925.35	2.67	5338.49	892.24	0.00	4.40	8808.87	2094.05
6/11/2011	16.57	905.22	925.90	1.67	3335.31	1203.48	0.00	904.34	924.96	2.72	5432.99	894.96	0.00	4.38	8768.30	2098.44
6/12/2011	23.42	920.77	926.30	2.25	4495.69	1205.72	0.00	919.85	925.12	3.63	7260.95	898.59	0.00	5.88	11756.64	2104.31
6/13/2011	22.27	922.82	926.77	2.30	4599.83	1208.02	0.00	921.82	925.83	3.75	7499.85	902.34	0.00	6.05	12099.68	2110.36
6/14/2011	21.03	917.98	926.46	2.21	4429.07	1210.24	0.00	916.95	925.35	3.57	7131.35	905.91	0.00	5.78	11560.42	2116.14
6/15/2011	22.37	918.56	926.61	2.20	4405.71	1212.44	0.00	917.61	925.43	3.59	7178.30	909.50	0.00	5.79	11584.01	2121.94
6/16/2011	19.77	918.93	926.30	1.29	2574.75	1213.73	0.00	918.03	925.51	2.03	4057.79	911.52	0.00	3.32	6632.54	2125.25
6/17/2011	0.00	0.00	773.18	0.00	0.00	1213.73		0.00	773.18	0.00	0.00	911.52		0.00	0.00	2125.25
6/18/2011	0.00	0.00	710.53	0.00	0.00	1213.73		0.00	734.57	0.00	0.00	911.52		0.00	0.00	2125.25
6/19/2011	0.00	0.00	686.57	0.00	0.00	1213.73		0.00	724.16	0.00	0.00	911.52		0.00	0.00	2125.25
6/20/2011	0.00	0.00	681.21	0.00	0.00	1213.73		0.00	717.78	0	0.00	911.52		0.00	0.00	2125.25
6/21/2011	0.09	702.75	730.55	0.03	54.38	1213.76	0.00	716.24	731.26	0.01	21.76	911.54	0.00	0.04	76.13	2125.29
6/22/2011	11.38	855.44	891.47	3.13	6255.23	1216.88	0.00	855.14	890.44	1.92	3831.68	913.45	0.00	5.04	10086.92	2130.33
6/23/2011	19.79	908.03	926.54	4.29	8582.92	1221.17	0.00	907.01	925.27	3.48	6959.39	916.93	0.00	7.77	15542.31	2138.11
6/24/2011	0.16	744.44	800.37	0.02	46.58	1221.20	0.00	769.31	812.82	0.01	12.95	916.94	0.00	0.03	59.52	2138.13
6/25/2011	0.00	0.00	712.50	0.00	0.00	1221.20		0.00	711.63	0.00	0.00	916.94		0.00	0.00	2138.13
6/26/2011	0.00	0.00	689.25	0.00	0.00	1221.20		0.00	718.49	0.00	0.00	916.94		0.00	0.00	2138.13
6/27/2011	0.00	0.00	683.34	0.00	0.00	1221.20		0.00	704.46	0.00	0.00	916.94		0.00	0.00	2138.13
6/28/2011	0.00	0.00	684.45	0.00	0.00	1221.20		0.00	701.63	0.00	0.00	916.94		0.00	0.00	2138.13
6/29/2011	0.00	0.00	686.34	0.00	0.00	1221.20		0.00	701.78	0.00	0.00	916.94		0.00	0.00	2138.13
6/30/2011	0.00	0.00	691.07	0.00	0.00	1221.20		0.00	708.32	0.00	0.00	916.94		0.00	0.00	2138.13
7/1/2011	0.00	0.00	690.99	0.00	0.00	1221.20		0.00	705.09	0.00	0.00	916.94		0.00	0.00	2138.13
7/2/2011	0.00	0.00	687.13	0.00	0.00	1221.20		0.00	694.85	0.00	0.00	916.94		0.00	0.00	2138.13
7/3/2011	0.00	0.00	686.89	0.00	0.00	1221.20		0.00	693.51	0.00	0.00	916.94		0.00	0.00	2138.13
7/4/2011	0.00	0.00	686.10	0.00	0.00	1221.20		0.00	690.12	0.00	0.00	916.94		0.00	0.00	2138.13
7/5/2011	0.00	0.00	686.42	0.00	0.00	1221.20		0.00	690.43	0.00	0.00	916.94		0.00	0.00	2138.13
7/6/2011	0.00	0.00	686.81	0.00	0.00	1221.20		0.00	691.54	0.00	0.00	916.94		0.00	0.00	2138.13
7/7/2011	0.00	0.00	686.42	0.00	0.00	1221.20		0.00	688.23	0.00	0.00	916.94		0.00	0.00	2138.13
7/8/2011	0.00	0.00	685.86	0.00	0.00	1221.20		0.00	683.5	0.00	0.00	916.94		0.00	0.00	2138.13
7/9/2011	0.00	0.00	686.42	0.00	0.00	1221.20		0.00	685.71	0.00	0.00	916.94		0.00	0.00	2138.13
7/10/2011	0.00	0.00	686.57	0.00	0.00	1221.20		0.00	685.79	0.00	0.00	916.94		0.00	0.00	2138.13
7/11/2011	0.00	0.00	686.34	0.00	0.00	1221.20		0.00	683.97	0.00	0.00	916.94		0.00	0.00	2138.13
7/12/2011	0.00	0.00	685.94	0.00	0.00	1221.20		0.00	682.48	0.00	0.00	916.94		0.00	0.00	2138.13
7/13/2011	0.00	0.00	685.71	0.00	0.00	1221.20		0.00	680.35	0.00	0.00	916.94		0.00	0.00	2138.13
7/14/2011	0.00	0.00	686.62	0.00	0.00	1221.20		0.00	686.26	0.00	0.00	916.94		0.00	0.00	2138.13
7/15/2011	0.00	0.00	685.94	0.00	0.00	1221.20		0.00	680.9	0.00	0.00	916.94		0.00	0.00	2138.13
7/16/2011	0.00	0.00	685.31	0.00	0.00	1221.20		0.00	679.8	0.00	0.00	916.94		0.00	0.00	2138.13
7/17/2011	0.00	0.00	685.00	0.00	0.00	1221.20		0.00	677.2	0.00	0.00	916.94		0.00	0.00	2138.13
7/18/2011	0.00				0.00	1221.20					0.00	916.94		0.00	0.00	2138.13
7/19/2011	0.00	No Power; Storm			0.00	1221.20					0.00	916.94		0.00	0.00	2138.13
7/20/2011	0.00				0.00	1221.20					0.00	916.94		0.00	0.00	2138.13
7/21/2011	0.00	0.00	684.45	0.00	0.00	1221.20		0.00	674.83	0.00	0.00	916.94		0.00	0.00	2138.13
7/22/2011	0.00	0.00	685.23	0.00	0.00	1221.20		0.00	676.01	0.00	0.00	916.94		0.00	0.00	2138.13
7/23/2011	0.00	0.00	685.63	0.00	0.00	1221.20		0.00	675.38	0.00	0.00	916.94		0.00	0.00	2138.13
7/24/2011	0.00	0.00	685.94	0.00	0.00	1221.20		0.00	674.52	0.00	0.00	916.94		0.00	0.00	2138.13
7/25/2011	0.00	0.00	685.86	0.00	0.00	1221.20		0.00	673.81	0.00	0.00	916.94		0.00	0.00	2138.13
7/26/2011	0.00	0.00	685.71	0.00	0.00	1221.20		0.00	673.89	0.00	0.00	916.94		0.00	0.00	2138.13
7/27/2011	0.00	0.00	685.79	0.00	0.00	1221.20		0.00	673.65	0.00	0.00	916.94		0.00	0.00	2138.13
7/28/2011	0.00	0.00	685.63	0.00	0.00	1221.20		0.00	673.26	0.00	0.00	916.94		0.00	0.00	2138.13
7/29/2011	0.00	0.00	685.47	0.00	0.00	1221.20		0.00	672.47	0.00	0.00	916.94		0.00	0.00	2138.13
7/30/2011	0.00	0.00	685.23	0.00	0.00	1221.20		0.00	671.52	0.00	0.00	916.94		0.00	0.00	2138.13
7/31/2011	0.00	0.00	685.23	0.00	0.00	1221.20		0.00	672.23	0.00	0.00	916.94		0.00	0.00	2138.13
8/1/2011	0.00	0.00	685.31	0.00	0.00	1221.20		0.00	672.15	0.00	0.00	916.94		0.00	0.00	2138.13
8/2/2011	0.00	0.00	685.39	0.00	0.00	1221.20		0.00	671.21	0.00	0.00	916.94		0.00	0.00	2138.13
8/3/2011	0.00	0.00	684.84	0.00	0.00	1221.20		0.00	668.84	0.00	0.00	916.94		0.00	0.00	2138.13
8/4/2011	0.00	0.00	685.16	0.00	0.00	1221.20		0.00	670.34	0.00	0.00	916.94		0.00	0.00	2138.13
8/5/2011	0.00	0.00	685.08	0.00	0.00	1221.20		0.00	670.73	0.00	0.00	916.94		0.00	0.00	2138.13
8/6/2011	0.00	0.00	684.60	0.00	0.00	1221.20		0.00	668.21	0.00	0.00	916.94		0.00	0.00	2138.13
8/7/2011	0.00	0.00	684.13	0.00	0.00	1221.20		0.00	666.32	0.00	0.00	916.94		0.00	0.00	2138.13
8/8/2011	0.00	0.00	684.68	0.00	0.00	1221.20		0.00	669.55	0.00	0.00	916.94		0.00	0.00	2138.13
8/9/2011	0.00	0.00	684.68	0.00	0.00	1221.20		0.00	668.53	0.00	0.00	916.94		0.00	0.00	2138.13
8/10/2011	0.00	0.00	684.68	0.00	0.00	1221.20		0.00	669.00	0.00	0.00	916.94		0.00	0.00	2138.13
8/11/2011	0.00	0.00	684.60	0.00	0.00	1221.20		0.00	669.87	0.00	0.00	916.94		0.00	0.00	2138.13
8/12/2011	0.00	0.00	686.65	0.00	0.00	1221.20		0.00	673.1	0.00	0.00	916.94		0.00	0.00	2138.13
8/13/2011	0.00	0.00	684.60	0.00	0.00	1221.20		0.00	667.42	0.00	0.00	916.94		0.00	0.00	2138.13
8/14/2011	0.00	0.00	684.29	0.00	0.00	1221.20		0.00	667.82	0.00	0.00	916.94		0.00	0.00	2138.13
8/15/2011	0.00	0.00	684.13	0.00	0.00	1221.20		0.00	667.82	0.00	0.00	916.94		0.00	0.00	2138.13
8/16/2011	0.00	0.00	684.37	0.00	0.00	1221.20		0.00	669.47	0.00	0.00	916.94		0.00	0.00	2138.13
8/17/2011	0.00	0.00	684.60	0.00	0.00	1221.20		0.00	669.71	0.00	0.00	916.94		0.00	0.00	2138.13
8/18/2011	0.00	0.00	684.60	0.00	0.00	1221.20		0.00	669.16	0.00	0.00	916.94		0.00	0.00	2138.13
8/19/2011	0.00	0.00	684.52	0.00	0.00	1221.20		0.00	668.61	0.00	0.00	916.94		0.00	0.00	2138.13
8/20/2011	0.00	0.00	684.68	0.00	0.00	1221.20		0.00	669.55	0.00	0.00	916.94		0.00	0.00	2138.13
8/21/2011	0.00	0.00	684.13	0.00	0.00	1221.20		0.00	668.13	0.00	0.00	916.94		0.00	0.00	2138.13
8/22/2011	0.00	0.00	684.29	0.00	0.00	1221.20		0.00	668.76	0.00	0.00	916.94		0.00	0.00	2138.13
8/23/2011	0.00	0.00	686.89	0.00	0.00	1221.20		0.00	674.91	0.00	0.00	916.94		0.00	0.00	2138.13
8/24/2011	0.00	0.00	684.76	0.00	0.00	1221.20		0.00	670.18	0.00	0.00	916.94		0.00	0.00	2138.13
8/25/2011	0.00	0.00	684.52	0.00	0.00	1221.20		0.00	670.58	0.00	0.00	916.94		0.00	0.00	2138.13
8/26/2011	4.91	748.97	777.20	1.34	2684.46	1222.54	0.00	749.58	778.46	0.90	1798.48	917.84	0.00	2.24	4482.94	2140.38
8/27/2011	0.21	699.48	715.49	0.04	75.15	1222.58	0.00	699.52	715.57	0.03	58.84	917.87	0.00	0.07	133.99	2140.44
8/28/2011	0.00	0.00	681.29	0.00	0.00	1222.58		0.00	681.21	0.00	0.00	917.87		0.00	0.00	2140.44
8/29/2011	11.56	792.32	862.31	2.81	5621.08	1225.39	0.00	792.11	861.44	2.16	4319.63	920.03	0.00	4.97	9940.71	2145.41
8/30/2011	23.93	900.60	925.43	5.35	10709.15	1230.74	0.01	899.84	923.7	5.75	11495.55	925.77	0.01	11.10	22204.70	2156.52
8/31/2011	23.74	912.55	926.06	4.42	8849.31	1235.17	0.00	912.02	925.59	4.70	9398.82	930.47	0.01	9.12	18248.14	2165.64
9/1/2011	23.83	881.25	917.24	3.42	6842.31	1238.59	0.00	880.81	916.05	3.52	7049.16	934.00	0.00	6.95	13891.48	2172.59
9/2/2011	23.45	894.55	923.07	3.55	7093.03	1242.14	0.00	894.21	922.12	3.93	7861.55	937.93	0.00	7.48	14954.59	2180.06
9/3/2011	23.43	888.42	922.44	3.25	6497.27	1245.38	0.00	888.22	921.73	3.59	7189.14	941.52	0.00	6.84	13686.41	2186.91
9/4/2011	23.94	884.34	908.17	3.17	6338.85	1248.55	0.00	884.11	907.62	3.31	6619.41	944.83	0.00	6.48	12958.27	2193.39
9/5/2011	12.44	885.18	889.81	1.75	3491.78	1250.30	0.00	884.93	889.42	1.77	3535.04	946.60	0.00	3.51	7026.83	2196.90
9/6/2011	0.00	0.00	719.12	0.00	0.00	1250.30		0.00	751.19	0.00	0.00	946.60		0.00	0.00	2196.90
9/7/2011	7.20	871.40	923.86	1.66	3319.08	1251.96	0.00	870.96	922.52	1.66	3315.65	948.26	0.00	3.32	6634.72	2200.22
9/8/2011	23.80	903.33	925.75	3.53	7055.78	1255.49	0.00	902.73	925.04	4.01	8020.24	952.27	0.00	7.54	15076.02	2207.75
9/9/2011	23.92	905.45	922.28	3.23	6469.22	1258.72	0.00	904.88	922.04	3.69	7372.55	955.95	0.00	6.92	13841.77	2214.68
9/10/2011	23.22	908.14	923.78	3.25	6491.66	1261.97	0.00	907.48	922.36	3.70	7403.39	959.66	0.00	6.95	13895.05	2221.62
9/11/2011	12.83	906.88	924.72	1.62	3249.43	1263.59	0.00	906.17	923.78	1.86	3717.30	961.51	0.00	3.48	6966.73	2225.11
9/12/2011	13.45	904.60	924.80	2.24	4483.59	1265.83	0.00	904.02	924.25	2.62	5249.56	964.14	0.00	4.87	9733.15	2229.97
9/13/2011	23.94	918.74	924.80	3.10	6199.85	1268.93	0.00	918.13	923.86	3.81	7627.29	967.95	0.00	6.91	13827.14	2236.89
9/14/2011	23.90	918.93	921.81	3.09	6175.12	1272.02	0.00	918.30	921.89	3.69	7370.34	971.64	0.00	6.77	13545.46	2243.66
9/15/2011	23.67	904.30	925.43	2.86	5721.16	1274.88	0.00	903.44	924.64	3.60	7191.34	975.23	0.00	6.46	12912.50	2250.12
9/16/2011	23.09	918.41	926.06	2.99	5976.40	1277.87	0.00	917.50	925.75	3.97	7943.35	979.21	0.00	6.96	13919.75	2257.08
9/17/2011	23.90	919.12	925.67	2.95	5896.49	1280.82	0.00	918.25	925.35	3.77	7534.73	982.97	0.00	6.72	13431.23	2263.79
9/18/2011	23.56	912.29	925.27	2.84	5678.50	1283.66	0.00	911.55	924.8	3.75	7497.66	986.72	0.00	6.59	13176.16	2270.38

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
9/19/2011	23.33	919.99	925.83	3.04	6076.02	1286.70	0.00	919.17	925.04	3.97	7941.57	990.69	0.00	7.01	14017.59	2277.39
9/20/2011	23.54	920.00	925.90	2.96	5917.03	1289.65	0.00	919.28	925.2	3.74	7476.70	994.43	0.00	6.70	13393.73	2284.08
9/21/2011	23.81	917.40	926.06	2.84	5689.80	1292.50	0.00	916.82	925.04	3.51	7023.41	997.94	0.00	6.36	12713.22	2290.44
9/22/2011	23.95	918.77	923.30	2.87	5742.17	1295.37	0.00	918.13	923.07	3.61	7210.49	1001.55	0.00	6.48	12952.66	2296.92
9/23/2011	23.53	916.57	925.67	2.89	5784.30	1298.26	0.00	915.93	924.96	3.85	7706.46	1005.40	0.00	6.75	13490.76	2303.66
9/24/2011	23.17	921.27	925.90	2.89	5778.21	1301.15	0.00	920.58	925.12	4.01	8029.21	1009.42	0.00	6.90	13807.42	2310.57
9/25/2011	23.47	922.31	926.30	2.80	5606.59	1303.95	0.00	921.72	926.06	4.16	8328.99	1013.58	0.00	6.97	13935.58	2317.53
9/26/2011	23.89	920.56	924.96	2.90	5809.34	1306.86	0.00	920.06	924.64	3.79	7588.91	1017.37	0.00	6.70	13398.25	2324.23
9/27/2011	22.83	919.61	925.59	2.80	5595.98	1309.66	0.00	919.01	925.12	3.73	7467.83	1021.11	0.00	6.53	13063.82	2330.77
9/28/2011	22.60	920.47	925.67	2.77	5544.89	1312.43	0.00	919.82	925.27	3.76	7525.95	1024.87	0.00	6.54	13070.83	2337.30
9/29/2011	23.74	920.70	925.67	2.73	5466.54	1315.16	0.00	919.97	925.12	3.85	7690.31	1028.72	0.00	6.58	13156.85	2343.88
9/30/2011	23.68	918.89	925.67	2.69	5377.32	1317.85	0.00	918.02	924.8	3.94	7887.09	1032.66	0.00	6.63	13264.41	2350.51
10/1/2011	23.50	918.26	925.67	2.81	5615.59	1320.66	0.00	917.06	924.25	4.17	8335.13	1036.83	0.00	6.98	13950.71	2357.49
10/2/2011	23.63	916.23	925.83	2.76	5517.33	1323.42	0.00	915.00	924.64	4.42	8838.48	1041.25	0.00	7.18	14355.81	2364.66
10/3/2011	15.00	919.82	925.83	1.84	3688.52	1325.26	0.00	918.62	924.56	2.90	5803.76	1044.15	0.00	4.75	9492.28	2369.41
10/4/2011	15.21	905.83	925.83	1.97	3941.64	1327.23	0.00	905.35	924.8	3.25	6498.11	1047.40	0.00	5.22	10439.74	2374.63
10/5/2011	21.66	919.19	925.90	2.37	4738.19	1329.60	0.00	918.33	925.27	4.01	8015.51	1051.41	0.00	6.38	12753.70	2381.01
10/6/2011	22.70	921.30	926.22	2.35	4706.14	1331.95	0.00	920.41	925.51	4.56	9116.89	1055.96	0.00	6.91	13823.04	2387.92
10/7/2011	23.18	920.80	926.61	2.37	4740.67	1334.33	0.00	919.93	925.9	4.50	8994.26	1060.46	0.00	6.87	13734.94	2394.79
10/8/2011	23.57	918.20	926.38	2.36	4714.35	1336.68	0.00	917.33	925.9	4.69	9373.80	1065.15	0.01	7.04	14088.15	2401.83
10/9/2011	22.21	920.83	926.54	2.43	4861.77	1339.11	0.00	919.98	925.9	4.85	9698.66	1070.00	0.01	7.28	14560.43	2409.11
10/10/2011	22.81	921.48	925.90	2.47	4932.63	1341.58	0.00	920.66	924.8	4.06	8110.26	1074.05	0.00	6.52	13042.89	2415.63
10/11/2011	23.15	917.56	925.83	2.39	4788.81	1343.97	0.00	916.70	924.72	3.75	7501.99	1077.80	0.00	6.15	12290.80	2421.78
10/12/2011	22.99	919.26	925.67	2.58	5150.88	1346.55	0.00	918.45	924.88	4.12	8236.33	1081.92	0.00	6.69	13387.21	2428.47
10/13/2011	22.41	920.11	926.61	2.46	4925.15	1349.01	0.00	919.49	925.98	3.89	7782.02	1085.81	0.00	6.35	12707.17	2434.82
10/14/2011	18.71	912.84	925.51	1.98	3961.42	1350.99	0.00	912.09	924.88	3.13	6260.00	1088.94	0.00	5.11	10221.42	2439.94
10/15/2011	19.40	899.70	925.35	1.93	3853.10	1352.92	0.00	898.63	924.25	3.34	6680.00	1092.28	0.00	5.27	10533.10	2445.20
10/16/2011	20.77	918.14	925.90	2.40	4796.27	1355.32	0.00	917.07	924.8	3.98	7960.00	1096.26	0.00	6.38	12756.27	2451.58
10/17/2011	21.53	920.45	926.22	2.44	4880.39	1357.76	0.00	919.34	925.27	4.07	8140.00	1100.33	0.00	6.51	13020.39	2458.09
10/18/2011	22.99	919.69	925.83	2.33	4661.30	1360.09	0.00	918.66	924.96	3.87	7740.00	1104.20	0.00	6.20	12401.30	2464.29
10/19/2011	22.33	918.32	925.90	2.47	4931.62	1362.55	0.00	917.38	925.27	3.91	7820.00	1108.11	0.00	6.38	12751.62	2470.67
10/20/2011	22.92	918.40	925.43	2.66	5325.58	1365.22	0.00	917.20	924.09	4.33	8660.00	1112.44	0.00	6.99	13985.58	2477.66
10/21/2011	20.94	914.88	925.75	2.16	4320.46	1367.38	0.00	913.55	924.56	3.80	7600.18	1116.24	0.00	5.96	11920.64	2483.62
10/22/2011	21.71	919.70	925.67	2.39	4771.28	1369.76	0.00	918.44	924.8	4.07	8146.73	1120.32	0.00	6.46	12918.00	2490.08
10/23/2011	21.05	919.41	925.90	2.42	4841.31	1372.18	0.00	918.11	925.12	4.01	8022.17	1124.33	0.00	6.43	12863.48	2496.51
10/24/2011	22.16	919.48	925.83	2.40	4804.62	1374.59	0.00	918.27	924.56	4.08	8162.35	1128.41	0.00	6.48	12966.98	2502.99
10/25/2011	21.79	920.86	925.98	2.47	4938.70	1377.06	0.00	919.63	925.12	4.10	8209.16	1132.51	0.00	6.57	13147.85	2509.57
10/26/2011	21.98	919.13	925.67	2.41	4810.31	1379.46	0.00	917.99	924.64	4.03	8055.80	1136.54	0.00	6.43	12866.12	2516.00
10/27/2011	23.18	915.36	925.12	2.49	4976.99	1381.95	0.00	914.19	924.01	4.23	8457.49	1140.77	0.00	6.72	13434.47	2522.72
10/28/2011	23.71	919.57	925.27	2.51	5022.58	1384.46	0.00	918.28	924.01	4.27	8546.74	1145.04	0.00	6.78	13569.32	2529.50
10/29/2011	23.21	916.97	925.59	2.45	4907.73	1386.91	0.00	915.71	924.33	4.36	8713.66	1149.40	0.00	6.81	13621.39	2536.31
10/30/2011	21.79	918.84	925.90	2.41	4817.71	1389.32	0.00	917.26	924.8	4.21	8428.09	1153.61	0.00	6.62	13245.79	2542.94
10/31/2011	23.05	914.95	925.67	2.31	4610.61	1391.63	0.00	913.51	924.33	4.01	8022.36	1157.63	0.00	6.32	12632.97	2549.25
11/1/2011	23.75	917.06	925.51	2.40	4799.09	1394.03	0.00	915.71	924.72	4.17	8348.53	1161.80	0.00	6.57	13147.63	2555.83
11/2/2011	23.95	913.88	923.15	2.24	4485.95	1396.27	0.00	912.57	921.49	3.91	7828.81	1165.71	0.00	6.16	12314.76	2561.98
11/3/2011	14.91	914.61	924.80	1.36	2728.45	1397.63	0.00	913.31	924.09	2.55	5092.36	1168.26	0.00	3.91	7820.81	2565.89

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
1/5/2012	0.00	0.00	0.00	0.00	0.00	1397.64		0.00	0.00	0.00	0.00	1168.26		0.00	0.00	2565.90
1/6/2012	0.00	0.00	666.01	0.00	0.00	1397.64		0.00	660.57	0.00	0.00	1168.26		0.00	0.00	2565.90
1/7/2012	0.00	0.00	671.05	0.00	0.00	1397.64		0.00	662.22	0.00	0.00	1168.26		0.00	0.00	2565.90
1/8/2012	0.00	0.00	684.51	0.00	0.00	1397.64		0.00	659.23	0.00	0.00	1168.26		0.00	0.00	2565.90
1/9/2012	2.98	758.02	910.54	0.67	1385.66	1398.30	0.00	754.38	904.63	1.03	2063.70	1169.29	0.00	1.70	3399.36	2567.60
1/10/2012	2.38	880.06	936.70	0.77	1541.14	1399.07	0.00	874.42	930.48	1.43	2853.34	1170.72	0.00	2.20	4394.48	2569.79
1/11/2012	0.00	0.00	723.85	0.00	0.00	1399.07		0.00	704.62	0.00	0.00	1170.72		0.00	0.00	2569.79
1/12/2012	0.00	0.00	673.26	0.00	0.00	1399.07		0.00	663.72	0.00	0.00	1170.72		0.00	0.00	2569.79
1/13/2012	0.00	0.00	656.56	0.00	0.00	1399.07		0.00	665.37	0.00	0.00	1170.72		0.00	0.00	2569.79
1/14/2012	0.00	0.00	647.01	0.00	0.00	1399.07		0.00	642.52	0.00	0.00	1170.72		0.00	0.00	2569.79
1/15/2012	0.00	0.00	639.68	0.00	0.00	1399.07		0.00	643.70	0.00	0.00	1170.72		0.00	0.00	2569.79
1/16/2012	0.00	0.00	634.01	0.00	0.00	1399.07		0.00	645.75	0.00	0.00	1170.72		0.00	0.00	2569.79
1/17/2012	0.00	0.00	652.61	0.00	0.00	1399.07		0.00	655.84	0.00	0.00	1170.72		0.00	0.00	2569.79
1/18/2012	0.00	0.00	642.52	0.00	0.00	1399.07		0.00	652.21	0.00	0.00	1170.72		0.00	0.00	2569.79
1/19/2012	0.00	0.00	637.79	0.00	0.00	1399.07		0.00	648.59	0.00	0.00	1170.72		0.00	0.00	2569.79
1/20/2012	0.00	0.00	631.49	0.00	0.00	1399.07		0.00	645.75	0.00	0.00	1170.72		0.00	0.00	2569.79
1/21/2012	0.00	0.00	638.34	0.00	0.00	1399.07		0.00	647.09	0.00	0.00	1170.72		0.00	0.00	2569.79
1/22/2012	0.00	0.00	646.38	0.00	0.00	1399.07		0.00	651.95	0.00	0.00	1170.72		0.00	0.00	2569.79
1/23/2012	0.00	0.00	658.44	0.00	0.00	1399.07		0.00	658.83	0.00	0.00	1170.72		0.00	0.00	2569.79
1/24/2012	0.00	0.00	657.42	0.00	0.00	1399.07		0.00	656.20	0.00	0.00	1170.72		0.00	0.00	2569.79
1/25/2012	0.00	0.00	657.73	0.00	0.00	1399.07		0.00	656.20	0.00	0.00	1170.72		0.00	0.00	2569.79
1/26/2012	0.00	0.00	658.66	0.00	0.00	1399.07		0.00	658.91	0.00	0.00	1170.72		0.00	0.00	2569.79
1/27/2012	0.00	0.00	661.59	0.00	0.00	1399.07		0.00	661.51	0.00	0.00	1170.72		0.00	0.00	2569.79
1/28/2012	0.00	0.00	655.05	0.00	0.00	1399.07		0.00	656.47	0.00	0.00	1170.72		0.00	0.00	2569.79
1/29/2012	0.00	0.00	655.05	0.00	0.00	1399.07		0.00	655.29	0.00	0.00	1170.72		0.00	0.00	2569.79
1/30/2012	0.00	0.00	654.74	0.00	0.00	1399.07		0.00	655.05	0.00	0.00	1170.72		0.00	0.00	2569.79
1/31/2012	0.00	0.00	661.75	0.00	0.00	1399.07		0.00	661.51	0.00	0.00	1170.72		0.00	0.00	2569.79
2/1/2012	0.00	0.00	664.11	0.00	0.00	1399.07		0.00	663.06	0.00	0.00	1170.72		0.00	0.00	2569.79
2/2/2012	0.00	0.00	661.75	0.00	0.00	1399.07		0.00	660.53	0.00	0.00	1170.72		0.00	0.00	2569.79
2/3/2012	0.00	0.00	662.62	0.00	0.00	1399.07		0.00	659.94	0.00	0.00	1170.72		0.00	0.00	2569.79
2/4/2012	0.00	0.00	660.17	0.00	0.00	1399.07		0.00	657.10	0.00	0.00	1170.72		0.00	0.00	2569.79
2/5/2012	0.00	0.00	663.01	0.00	0.00	1399.07		0.00	658.96	0.00	0.00	1170.72		0.00	0.00	2569.79
2/6/2012	0.00	0.00	666.48	0.00	0.00	1399.07		0.00	658.76	0.00	0.00	1170.72		0.00	0.00	2569.79
2/7/2012	0.00	0.00	665.61	0.00	0.00	1399.07		0.00	657.16	0.00	0.00	1170.72		0.00	0.00	2569.79
2/8/2012	0.00	0.00	664.59	0.00	0.00	1399.07		0.00	655.29	0.00	0.00	1170.72		0.00	0.00	2569.79
2/9/2012	0.00	0.00	666.79	0.00	0.00	1399.07		0.00	656.15	0.00	0.00	1170.72		0.00	0.00	2569.79
2/10/2012	0.00	0.00	666.64	0.00	0.00	1399.07		0.00	655.45	0.00	0.00	1170.72		0.00	0.00	2569.79
2/11/2012	0.00	0.00	666.40	0.00	0.00	1399.07		0.00	654.43	0.00	0.00	1170.72		0.00	0.00	2569.79
2/12/2012	0.00	0.00	662.85	0.00	0.00	1399.07		0.00	647.01	0.00	0.00	1170.72		0.00	0.00	2569.79
2/13/2012	0.00	0.00	667.35	0.00	0.00	1399.07		0.00	652.69	0.00	0.00	1170.72		0.00	0.00	2569.79
2/14/2012	0.00	0.00	668.37	0.00	0.00	1399.07		0.00	655.29	0.00	0.00	1170.72		0.00	0.00	2569.79
2/15/2012	0.00	0.00	669.87	0.00	0.00	1399.07		0.00	657.18	0.00	0.00	1170.72		0.00	0.00	2569.79
2/16/2012	0.00	0.00	670.73	0.00	0.00	1399.07		0.00	658.99	0.00	0.00	1170.72		0.00	0.00	2569.79
2/17/2012	0.00				0.00	1399.07					0.00	1170.72		0.00	0.00	2569.79
2/18/2012	0.00	0.00	671.44	0.00	0.00	1399.07		0.00	659.82	0.00	0.00	1170.72		0.00	0.00	2569.79
2/19/2012	0.00	0.00	669.18	0.00	0.00	1399.07		0.00	656	0.00	0.00	1170.72		0.00	0.00	2569.79
2/20/2012	0.00	0.00	670.81	0.00	0.00	1399.07		0.00	657.97	0.00	0.00	1170.72		0.00	0.00	2569.79
2/21/2012	0.00	0.00	670.81	0.00	0.00	1399.07		0.00	658.36	0.00	0.00	1170.72		0.00	0.00	2569.79
2/22/2012	0.00	0.00	672.23	0.00	0.00	1399.07		0.00	661.26	0.00	0.00	1170.72		0.00	0.00	2569.79
2/23/2012	0.00	0.00	672.78	0.00	0.00	1399.07		0.00	662.7	0.00	0.00	1170.72		0.00	0.00	2569.79
2/24/2012	0.00	0.00	672.70	0.00	0.00	1399.07		0.00	662.14	0.00	0.00	1170.72		0.00	0.00	2569.79
2/25/2012	0.00	0.00	669.55	0.00	0.00	1399.07		0.00	656.55	0.00	0.00	1170.72		0.00	0.00	2569.79
2/26/2012	0.00	0.00	671.52	0.00	0.00	1399.07		0.00	658.34	0.00	0.00	1170.72		0.00	0.00	2569.79
2/27/2012	0.00	0.00	673.33	0.00	0.00	1399.07		0.00	660.88	0.00	0.00	1170.72		0.00	0.00	2569.79
2/28/2012	0.00	0.00	673.33	0.00	0.00	1399.07		0.00	660.57	0.00	0.00	1170.72		0.00	0.00	2569.79
2/29/2012	0.00	0.00	674.04	0.00	0.00	1399.07		0.00	662.54	0.00	0.00	1170.72		0.00	0.00	2569.79
3/1/2012	0.00	0.00	673.73	0.00	0.00	1399.07		0.00	662.46	0.00	0.00	1170.72		0.00	0.00	2569.79
3/2/2012	1.53	749.90	823.06	0.50	1008.66	1399.58	0.00	746.39	827.87	0.64	1278.73	1171.36	0.00	1.14	2287.41	2570.94
3/3/2012	0.00	0.00	676.40	0.00	0.00	1399.58		0.00	675.3	0.00	0.00	1171.36		0.00	0.00	2570.94
3/4/2012	0.00	0.00	668.68	0.00	0.00	1399.58		0.00	656.83	0.00	0.00	1171.36		0.00	0.00	2570.94
3/5/2012	0.00	0.00	667.42	0.00	0.00	1399.58		0.00	655.05	0.00	0.00	1171.36		0.00	0.00	2570.94
3/6/2012	0.00	0.00	670.58	0.00	0.00	1399.58		0.00	658.12	0.00	0.00	1171.36		0.00	0.00	2570.94
3/7/2012	3.24	800.72	883.64	1.28	2520.05	1400.84	0.00	800.33	881.69	1.51	3014.95	1172.87	0.00	2.77	5535.00	2573.70
3/8/2012	0.00	0.00	676.01	0.00	0.00	1400.84		0.00	677.9	0.00	0.00	1172.87		0.00	0.00	2573.70
3/9/2012	0.89	742.85	788.82	0.25	495.93	1401.09	0.00	738.13	797.14	0.32	648.68	1173.19	0.00	0.57	1144.61	2574.28
3/10/2012	0.00	0.00	661.56	0.00	0.00	1401.09		0.00	657.18	0.00	0.00	1173.19		0.00	0.00	2574.28
3/11/2012	0.00	0.00	675.39	0.00	0.00	1401.09		0.00	664.19	0.00	0.00	1173.19		0.00	0.00	2574.28
3/12/2012	0.00	0.00	667.58	0.00	0.00	1401.09		0.00	658.44	0.00	0.00	1173.19		0.00	0.00	2574.28
3/13/2012	0.00	0.00	683.74	0.00	0.00	1401.09		0.00	670.02	0.00	0.00	1173.19		0.00	0.00	2574.28
3/14/2012	0.00	0.00	689.25	0.00	0.00	1401.09		0.00	674.67	0.00	0.00	1173.19		0.00	0.00	2574.28
3/15/2012	0.00	0.00	687.44	0.00	0.00	1401.09		0.00	673.49	0.00	0.00	1173.19		0.00	0.00	2574.28
3/16/2012	1.99	775.64	864.44	0.54	1083.06	1401.63	0.00	772.69	863.61	0.75	1503.32	1173.94	0.00	1.29	2586.38	2575.57
3/17/2012	0.00	0.00	694.77	0.00	0.00	1401.63		0.00	687.44	0.00	0.00	1173.94		0.00	0.00	2575.57
3/18/2012	0.00	0.00	679.95	0.00	0.00	1401.63		0.00	672.94	0.00	0.00	1173.94		0.00	0.00	2575.57
3/19/2012	0.00	0.00	680.63	0.00	0.00	1401.63		0.00	668.53	0.00	0.00	1173.94		0.00	0.00	2575.57
3/20/2012	0.00	0.00	681.45	0.00	0.00	1401.63		0.00	675.54	0.00	0.00	1173.94		0.00	0.00	2575.57
3/21/2012	0.00	0.00	683.50	0.00	0.00	1401.63		0.00	677.83	0.00	0.00	1173.94		0.00	0.00	2575.57
3/22/2012	0.00	0.00	685.37	0.00	0.00	1401.63		0.00	687.66	0.00	0.00	1173.94		0.00	0.00	2575.57
3/23/2012	1.33	703.22	786.50	0.15	295.84	1401.78	0.00	702.58	785.4	0.23	460.82	1174.17	0.00	0.38	756.66	2575.95
3/24/2012	0.00	0.00	667.50	0.00	0.00	1401.78		0.00	670.65	0.00	0.00	1174.17		0.00	0.00	2575.95
3/25/2012	0.00	0.00	678.77	0.00	0.00	1401.78		0.00	672.47	0.00	0.00	1174.17		0.00	0.00	2575.95
3/26/2012	0.00	0.00	682.40	0.00	0.00	1401.78		0.00	675.78	0.00	0.00	1174.17		0.00	0.00	2575.95
3/27/2012	0.00	0.00	685.18	0.00	0.00	1401.78		0.00	679.96	0.00	0.00	1174.17		0.00	0.00	2575.95
3/28/2012	0.00	0.00	684.76	0.00	0.00	1401.78		0.00	678.8	0.00	0.00	1174.17		0.00	0.00	2575.95
3/29/2012	0.00	0.00	684.29	0.00	0.00	1401.78		0.00	677.98	0.00	0.00	1174.17		0.00	0.00	2575.95
3/30/2012	1.55	681.18	726.02	0.76	1611.40	1402.53	0.00	682.96	726.61	0.17	335.55	1174.34	0.00	0.92	1944.95	2576.87
3/31/2012	0.00	0.00	663.17	0.00	0.00	1402.53		0.00	660.73	0.00	0.00	1174.34		0.00	0.00	2576.87
4/1/2012	0.00	0.00	684.21	0.00	0.00	1402.53		0.00	676.64	0.00	0.00	1174.34		0.00	0.00	2576.87
4/2/2012	0.00	0.00	680.82	0.00	0.00	1402.53		0.00	674.67	0.00	0.00	1174.34		0.00	0.00	2576.87
4/3/2012	0.00	0.00	685.86	0.00	0.00	1402.53		0.00	677.2	0.00	0.00	1174.34		0.00	0.00	2576.87
4/4/2012	0.00	0.00	681.69	0.00	0.00	1402.53		0.00	674.2	0.00	0.00	1174.34		0.00	0.00	2576.87
4/5/2012	0.00	0.00	680.95	0.00	0.00	1402.53		0.00	674.2	0.00	0.00	1174.34		0.00	0.00	2576.87
4/6/2012	0.00	0.00	681.65	0.00	0.00	1402.53		0.00	673.89	0.00	0.00	1174.34		0.00	0.00	2576.87
4/7/2012	0.00	0.00	682.48	0.00	0.00	1402.53		0.00	674.12	0.00	0.00	1174.34		0.00	0.00	2576.87
4/8/2012	0.00	0.00	681.14	0.00	0.00	1402.53		0.00	673.57	0.00	0.00	1174.34		0.00	0.00	2576.87
4/9/2012	0.00	0.00	673.96	0.00	0.00	1402.53		0.00	666.64	0.00	0.00	1174.34		0.00	0.00	2576.87
4/10/2012	3.29	827.26	933.39	1.30	2597.53	1403.83	0.00	825.26	930.87	1.69	3382.24	1176.03	0.00	2.98	5979.77	2579.86
4/11/2012	4.68	890.36	939.77	1.00	2007.29	1404.83	0.00	887.71	937.25	2.25	4500.68	1178.28	0.00	3.25	6507.97	2583.11
4/12/2012	0.00	0.00	753.72	0.00	0.00	1404.83		0.00	704.62	0.00	0.00	1178.28		0.00	0.00	2583.11
4/13/2012	2.88	857.47	943.61	0.39	774.77	1405.22	0.00	853.06	938.43	1.30	2608.24	1179.59	0.00	1.69	3383.01	2584.81
4/14/2012	0.00	0.00	745.05	0.00	0.00	1405.22		0.00	689.25	0.00	0.00	1179.59		0.00	0.00	2584.81
4/15/2012	0.00	0.00	718.49	0.00	0.00	1405.22		0.00	684.76	0.00	0.00	1179.59		0.00	0.00	2584.81
4/16/2012	0.00	0.00	730.94	0.00	0.00	1405.22		0.00	681.06	0.00	0.00	1179.59		0.00	0.00	2584.81
4/17/2012	0.00	0.00	710.06	0.00	0.00	1405.22		0.00	678.3	0.00	0.00	1179.59		0.00	0.00	2584.81
4/18/2012	0.00	0.00	698.71	0.00	0.00	1405.22		0.00	676.49	0.00	0.00	1179.59		0.00	0.00	2584.81
4/19/2012	0.00	0.00	697.05	0.00	0.00	1405.22		0.00	682.71	0.00	0.00	1179.59		0.00	0.00	2584.81
4/20/2012	0.00	0.00	702.16	0.00	0.00	1405.22		0.00	682.48	0.00	0.00	1179.59		0.00	0.00	2584.81
4/21/2012	0.00	0.00	658.76	0.00	0.00	1405.22		0.00	662.46	0.00	0.00	1179.59		0.00	0.00	2584.81

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

		MH-18						MH-20						Total		
Date	Pump "On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
6/30/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/1/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/2/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/3/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/4/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/5/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/6/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/7/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/8/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/9/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/10/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/11/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/12/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/13/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/14/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/15/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/16/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/17/2012	0.00				0.00	1410.75					0.00	1187.33		0.00	0.00	2598.08
7/18/2012	5.64	820.28	912.74	1.99	3980.40	1412.74	0.00	821.80	912.74	1.72	3435.22	1189.05	0.00	3.71	7416.41	2601.79
7/19/2012	0.00	877.29	877.43	0.00	0.00	1412.74	0.00	880.60	881.21	0.00	0.00	1189.05	0.00	0.00	0.00	2601.79
7/20/2012	0.00	0.00	875.15	0.00	0.00	1412.74		0.00	878.61	0.00	0.00	1189.05		0.00	0.00	2601.79
7/21/2012	0.00	0.00	875.88	0.00	0.00	1412.74		0.00	874.2	0.00	0.00	1189.05		0.00	0.00	2601.79
7/22/2012	0.00	0.00	878.73	0.00	0.00	1412.74		0.00	874.78	0.00	0.00	1189.05		0.00	0.00	2601.79
7/23/2012	8.42	880.44	912.11	2.53	5066.04	1415.27	0.00	879.86	912.03	3.08	6167.03	1192.13	0.00	5.62	11233.08	2607.41
7/24/2012	18.23	910.09	935.36	1.80	3609.32	1417.08	0.00	908.82	932.6	4.77	9544.77	1196.91	0.01	6.58	13154.09	2613.98
7/25/2012	23.94	924.76	926.30	1.66	3312.84	1418.73	0.00	924.00	925.67	5.39	10777.18	1202.29	0.01	7.05	14090.02	2621.03
7/26/2012	15.72	926.05	963.10	1.09	2184.82	1419.83	0.00	925.37	962.23	3.53	7053.31	1205.82	0.00	4.62	9238.13	2625.65
7/27/2012	0.01	690.87	694.61	0.00	0.00	1419.83	0.00	722.08	724.64	0.00	0.16	1205.82	0.00	0.00	0.16	2625.65
7/28/2012	10.23	892.27	930.48	1.37	2730.97	1421.19	0.00	891.82	929.37	2.67	5342.09	1208.49	0.00	4.04	8073.06	2629.68
7/29/2012	23.93	924.81	926.77	1.62	3231.09	1422.81	0.00	924.13	926.06	4.94	9889.50	1213.44	0.01	6.56	13120.59	2636.24
7/30/2012	11.66	924.89	926.38	0.75	1496.81	1423.55	0.00	924.34	925.75	2.23	4460.43	1215.67	0.00	2.98	5957.24	2639.22
7/31/2012	13.82	905.50	935.28	1.38	2759.31	1424.93	0.00	905.38	934.81	3.12	6246.85	1218.79	0.00	4.50	9006.16	2643.73
8/1/2012	23.95	924.99	942.69	1.50	2994.58	1426.43	0.00	924.42	941.35	4.27	8532.66	1223.06	0.00	5.76	11527.24	2649.49
8/2/2012	21.17	924.78	926.30	1.28	2552.76	1427.71	0.00	924.33	925.98	3.50	6991.98	1226.55	0.00	4.77	9544.74	2654.26
8/3/2012	12.79	914.82	928.03	1.15	2294.26	1428.86	0.00	914.26	927.17	2.53	5069.03	1229.09	0.00	3.68	7363.29	2657.94
8/4/2012	23.94	924.83	926.54	1.45	2901.34	1430.31	0.00	924.32	925.98	3.83	7662.88	1232.92	0.00	5.28	10564.23	2663.23
8/5/2012	23.95	924.82	926.69	1.50	2991.68	1431.80	0.00	924.29	926.38	3.68	7357.01	1236.60	0.00	5.17	10348.69	2668.40
8/6/2012	8.02	914.24	934.65	0.80	1607.18	1432.61	0.00	913.99	933.55	1.68	3367.67	1238.28	0.00	2.49	4974.84	2670.89
8/7/2012	0.77	849.47	903.92	0.23	454.53	1432.83	0.00	849.74	903.37	0.25	496.09	1238.53	0.00	0.48	950.62	2671.36

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
9/7/2012	9.70	806.22	862.62	2.32	4642.45	1436.24	0.00	806.08	861.99	1.57	3139.30	1240.70	0.00	3.89	7781.75	2676.95
9/8/2012	20.32	895.98	932.52	2.77	5543.35	1439.02	0.00	895.07	930.71	4.15	8299.81	1244.85	0.00	6.92	13843.16	2683.87
9/9/2012	0.00	0.00	807.30	0.00	0.00	1439.02		0.00	809.43	0.00	0.00	1244.85		0.00	0.00	2683.87
9/10/2012	8.49	892.95	970.51	1.52	3034.97	1440.53	0.00	891.74	968.22	2.07	4136.54	1246.92	0.00	3.59	7171.51	2687.46
9/11/2012	20.28	974.30	1383.80	3.14	6273.85	1443.67	0.00	936.61	1116.6	6.37	12731.17	1253.29	0.01	9.50	19005.02	2696.96
9/12/2012	14.33	920.60	933.47	1.55	3093.60	1445.22	0.00	919.72	930.08	3.80	7590.20	1257.08	0.00	5.34	10683.80	2702.30
9/13/2012	23.94	924.71	931.66	1.81	3625.35	1447.03	0.00	923.76	930.32	4.93	9863.99	1262.02	0.01	6.74	13489.34	2709.04
9/14/2012	23.89	924.73	926.22	1.92	3848.83	1448.95	0.00	923.89	925.12	4.50	8997.08	1266.51	0.00	6.42	12845.91	2715.47
9/15/2012	23.93	924.75	926.06	1.89	3775.40	1450.84	0.00	923.87	925.35	4.35	8701.54	1270.86	0.00	6.24	12476.94	2721.71
9/16/2012	23.94	924.86	937.41	1.83	3655.79	1452.67	0.00	923.92	935.83	4.23	8459.66	1275.09	0.00	6.06	12115.44	2727.76
9/17/2012	23.94	924.78	926.30	1.76	3521.53	1454.43	0.00	923.92	925.67	4.03	8066.14	1279.13	0.00	5.79	11587.67	2733.56
9/18/2012	20.42	923.37	933.63	1.78	3567.87	1456.21	0.00	922.72	931.66	3.78	7565.79	1282.91	0.00	5.57	11133.67	2739.12
9/19/2012	23.94	924.25	936.94	1.71	3426.44	1457.93	0.00	924.05	936.54	3.95	7904.30	1286.86	0.00	5.67	11330.74	2744.79
9/20/2012	23.93	924.83	931.26	1.64	3284.93	1459.57	0.00	923.90	930.55	3.84	7687.74	1290.71	0.00	5.49	10972.67	2750.28
9/21/2012	24.00	925.21	953.72	1.64	3271.22	1461.20	0.00	924.45	952.38	3.65	7303.94	1294.36	0.00	5.29	10575.16	2755.56
9/22/2012	24.00	924.86	926.77	1.82	3643.23	1463.03	0.00	924.18	926.46	3.65	7304.77	1298.01	0.00	5.47	10948.00	2761.04
9/23/2012	24.00	924.80	926.22	1.64	3270.94	1464.66	0.00	923.81	926.06	3.73	7462.03	1301.74	0.00	5.37	10732.97	2766.40
9/24/2012	24.00	925.15	938.51	1.73	3454.34	1466.39	0.00	924.14	936.94	3.73	7461.33	1305.47	0.00	5.46	10915.67	2771.86
9/25/2012	24.00	924.89	926.69	1.60	3204.49	1467.99	0.00	923.88	925.43	3.64	7277.95	1309.11	0.00	5.24	10482.44	2777.10
9/26/2012	24.00	923.10	932.21	1.43	2859.82	1469.42	0.00	922.44	931.58	3.05	6102.22	1312.16	0.00	4.48	8962.04	2781.58
9/27/2012	24.00	925.63	966.57	1.56	3110.86	1470.98	0.00	924.94	963.89	3.55	7094.37	1315.71	0.00	5.10	10205.23	2786.69
9/28/2012	24.00	924.84	926.30	1.64	3283.35	1472.62	0.00	924.17	925.98	3.46	6928.58	1319.17	0.00	5.11	10211.93	2791.79
9/29/2012	24.00	924.77	926.93	1.45	2906.08	1474.07	0.00	923.68	926.14	3.51	7022.31	1322.69	0.00	4.96	9928.39	2796.76
9/30/2012	24.00	924.83	926.69	1.51	3023.00	1475.58	0.00	923.82	925.75	3.55	7102.02	1326.24	0.00	5.06	10125.02	2801.82
10/1/2012	24.00	924.85	926.77	1.36	2723.47	1476.94	0.00	923.95	926.22	3.46	6910.55	1329.69	0.00	4.82	9634.02	2806.64
10/2/2012	24.00	924.93	931.26	1.31	2617.05	1478.25	0.00	924.19	930.4	3.38	6762.95	1333.07	0.00	4.69	9380.00	2811.33
10/3/2012	24.00	926.11	963.73	1.46	2913.59	1479.71	0.00	925.46	961.45	3.35	6702.42	1336.42	0.00	4.81	9616.02	2816.13
10/4/2012	24.00	924.87	926.77	1.62	3245.99	1481.33	0.00	924.19	926.22	3.32	6642.71	1339.75	0.00	4.94	9888.70	2821.08
10/5/2012	24.00	925.04	929.29	1.40	2802.80	1482.73	0.00	924.23	928.66	3.37	6749.26	1343.12	0.00	4.78	9552.06	2825.85
10/6/2012	24.00	925.72	961.45	1.55	3109.78	1484.29	0.00	924.64	959.48	3.63	7258.43	1346.75	0.00	5.18	10368.20	2831.04
10/7/2012	24.00	924.84	926.54	1.41	2818.89	1485.70	0.00	923.58	925.43	3.59	7189.24	1350.34	0.00	5.00	10008.13	2836.04
10/8/2012	23.64	924.88	926.69	1.25	2509.78	1486.95	0.00	923.62	925.43	3.59	7185.43	1353.94	0.00	4.85	9695.21	2840.89
10/9/2012	24.00	925.52	961.37	1.48	2964.44	1488.44	0.00	924.39	959.00	3.63	7252.22	1357.56	0.00	5.11	10216.66	2846.00
10/10/2012	24.00	925.05	936.23	1.31	2611.12	1489.74	0.00	923.84	934.57	3.62	7240.60	1361.18	0.00	4.93	9851.73	2850.92
10/11/2012	24.00	924.91	927.48	1.42	2836.27	1491.16	0.00	923.68	926.93	3.68	7367.89	1364.87	0.00	5.10	10204.16	2856.03
10/12/2012	24.00	924.98	928.51	1.40	2805.24	1492.56	0.00	923.68	927.72	3.74	7477.15	1368.61	0.00	5.14	10282.39	2861.17
10/13/2012	24.00	924.90	927.80	1.40	2803.50	1493.96	0.00	923.76	927.4	3.58	7163.32	1372.19	0.00	4.98	9966.82	2866.15
10/14/2012	24.00	924.86	926.77	1.33	2657.20	1495.29	0.00	924.04	926.06	3.33	6651.07	1375.51	0.00	4.65	9308.28	2870.81
10/15/2012	24.00	924.90	930.32	1.29	2580.90	1496.58	0.00	924.13	929.69	3.52	7034.97	1379.03	0.00	4.81	9615.87	2875.61
10/16/2012	24.00	924.92	926.69	1.41	2824.76	1498.00	0.00	923.80	926.14	3.58	7161.86	1382.61	0.00	4.99	9986.62	2880.61
10/17/2012	24.00	925.01	927.80	1.34	2672.17	1499.33	0.00	923.98	927.48	3.52	7032.44	1386.13	0.00	4.85	9704.61	2885.46
10/18/2012	24.00	925.02	929.06	1.29	2582.69	1500.62	0.00	924.03	928.51	3.58	7161.80	1389.71	0.00	4.87	9744.49	2890.33
10/19/2012	21.42	924.20	927.56	1.36	2728.17	1501.99	0.00	923.22	926.38	3.34	6677.16	1393.05	0.00	4.70	9405.33	2895.03
10/20/2012	24.00	924.96	928.19	1.23	2457.52	1503.22	0.00	923.84	927.4	3.59	7180.80	1396.64	0.00	4.82	9638.31	2899.85
10/21/2012	24.00	924.99	929.53	1.32	2635.37	1504.53	0.00	923.89	928.9	3.64	7284.94	1400.28	0.00	4.96	9920.30	2904.81
10/22/2012	24.00	925.32	933.55	1.34	2675.80	1505.87	0.00	924.23	933.23	3.54	7081.72	1403.82	0.00	4.88	9757.52	2909.69
10/23/2012	24.00	924.80	926.93	1.26	2516.43	1507.13	0.00	923.84	925.83	3.35	6705.88	1407.17	0.00	4.61	9222.31	2914.30
10/24/2012	24.00	924.94	929.84	1.13	2257.41	1508.26	0.00	924.02	929.06	3.36	6728.82	1410.54	0.00	4.49	8986.23	2918.80
10/25/2012	24.00	924.89	930.08	1.36	2716.70	1509.62	0.00	923.89	929.37	3.42	6838.90	1413.96	0.00	4.78	9555.60	2923.57
10/26/2012	24.00	924.76	927.56	1.22	2438.79	1510.84	0.00	923.82	927.01	3.40	6809.46	1417.36	0.00	4.62	9248.25	2928.20
10/27/2012	24.00	924.89	927.56	1.22	2439.58	1512.06	0.00	923.99	926.22	3.63	7261.56	1420.99	0.00	4.85	9701.14	2933.05
10/28/2012	24.00	926.03	968.85	1.53	3066.10	1513.59	0.00	924.88	966.02	3.99	7977.11	1424.98	0.00	5.52	11043.21	2938.57
10/29/2012	23.83	924.80	927.48	1.51	3014.65	1515.10	0.00	923.90	926.77	4.47	8937.10	1429.45	0.00	5.98	11951.76	2944.55
10/30/2012	0.81	924.81	925.76	0.03	64.64	1515.13	0.00	923.80	925.2	0.11	219.39	1429.56	0.00	0.14	283.28	2944.69
10/31/2012	0.00	0.00	724.64	0.00	0.00	1515.13		0.00	780.36	0.00	0.00	1429.56		0.00	0.00	2944.69
11/1/2012	0.00	0.00	685.70	0.00	0.00	1515.13		0.00	767.82	0.00	0.00	1429.56		0.00	0.00	2944.69
11/2/2012	0.00	0.00	663.94	0.00	0.00	1515.13		0.00	749.14	0.00	0.00	1429.56		0.00	0.00	2944.69
11/3/2012	0.00	0.00	671.84	0.00	0.00	1515.13		0.00	734.88	0.00	0.00	1429.56		0.00	0.00	2944.69
11/4/2012	0.00	0.00	665.18	0.00	0.00	1515.13		0.00	721.14	0.00	0.00	1429.56		0.00	0.00	2944.69
11/5/2012	0.00	0.00	661.12	0.00	0.00	1515.13		0.00	712.26	0.00	0.00	1429.56		0.00	0.00	2944.69
11/6/2012	0.00	0.00	661.21	0.00	0.00	1515.13		0.00	702.59	0.00	0.00	1429.56		0.00	0.00	2944.69
11/7/2012	0.00	0.00	660.06	0.00	0.00	1515.13		0.00	694.77	0.00	0.00	1429.56		0.00	0.00	2944.69
11/8/2012	0.00	0.00	660.33	0.00	0.00	1515.13		0.00	687.69	0.00	0.00	1429.56		0.00	0.00	2944.69
11/9/2012	0.00	0.00	676.88	0.00	0.00	1515.13		0.00	682.43	0.00	0.00	1429.56		0.00	0.00	2944.69
11/10/2012	0.00	0.00	660.03	0.00	0.00	1515.13		0.00	676.20	0.00	0.00	1429.56		0.00	0.00	2944.69
11/11/2012	0.00	0.00	672.17	0.00	0.00	1515.13		0.00	667.69	0.00	0.00	1429.56		0.00	0.00	2944.69
11/12/2012	14.83	862.47	961.37	3.06	6125.39	1518.19	0.00	861.52	959	3.78	7558.33	1433.34	0.00	6.84	13683.71	2951.52
11/13/2012	24.00	927.32	988.48	2.02	4035.26	1520.20	0.00	925.76	985.72	5.97	11949.11	1439.31	0.01	7.99	15984.37	2959.51
11/14/2012	24.00	924.81	927.64	1.56	3125.75	1521.77	0.00	923.78	927.09	5.11	10217.33	1444.42	0.01	6.67	13343.08	2966.19
11/15/2012	4.31	924.80	925.98	0.25	503.37	1522.02	0.00	923.75	924.96	0.87	1747.55	1445.29	0.00	1.13	2250.92	2967.31
11/16/2012	0.00	0.00	703.67	0.00	0.00	1522.02		0.00	752.77	0.00	0.00	1445.29		0.00	0.00	2967.31
11/17/2012	0.00	0.00	672.07	0.00	0.00	1522.02		0.00	724.95	0.00	0.00	1445.29		0.00	0.00	2967.31
11/18/2012	0.00	0.00	666.16	0.00	0.00	1522.02		0.00	708.64	0.00	0.00	1445.29		0.00	0.00	2967.31
11/19/2012	14.32	894.81	924.72	2.14	4286.58	1524.16	0.00	893.73	922.52	3.67	7341.10	1448.96	0.00	5.81	11627.68	2973.13
11/20/2012	24.00	923.93	930.08	1.58	3160.77	1525.74	0.00	922.60	928.43	5.03	10066.48	1454.00	0.01	6.61	13227.25	2979.74
11/21/2012	24.00	924.91	927.56	1.43	2856.27	1527.17	0.00	923.74	926.38	4.59	9183.16	1458.59	0.00	6.02	12039.43	2985.76
11/22/2012	24.00	924.88	927.09	1.31	2621.90	1528.48	0.00	923.79	925.75	4.29	8570.26	1462.87	0.00	5.60	11192.16	2991.35
11/23/2012	24.00	924.91	928.19	1.20	2398.78	1529.68	0.00	923.95	927.56	4.18	8357.07	1467.05	0.00	5.38	10755.85	2996.73

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

		MH-18						MH-20						Total		
Date	Pump "On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
11/24/2012	24.00	924.87	926.77	1.16	2317.71	1530.84	0.00	923.92	925.83	3.95	7906.66	1471.01	0.00	5.11	10224.37	3001.84
11/25/2012	24.00	924.89	927.48	1.10	2197.76	1531.94	0.00	923.97	926.69	4.07	8148.86	1475.08	0.00	5.17	10346.62	3007.02
11/26/2012	19.69	915.24	933.47	0.99	1975.64	1532.93	0.00	914.54	932.21	3.20	6407.81	1478.28	0.00	4.19	8383.44	3011.21
11/27/2012	24.00	917.20	933.08	0.98	1964.29	1533.91	0.00	916.08	931.26	3.84	7685.33	1482.13	0.00	4.82	9649.62	3016.03
11/28/2012	24.00	924.93	930.08	1.07	2143.68	1534.98	0.00	923.98	929.53	3.89	7785.45	1486.02	0.00	4.96	9929.14	3021.00
11/29/2012	24.00	924.89	926.69	0.98	1963.77	1535.96	0.00	923.85	926.06	3.81	7625.69	1489.83	0.00	4.79	9589.46	3025.79
11/30/2012	24.00	924.90	928.43	1.02	2042.82	1536.98	0.00	923.89	927.4	3.75	7495.93	1493.58	0.00	4.77	9538.75	3030.56
12/1/2012	24.00	924.91	926.51	1.11	2218.70	1538.09	0.00	923.89	927.24	3.78	7566.45	1497.36	0.00	4.89	9785.14	3035.46
12/2/2012	24.00	924.95	927.24	0.97	1944.12	1539.06	0.00	924.11	926.38	3.74	7477.49	1501.10	0.00	4.71	9421.61	3040.17
12/3/2012	24.00	924.95	926.93	0.97	1947.89	1540.04	0.00	924.02	925.83	3.54	7083.93	1504.64	0.00	4.52	9031.82	3044.68
12/4/2012	24.00	924.93	927.32	1.28	2569.78	1541.32	0.00	923.95	926.69	3.73	7468.79	1508.38	0.00	5.02	10038.57	3049.70
12/5/2012	24.00	924.96	927.95	1.07	2131.59	1542.39	0.00	923.98	927.32	3.88	7767.12	1512.26	0.00	4.95	9898.71	3054.65
12/6/2012	24.00	924.84	926.61	0.95	1897.53	1543.34	0.00	923.78	925.67	3.80	7602.02	1516.06	0.00	4.75	9499.55	3059.40
12/7/2012	24.00	924.79	926.30	1.05	2090.51	1544.38	0.00	923.90	925.43	4.02	8034.18	1520.08	0.00	5.06	10124.69	3064.46
12/8/2012	24.00	924.91	926.93	0.75	1498.09	1545.13	0.00	923.94	925.98	3.66	7322.25	1523.74	0.00	4.41	8820.33	3068.87
12/9/2012	24.00	925.25	942.69	1.05	2100.88	1546.18	0.00	924.22	941.27	3.79	7572.64	1527.53	0.00	4.84	9673.53	3073.71
12/10/2012	24.00	924.91	928.27	1.06	2121.72	1547.24	0.00	924.10	927.56	3.97	7935.85	1531.50	0.00	5.03	10057.57	3078.74
12/11/2012	24.00	924.82	926.46	0.98	1968.78	1548.23	0.00	923.97	925.59	3.93	7863.07	1535.43	0.00	4.92	9831.85	3083.65
12/12/2012	24.00	925.68	942.22	1.07	2148.39	1549.30	0.00	924.21	940.88	4.07	8148.23	1539.50	0.00	5.15	10296.62	3088.80
12/13/2012	24.00	924.86	926.93	0.94	1882.26	1550.24	0.00	923.79	926.06	3.97	7949.01	1543.48	0.00	4.92	9831.27	3093.72
12/14/2012	24.00	924.85	926.93	0.93	1865.76	1551.18	0.00	923.78	926.14	4.02	8034.83	1547.49	0.00	4.95	9900.59	3098.67
12/15/2012	24.00	924.89	926.77	0.87	1735.53	1552.04	0.00	923.79	925.83	3.93	7867.93	1551.43	0.00	4.80	9603.46	3103.47
12/16/2012	24.00	924.92	926.85	0.88	1756.55	1552.92	0.00	923.78	925.83	3.71	7418.94	1555.14	0.00	4.59	9175.49	3108.06
12/17/2012	23.88	924.90	932.37	0.90	1792.14	1553.82	0.00	923.93	931.58	3.97	7943.33	1559.11	0.00	4.87	9735.47	3112.93
12/18/2012	24.00	925.92	946.95	0.99	1975.46	1554.81	0.00	924.42	945.45	4.06	8123.40	1563.17	0.00	5.05	10098.86	3117.98
12/19/2012	24.00	924.84	927.17	0.88	1767.95	1555.69	0.00	923.85	925.75	3.96	7914.62	1567.13	0.00	4.84	9682.57	3122.82
12/20/2012	24.00	924.85	927.17	1.04	2088.31	1556.73	0.00	923.90	926.06	4.32	8638.71	1571.45	0.00	5.36	10727.02	3128.18
12/21/2012	23.52	924.89	927.09	0.86	1711.09	1557.59	0.00	923.89	926.3	4.07	8135.60	1575.51	0.00	4.92	9846.69	3133.10
12/22/2012	14.86	901.02	927.09	0.75	1502.89	1558.34	0.00	900.65	926.3	2.51	5013.51	1578.02	0.00	3.26	6516.40	3136.36
12/23/2012	24.00	924.86	926.77	0.78	1560.60	1559.12	0.00	923.82	926.22	4.30	8603.60	1582.32	0.00	5.08	10164.20	3141.44
12/24/2012	24.00	924.83	926.54	0.79	1582.48	1559.91	0.00	923.81	925.59	4.10	8200.82	1586.42	0.00	4.89	9783.30	3146.34
12/25/2012	24.00	924.82	926.61	0.87	1748.77	1560.79	0.00	923.98	925.83	4.16	8324.55	1590.59	0.00	5.04	10073.32	3151.37
12/26/2012	24.00	924.90	927.17	0.84	1670.43	1561.62	0.00	923.82	925.98	4.48	8968.45	1595.07	0.00	5.32	10638.87	3156.69
12/27/2012	24.00	924.85	926.54	0.81	1616.18	1562.43	0.00	923.75	925.43	4.18	8355.00	1599.25	0.00	4.99	9971.18	3161.68
12/28/2012	24.00	924.87	927.17	0.91	1813.28	1563.34	0.00	923.86	926.14	4.21	8418.76	1603.46	0.00	5.12	10232.04	3166.79
12/29/2012	24.00	924.86	926.61	0.95	1902.55	1564.29	0.00	923.79	925.83	4.37	8738.98	1607.83	0.00	5.32	10641.53	3172.11
12/30/2012	24.00	924.85	926.22	0.75	1507.59	1565.04	0.00	923.74	925.04	4.31	8618.42	1612.13	0.00	5.06	10126.01	3177.18
12/31/2012	24.00	924.89	926.61	0.86	1713.42	1565.90	0.00	923.79	925.2	4.39	8782.19	1616.53	0.00	5.25	10495.62	3182.42
1/1/2013	24.00	924.80	926.38	0.96	1922.23	1566.86	0.00	923.78	925.27	4.29	8580.81	1620.82	0.00	5.25	10503.04	3187.68
1/2/2013	24.00	924.84	926.77	0.86	1715.68	1567.72	0.00	923.71	925.67	4.41	8825.76	1625.23	0.00	5.27	10541.44	3192.95
1/3/2013	18.77	922.82	926.35	0.92	1842.97	1568.64	0.00	921.59	927.48	3.69	7387.27	1628.92	0.00	4.62	9230.24	3197.56
1/4/2013	23.00	924.50	929.21	0.79	1572.28	1569.43	0.00	923.34	927.87	4.10	8199.68	1633.02	0.00	4.89	9771.96	3202.45
1/5/2013	24.00	924.86	927.48	0.77	1542.18	1570.20	0.00	923.76	926.85	4.35	8695.94	1637.37	0.00	5.12	10238.12	3207.57
1/6/2013	24.00	924.84	926.77	0.91	1810.28	1571.10	0.00	923.87	925.83	4.24	8476.71	1641.61	0.00	5.14	10286.99	3212.71
1/7/2013	24.00	924.86	926.46	0.93	1858.72	1572.03	0.00	923.82	925.51	4.24	8483.80	1645.85	0.00	5.17	10342.52	3217.88
1/8/2013	24.00	924.82	926.30	0.77	1533.22	1572.80	0.00	923.70	925.51	4.20	8396.20	1650.05	0.00	4.96	9929.42	3222.85
1/9/2013	24.00	924.85	926.46	0.87	1737.40	1573.67	0.00	923.81	925.75	4.33	8668.25	1654.38	0.00	5.20	10405.65	3228.05
1/10/2013	24.00	924.79	926.46	0.82	1646.59	1574.49	0.00	923.85	925.98	4.27	8534.26	1658.65	0.00	5.09	10180.86	3233.14
1/11/2013	24.00	924.84	933.47	0.74	1485.64	1575.23	0.00	923.90	931.81	4.12	8239.64	1662.77	0.00	4.86	9725.29	3238.00
1/12/2013	24.00	924.76	926.46	0.80	1590.04	1576.03	0.00	923.69	925.35	3.84	7684.18	1666.61	0.00	4.64	9274.21	3242.64
1/13/2013	24.00	924.85	927.01	1.11	2214.73	1577.13	0.00	923.77	926.06	3.92	7830.59	1670.53	0.00	5.02	10045.31	3247.66
1/14/2013	24.00	924.79	927.32	1.01	2015.86	1578.14	0.00	924.06	926.69	4.17	8347.34	1674.70	0.00	5.18	10363.20	3252.84
1/15/2013	24.00	924.87	932.13	0.83	1659.98	1578.97	0.00	923.86	929.61	4.38	8764.46	1679.08	0.00	5.21	10424.45	3258.06
1/16/2013	24.00	924.85	926.46	0.81	1618.95	1579.78	0.00	923.90	925.43	4.26	8519.51	1683.34	0.00	5.07	10138.46	3263.13
1/17/2013	24.00	924.81	927.09	0.90	1791.96	1580.68	0.00	923.92	926.14	4.26	8521.53	1687.60	0.00	5.16	10313.49	3268.28
1/18/2013	24.00	924.89	927.24	0.86	1722.28	1581.54	0.00	923.79	926.46	4.36	8727.24	1691.97	0.00	5.22	10449.53	3273.51
1/19/2013	24.00	924.88	926.77	0.83	1663.51	1582.37	0.00	923.89	925.83	4.20	8405.77	1696.17	0.00	5.03	10069.28	3278.54
1/20/2013	24.00	924.91	927.64	0.85	1695.52	1583.22	0.00	923.91	926.46	4.32	8643.87	1700.49	0.00	5.17	10339.39	3283.71
1/21/2013	20.84	923.58	926.69	1.00	1997.55	1584.22	0.00	922.40	925.75	4.27	8533.75	1704.76	0.00	5.27	10531.30	3288.98
1/22/2013	24.00	924.85	927.24	1.35	2691.42	1585.56	0.00	923.67	926.14	5.21	10416.71	1709.97	0.01	6.55	13108.13	3295.53
1/23/2013	14.50	921.78	931.81	0.79	1584.40	1586.36	0.00	921.06	928.27	3.42	6830.72	1713.38	0.00	4.21	8415.13	3299.74
1/24/2013	22.11	967.68	1025.20	1.64	3280.39	1588.00	0.00	965.11	1020.9	9.10	18207.10	1722.49	0.01	10.74	21487.49	3310.48
1/25/2013	24.00	1033.04	1058.40	2.52	5030.29	1590.51	0.00	1029.24	1038.2	14.65	29294.75	1737.13	0.01	17.16	34325.04	3327.64
1/26/2013	17.58	1025.25	1047.10	1.98	3964.25	1592.49	0.00	1021.44	1042.3	10.53	21063.59	1747.67	0.01	12.51	25027.84	3340.16
1/27/2013	17.48	1040.20	1051.50	1.81	3614.25	1594.30	0.00	1036.33	1047	10.83	21665.92	1758.50	0.01	12.64	25280.17	3352.80
1/28/2013	9.22	919.20	932.13	0.52	1033.56	1594.82	0.00	918.51	928.19	2.66	5318.83	1761.16	0.00	3.18	6352.40	3355.98
1/29/2013	24.00	987.99	1039.90	1.71	3411.85	1596.52	0.00	985.05	1035.5	11.87	23730.79	1773.02	0.01	13.57	27142.63	3369.55
1/30/2013	19.30	1028.48	1055.00	2.04	4082.65	1598.56	0.00	1024.79	1050.7	11.98	23957.48	1785.00	0.01	14.02	28040.13	3383.57
1/31/2013	22.62	1030.27	1045.60	2.12	4248.36	1600.69	0.00	1026.52	1041.2	14.01	28019.18	1799.01	0.01	16.13	32267.54	3399.70
2/1/2013	24.00	1034.75	1045.20	2.08	4165.64	1602.77	0.00	1031.11	1040.8	14.96	29927.23	1813.98	0.01	17.05	34092.87	3416.75
2/2/2013	24.00	1039.50	1048.20	2.17	4345.58	1604.94	0.00	1035.88	1043.2	14.98	29954.32	1828.95	0.01	17.15	34299.91	3433.90
2/3/2013	24.00	1044.33	1050.50	2.32	4631.74	1607.26	0.00	1040.42	1045.8	15.02	30041.36	1843.97	0.01	17.34	34673.10	3451.23
2/4/2013	24.00	1045.02	1050.90	2.32	4631.26	1609.58	0.00	1041.13	1046.6	15.08	30169.51	1859.06	0.01	17.40	34800.77	3468.63
2/5/2013	20.86	1041.43	1053.90	2.12	4247.56	1611.70	0.00	1037.39	1049.1	13.03	26068.24	1872.09	0.01	15.16	30315.80	3483.79
2/6/2013	24.00	1042.29	1049.50	2.27	4540.86	1613.97	0.00	1038.40	1044.9	14.88	29758.41	1886.97	0.01	17.15	34299.27	3500.94
2/7/2013	24.00	1046.58	1054.20	2.26	4524.45	1616.23	0.00	1042.62	1049.4	14.98	29960.20	1901.95	0.01	17.24	34484.65	3518.18
2/8/2013	24.00	1210.20	1377.30	8.65	17292.66	1624.88	0.01	963.76	1044.3	7.48	14962.04	1909.43	0.01	16.13	32254.71	3534.31
2/9/2013	24.00	1314.74	1350.50	14.63	29263.89	1639.51	0.01	819.86	850.96	0.85	1703.53	1910.28	0.00	15.48	30967.42	3549.79
2/10/2013	24.00	1289.46	1305.40	14.91	29823.10	1654.42	0.01	780.06	795.88	0.91	1811.69	1911.19	0.00	15.82	31634.78	3565.61
2/11/2013	11.53	1282.86	1293.20	7.20	14390.14	1661.62	0.01	760.70	766.17	0.50	996.04	1911.69	0.00	7.69	15386.18	3573.31
3/11/2013	9.21	1201.15	1334.30	5.43	10865.57	1667.05	0.00	677.06	686.18	0.22	447.64	1911.91	0.00	5.66	11313.21	3578.96

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
3/12/2013	17.57	1333.02	1343.80	10.38	20751.04	1677.43	0.01	671.98	678.85	1.82	3633.10	1913.73	0.00	12.19	24384.14	3591.15
3/13/2013	0.04	862.94	970.59	0.00	0.00	1677.43	0.00	676.35	678.22	0.00	1.68	1913.73	0.00	0.00	1.68	3591.16
3/14/2013	0.00	0.00	787.92	0.00	0.00	1677.43		0.00	675.15	0.00	0.00	1913.73		0.00	0.00	3591.16
3/15/2013	0.00	0.00	744.81	0.00	0.00	1677.43		0.00	678.93	0.00	0.00	1913.73		0.00	0.00	3591.16
3/16/2013	0.00	0.00	740.71	0.00	0.00	1677.43		0.00	679.56	0.00	0.00	1913.73		0.00	0.00	3591.16
3/17/2013	0.00	0.00	736.30	0.00	0.00	1677.43		0.00	675.46	0.00	0.00	1913.73		0.00	0.00	3591.16
3/18/2013	0.00	0.00	728.02	0.00	0.00	1677.43		0.00	677.12	0.00	0.00	1913.73		0.00	0.00	3591.16
3/19/2013	0.00	0.00	724.72	0.00	0.00	1677.43		0.00	679.88	0.00	0.00	1913.73		0.00	0.00	3591.16
3/20/2013	0.00	0.00	713.92	0.00	0.00	1677.43		0.00	673.33	0.00	0.00	1913.73		0.00	0.00	3591.16
3/21/2013	0.04	709.01	711.55	0.01	22.18	1677.44	0.00	667.89	668.92	0.00	1.58	1913.73	0.00	0.01	23.76	3591.17
3/22/2013	0.00	0.00	709.27	0.00	0.00	1677.44		0.00	670.34	0.00	0.00	1913.73		0.00	0.00	3591.17
3/23/2013	0.00	0.00	722.19	0.00	0.00	1677.44		0.00	677.12	0.00	0.00	1913.73		0.00	0.00	3591.17
3/24/2013	0.00	0.00	702.89	0.00	0.00	1677.44		0.00	670.34	0.00	0.00	1913.73		0.00	0.00	3591.17
3/25/2013	0.00	0.00	699.89	0.00	0.00	1677.44		0.00	671.29	0.00	0.00	1913.73		0.00	0.00	3591.17
3/26/2013	0.00	0.00	698.63	0.00	0.00	1677.44		0.00	674.44	0.00	0.00	1913.73		0.00	0.00	3591.17
3/27/2013	0.00	0.00	696.35	0.00	0.00	1677.44		0.00	673.49	0.00	0.00	1913.73		0.00	0.00	3591.17
3/28/2013	0.00	0.00	694.38	0.00	0.00	1677.44		0.00	674.91	0.00	0.00	1913.73		0.00	0.00	3591.17
3/29/2013	0.00	0.00	701.70	0.00	0.00	1677.44		0.00	677.98	0.00	0.00	1913.73		0.00	0.00	3591.17
3/30/2013	0.00	0.00	709.11	0.00	0.00	1677.44		0.00	683.74	0.00	0.00	1913.73		0.00	0.00	3591.17
3/31/2013	0.00	0.00	687.83	0.00	0.00	1677.44		0.00	674.99	0.00	0.00	1913.73		0.00	0.00	3591.17
4/1/2013	0.00	0.00	688.31	0.00	0.00	1677.44		0.00	674.36	0.00	0.00	1913.73		0.00	0.00	3591.17
4/2/2013	0.00	0.00	687.91	0.00	0.00	1677.44		0.00	672.23	0.00	0.00	1913.73		0.00	0.00	3591.17
4/3/2013	0.00	0.00	692.01	0.00	0.00	1677.44		0.00	675.23	0.00	0.00	1913.73		0.00	0.00	3591.17
4/4/2013	0.00	0.00	692.56	0.00	0.00	1677.44		0.00	676.09	0.00	0.00	1913.73		0.00	0.00	3591.17
4/5/2013	0.00	0.00	701.23	0.00	0.00	1677.44		0.00	683.26	0.00	0.00	1913.73		0.00	0.00	3591.17
4/6/2013	0.00	0.00	699.66	0.00	0.00	1677.44		0.00	682.32	0.00	0.00	1913.73		0.00	0.00	3591.17
4/7/2013	0.00	0.00	719.20	0.00	0.00	1677.44		0.00	686.81	0.00	0.00	1913.73		0.00	0.00	3591.17
4/8/2013	0.00	0.00	722.67	0.00	0.00	1677.44		0.00	689.17	0.00	0.00	1913.73		0.00	0.00	3591.17
4/9/2013	0.00	0.00	722.90	0.00	0.00	1677.44		0.00	688.94	0.00	0.00	1913.73		0.00	0.00	3591.17
4/10/2013	0.00	0.00	712.66	0.00	0.00	1677.44		0.00	685.86	0.00	0.00	1913.73		0.00	0.00	3591.17
4/11/2013	0.00	0.00	674.44	0.00	0.00	1677.44		0.00	687.68	0.00	0.00	1913.73		0.00	0.00	3591.17
4/12/2013	0.00			0.00	0.00	1677.44				0.00	0.00	1913.73		0.00	0.00	3591.17
4/13/2013	0.00			0.00	0.00	1677.44				0.00	0.00	1913.73		0.00	0.00	3591.17
4/14/2013	0.00			0.00	0.00	1677.44				0.00	0.00	1913.73		0.00	0.00	3591.17
4/15/2013	0.00			0.00	0.00	1677.44				0.00	0.00	1913.73		0.00	0.00	3591.17
4/16/2013	0.00	0.00	664.19	0.00	0.00	1677.44		0.00	685.23	0.00	0.00	1913.73		0.00	0.00	3591.17
4/17/2013	0.00	0.00	661.83	0.00	0.00	1677.44		0.00	682.63	0.00	0.00	1913.73		0.00	0.00	3591.17
4/18/2013	0.00	0.00	660.49	0.00	0.00	1677.44		0.00	688.46	0.00	0.00	1913.73		0.00	0.00	3591.17
4/19/2013	0.00	0.00	659.23	0.00	0.00	1677.44		0.00	682.95	0.00	0.00	1913.73		0.00	0.00	3591.17
4/20/2013	0.00	0.00	655.60	0.00	0.00	1677.44		0.00	684.6	0.00	0.00	1913.73		0.00	0.00	3591.17
4/21/2013	0.00	0.00	655.29	0.00	0.00	1677.44		0.00	684.13	0.00	0.00	1913.73		0.00	0.00	3591.17
4/22/2013	0.00	0.00	653.79	0.00	0.00	1677.44		0.00	686.42	0.00	0.00	1913.73		0.00	0.00	3591.17
4/23/2013	8.72	1206.58	1323.40	4.97	9938.19	1682.41	0.00	677.84	687.52	0.19	373.88	1913.92	0.00	5.16	10312.07	3596.32
4/24/2013	24.00	1332.20	1350.70	13.03	26058.80	1695.44	0.01	668.14	687.44	0.58	1159.83	1914.50	0.00	13.61	27218.63	3609.93
4/25/2013	24.00	1320.11	1334.00	13.37	26737.81	1708.80	0.01	667.81	686.81	1.45	2891.73	1915.94	0.00	14.81	29629.54	3624.75
4/26/2013	24.00	1302.15	1316.20	13.94	27876.05	1722.74	0.01	667.86	687.91	1.00	2006.42	1916.95	0.00	14.94	29882.47	3639.69
4/27/2013	24.00	1277.83	1299.80	15.22	30444.73	1737.96	0.01	669	687.6	1.19	2387.68	1918.14	0.00	16.42	32832.41	3656.11
4/28/2013	24.00	1251.16	1268.20	15.59	31170.76	1753.55	0.01	672.94	686.02	0.52	1042.41	1918.66	0.00	16.11	32213.17	3672.21
4/29/2013	22.40	1236.84	1249.00	14.53	29051.14	1768.08	0.01	677.05	685.94	0.49	975.53	1919.15	0.00	15.01	30026.68	3687.22
4/30/2013	23.94	1236.87	1248.50	15.48	30965.33	1783.56	0.01	676.40	689.65	0.51	1024.30	1919.66	0.00	15.99	31989.63	3703.22
5/1/2013	9.28	1228.28	1235.00	6.00	12006.65	1789.56	0.00	664.87	689.25	0.21	411.25	1919.87	0.00	6.21	12417.90	3709.43
6/24/2013	11.44	1107.73	1199.50	6.95	13901.74	1796.89	0.01	788.00	789.81	0.25	500.73	1920.13	0.00	7.20	14404.47	3717.03
6/25/2013	16.37	1224.18	1266.80	9.76	19525.69	1806.66	0.01	789.76	792.8	0.36	726.65	1920.50	0.00	10.13	20255.34	3727.15
6/26/2013	10.76	1241.03	1275.30	6.44	12880.16	1813.10	0.01	794.19	794.77	0.24	480.34	1920.74	0.00	6.68	13360.50	3733.83
6/27/2013	14.72	1270.08	1283.30	8.99	17971.09	1822.08	0.01	795.76	798.16	0.33	668.64	1921.07	0.00	9.32	18639.73	3743.15

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
6/28/2013	14.29	1241.37	1278.30	8.65	17307.08	1830.74	0.01	800.98	802.34	0.33	653.74	1921.40	0.00	8.98	17960.82	3752.13
6/29/2013	19.57	1270.17	1286.20	12.60	25196.78	1843.34	0.01	804.18	806.04	0.45	896.08	1921.84	0.00	13.05	26092.86	3765.18
6/30/2013	24.00	1263.92	1274.80	15.21	30428.92	1858.55	0.01	807.46	809.75	0.55	1093.99	1922.39	0.00	15.76	31522.91	3780.94
7/1/2013	24.00	1250.64	1262.50	15.42	30837.22	1873.97	0.01	810.53	812.43	0.55	1095.66	1922.94	0.00	15.97	31932.88	3796.91
7/2/2013	24.00	1246.97	1254.30	15.46	30926.75	1889.43	0.01	814.02	816.13	0.55	1096.05	1923.49	0.00	16.01	32022.80	3812.92
7/3/2013	24.00	1239.17	1246.10	15.26	30528.62	1904.70	0.01	817.11	819.52	0.54	1087.49	1924.03	0.00	15.81	31616.11	3828.73
7/4/2013	24.00	1235.12	1242.70	15.32	30643.41	1920.02	0.01	819.26	821.57	0.54	1087.33	1924.57	0.00	15.87	31730.74	3844.59
7/5/2013	24.00	1232.70	1239.70	15.41	30828.76	1935.43	0.01	821.03	823.06	0.55	1097.13	1925.12	0.00	15.96	31925.86	3860.56
7/6/2013	19.86	1222.03	1237.80	12.63	25257.27	1948.06	0.01	822.68	825.43	0.45	903.14	1925.57	0.00	13.08	26160.42	3873.64
7/7/2013	24.00	1224.91	1235.80	15.46	30916.61	1963.52	0.01	823.13	824.48	0.55	1100.79	1926.13	0.00	16.01	32017.40	3889.65
7/8/2013	24.00	1229.03	1236.60	15.38	30755.27	1978.90	0.01	824.23	826.37	0.55	1096.33	1926.67	0.00	15.93	31851.60	3905.57
7/9/2013	22.08	1218.53	1231.90	14.23	28451.82	1993.12	0.01	824.92	826.93	0.50	1000.35	1927.17	0.00	14.73	29452.16	3920.30
7/10/2013	24.00	1218.33	1230.30	15.42	30833.09	2008.54	0.01	825.76	828.42	0.54	1089.72	1927.72	0.00	15.96	31922.81	3936.26
7/11/2013	24.00	1220.29	1226.60	15.50	30995.32	2024.04	0.01	825.46	827.08	0.55	1107.99	1928.27	0.00	16.05	32103.31	3952.31
7/12/2013	24.00	1213.26	1225.80	15.55	31100.00	2039.59	0.01	824.66	827.00	0.56	1120.00	1928.83	0.00	16.11	32220.00	3968.42
7/13/2013	22.94	1213.08	1224.10	14.84	29680.00	2054.43	0.01	825.76	828.27	0.53	1060.00	1929.36	0.00	15.37	30740.00	3983.79
7/14/2013	24.00	1216.23	1224.20	15.39	30780.00	2069.82	0.01	827.54	830.39	0.54	1080.00	1929.90	0.00	15.93	31860.00	3999.72
7/15/2013	20.43	1215.46	1223.50	13.06	26120.00	2082.88	0.01	829.80	832.84	0.46	920.00	1930.36	0.00	13.52	27040.00	4013.24
7/16/2013	15.76	1191.04	1208.80	10.21	20420.00	2093.09	0.01	836.41	838.43	0.64	1280.00	1931.00	0.00	10.85	21700.00	4024.09
7/17/2013	24.00	1214.10	1224.00	15.44	30880.00	2108.53	0.01	840.67	843.32	1.16	2320.00	1932.16	0.00	16.60	33200.00	4040.69
7/18/2013	24.00	1218.97	1226.70	15.38	30760.00	2123.91	0.01	841.00	842.92	1.08	2160.00	1933.24	0.00	16.46	32920.00	4057.15
7/19/2013	24.00	1189.65	1223.30	13.33	26660.00	2137.24	0.01	832.70	864.59	5.47	10940.00	1938.71	0.01	18.80	37600.00	4075.95
7/20/2013	24.00	1188.61	1216.10	14.10	28200.00	2151.34	0.01	798.56	877.91	4.88	9760.00	1943.59	0.01	18.98	37960.00	4094.93
7/21/2013	24.00	1185.01	1211.70	13.99	27980.00	2165.33	0.01	814.80	892.10	4.38	8760.00	1947.97	0.01	18.37	36740.00	4113.30
7/22/2013	22.74	1184.20	1203.10	14.16	28323.19	2179.49	0.01	801.04	889.89	2.90	5796.96	1950.87	0.00	17.06	34120.16	4130.36
7/23/2013	23.06	1187.54	1209.90	14.19	28384.32	2193.68	0.01	758.51	884.30	2.92	5834.52	1953.79	0.00	17.11	34218.84	4147.47
7/24/2013	22.66	1192.02	1205.10	14.91	29812.03	2208.59	0.01	741.95	816.76	1.04	2086.06	1954.83	0.00	15.95	31898.09	4163.42
7/25/2013	24.00	1198.93	1207.90	15.73	31450.32	2224.31	0.01	702.29	713.92	0.99	1980.91	1955.82	0.00	16.72	33431.23	4180.13
7/26/2013	23.12	1185.31	1204.00	14.35	28690.55	2238.66	0.01	755.66	883.90	2.17	4345.11	1957.99	0.00	16.52	33035.66	4196.65
7/27/2013	23.90	1202.66	1211.10	16.13	32253.26	2254.78	0.01	711.52	721.72	0.00	0.00	1957.99	0.00	16.13	32253.26	4212.78
7/28/2013	21.29	1194.13	1207.70	14.30	28599.47	2269.08	0.01	706.11	708.95	0.00	0.00	1957.99	0.00	14.30	28599.47	4227.08
7/29/2013	23.79	1177.47	1208.50	14.19	28387.23	2283.28	0.01	794.46	919.36	4.60	9191.34	1962.59	0.01	18.79	37578.57	4245.87
7/30/2013	23.89	1156.64	1167.80	12.76	25513.84	2296.03	0.01	936.67	957.58	9.02	18045.25	1971.61	0.01	21.78	43559.09	4267.65
7/31/2013	20.77	1141.33	1152.80	10.98	21955.01	2307.01	0.01	953.44	965.46	8.12	16237.94	1979.73	0.01	19.10	38192.95	4286.74
8/1/2013	24.00	1146.39	1155.70	12.47	24943.35	2319.48	0.01	967.46	973.19	9.55	19092.41	1989.28	0.01	22.02	44035.76	4308.76
8/2/2013	19.92	1141.00	1155.20	10.77	21537.25	2330.25	0.01	962.00	974.61	7.53	15056.28	1996.81	0.01	18.30	36593.53	4327.06
8/3/2013	15.01	1127.93	1152.80	8.04	16078.50	2338.29	0.01	952.25	972.24	5.73	11469.90	2002.54	0.01	13.77	27548.40	4340.83
8/4/2013	15.17	1112.58	1136.30	7.59	15185.36	2345.88	0.01	958.93	977.05	6.42	12848.40	2008.96	0.01	14.02	28033.76	4354.85
8/5/2013	24.00	1132.14	1147.70	11.82	23641.30	2357.71	0.01	978.72	984.54	10.22	20435.19	2019.18	0.01	22.04	44076.50	4376.89
8/6/2013	18.38	1145.68	1159.80	9.49	18977.54	2367.19	0.01	981.02	990.29	7.48	14963.99	2026.66	0.01	16.97	33941.53	4393.86
8/7/2013	12.55	1119.17	1148.60	6.44	12883.06	2373.64	0.01	959.96	983.12	5.11	10229.28	2031.78	0.01	11.56	23112.34	4405.41
8/8/2013	14.74	1116.76	1138.30	7.39	14780.87	2381.03	0.01	960.75	981.38	6.20	12398.00	2037.98	0.01	13.59	27178.87	4419.00
8/9/2013	24.00	1137.52	1151.00	12.07	24139.91	2393.10	0.01	979.94	985.95	10.02	20034.04	2048.00	0.01	22.09	44173.95	4441.09
8/10/2013	20.40	1138.36	1153.90	10.51	21011.40	2403.60	0.01	977.02	985.8	8.07	16144.39	2056.07	0.01	18.58	37155.80	4459.67
8/11/2013	14.04	1127.16	1147.30	7.45	14904.91	2411.05	0.01	964.04	983.98	5.46	10925.10	2061.53	0.01	12.92	25830.01	4472.58
8/12/2013	24.00	1142.41	1150.20	12.19	24375.40	2423.24	0.01	978.16	986.19	9.70	19392.62	2071.23	0.01	21.88	43768.02	4494.47
8/13/2013	18.76	1132.56	1152.30	9.77	19533.76	2433.01	0.01	976.80	988.95	7.39	14788.07	2078.62	0.01	17.16	34321.83	4511.63
8/14/2013	20.20	1127.29	1142.30	10.60	21204.88	2443.61	0.01	972.97	985.24	8.10	16205.09	2086.72	0.01	18.70	37409.97	4530.33
8/15/2013	18.75	1124.96	1148.10	8.97	17948.27	2452.59	0.01	976.43	987.53	7.46	14910.43	2094.18	0.01	16.43	32858.70	4546.76
8/16/2013	24.00	1110.44	1133.10	11.00	22001.24	2463.59	0.01	987.56	1008.8	11.00	22003.07	2105.18	0.01	22.00	44004.31	4568.77
8/17/2013	13.91	1093.49	1114.40	6.22	12436.15	2469.80	0.01	981.22	1001	6.58	13157.86	2111.76	0.01	12.80	25594.01	4581.56
8/18/2013	16.53	1095.15	1112.90	7.42	14830.98	2477.22	0.01	977.13	994.86	7.79	15581.66	2119.55	0.01	15.21	30412.64	4596.77
8/19/2013	24.00	1111.58	1122.60	10.52	21049.00	2487.74	0.01	995.56	1005.7	11.54	23081.36	2131.09	0.01	22.07	44130.36	4618.83
8/20/2013	18.18	1105.50	1121.80	8.06	16116.11	2495.80	0.01	992.62	1008.5	8.59	17172.60	2139.68	0.01	16.64	33288.71	4635.48
8/21/2013	18.25	1103.23	1119.30	8.34	16688.82	2504.15	0.01	985.16	1001.5	8.37	16742.31	2148.05	0.01	16.72	33431.13	4652.19
8/22/2013	24.00	1120.59	1129.30	10.97	21949.21	2515.12	0.01	995.33	1002.6	10.88	21765.81	2158.93	0.01	21.86	43715.02	4674.05
8/23/2013	20.31	1109.56	1129.80	9.35	18698.37	2524.47	0.01	994.39	1006.4	9.26	18522.41	2168.19	0.01	18.61	37220.77	4692.66
8/24/2013	16.77	1097.09	1114.80	7.52	15040.54	2531.99	0.01	988.74	1004.7	7.89	15784.72	2176.08	0.01	15.41	30825.26	4708.07
8/25/2013	20.42	1103.19	1118.70	8.90	17800.48	2540.89	0.01	994.67	1008.1	9.59	19170.65	2185.67	0.01	18.49	36971.13	4726.56
8/26/2013	24.00	1112.70	1120.00	10.67	21331.68	2551.56	0.01	1002.13	1010.6	11.23	22466.13	2196.90	0.01	21.90	43797.81	4748.46
8/27/2013	15.16	1099.37	1117.90	6.83	13660.06	2558.39	0.01	989.64	1007.8	6.94	13875.42	2203.84	0.01	13.77	27535.48	4762.23
8/28/2013	24.00	1110.86	1118.90	10.69	21370.98	2569.07	0.01	1001.07	1007.7	11.14	22274.55	2214.98	0.01	21.82	43645.53	4784.05
8/29/2013	21.54	1107.82	1122.20	9.62	19242.63	2578.69	0.01	1003.89	1015.9	9.77	19540.39	2224.75	0.01	19.39	38783.02	4803.44
8/30/2013	15.11	1096.75	1116.00	6.88	13761.55	2585.57	0.01	991.29	1008.5	6.76	13523.09	2231.51	0.01	13.64	27284.64	4817.08
8/31/2013	17.15	1095.25	1113.00	7.75	15507.56	2593.33	0.01	990.19	1003.9	7.94	15880.26	2239.45	0.01	15.69	31387.82	4832.78
9/1/2013	22.90	1105.55	1114.00	10.24	20487.30	2603.57	0.01	1003.46	1009.8	10.72	21436.46	2250.17	0.01	20.96	41923.75	4853.74
9/2/2013	22.13	1106.20	1118.00	9.92	19834.91	2613.49	0.01	1006.76	1014.5	10.09	20171.74	2260.25	0.01	20.00	40006.65	4873.74
9/3/2013	24.00	1107.58	1116.50	10.89	21789.36	2624.38	0.01	1009.83	1016.5	11.11	22219.31	2271.36	0.01	22.00	44008.67	4895.75
9/4/2013	13.71	1109.17	1116.30	6.35	12705.99	2630.74	0.01	1011.79	1017.2	6.31	12627.38	2277.68	0.01	12.67	25333.37	4908.41
9/5/2013	0.00	0.00	919.28	0.00	0.00	2630.74		0.00	904.08	0.00	0.00	2277.68		0.00	0.00	4908.41
9/6/2013	0.00	0.00	867.83	0.00	0.00	2630.74		0.00	853.33	0.00	0.00	2277.68		0.00	0.00	4908.41
9/7/2013	0.00	0.00	840.23	0.00	0.00	2630.74		0.00	825.19	0.00	0.00	2277.68		0.00	0.00	4908.41
9/8/2013	0.00	0.00	833.31	0.00	0.00	2630.74		0.00	809.67	0.00	0.00	2277.68		0.00	0.00	4908.41
9/9/2013	0.00	0.00	814.08	0.00	0.00	2630.74		0.00	794.06	0.00	0.00	2277.68		0.00	0.00	4908.41
9/10/2013	0.00	0.00	788.23	0.00	0.00	2630.74		0.00	773.42	0.00	0.00	2277.68		0.00	0.00	4908.41
9/11/2013	0.00	0.00	776.25	0.00	0.00	2630.74		0.00	760.57	0.00	0.00	2277.68		0.00	0.00	4908.41
9/12/2013	0.00	0.00	779.48	0.00	0.00	2630.74		0.00	751.59	0.00	0.00	2277.68		0.00	0.00	4908.41
9/13/2013	0.00	0.00	0.00	0.00	0.00	2630.74		0.00	0	0.00	0.00	2277.68		0.00	0.00	4908.41
9/14/2013	0.00	0.00	0.00	0.00	0.00	2630.74		0.00	0	0.00	0.00	2277.68		0.00	0.00	4908.41
9/15/2013	0.00	0.00	0.00	0.00	0.00	2630.74		0.00	0	0.00	0.00	2277.68		0.00	0.00	4908.41
9/16/2013	0.00	0.00	820.94	0.00	0.00	2630.74		0.00	734.57	0.00	0.00	2277.68		0.00	0.00	4908.41
9/17/2013	0.00	0.00	840.48	0.00	0.00	2630.74		0.00	744.18	0.00	0.00	2277.68		0.00	0.00	4908.41
9/18/2013	0.00	0.00	831.42	0.00	0.00	2630.74		0.00	734.33	0.00	0.00	2277.68		0.00	0.00	4908.41
9/19/2013	0.00	0.00	835.91	0.00	0.00	2630.74		0.00	708.72	0.00	0.00	2277.68		0.00	0.00	4908.41
9/20/2013	0.00	0.00	830.63	0.00	0.00	2630.74		0.00	702.81	0.00	0.00	2277.68		0.00	0.00	4908.41
9/21/2013	0.00	0.00	804.15	0.00	0.00	2630.74		0.00	695.24	0.00	0.00	2277.68		0.00	0.00	4908.41
9/22/2013	0.00	0.00	821.57	0.00	0.00	2630.74		0.00	704.7	0.00	0.00	2277.68		0.00	0.00	4908.41
9/23/2013	0.00	0.00	807.07	0.00	0.00	2630.74		0.00	712.97	0.00	0.00	2277.68		0.00	0.00	4908.41
9/24/2013	0.00	0.00	836.07	0.00	0.00	2630.74		0.00	723.38	0.00	0.00	2277.68		0.00	0.00	4908.41
9/25/2013	0.00	0.00	838.67	0.00	0.00	2630.74		0.00	724.32	0.00	0.00	2277.68		0.00	0.00	4908.41
9/26/2013	0.00	0.00	833.78	0.00	0.00	2630.74		0.00	711.71	0.00	0.00	2277.68		0.00	0.00	4908.41
9/27/2013	0.00	0.00	833.47	0.00	0.00	2630.74		0.00	720.14	0.00	0.00	2277.68		0.00	0.00	4908.41
9/28/2013	0.00	0.00	826.58	0.00	0.00	2630.74		0.00	718.33	0.00	0.00	2277.68		0.00	0.00	4908.41
9/29/2013	0.00	0.00	830.16	0.00	0.00	2630.74		0.00	715.49	0.00	0.00	2277.68		0.00	0.00	4908.41
9/30/2013	0.00	0.00	815.34	0.00	0.00	2630.74		0.00	691.46	0.00	0.00	2277.68		0.00	0.00	4908.41
10/1/2013	0.00	0.00	824.96	0.00	0.00	2630.74		0.00	688.15	0.00	0.00	2277.68		0.00	0.00	4908.41
10/2/2013	0.00	0.00	826.93	0.00	0.00	2630.74		0.00	705.86	0.00	0.00	2277.68		0.00	0.00	4908.41
10/3/2013	0.00	0.00	821.72	0.00	0.00	2630.74		0.00	683.34	0.00	0.00	2277.68		0.00	0.00	4908.41
10/4/2013	0.00	0.00	820.23	0.00	0.00	2630.74		0.00	682.87	0.00	0.00	2277.68		0.00	0.00	4908.41
10/5/2013	0.00	0.00	819.52	0.00	0.00	2630.74		0.00	682.71	0.00	0.00	2277.68		0.00	0.00	4908.41
10/6/2013	0.00	0.00	815.26	0.00	0.00	2630.74		0.00	682.63	0.00	0.00	2277.68		0.00	0.00	4908.41
10/7/2013	0.00	0.00	797.22	0.00	0.00	2630.74		0.00	686.57	0.00	0.00	2277.68		0.00	0.00	4908.41
10/8/2013	0.00	0.00	811.48	0.00	0.00	2630.74		0.00	710.69	0.00	0.00	2277.68		0.00	0.00	4908.41
10/9/2013	0.00	0.00	810.22	0.00	0.00	2630.74		0.00	712.11	0.00	0.00	2277.68		0.00	0.00	4908.41
10/10/2013	0.00	0.00	809.59	0.00	0.00	2630.74		0.00	707.77	0.00	0.00	2277.68		0.00	0.00	4908.41
10/11/2013	0.00	0.00	779.56	0.00	0.00	2630.74		0.00	690.75	0.00	0.00	2277.68		0.00	0.00	4908.41
10/12/2013	0.00	0.00	804.47	0.00	0.00	2630.74		0.00	691.07	0.00	0.00	2277.68		0.00	0.00	4908.41
10/13/2013	0.00	0.00	806.59	0.00	0.00	2630.74		0.00	690.28	0.00	0.00	2277.68		0.00	0.00	4908.41

Cumulative Injection Summary

Daily Values

Total Tons Injected	4968.20
MH-18 Total Tons	2690.52
MH-20 Total Tons	2277.68
Total Injection Hours	12735.47

(Empty cell) No Data Collected
Manual Injection Period
Unidentified Interruption
Boiler Trip
Water Pump Failure
tank over pressurizing
Gas Supply Problems
Cold End
Power Loss
Low CO2 Tank Level
Booster pump failure
New Pump & Logic Install
Communication Loss
Injection Pressure Upgrades
Pump Drive Skid Rebuild
Check Valve Installation
high CO2 in monitoring well

	Pump	MH-18						MH-20						Total		
Date	"On" (hours)	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-18 Tons Cumulative	MH-18 Injectivity	Avg Injection Pressure	Daily Max Inj Pressure	Tons Injected	Lbs Injected	MH-20 Tons Cumulative	MH-20 Injectivity	Tons Injected	Lbs Injected	Total Cumulative Tons
10/14/2013	0.00	0.00	776.86	0.00	0.00	2630.74		0.00	680.03	0.00	0.00	2277.68		0.00	0.00	4908.41
10/15/2013	0.00	0.00	798.63	0.00	0.00	2630.74		0.00	683.03	0.00	0.00	2277.68		0.00	0.00	4908.41
10/16/2013	0.00	0.00	785.47	0.00	0.00	2630.74		0.00	692.41	0.00	0.00	2277.68		0.00	0.00	4908.41
10/17/2013	0.00	0.00	769.48	0.00	0.00	2630.74		0.00	682.63	0.00	0.00	2277.68		0.00	0.00	4908.41
10/18/2013	0.00	0.00	791.07	0.00	0.00	2630.74		0.00	711.63	0.00	0.00	2277.68		0.00	0.00	4908.41
10/19/2013	0.00	0.00	767.43	0.00	0.00	2630.74		0.00	694.30	0.00	0.00	2277.68		0.00	0.00	4908.41
10/20/2013	0.00	0.00	775.86	0.00	0.00	2630.74		0.00	717.94	0.00	0.00	2277.68		0.00	0.00	4908.41
10/21/2013	0.00	0.00	791.31	0.00	0.00	2630.74		0.00	726.69	0.00	0.00	2277.68		0.00	0.00	4908.41
10/22/2013	0.00	0.00	771.37	0.00	0.00	2630.74		0.00	700.92	0.00	0.00	2277.68		0.00	0.00	4908.41
10/23/2013	0.00	0.00	762.07	0.00	0.00	2630.74		0.00	660.19	0.00	0.00	2277.68		0.00	0.00	4908.41
10/24/2013	14.84	1108.55	1131.50	7.82	15640.00	2638.56	0.01	0.00	685.16	0.00	0.00	2277.68		7.82	15640.00	4916.23
10/25/2013	10.97	1136.35	1143.80	5.67	11330.60	2644.22	0.00	679.89	701.07	0.00	0.00	2277.68	0.00	5.67	11330.60	4921.90
10/26/2013	0.00	0.00	803.76	0.00	0.00	2644.22		0.00	715.18	0.00	0.00	2277.68		0.00	0.00	4921.90
10/27/2013	0.00	0.00	779.56	0.00	0.00	2644.22		0.00	722.11	0.00	0.00	2277.68		0.00	0.00	4921.90
10/28/2013	14.71	1131.96	1158.00	7.58	15154.51	2651.80	0.01	700.50	733.07	0.00	0.00	2277.68	0.00	7.58	15154.51	4929.48
10/29/2013	24.00	1158.17	1172.90	12.46	24928.18	2664.26	0.01	691.52	739.85	0.00	0.00	2277.68	0.00	12.46	24928.18	4941.94
10/30/2013	24.00	1168.95	1174.80	12.51	25016.32	2676.77	0.01	713.71	735.98	0.00	0.00	2277.68	0.00	12.51	25016.32	4954.45
10/31/2013	24.00	1165.60	1173.30	12.45	24907.94	2689.23	0.01	731.70	747.81	0.00	0.00	2277.68	0.00	12.45	24907.94	4966.90
11/1/2013	2.29	1164.39	1166.30	1.18	2362.92	2690.41	0.00	740.82	745.20	0.00	1.91	2277.68	0.00	1.18	2364.83	4968.08
11/2/2013	0.29	867.30	943.87	0.11	224.37	2690.52	0.00	691.90	698.47	0.00	0.49	2277.68	0.00	0.11	224.86	4968.20
Do not delete this shaded area. Highlight the entire row above and select "insert" to add additional entries and automatically advance data graphs each month.																

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/09/09
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: November, 2009

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	ANNULUS PRESSURES		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
11/21/09	3.66			373		15.59	15.59	531.10	1152.074
11/22/09	3.22			391		31.295	46.885	1211.79	1234.365
11/23/09	1.83			345		12.75	53.635	867.12	1211.922
11/24/09	7.00			410		35.595	95.23	634.01	1181.998
TOTALS									

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

WR-40

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/09/09
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: November, 2009

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	ANNULUS PRESSURES		MAXIMUM DAILY INJECTION PRESSURE	SHUT IN PRESSURE	VOLUME IN MCF.		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	AVERAGE	MAXIMUM
11/21/09	3.66			393		15.920	15.590	542.34	1181.998
11/22/09	3.22			413		30.235	46.115	1170.75	1167.036
11/23/09	1.83			346		12.325	58.480	838.21	1219.403
11/24/09	7.00			436		34.050	92.530	606.50	1211.922
TOTALS									

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY: _____
TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 1/7/10
WELL NO. MH-20
API PERMIT NO. 47- 021 -00930

OPERATOR NAME: CNX Gas Company MONTH: December, 2009

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
12/1/09	6	144	121	472		45.27	45.27		
12/2/09	7	160	110	528		54.90	100.17		
12/3/09	6.5	157	105	530		46.16	146.33		
12/7/09	3.5	171	124	485		22.79	169.12		
12/8/09	5.33	134	90	531		29.84	198.96		
12/15/09	5	140	107	564		35.49	234.45		
12/16/09	8	148	70	571		43.78	278.23		
TOTALS									

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY: RAVI SRIVASTAVA
TITLE: ASSOCIATE ENGINEER

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 1/7/10
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: December, 2009

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
12/1/09	6	183	130	429		51.16	51.16		
12/2/09	7	175	133	461		66.90	118.06		
12/3/09	6.5	165	133	471		57.95	176.01		
12/7/09	3.5	165	140	433		25.61	201.62		
12/8/09	5.33	160	120	465		39.84	241.46		
12/15/09	5	145	125	459		40.43	281.89		
12/16/09	8	151	122	505		66.97	348.86		
TOTALS									

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY: RAVI SRIVASTAVA
TITLE: ASSOCIATE ENGINEER

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 4/5/2010
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: January, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
1/20/2010	11.98	144.35	14.59	478.95		92.12	92.12		
1/21/2010	12.79	135.29	10.92	509.63		89.85	181.97		
1/22/2010	23.76	157.71	18.12	560.67		166.81	348.78		
1/23/2010	23.92	119.29	16.04	578.44		156.03	504.81		
1/24/2010	23.95	108.68	99.00	594.78		149.64	654.45		
1/25/2010	23.96	133.29	88.31	631.03		156.39	810.84		
1/26/2010	23.96	122.53	101.27	646.08		163.07	973.91		
1/27/2010	22.56	143.84	57.89	675.35		142.25	1116.16		
1/28/2010	23.96	107.53	45.11	665.83		139.55	1255.71		
1/29/2010	23.96	117.17	19.41	673.97		129.80	1385.51		
1/30/2010	13.42	106.53	4.96	680.88		68.23	1453.74		
TOTALS	228.22						1453.74		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

IWR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 4/5/2010
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: January, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
1/20/2010	11.98	183.66	10.55	552.33		64.31	64.31		
1/21/2010	12.79	123.84	6.00	592.04		56.49	120.80		
1/22/2010	23.76	72.15	0.64	646.27		58.44	179.24		
1/23/2010	23.92	65.31	0.27	657.68		34.08	213.32		
1/24/2010	23.95	58.17	0.28	663.29		31.16	244.48		
1/25/2010	23.96	62.24	1.45	662.44		51.48	295.96		
1/26/2010	23.96	59.99	0.46	664.00		52.21	338.17		
1/27/2010	22.56	72.14	0.46	676.78		35.89	374.06		
1/28/2010	23.96	56.17	0.47	665.19		40.43	414.49		
1/29/2010	23.96	65.17	0.37	673.89		32.29	446.78		
1/30/2010	13.42	86.07	0.15	680.58		22.22	469.00		
TOTALS	228.22						469.00		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

IWR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 4/5/2010
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: February, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
2/24/2010	13.86	155.21	17.41	662.77		76.97	76.97		
2/25/2010	19.31	156.01	1.84	676.97		84.85	161.82		
2/26/2010	23.96	74.15	2.01	677.08		92.02	253.84		
2/27/2010	23.95	85.66	2.08	681.24		76.01	329.85		
2/28/2010	21.29	85.98	2.06	684.71		51.64	381.49		
TOTALS	102.37						381.49		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 4/5/2010
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: February, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 700 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
2/24/2010	13.86	125.35	0.07	679.90		53.22	53.22		
2/25/2010	19.31	80.15	0.09	694.55		29.53	82.75		
2/26/2010	23.96	60.22	0.08	686.42		33.66	116.41		
2/27/2010	23.95	57.39	0.11	685.12		36.81	153.22		
2/28/2010	21.29	64.23	0.17	684.85		31.74	184.96		
TOTALS	102.37						184.96		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 4/6/2010
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: March, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 700 (3/1-3/15) 933 as of 3/16/2010 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
3/1/2010	23.96	74.86	2.05	691.41		50.04	50.04		
3/2/2010	23.95	66.59	1.96	697.90		35.28	85.32		
3/3/2010	20.64	75.69	1.96	696.36		10.27	95.59		
3/4/2010	23.81	60.86	1.76	696.56		11.41	107.00		
3/5/2010	23.95	64.71	2.40	696.53		9.32	116.32		
3/6/2010	18.74	85.48	2.39	697.66		9.36	125.68		
3/7/2010	15.21	80.61	3.02	693.49		11.92	137.60		
3/8/2010	21.49	58.49	2.73	696.97		7.50	145.10		
3/9/2010	23.14	60.00	3.09	391.38		16.92	162.02		
3/10/2010	22.78	52.61	4.59	395.98		19.85	181.87		
3/11/2010	21.97	42.08	4.97	698.06		15.00	196.87		
3/12/2010	9.88	127.89	5.97	395.37		8.69	205.56		
3/13/2010	3.23	70.36	3.62	660.71		4.20	209.76		
3/14/2010	22.96	55.03	3.19	691.30		17.38	227.14		
3/15/2010	23.76	64.09	3.23	695.25		19.36	246.50		
3/16/2010	22.88	50.86	3.18	698.39		22.03	268.53		
3/17/2010	23.24	80.45	2.81	398.76		26.17	294.70		
3/18/2010	22.98	83.94	3.33	698.76		24.49	319.19		
3/19/2010	23.27	122.96	2.62	698.86		23.01	342.20		
3/20/2010	22.06	117.11	2.25	697.00		10.37	352.57		
3/21/2010	23.53	53.49	2.22	695.83		8.65	361.22		
3/22/2010	23.37	40.77	3.11	694.10		8.71	369.93		
3/23/2010	23.86	109.95	2.96	696.34		6.77	376.70		
3/24/2010	22.71	47.17	3.11	697.04		7.68	384.38		
3/25/2010	20.57	72.80	3.44	698.50		8.24	392.62		
3/26/2010	16.88	107.05	3.37	698.87		17.25	409.87		
3/27/2010	17.21	122.73	3.02	699.17		20.10	429.97		
3/28/2010	22.41	111.80	3.95	698.84		26.47	456.44		
3/29/2010	23.77	87.31	5.33	698.17		34.37	490.81		
3/30/2010	21.29	61.61	5.36	697.88		23.01	513.82		
3/31/2010	20.34	135.36	5.82	717.01		20.77	534.59		
TOTALS	649.84						534.59		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 4/6/2010
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: March, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 700 (3/1-3/15) 933 as of 3/16/2010 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
3/1/2010	23.96	56.37	0.11	690.64		35.01	35.01		
3/2/2010	23.95	77.63	0.09	696.02		29.80	64.81		
3/3/2010	20.64	56.95	0.14	695.91		29.48	94.29		
3/4/2010	23.81	83.02	0.13	695.32		35.53	129.82		
3/5/2010	23.95	74.80	0.16	695.03		35.62	165.44		
3/6/2010	18.74	118.43	0.17	697.16		28.91	194.35		
3/7/2010	15.21	145.14	0.17	695.86		22.65	217.00		
3/8/2010	21.49	83.31	0.11	696.25		33.00	250.00		
3/9/2010	23.14	58.07	0.16	693.97		40.66	290.66		
3/10/2010	22.78	58.22	0.17	696.24		41.63	332.29		
3/11/2010	21.97	60.60	0.63	696.66		41.17	373.46		
3/12/2010	9.88	88.28	1.66	694.15		17.29	390.75		
3/13/2010	3.23	59.40	3.37	659.44		8.24	398.99		
3/14/2010	22.96	60.06	2.25	690.24		62.59	461.58		
3/15/2010	23.76	145.67	0.13	694.55		51.42	513.00		
3/16/2010	22.88	117.89	0.11	696.69		44.41	557.41		
3/17/2010	23.24	185.84	0.41	696.41		52.20	609.61		
3/18/2010	22.98	200.07	4.43	696.39		54.10	663.71		
3/19/2010	23.27	285.80	0.39	696.55		45.51	709.22		
3/20/1010	22.06	273.15	2.39	696.85		32.03	741.25		
3/21/2010	23.53	121.73	1.62	695.10		34.71	775.96		
3/22/2010	23.37	137.05	1.90	693.31		36.67	812.63		
3/23/2010	23.86	245.22	1.42	695.80		17.93	830.56		
3/24/2010	22.71	163.47	2.24	695.43		28.11	858.67		
3/25/2010	20.57	149.33	0.38	696.82		26.78	885.45		
3/26/2010	16.88	286.49	0.47	696.58		23.36	908.81		
3/27/2010	17.21	290.30	0.76	696.61		26.63	935.44		
3/28/2010	22.41	235.59	0.35	696.67		30.32	965.76		
3/29/2010	23.77	183.45	0.43	696.78		34.81	1000.57		
3/30/2010	21.29	132.55	0.49	697.51		24.38	1024.95		
3/31/2010	20.34	266.82	0.29	716.78		27.28	1052.23		
TOTALS	649.84						1052.23		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 5/7/2010
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: April, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
4/1/2010	22.34	51.11	6.25	718.9		23.93	23.93		
4/2/2010	22.99	80.52	6.33	713.8		41.80	65.73		
4/3/2010	22.79	62.16	6.32	716.1		41.11	106.84		
4/4/2010	21.08	64.99	6.46	718.2		44.03	150.87		
4/5/2010	23.20	86.42	5.86	717.3		45.18	196.05		
4/6/2010	23.33	61.98	5.70	716.4		44.11	240.16		
4/7/2010	22.29	61.93	6.00	717.9		45.50	285.66		
4/8/2010	20.36	64.70	5.60	718.0		40.74	326.40		
4/9/2010	22.19	65.83	5.13	718.3		43.87	370.27		
4/10/2010	20.51	68.94	4.65	718.8		41.59	411.86		
4/11/2010	18.83	92.13	4.69	718.6		38.41	450.27		
4/12/2010	23.95	101.62	4.80	716.0		50.75	501.02		
4/13/2010	9.34	72.18	5.15	717.9		22.50	523.52		
4/14/2010	0.00	0.00	0.00	0.0		0.00	523.52		
4/15/2010	7.47	62.43	4.76	680.1		19.35	542.87		
4/16/2010	23.82	62.56	3.97	717.2		46.83	589.70		
4/17/2010	21.92	63.94	3.35	718.1		39.24	628.94		
4/18/2010	23.92	73.04	3.49	718.1		41.83	670.77		
4/19/2010	22.98	65.00	3.42	717.7		46.41	717.18		
4/20/2010	23.67	64.01	3.43	717.5		43.34	760.52		
4/21/2010	18.94	81.91	3.41	717.3		36.85	797.37		
4/22/2010	16.18	68.90	3.44	718.5		31.81	829.18		
4/23/2010	18.59	74.90	3.46	718.3		39.49	868.67		
4/24/2010	20.64	60.32	3.93	718.3		42.35	911.02		
4/25/2010	21.64	68.87	4.28	718.2		44.75	955.77		
4/26/2010	19.49	61.73	4.32	718.4		34.96	990.73		
4/27/2010	20.36	64.25	2.83	718.4		33.81	1024.54		
4/28/2010	15.44	143.67	2.74	718.6		21.18	1045.72		
4/29/2010	11.95	69.30	3.23	718.8		17.78	1063.50		
4/30/2010	0.00	0.00	0.00	0.0		0.00	1063.50		
TOTALS	560.21					1063.50	1063.50		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 5/7/2010
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: April, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
4/1/2010	22.34	58.59	0.34	719.0		29.68	29.68		
4/2/2010	22.99	114.70	0.77	713.2		38.10	67.78		
4/3/2010	22.79	64.64	0.38	715.5		53.78	121.56		
4/4/2010	21.08	59.55	1.10	716.4		44.73	166.29		
4/5/2010	23.20	156.38	0.07	716.5		48.86	215.15		
4/6/2010	23.33	60.93	3.49	715.4		56.21	271.36		
4/7/2010	22.29	66.68	3.77	716.7		54.96	326.32		
4/8/2010	20.36	110.60	0.11	716.7		40.80	367.12		
4/9/2010	22.19	91.98	0.09	716.5		34.20	401.32		
4/10/2010	20.51	128.21	0.07	716.5		38.30	439.62		
4/11/2010	18.83	165.66	0.06	716.5		37.99	477.61		
4/12/2010	23.95	216.21	0.08	715.4		44.25	521.86		
4/13/2010	9.34	123.80	0.10	716.5		16.27	538.13		
4/14/2010	0.00	0.00	0.00	0.0		0.00	538.13		
4/15/2010	7.47	58.62	6.16	679.0		18.30	556.43		
4/16/2010	23.82	129.66	0.36	716.4		57.69	614.12		
4/17/2010	21.92	116.94	0.39	716.3		34.97	649.09		
4/18/2010	23.92	128.38	0.36	716.6		34.99	684.08		
4/19/2010	22.98	123.81	0.37	716.9		39.77	723.85		
4/20/2010	23.67	118.21	0.36	716.7		37.67	761.52		
4/21/2010	18.94	147.16	0.33	716.7		32.61	794.13		
4/22/2010	16.18	113.84	0.46	716.5		32.45	826.58		
4/23/2010	18.59	68.34	0.35	717.0		42.73	869.31		
4/24/2010	20.64	59.79	1.39	717.1		43.18	912.49		
4/25/2010	21.64	58.70	0.47	717.1		39.83	952.32		
4/26/2010	19.49	57.59	0.54	717.2		36.45	988.77		
4/27/2010	20.36	93.30	0.34	716.6		35.20	1023.97		
4/28/2010	15.44	327.27	0.40	717.0		23.17	1047.14		
4/29/2010	11.95	86.35	0.42	716.7		18.69	1065.83		
4/30/2010	0.00	0.00	0.00	0.0		0.00	1065.83		
TOTALS	560.21					1065.83	1065.83		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

IWR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 6/4/2010
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: May, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
5/1/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/2/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/3/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/4/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/5/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/6/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/7/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/8/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/9/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/10/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/11/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/12/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/13/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/14/2010	9.07	68.14	7.84	662.5		18.89	18.89		
5/15/2010	23.94	64.48	6.26	687.2		51.89	70.78		
5/16/2010	23.95	58.67	5.25	702.3		47.19	117.97		
5/17/2010	22.98	54.55	4.58	715.6		34.31	152.28		
5/18/2010	12.73	58.94	4.77	714.7		25.31	177.59		
5/19/2010	23.95	58.31	4.57	716.9		44.19	221.78		
5/20/2010	22.73	65.10	4.27	715.8		45.80	267.58		
5/21/2010	21.88	59.00	5.13	717.3		37.38	304.96		
5/22/2010	22.84	61.58	4.95	717.4		42.69	347.65		
5/23/2010	23.95	62.41	4.81	716.2		43.68	391.33		
5/24/2010	21.57	57.98	4.86	717.5		35.26	426.59		
5/25/2010	0.00	0.00	0.00	0.0		0.00	426.59		
5/26/2010	0.00	0.00	0.00	0.0		0.00	426.59		
5/27/2010	0.00	0.00	0.00	0.0		0.00	426.59		
5/28/2010	0.00	0.00	0.00	0.0		0.00	426.59		
5/29/2010	0.00	0.00	0.00	0.0		0.00	426.59		
5/30/2010	0.00	0.00	0.00	0.0		0.00	426.59		
5/31/2010	0.00	0.00	0.00	0.0		0.00	426.59		
TOTALS	229.59					426.59	426.59		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 6/4/2010
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: May, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
5/1/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/2/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/3/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/4/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/5/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/6/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/7/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/8/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/9/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/10/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/11/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/12/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/13/2010	0.00	0.00	0.00	0.0		0.00	0.00		
5/14/2010	9.07	62.63	11.30	662.0		25.29	25.29		
5/15/2010	23.94	77.66	5.18	686.3		67.56	92.85		
5/16/2010	23.95	73.03	8.84	701.6		62.46	155.31		
5/17/2010	22.98	62.60	9.89	714.8		56.21	211.52		
5/18/2010	12.73	64.91	7.87	713.6		35.80	247.32		
5/19/2010	23.95	64.22	9.45	716.1		62.84	310.16		
5/20/2010	22.73	67.33	7.18	714.8		61.44	371.60		
5/21/2010	21.88	64.75	7.21	716.6		56.05	427.65		
5/22/2010	22.84	64.77	8.29	716.7		59.42	487.07		
5/23/2010	23.95	61.98	6.75	715.7		61.46	548.53		
5/24/2010	21.57	61.80	7.89	716.7		54.06	602.59		
5/25/2010	0.00	0.00	0.00	0.0		0.00	602.59		
5/26/2010	0.00	0.00	0.00	0.0		0.00	602.59		
5/27/2010	0.00	0.00	0.00	0.0		0.00	602.59		
5/28/2010	0.00	0.00	0.00	0.0		0.00	602.59		
5/29/2010	0.00	0.00	0.00	0.0		0.00	602.59		
5/30/2010	0.00	0.00	0.00	0.0		0.00	602.59		
5/31/2010	0.00	0.00	0.00	0.0		0.00	602.59		
TOTALS	229.59					602.59	602.59		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 7/9/2010
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company MONTH: June, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
6/1/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/2/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/3/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/4/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/5/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/6/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/7/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/8/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/9/2010	11.63	59.22	8.05	659.6		23.76	23.76		
6/10/2010	0.20	41.36	9.45	660.3		0.35	24.11		
6/11/2010	6.23	55.94	9.88	686.5		10.53	34.64		
6/12/2010	23.31	59.23	7.08	706.2		41.09	75.73		
6/13/2010	20.83	58.38	7.59	716.6		30.31	106.04		
6/14/2010	5.81	52.34	7.35	717.0		6.43	112.47		
6/15/2010	5.90	55.11	9.57	714.5		8.76	121.23		
6/16/2010	15.83	66.95	8.31	716.9		23.52	144.75		
6/17/2010	11.91	67.62	9.29	717.4		15.90	160.65		
6/18/2010	18.04	76.15	9.54	717.9		28.35	189.00		
6/19/2010	15.78	67.54	11.20	717.5		32.73	221.73		
6/20/2010	15.16	72.56	9.27	717.3		31.57	253.30		
6/21/2010	12.90	76.71	9.40	717.5		33.17	286.47		
6/22/2010	4.16	63.73	11.39	713.2		8.26	294.73		
6/23/2010	16.62	70.78	8.74	717.0		33.42	328.15		
6/24/2010	18.09	60.78	8.70	717.2		37.86	366.01		
6/25/2010	11.32	67.41	8.20	717.4		24.94	390.95		
6/26/2010	0.45	62.63	30.15	655.8		1.33	392.28		
6/27/2010	0.00	0.00	0.00	0.0		0.00	392.28		
6/28/2010	8.47	69.85	9.91	716.6		15.76	408.04		
6/29/2010	14.93	63.86	7.91	717.7		29.55	437.59		
6/30/2010	17.03	70.73	7.69	718.4		37.12	474.71		
TOTALS	254.60					474.71	474.71		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR CO2 SEQUESTRATION

DATE: 7/9/2010
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company MONTH: June, 2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	ANNULUS PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		PRODUCTION OF METHANE (MCF)	
		MAX	MIN			DAILY	ACCUMULATED	DAILY	ACCUMULATED
6/1/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/2/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/3/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/4/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/5/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/6/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/7/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/8/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/9/2010[a]	11.63	NA	NA	674.2		NA	NA		
6/10/2010[a]	0.20	NA	NA	675.2		NA	NA		
6/11/2010[b]	0.00	0.00	0.00	0.0		0.00	0.00		
6/12/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/13/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/14/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/15/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/16/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/17/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/18/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/19/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/20/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/21/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/22/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/23/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/24/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/25/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/26/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/27/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/28/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/29/2010	0.00	0.00	0.00	0.0		0.00	0.00		
6/30/2010	0.00	0.00	0.00	0.0		0.00	0.00		
TOTALS	11.83						0.00		

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____
TITLE: _____

a – Flow meter malfunction, readings inaccurate
b – Injection well removed from service due to flow meter malfunction.

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: July-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	18.4	6.36	68.07	717.97	36.98	36.98			
2	19.2	6.44	70.26	717.78	37.78	74.76			
3	18.1	5.66	77.89	717.83	37.71	112.47			
4	17.8	6.84	80.64	718.22	41.97	154.44			
5	21.6	9.99	80.18	716.95	57.12	211.56			
6	19.5	13.98	82.14	717.12	54.00	265.57			
7	18.9	13.08	77.03	716.71	51.39	316.96			
8	17.9	11.61	79.84	717.17	46.65	363.61			
9	19.5	10.64	79.13	716.95	48.16	411.77			
10	15.5	11.03	70.59	717.29	37.07	448.84			
11	22.6	9.23	76.92	716.93	59.56	508.39			
12	12.3	11.67	73.76	717.31	27.08	535.48			
13	17.5	11.93	72.85	717.04	42.38	577.85			
14	16.1	12.57	71.43	717.25	42.02	619.87			
15	18.1	15.09	75.93	716.87	50.41	670.28			
16	15.9	14.08	71.54	716.96	42.20	712.48			
17	15.5	14.04	73.41	717.12	40.70	753.18			
18	0.0	0.00	0.00	0.00	0.00	753.18			
19	14.2	15.85	73.48	716.88	36.56	789.74			
20	10.9	14.59	76.39	716.96	26.31	816.06			
21	18.0	12.24	65.47	716.84	41.57	857.62			
22	6.8	11.63	69.46	710.7	17.35	874.98			
23	21.8	10.93	65.31	716.35	51.70	926.68			
24	19.2	10.14	69.04	714.66	47.77	974.44			
25	8.7	10.47	71.23	717.04	18.90	993.34			
26	0.0	0.00	0.00	0.00	0.00	993.34			
27	5.1	16.08	74.36	717.01	10.98	1004.32			
28	19.1	9.22	72.41	717.47	43.18	1047.50			
29	23.3	8.56	66.41	717.18	51.56	1099.06			
30	8.7	8.66	75.93	717.59	21.76	1120.82			
31	19.2	9.49	70.62	717.06	44.81	1165.63			
TOTALS	479.3	5.66	82.14	718.22	1165.63	1165.63			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

Appendix E
CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: July-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	NA	NA	NA	0	0			
2	0.0	NA	NA	NA	0	0			
3	0.0	NA	NA	NA	0	0			
4	0.0	NA	NA	NA	0	0			
5	0.0	NA	NA	NA	0	0			
6	0.0	NA	NA	NA	0	0			
7	0.0	NA	NA	NA	0	0			
8	0.0	NA	NA	NA	0	0			
9	0.0	NA	NA	NA	0	0			
10	0.0	NA	NA	NA	0	0			
11	0.0	NA	NA	NA	0	0			
12	0.0	NA	NA	NA	0	0			
13	0.0	NA	NA	NA	0	0			
14	0.0	NA	NA	NA	0	0			
15	0.0	NA	NA	NA	0	0			
16	0.0	NA	NA	NA	0	0			
17	0.0	NA	NA	NA	0	0			
18	0.0	NA	NA	NA	0	0			
19	0.0	NA	NA	NA	0	0			
20	0.0	NA	NA	NA	0	0			
21	0.0	NA	NA	NA	0	0			
22	0.0	NA	NA	NA	0	0			
23	0.0	NA	NA	NA	0	0			
24	0.0	NA	NA	NA	0	0			
25	0.0	NA	NA	NA	0	0			
26	0.0	NA	NA	NA	0	0			
27	0.0	NA	NA	NA	0	0			
28	0.0	NA	NA	NA	0	0			
29	0.0	NA	NA	NA	0	0			
30	0.0	NA	NA	NA	0	0			
31	0.0	NA	NA	NA	0	0			
TOTALS	0.0	NA	NA	NA	0	0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: August-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	18.4	9.32	73.96	717.34	41.78	41.78			
2	20.9	9.45	74.54	717.25	49.36	91.14			
3	21.9	10.00	69.10	717.20	47.10	138.24			
4	14.7	9.00	70.22	716.96	35.34	173.58			
5	0.0	0.00	0.00	0.00	0.00	173.58			
6	13.1	8.95	71.63	716.01	29.98	203.56			
7	16.6	8.13	89.90	717.61	37.35	240.91			
8	0.1	16.77	40.93	717.59	0.26	241.17			
9	0.0	0.00	0.00	0.00	0.00	241.17			
10	0.0	0.00	0.00	0.00	0.00	241.17			
11	0.0	0.00	0.00	0.00	0.00	241.17			
12	0.0	0.00	0.00	0.00	0.00	241.17			
13	0.0	0.00	0.00	0.00	0.00	241.17			
14	0.0	0.00	0.00	0.00	0.00	241.17			
15	0.0	0.00	0.00	0.00	0.00	241.17			
16	0.0	0.00	0.00	0.00	0.00	241.17			
17	0.0	0.00	0.00	0.00	0.00	241.17			
18	0.0	0.00	0.00	0.00	0.00	241.17			
19	4.5	0.00	131.99	680.58	14.85	256.02			
20	0.5	0.02	57.09	559.30	0.51	256.54			
21	13.6	0.00	118.58	758.21	74.63	331.17			
22	10.5	42.12	124.50	780.67	67.46	398.63			
23	11.7	3.16	133.23	772.71	68.40	467.03			
24	15.2	39.86	121.63	807.78	94.09	561.12			
25	0.0	0.00	0.00	0.00	0.00	561.12			
26	9.3	3.52	123.72	782.40	58.28	619.40			
27	9.7	8.22	143.47	820.38	72.12	691.52			
28	6.8	109.73	140.85	821.41	52.00	743.52			
29	0.0	0.00	0.00	0.00	0.00	743.52			
30	17.4	0.01	198.55	891.78	165.91	909.43			
31	11.0	0.06	176.72	897.61	93.58	1003.02			
TOTALS	216.1	0.01	198.55	897.61	1003.02	1003.02			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: August-2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.00	0.00	0.00	0.00	0.00			
2	0.0	0.00	0.00	0.00	0.00	0.00			
3	0.0	0.00	0.00	0.00	0.00	0.00			
4	0.0	0.00	0.00	0.00	0.00	0.00			
5	0.0	0.00	0.00	0.00	0.00	0.00			
6	0.0	0.00	0.00	0.00	0.00	0.00			
7	0.0	0.00	0.00	0.00	0.00	0.00			
8	0.0	0.00	0.00	0.00	0.00	0.00			
9	0.0	0.00	0.00	0.00	0.00	0.00			
10	0.0	0.00	0.00	0.00	0.00	0.00			
11	0.0	0.00	0.00	0.00	0.00	0.00			
12	0.0	0.00	0.00	0.00	0.00	0.00			
13	0.0	0.00	0.00	0.00	0.00	0.00			
14	0.0	0.00	0.00	0.00	0.00	0.00			
15	0.0	0.00	0.00	0.00	0.00	0.00			
16	0.0	0.00	0.00	0.00	0.00	0.00			
17	0.0	0.00	0.00	0.00	0.00	0.00			
18	0.0	0.00	0.00	0.00	0.00	0.00			
19	4.5	0.00	193.95	653.71	32.16	32.16			
20	0.5	0.00	81.25	558.44	0.77	32.93			
21	13.6	2.16	153.24	757.34	95.52	128.46			
22	10.5	33.98	133.74	780.12	74.26	202.71			
23	11.7	0.00	128.61	774.13	63.81	266.53			
24	15.2	8.55	126.62	810.30	86.35	352.88			
25	0.0	0.00	0.00	0.00	0.00	352.88			
26	9.3	2.52	105.97	785.71	44.54	397.42			
27	9.7	4.07	115.56	825.27	52.03	449.45			
28	6.8	64.63	107.11	826.45	35.27	484.72			
29	0.0	0.00	0.00	0.00	0.00	484.72			
30	17.4	0.00	134.71	895.25	105.67	590.39			
31	11.0	0.00	116.01	899.90	51.67	642.06			
TOTALS	110.4	2.16	193.95	899.90	642.06	642.06			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: September-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.00	0.00	0.00	0.00	0.00			
2	9.7	4.39	146.24	848.12	71.07	71.07			
3	23.4	4.47	151.63	905.97	165.19	236.26			
4	8.5	0.04	135.35	892.10	39.19	275.45			
5	0.0	0.00	0.00	0.00	0.00	275.45			
6	0.0	0.00	0.00	0.00	0.00	275.45			
7	0.0	0.00	0.00	0.00	0.00	275.45			
8	0.0	0.00	0.00	0.00	0.00	275.45			
9	1.0	0.01	77.44	726.69	2.77	278.22			
10	4.6	0.02	160.60	792.41	35.87	314.09			
11	0.0	0.00	0.00	0.00	0.00	314.09			
12	0.0	0.00	0.00	0.00	0.00	314.09			
13	0.0	0.00	0.00	0.00	0.00	314.09			
14	0.0	0.00	0.00	0.00	0.00	314.09			
15	0.0	0.00	0.00	0.00	0.00	314.09			
16	0.0	0.00	0.00	0.00	0.00	314.09			
17	0.0	0.00	0.00	0.00	0.00	314.09			
18	0.0	0.00	0.00	0.00	0.00	314.09			
19	0.0	0.00	0.00	0.00	0.00	314.09			
20	8.7	0.02	155.69	788.78	69.20	383.29			
21	7.7	83.68	142.55	824.40	62.93	446.22			
22	0.0	0.00	0.00	0.00	0.00	446.22			
23	1.7	0.05	148.38	756.32	12.68	458.90			
24	0.0	0.00	0.00	0.00	0.00	458.90			
25	0.0	0.00	0.00	0.00	0.00	458.90			
26	0.0	0.00	0.00	0.00	0.00	458.90			
27	1.5	0.01	162.88	743.39	13.19	472.09			
28	10.6	0.01	166.67	819.52	99.95	572.04			
29	0.0	0.00	0.00	0.00	0.00	572.04			
30	0.0	0.00	0.00	0.00	0.00	572.04			
31						572.04			
TOTALS	77.4	0.01	166.67	905.97	572.04	572.04			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: September-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.00	0.00	0.00	0.00	0.00			
2	9.7	0.00	103.46	849.54	42.32	42.32			
3	23.4	0.00	92.20	908.49	87.26	129.58			
4	8.5	0.00	86.49	892.57	19.84	149.42			
5	0.0	0.00	0.00	0.00	0.00	149.42			
6	0.0	0.00	0.00	0.00	0.00	149.42			
7	0.0	0.00	0.00	0.00	0.00	149.42			
8	0.0	0.00	0.00	0.00	0.00	149.42			
9	1.0	0.00	62.40	726.69	2.04	151.46			
10	4.6	0.00	112.44	799.19	20.29	171.75			
11	0.0	0.00	0.00	0.00	0.00	171.75			
12	0.0	0.00	0.00	0.00	0.00	171.75			
13	0.0	0.00	0.00	0.00	0.00	171.75			
14	0.0	0.00	0.00	0.00	0.00	171.75			
15	0.0	0.00	0.00	0.00	0.00	171.75			
16	0.0	0.00	0.00	0.00	0.00	171.75			
17	0.0	0.00	0.00	0.00	0.00	171.75			
18	0.0	0.00	0.00	0.00	0.00	171.75			
19	0.0	0.00	0.00	0.00	0.00	171.75			
20	8.7	0.00	98.83	790.36	37.52	209.27			
21	7.7	30.51	80.41	825.51	30.89	240.15			
22	0.0	0.00	0.00	0.00	0.00	240.15			
23	1.7	3.47	90.95	759.23	7.20	247.36			
24	0.0	0.00	0.00	0.00	0.00	247.36			
25	0.0	0.00	0.00	0.00	0.00	247.36			
26	0.0	0.00	0.00	0.00	0.00	247.36			
27	1.5	3.70	85.40	746.39	6.48	253.84			
28	10.6	4.31	83.79	822.59	41.25	295.09			
29	0.0	0.00	0.00	0.00	0.00	295.09			
30	0.0	0.00	0.00	0.00	0.00	295.09			
31									
TOTALS	77.4	3.47	112.44	908.49	295.09	295.09			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: October-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	0.00	0.00	0.00			
2	0.00	0.00	0.00	0.00	0.00	0.00			
3	0.00	0.00	0.00	0.00	0.00	0.00			
4	0.00	0.00	0.00	0.00	0.00	0.00			
5	0.00	0.00	0.00	0.00	0.00	0.00			
6	0.00	0.00	0.00	0.00	0.00	0.00			
7	0.42	2.56	5.31	685.63	0.10	0.10			
8	0.00	0.00	0.00	0.00	0.00	0.10			
9	0.00	0.00	0.00	0.00	0.00	0.10			
10	0.00	0.00	0.00	0.00	0.00	0.10			
11	0.00	0.00	0.00	0.00	0.00	0.10			
12	0.00	0.00	0.00	0.00	0.00	0.10			
13	0.00	0.00	0.00	0.00	0.00	0.10			
14	0.00	0.00	0.00	0.00	0.00	0.10			
15	0.00	0.00	0.00	0.00	0.00	0.10			
16	0.00	0.00	0.00	0.00	0.00	0.10			
17	0.00	0.00	0.00	0.00	0.00	0.10			
18	0.00	0.00	0.00	0.00	0.00	0.10			
19	0.00	0.00	0.00	0.00	0.00	0.10			
20	0.00	0.00	0.00	0.00	0.00	0.10			
21	0.00	0.00	0.00	0.00	0.00	0.10			
22	0.00	0.00	0.00	0.00	0.00	0.10			
23	0.00	0.00	0.00	0.00	0.00	0.10			
24	0.00	0.00	0.00	0.00	0.00	0.10			
25	0.00	0.00	0.00	0.00	0.00	0.10			
26	9.94	0.00	207.28	763.72	63.41	63.52			
27	11.85	9.13	127.40	798.56	71.92	135.44			
28	6.80	0.00	140.05	784.92	48.54	183.98			
29	5.40	78.27	141.67	860.73	39.61	223.59			
30	11.90	0.00	134.12	872.32	78.35	301.94			
31	0.00	0.00	0.00	0.00	0.00	301.94			
TOTALS	46.3	2.56	207.28	872.32	301.94	301.94			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: October-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	0.00	0.00	0.00			
2	0.00	0.00	0.00	0.00	0.00	0.00			
3	0.00	0.00	0.00	0.00	0.00	0.00			
4	0.00	0.00	0.00	0.00	0.00	0.00			
5	0.00	0.00	0.00	0.00	0.00	0.00			
6	0.00	0.00	0.00	0.00	0.00	0.00			
7	0.42	0.00	4.10	684.84	0.07	0.07			
8	0.00	0.00	0.00	0.00	0.00	0.07			
9	0.00	0.00	0.00	0.00	0.00	0.07			
10	0.00	0.00	0.00	0.00	0.00	0.07			
11	0.00	0.00	0.00	0.00	0.00	0.07			
12	0.00	0.00	0.00	0.00	0.00	0.07			
13	0.00	0.00	0.00	0.00	0.00	0.07			
14	0.00	0.00	0.00	0.00	0.00	0.07			
15	0.00	0.00	0.00	0.00	0.00	0.07			
16	0.00	0.00	0.00	0.00	0.00	0.07			
17	0.00	0.00	0.00	0.00	0.00	0.07			
18	0.00	0.00	0.00	0.00	0.00	0.07			
19	0.00	0.00	0.00	0.00	0.00	0.07			
20	0.00	0.00	0.00	0.00	0.00	0.07			
21	0.00	0.00	0.00	0.00	0.00	0.07			
22	0.00	0.00	0.00	0.00	0.00	0.07			
23	0.00	0.00	0.00	0.00	0.00	0.07			
24	0.00	0.00	0.00	0.00	0.00	0.07			
25	0.00	0.00	0.00	0.00	0.00	0.07			
26	9.94	0.00	116.11	762.86	50.03	50.11			
27	11.85	0.00	99.69	799.19	57.70	107.81			
28	6.80	0.00	91.09	785.24	28.10	135.91			
29	5.40	8.31	83.79	859.71	20.37	156.28			
30	11.90	0.00	84.83	870.82	38.35	194.64			
31	0.00	0.00	0.00	0.00	0.00	194.64			
TOTALS	46.3	8.31	116.11	870.82	194.64	194.64			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: November-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	0.00	0.00	0.00			
2	0.00	0.00	0.00	0.00	0.00	0.00			
3	0.00	0.00	0.00	0.00	0.00	0.00			
4	0.00	0.00	0.00	0.00	0.00	0.00			
5	0.00	0.00	0.00	0.00	0.00	0.00			
6	0.00	0.00	0.00	0.00	0.00	0.00			
7	0.00	0.00	0.00	0.00	0.00	0.00			
8	0.00	0.00	0.00	0.00	0.00	0.00			
9	0.00	0.00	0.00	0.00	0.00	0.00			
10	0.00	0.00	0.00	0.00	0.00	0.00			
11	0.00	0.00	0.00	0.00	0.00	0.00			
12	9.42	0.02	161.97	794.93	80.91	80.91			
13	23.95	86.10	163.13	899.11	206.66	287.57			
14	18.25	0.00	150.66	903.68	118.04	405.61			
15	23.83	0.00	133.22	913.61	162.82	568.43			
16	21.69	0.00	130.32	914.01	129.64	698.07			
17	0.00	0.00	0.00	0.00	0.00	698.07			
18	0.00	0.00	0.00	0.00	0.00	698.07			
19	0.00	0.00	0.00	0.00	0.00	698.07			
20	0.00	0.00	0.00	0.00	0.00	698.07			
21	0.00	0.00	0.00	0.00	0.00	698.07			
22	0.00	0.00	0.00	0.00	0.00	698.07			
23	8.55	0.00	198.43	864.83	84.71	782.77			
24	23.14	0.00	154.46	913.85	170.64	953.41			
25	21.85	0.00	137.37	914.56	128.62	1082.03			
26	14.69	0.00	115.47	915.03	82.00	1164.02			
27	0.00	0.00	0.00	0.00	0.00	1164.02			
28	0.00	0.00	0.00	0.00	0.00	1164.02			
29	0.00	0.00	0.00	0.00	0.00	1164.02			
30	0.00	0.00	0.00	0.00	0.00	1164.02			
31									
TOTALS	165.4	0.02	198.43	915.03	1164.02	1164.02			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: November-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	0.00	0.00	0.00			
2	0.00	0.00	0.00	0.00	0.00	0.00			
3	0.00	0.00	0.00	0.00	0.00	0.00			
4	0.00	0.00	0.00	0.00	0.00	0.00			
5	0.00	0.00	0.00	0.00	0.00	0.00			
6	0.00	0.00	0.00	0.00	0.00	0.00			
7	0.00	0.00	0.00	0.00	0.00	0.00			
8	0.00	0.00	0.00	0.00	0.00	0.00			
9	0.00	0.00	0.00	0.00	0.00	0.00			
10	0.00	0.00	0.00	0.00	0.00	0.00			
11	0.00	0.00	0.00	0.00	0.00	0.00			
12	9.42	0.00	127.87	796.27	37.40	37.40			
13	23.95	21.14	86.03	899.43	86.36	123.77			
14	18.25	0.00	77.64	903.45	48.33	172.10			
15	23.83	0.00	67.12	913.3	67.54	239.64			
16	21.69	0.00	70.18	912.74	57.45	297.08			
17	0.00	0.00	0.00	0.00	0.00	297.08			
18	0.00	0.00	0.00	0.00	0.00	297.08			
19	0.00	0.00	0.00	0.00	0.00	297.08			
20	0.00	0.00	0.00	0.00	0.00	297.08			
21	0.00	0.00	0.00	0.00	0.00	297.08			
22	0.00	0.00	0.00	0.00	0.00	297.08			
23	8.55	0.00	78.39	864.99	24.56	321.65			
24	23.14	0.00	84.78	912.74	76.93	398.57			
25	21.85	0.00	79.60	913.3	63.95	462.52			
26	14.69	0.00	65.88	913.06	36.54	499.06			
27	0.00	0.00	0.00	0.00	0.00	499.06			
28	0.00	0.00	0.00	0.00	0.00	499.06			
29	0.00	0.00	0.00	0.00	0.00	499.06			
30	0.00	0.00	0.00	0.00	0.00	499.06			
31									
TOTALS	165.4	21.14	127.87	913.30	499.06	499.06			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: December-2010

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	7.51	9.75	160.51	868.14	62.96	62.96			
2	5.32	57.90	124.47	909.04	35.22	98.18			
3	4.07	-1.28	139.15	844.58	25.21	123.39			
4	0.00	0.00	0.00	0.00	0.00	123.39			
5	0.00	0.00	0.00	0.00	0.00	123.39			
6	3.65	-0.03	192.54	831.34	32.41	155.80			
7	1.80	-0.02	207.28	812.90	15.58	171.37			
8	0.00	0.00	0.00	0.00	0.00	171.37			
9	0.00	0.00	0.00	0.00	0.00	171.37			
10	0.00	0.00	0.00	0.00	0.00	171.37			
11	0.00	0.00	0.00	0.00	0.00	171.37			
12	0.00	0.00	0.00	0.00	0.00	171.37			
13	7.77	-0.03	207.28	768.22	49.22	220.59			
14	21.87	-0.03	149.12	914.87	167.08	387.67			
15	10.32	-0.03	180.20	856.16	41.10	428.76			
16	24.00	44.56	93.91	910.77	115.16	543.93			
17	23.95	48.81	93.03	915.74	113.27	657.20			
18	23.59	-0.04	158.75	921.02	112.58	769.78			
19	23.21	-0.03	153.08	922.04	106.02	875.80			
20	9.71	-0.03	132.96	891.15	34.46	910.26			
21	5.30	-0.03	138.62	890.36	21.19	931.45			
22	0.00	0.00	0.00	0.00	0.00	931.45			
23	0.00	0.00	0.00	0.00	0.00	931.45			
24	0.00	0.00	0.00	0.00	0.00	931.45			
25	0.00	0.00	0.00	0.00	0.00	931.45			
26	0.00	0.00	0.00	0.00	0.00	931.45			
27	0.00	0.00	0.00	0.00	0.00	931.45			
28	0.00	0.00	0.00	0.00	0.00	931.45			
29	0.00	0.00	0.00	0.00	0.00	931.45			
30	0.00	0.00	0.00	0.00	0.00	931.45			
31	0.00	0.00	0.00	0.00	0.00	931.45			
TOTALS	172.1	-1.28	207.28	922.04	931.45	931.45			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: December-2010

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	7.51	0.00	85.61	872.63	21.89	21.89			
2	5.32	0.00	83.25	911.72	18.38	40.27			
3	4.07	4.87	207.28	846.94	17.29	57.57			
4	0.00	0.00	0.00	0.00	0.00	57.57			
5	0.00	0.00	0.00	0.00	0.00	57.57			
6	3.65	0.00	109.71	833.7	10.01	67.58			
7	1.80	0.00	132.36	815.42	5.08	72.65			
8	0.00	0.00	0.00	0.00	0.00	72.65			
9	0.00	0.00	0.00	0.00	0.00	72.65			
10	0.00	0.00	0.00	0.00	0.00	72.65			
11	0.00	0.00	0.00	0.00	0.00	72.65			
12	0.00	0.00	0.00	0.00	0.00	72.65			
13	7.77	0.00	119.70	776.81	11.93	84.59			
14	21.87	0.00	81.52	912.43	67.89	152.47			
15	10.32	0.00	110.28	852.77	16.45	168.92			
16	24.00	0.00	55.29	908.02	53.24	222.16			
17	23.95	6.68	66.74	912.74	59.76	281.92			
18	23.59	5.06	136.80	918.1	71.15	353.07			
19	23.21	0.00	138.17	919.13	66.44	419.51			
20	9.71	1.23	103.05	888.31	23.55	443.06			
21	5.30	0.00	121.01	888.31	14.11	457.17			
22	0.00	0.00	0.00	0.00	0.00	457.17			
23	0.00	0.00	0.00	0.00	0.00	457.17			
24	0.00	0.00	0.00	0.00	0.00	457.17			
25	0.00	0.00	0.00	0.00	0.00	457.17			
26	0.00	0.00	0.00	0.00	0.00	457.17			
27	0.00	0.00	0.00	0.00	0.00	457.17			
28	0.00	0.00	0.00	0.00	0.00	457.17			
29	0.00	0.00	0.00	0.00	0.00	457.17			
30	0.00	0.00	0.00	0.00	0.00	457.17			
31	0.00	0.00	0.00	0.00	0.00	457.17			
TOTALS	172.1	1.23	207.28	919.13	457.17	457.17			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/4/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: January-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.00	0.00	0.00	0.00	0.00			
2	0.0	0.00	0.00	0.00	0.00	0.00			
3	0.0	0.00	0.00	0.00	0.00	0.00			
4	0.0	0.00	0.00	0.00	0.00	0.00			
5	0.0	0.00	0.00	0.00	0.00	0.00			
6	0.0	0.00	0.00	0.00	0.00	0.00			
7	0.0	0.00	0.00	0.00	0.00	0.00			
8	0.0	0.00	0.00	0.00	0.00	0.00			
9	0.0	0.00	0.00	0.00	0.00	0.00			
10	5.8	0.00	199.24	841.27	42.73	42.73			
11	17.0	0.00	196.39	922.36	116.36	159.10			
12	14.9	0.00	126.50	931.74	84.60	243.69			
13	1.5	0.00	160.16	853.40	10.54	254.23			
14	14.2	0.00	203.70	931.74	80.23	334.46			
15	15.4	0.00	200.04	931.42	71.85	406.31			
16	13.0	0.00	207.28	932.13	57.13	463.44			
17	3.0	0.00	152.53	861.52	13.85	477.29			
18	0.9	0.00	207.28	841.35	7.20	484.49			
19	0.5	0.00	154.20	745.99	2.90	487.38			
20	1.0	0.00	173.90	743.63	5.97	493.35			
21	0.2	0.00	203.13	685.86	1.27	494.62			
22	0.0	0.00	0.00	0.00	0.00	494.62			
23	0.0	0.00	0.00	0.00	0.00	494.62			
24	0.0	0.00	0.00	0.00	0.00	494.62			
25	0.0	0.00	0.00	0.00	0.00	494.62			
26	0.0	0.00	0.00	0.00	0.00	494.62			
27	9.9	0.00	152.27	819.20	64.55	559.17			
28	24.0	62.86	97.40	917.71	120.05	679.22			
29	12.9	41.20	88.11	930.79	58.90	738.11			
30	0.0	0.00	0.00	0.00	0.00	738.11			
31	4.2	0.00	198.21	929.92	32.64	770.75			
TOTALS	138.5	41.2	207.28	932.13	770.75	770.75			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/4/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: January-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.00	0.00	0.00	0.00	0.00			
2	0.0	0.00	0.00	0.00	0.00	0.00			
3	0.0	0.00	0.00	0.00	0.00	0.00			
4	0.0	0.00	0.00	0.00	0.00	0.00			
5	0.0	0.00	0.00	0.00	0.00	0.00			
6	0.0	0.00	0.00	0.00	0.00	0.00			
7	0.0	0.00	0.00	0.00	0.00	0.00			
8	0.0	0.00	0.00	0.00	0.00	0.00			
9	0.0	0.00	0.00	0.00	0.00	0.00			
10	5.8	0.00	207.28	839.93	28.55	28.55			
11	17.0	0.00	134.59	919.28	78.07	106.62			
12	14.9	0.00	91.07	929.92	50.08	156.70			
13	1.5	0.00	94.58	853.25	4.10	160.79			
14	14.2	0.00	100.57	930	51.99	212.78			
15	15.4	0.00	131.24	930.24	50.02	262.80			
16	13.0	0.00	151.61	929.61	42.01	304.81			
17	3.0	3.74	100.70	858.45	7.58	312.39			
18	0.9	9.36	119.81	841.19	3.13	315.53			
19	0.5	2.90	85.68	744.73	1.06	316.59			
20	1.0	0.00	112.57	745.28	1.74	318.33			
21	0.2	0.00	149.39	691.62	0.22	318.55			
22	0.0	0.00	0.00	0.00	0.00	318.55			
23	0.0	0.00	0.00	0.00	0.00	318.55			
24	0.0	0.00	0.00	0.00	0.00	318.55			
25	0.0	0.00	0.00	0.00	0.00	318.55			
26	0.0	0.00	0.00	0.00	0.00	318.55			
27	9.9	3.90	86.68	817.23	22.97	341.52			
28	24.0	28.36	59.82	914.24	71.16	412.68			
29	12.9	18.10	58.86	926.93	35.63	448.31			
30	0.0	0.00	0.00	0.00	0.00	448.31			
31	4.2	3.30	129.21	928.74	17.39	465.70			
TOTALS	138.4611111	2.9	207.28	930.24	465.70	465.70			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 3/10/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: February-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	0.00	0.00	0.00			
2	0.00	0.00	0.00	0.00	0.00	0.00			
3	0.00	0.00	0.00	0.00	0.00	0.00			
4	0.00	0.00	0.00	0.00	0.00	0.00			
5	0.00	0.00	0.00	0.00	0.00	0.00			
6	0.00	0.00	0.00	0.00	0.00	0.00			
7	0.00	0.00	0.00	0.00	0.00	0.00			
8	0.00	0.00	0.00	0.00	0.00	0.00			
9	10.40	-0.04	207.28	917.87	89.27	89.27			
10	11.34	-0.03	194.92	932.60	67.30	156.57			
11	0.00	0.00	0.00	0.00	0.00	156.57			
12	0.00	0.00	0.00	0.00	0.00	156.57			
13	0.00	0.00	0.00	0.00	0.00	156.57			
14	12.34	-0.04	170.16	930.95	75.65	232.22			
15	8.73	-0.04	142.48	932.52	41.30	273.52			
16	11.54	-0.04	153.40	921.65	53.25	326.76			
17	21.31	-0.04	91.20	927.32	82.22	408.98			
18	21.83	-0.04	87.25	926.54	80.55	489.53			
19	23.78	-0.03	68.52	927.56	85.72	575.25			
20	23.49	-0.04	67.59	928.43	82.73	657.98			
21	23.86	-0.03	76.44	926.69	80.28	738.26			
22	20.99	44.37	64.21	921.81	68.95	807.22			
23	10.36	-0.04	138.03	927.01	37.65	844.87			
24	23.59	-0.04	65.43	927.48	69.92	914.79			
25	23.73	-0.04	74.96	927.56	71.91	986.70			
26	23.92	-0.03	54.48	926.30	69.98	1056.69			
27	23.38	-0.04	62.10	927.80	66.64	1123.33			
28	22.66	-0.03	71.79	926.85	67.90	1191.22			
29									
30									
31									
TOTALS	317.2	-0.04	207.28	932.6	1191.22	1191.22			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

W 0CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 3/10/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: February-2011

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.0	0.0	0.0	0.0	0.00			
2	0.0	0.0	0.0	0.0	0.0	0.00			
3	0.0	0.0	0.0	0.0	0.0	0.00			
4	0.0	0.0	0.0	0.0	0.0	0.00			
5	0.0	0.0	0.0	0.0	0.0	0.00			
6	0.0	0.0	0.0	0.0	0.0	0.00			
7	0.0	0.0	0.0	0.0	0.0	0.00			
8	0.0	0.0	0.0	0.0	0.0	0.00			
9	10.40	-1.91	88.72	915.19	30.85	30.85			
10	11.34	-0.74	165.26	928.51	39.78	70.63			
11	0.0	0.00	0.00	0.0	0.00	70.63			
12	0.0	0.00	0.00	0.0	0.00	70.63			
13	0.0	0.00	0.00	0.0	0.00	70.63			
14	12.34	1.15	90.11	928.19	40.09	110.72			
15	8.73	-0.95	116.56	928.58	26.24	136.96			
16	11.54	1.35	101.55	919.44	34.12	171.08			
17	21.31	1.10	70.56	924.56	54.63	225.72			
18	21.83	1.76	67.21	924.64	53.63	279.35			
19	23.78	2.00	53.82	924.17	56.69	336.04			
20	23.49	0.87	51.86	924.96	56.15	392.19			
21	23.86	5.37	49.96	924.01	55.72	447.91			
22	20.99	22.00	44.99	918.02	49.31	497.22			
23	10.36	0.35	69.76	923.3	29.67	526.89			
24	23.59	1.39	55.00	923.23	55.76	582.65			
25	23.73	1.55	58.13	923.86	54.18	636.83			
26	23.92	8.04	48.20	922.67	56.82	693.65			
27	23.38	5.38	49.04	924.64	55.43	749.08			
28	22.66	2.35	76.07	924.25	56.83	805.91			
29									
30									
31									
TOTALS	317.24	-1.91	165.26	928.58	805.91	805.91			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

Appendix E

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: May 2, 2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: March-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	17.54	0.00	91.26	928.27	51.26	51.26			
2	23.07	0.00	63.86	928.19	66.32	117.58			
3	23.03	0.00	65.43	928.58	68.01	185.59			
4	23.63	0.00	53.39	928.03	63.21	248.79			
5	23.77	0.00	58.46	927.40	66.11	314.91			
6	22.89	0.00	69.66	928.03	70.08	384.99			
7	22.97	0.00	61.65	928.35	65.07	450.06			
8	23.14	0.00	55.87	928.03	63.34	513.40			
9	23.11	0.00	69.25	927.80	69.59	582.99			
10	22.86	0.00	67.37	927.64	66.95	649.94			
11	22.69	0.00	62.27	927.72	65.25	715.19			
12	22.93	0.00	54.01	928.03	61.81	777.00			
13	21.82	0.00	55.25	927.95	58.95	835.95			
14	22.95	0.00	54.78	927.95	60.85	896.80			
15	22.98	0.00	53.01	928.03	0.83	957.64			
16	22.46	0.00	55.53	927.95	59.64	1017.27			
17	22.36	0.00	55.77	927.95	57.90	1075.17			
18	22.32	0.00	53.59	927.17	55.61	1130.78			
19	22.60	0.00	54.07	927.95	58.12	1188.90			
20	21.06	0.00	56.67	928.03	55.51	1244.41			
21	22.11	0.00	64.98	927.56	54.51	1298.93			
22	23.07	7.16	57.99	924.64	60.75	1359.67			
23	15.17	0.00	57.79	927.48	37.52	1397.19			
24	0.00	0.00	0.00	682.48	0.00	1397.19			
25	12.23	0.00	169.96	927.72	39.80	1436.99			
26	20.78	0.00	72.64	927.95	53.57	1490.56			
27	23.68	0.00	60.06	927.64	53.97	1544.54			
28	22.42	0.00	55.35	928.51	52.99	1597.53			
29	22.68	0.00	53.17	928.35	50.06	1647.59			
30	22.84	0.00	58.31	927.95	53.25	1700.84			
31	21.57	0.00	55.66	927.80	51.56	1752.40			
TOTALS	656.72	0.00	169.96	928.58	1752.40	1752.40			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: May 2, 2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: March-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	17.54	0.00	90.06	925.35	44.73	44.73			
2	23.07	1.32	56.75	924.88	56.80	101.53			
3	23.03	1.04	58.67	925.51	58.93	160.46			
4	23.63	3.04	49.29	924.41	57.24	217.71			
5	23.77	6.98	49.14	924.01	59.31	277.02			
6	22.89	1.18	57.83	924.01	61.84	338.85			
7	22.97	0.93	59.99	925.04	60.75	399.60			
8	23.14	0.95	54.94	924.33	60.58	460.19			
9	23.11	1.15	58.02	924.25	65.59	525.78			
10	22.86	1.17	59.39	924.33	64.47	590.24			
11	22.69	0.85	60.65	924.01	64.07	654.32			
12	22.93	1.38	54.09	925.12	62.95	717.27			
13	21.82	1.35	58.82	924.41	61.20	778.47			
14	22.95	6.61	58.30	925.04	63.74	842.22			
15	22.98	6.30	56.00	924.56	64.23	906.44			
16	22.46	1.62	61.45	924.41	64.16	970.61			
17	22.36	5.90	60.83	924.72	62.66	1033.26			
18	22.32	7.47	52.86	924.96	60.40	1093.66			
19	22.60	6.56	60.52	925.35	63.21	1156.87			
20	21.06	1.41	62.15	925.51	61.93	1218.80			
21	22.11	1.48	60.86	924.49	60.82	1279.62			
22	23.07	0.00	55.33	927.48	55.85	1335.47			
23	15.17	5.40	61.19	925.51	42.45	1377.91			
24	0.00	0.00	0.00	724.24	0.00	1377.91			
25	12.23	0.00	119.44	924.25	44.67	1422.58			
26	20.78	0.45	81.81	924.96	64.48	1487.07			
27	23.68	1.43	63.59	924.33	61.78	1548.84			
28	22.42	0.45	57.74	925.51	62.48	1611.32			
29	22.68	0.49	57.97	925.04	59.96	1671.28			
30	22.8	0.93	64.28	924.09	64.79	1736.07			
31	21.6	0.77	65.62	924.17	63.96	1800.03			
TOTALS	656.7	0.00	119.44	927.48	1800.03	1800.03			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: May 2, 2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: April, 2011

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	22.17	0.00	53.36	927.72	50.59	50.59			
2	21.17	0.00	71.82	927.72	52.10	102.69			
3	20.32	0.00	52.52	928.03	47.63	150.32			
4	21.86	0.00	50.92	927.56	47.32	197.64			
5	23.09	0.00	56.33	927.80	52.82	250.46			
6	21.86	0.00	49.68	928.03	48.45	298.91			
7	22.71	0.00	48.99	927.72	46.63	345.53			
8	22.97	0.00	51.78	927.64	48.09	393.62			
9	21.34	0.00	46.02	927.64	46.57	440.19			
10	7.18	0.00	45.90	927.72	15.90	456.09			
11	0.00	0.00	0.00	737.09	0.00	456.09			
12	0.00	0.00	0.00	681.06	0.00	456.09			
13	13.56	0.00	79.81	920.15	35.76	491.85			
14	20.08	0.00	90.94	926.93	44.71	536.56			
15	21.64	0.00	55.04	926.93	47.83	584.39			
16	21.91	0.00	56.23	926.22	48.69	633.08			
17	19.80	0.00	59.75	926.46	42.55	675.63			
18	21.09	0.00	56.54	926.69	43.63	719.26			
19	21.04	0.00	61.27	926.54	46.67	765.92			
20	20.99	0.00	51.36	926.38	45.58	811.50			
21	21.26	0.00	48.92	926.61	45.33	856.83			
22	16.11	0.00	67.06	926.54	35.03	891.86			
23	21.76	0.00	67.69	926.54	45.31	937.18			
24	20.32	0.00	46.88	927.01	43.94	981.12			
25	21.14	0.00	48.84	926.85	43.25	1024.37			
26	21.92	0.00	44.19	926.93	44.34	1068.71			
27	22.36	0.00	43.64	926.77	44.60	1113.30			
28	23.40	0.00	50.09	926.61	45.28	1158.58			
29	22.52	0.00	55.02	926.61	45.61	1204.19			
30	21.87	0.00	44.72	926.85	44.60	1248.79			
31						1248.79			
TOTALS	577.46	0.00	90.94	928.03	1248.79	1248.79			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: May 2, 2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: ~~March~~ April 2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	22.17	0.77	64.78	924.41	64.08	64.08			
2	21.17	0.81	66.42	924.49	65.32	129.40			
3	20.32	6.74	67.77	925.2	62.67	192.08			
4	21.86	7.61	65.91	925.67	60.10	252.17			
5	23.09	0.75	57.92	924.09	66.55	318.73			
6	21.86	2.10	60.36	924.72	63.84	382.56			
7	22.71	6.47	59.83	925.67	60.72	443.29			
8	22.97	7.24	56.25	924.56	62.64	505.93			
9	21.34	6.56	58.29	925.12	62.21	568.14			
10	7.18	7.94	57.80	924.64	21.76	589.90			
11	0.00	0.00	0.00	729.76	0.00	589.90			
12	0.00	0.00	0.00	730.15	0.00	589.90			
13	13.56	6.04	61.28	918.18	37.73	627.63			
14	20.08	6.05	75.94	925.98	59.52	687.15			
15	21.64	7.08	75.09	925.98	64.78	751.92			
16	21.91	0.78	60.12	925.12	63.73	815.65			
17	19.80	0.00	73.82	925.12	55.23	870.88			
18	21.09	7.07	80.42	925.83	59.12	930.00			
19	21.04	0.90	63.63	925.12	61.79	991.79			
20	20.99	4.22	60.12	925.43	60.10	1051.90			
21	21.26	1.73	60.57	925.59	61.16	1113.06			
22	16.11	0.75	67.70	924.72	48.02	1161.08			
23	21.76	0.80	62.89	925.51	60.46	1221.54			
24	20.32	6.71	59.39	925.51	58.88	1280.42			
25	21.14	7.54	59.48	925.98	58.32	1338.74			
26	21.92	7.82	56.72	926.22	59.55	1398.29			
27	22.36	7.39	54.43	926.14	60.34	1458.62			
28	23.40	4.29	52.58	925.35	60.84	1519.46			
29	22.52	5.27	55.68	924.88	64.44	1583.90			
30	21.87	2.15	59.29	925.83	63.03	1646.93			
31						1646.93			
TOTALS	577.46	0.00	80.42	926.22	1646.93	1646.93			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: June 14, 2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: May-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	22.41	0.00	43.27	926.93	45.55	45.55			
2	22.57	0.00	40.92	926.93	43.59	89.14			
3	22.40	0.00	66.78	926.54	45.29	134.43			
4	22.21	0.00	44.05	926.61	44.25	178.69			
5	23.06	0.00	46.60	926.54	44.51	223.20			
6	23.09	0.00	41.35	926.54	44.73	267.93			
7	14.73	0.00	43.03	926.61	28.58	296.50			
8	6.22	0.01	108.45	917.08	16.66	313.16			
9	23.17	0.00	41.12	926.77	42.74	355.89			
10	22.71	0.00	41.30	926.69	39.09	394.99			
11	22.89	0.00	38.63	926.69	40.22	435.21			
12	21.48	0.00	43.18	926.61	40.16	475.36			
13	21.30	0.01	41.48	926.46	39.37	514.74			
14	20.73	0.01	41.19	926.54	40.09	554.83			
15	21.16	0.00	40.75	926.30	41.08	595.91			
16	20.99	0.00	64.06	926.22	40.53	636.44			
17	22.24	0.00	47.04	926.46	42.25	678.70			
18	21.93	0.00	59.27	926.54	42.14	720.84			
19	21.12	0.00	41.82	926.69	42.03	762.86			
20	21.08	0.00	43.23	926.69	41.83	804.69			
21	21.63	0.00	42.41	927.17	40.84	845.53			
22	19.24	0.00	42.79	927.09	37.34	882.87			
23	11.77	0.00	67.31	926.38	23.61	906.48			
24	15.27	0.01	99.33	926.69	28.93	935.41			
25	21.89	0.01	40.07	926.46	37.15	972.56			
26	21.31	0.00	39.67	926.85	38.61	1011.17			
27	21.84	0.01	37.90	926.61	39.44	1050.61			
28	21.51	0.01	39.07	926.93	39.07	1089.68			
29	8.51	0.01	40.43	926.46	16.03	1105.70			
30	0.00	0.00	0.00	762.62	0.00	1105.70			
31	11.50	-0.01	93.55	926.69	26.96	1132.66			
TOTALS	591.96	-0.01	108.45	927.17	1132.66	1132.66			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT

BY: J. T. Bell

TITLE: Manager, Field Services

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: June 14, 2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: May-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	22.41	6.80	56.07	925.43	63.82	63.82			
2	22.57	6.52	55.64	925.35	60.45	124.27			
3	22.40	0.54	78.25	925.2	63.85	188.11			
4	22.21	6.79	61.07	925.51	65.30	253.41			
5	23.06	5.62	62.74	925.35	65.55	318.96			
6	23.09	1.15	56.61	925.67	65.84	384.80			
7	14.73	6.40	62.16	925.83	43.03	427.83			
8	6.22	6.12	94.28	915.03	22.36	450.19			
9	23.17	7.51	62.60	925.43	68.56	518.76			
10	22.71	7.00	59.81	925.9	61.36	580.11			
11	22.89	7.12	57.21	925.51	61.25	641.36			
12	21.48	7.20	62.47	925.75	60.73	702.09			
13	21.30	5.11	61.45	925.75	59.22	761.31			
14	20.73	3.80	57.84	925.75	60.17	821.48			
15	21.16	4.55	59.00	925.27	61.62	883.10			
16	20.99	4.38	60.75	925.12	60.79	943.89			
17	22.24	6.65	60.93	925.12	66.22	1010.11			
18	21.93	0.51	60.26	925.75	64.17	1074.28			
19	21.12	5.65	60.10	925.35	64.13	1138.42			
20	21.08	5.53	60.87	925.75	64.12	1202.53			
21	21.63	4.05	60.88	926.46	63.56	1266.10			
22	19.24	5.71	62.93	926.3	57.96	1324.06			
23	11.77	1.24	85.98	925.67	39.12	1363.17			
24	15.27	0.90	85.16	925.75	49.14	1412.31			
25	21.89	4.40	63.23	925.43	61.32	1473.63			
26	21.31	5.89	59.64	926.22	62.17	1535.80			
27	21.84	1.12	57.77	925.35	62.86	1598.66			
28	21.51	0.82	57.93	926.14	62.09	1660.75			
29	8.51	4.85	60.93	925.27	25.35	1686.10			
30	0.00	0.00	0.00	761.67	0.00	1686.10			
31	11.5	8.22	76.62	925.35	38.50	1724.61			
TOTALS	591.96	0.00	94.28	926.46	1724.61	1724.61			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: July 20, 2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: June-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	21.94	0.00	43.11	927.09	40.52	40.52			
2	21.69	0.00	43.20	926.85	39.60	80.12			
3	21.78	-0.01	40.10	926.93	39.15	119.27			
4	22.04	-0.01	40.39	927.01	38.01	157.28			
5	8.30	0.01	39.22	926.46	15.67	172.95			
6	12.17	0.00	89.85	926.69	24.33	197.28			
7	17.92	0.01	42.48	926.77	34.29	231.57			
8	22.34	0.01	66.27	926.85	35.80	267.37			
9	21.19	0.01	80.69	926.38	35.86	303.23			
10	14.64	0.01	80.38	926.69	29.78	333.00			
11	16.57	0.01	86.08	925.90	28.60	361.60			
12	23.42	0.01	37.74	926.30	38.55	400.15			
13	22.27	0.00	39.78	926.77	39.44	439.59			
14	21.03	0.00	62.75	926.46	.98	477.57			
15	22.37	0.00	43.69	926.61	37.77	515.35			
16	13.77	0.02	70.99	926.30	22.08	537.42			
17	0.00	0.00	0.00	773.18	0.00	537.42			
18	0.00	0.00	0.00	710.53	0.00	537.42			
19	0.00	0.00	0.00	686.57	0.00	537.42			
20	0.00	0.00	0.00	681.21	0.00	537.42			
21	0.09	31.23	158.94	730.55	0.47	537.89			
22	11.38	38.53	179.54	891.47	53.63	591.52			
23	19.79	37.12	115.34	926.54	73.59	665.11			
24	0.16	27.44	153.75	800.37	0.40	665.51			
25	0.00	0.00	0.00	712.50	0.00	665.51			
26	0.00	0.00	0.00	689.25	0.00	665.51			
27	0.00	0.00	0.00	683.34	0.00	665.51			
28	0.00	0.00	0.00	684.45	0.00	665.51			
29	0.00	0.00	0.00	686.34	0.00	665.51			
30	0.00	0.00	0.00	691.07	0.00	665.51			
TOTALS	334.85	-0.01	179.54	927.09	665.51	665.51			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT.

BY:

TITLE: Manager - Field Services

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: July 20, 2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: June-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	21.94	6.23	64.30	926.38	66.32	66.32			
2	21.69	4.89	67.12	926.22	63.50	129.83			
3	21.78	3.52	61.65	925.98	63.74	193.56			
4	22.04	7.27	61.41	926.46	62.29	255.86			
5	8.30	6.36	55.41	925.27	23.87	279.72			
6	12.17	7.56	71.32	925.2	36.17	315.89			
7	17.92	4.21	61.26	925.43	55.99	371.88			
8	22.34	6.28	103.54	926.22	58.47	430.36			
9	21.19	7.41	119.36	925.43	57.30	487.66			
10	14.64	3.65	120.43	925.35	45.76	533.42			
11	16.57	6.51	85.92	924.96	46.58	580.00			
12	23.42	8.03	56.39	925.12	62.26	642.26			
13	22.27	5.48	61.45	925.83	64.30	706.56			
14	21.03	4.14	91.48	925.35	61.15	767.71			
15	22.37	7.25	67.11	925.43	61.55	829.25			
16	13.77	8.45	109.06	925.51	34.79	864.05			
17	0.00	0.00	0.00	773.18	0.00	864.05			
18	0.00	0.00	0.00	734.57	0.00	864.05			
19	0.00	0.00	0.00	724.16	0.00	864.05			
20	0.00	0.00	0.00	717.78	0.00	864.05			
21	0.09	8.48	76.65	731.26	0.19	864.23			
22	11.38	7.85	68.51	890.44	32.85	897.09			
23	19.79	7.22	79.92	925.27	59.67	956.76			
24	0.16	2.72	70.79	812.82	0.11	956.87			
25	0.00	0.00	0.00	711.63	0.00	956.87			
26	0.00	0.00	0.00	718.49	0.00	956.87			
27	0.00	0.00	0.00	704.46	0.00	956.87			
28	0.00	0.00	0.00	701.63	0.00	956.87			
29	0.00	0.00	0.00	701.78	0.00	956.87			
30	0.00	0.00	0.00	708.32	0.00	956.87			
TOTALS	334.85	0.00	120.43	926.46	956.87	956.87			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Services

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE:
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: July-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	690.99	0.00	0			
2	0.00	0.00	0.00	687.13	0.00	0			
3	0.00	0.00	0.00	686.89	0.00	0			
4	0.00	0.00	0.00	686.10	0.00	0			
5	0.00	0.00	0.00	686.42	0.00	0			
6	0.00	0.00	0.00	686.81	0.00	0			
7	0.00	0.00	0.00	686.42	0.00	0			
8	0.00	0.00	0.00	685.86	0.00	0			
9	0.00	0.00	0.00	686.42	0.00	0			
10	0.00	0.00	0.00	686.57	0.00	0			
11	0.00	0.00	0.00	686.34	0.00	0			
12	0.00	0.00	0.00	685.94	0.00	0			
13	0.00	0.00	0.00	685.71	0.00	0			
14	0.00	0.00	0.00	688.62	0.00	0			
15	0.00	0.00	0.00	685.94	0.00	0			
16	0.00	0.00	0.00	685.31	0.00	0			
17	0.00	0.00	0.00	685.00	0.00	0			
18	0.00	0.00	0.00	Power loss - no data	0.00	0			
19	0.00	0.00	0.00	Power loss - no data	0.00	0			
20	0.00	0.00	0.00	Power loss - no data	0.00	0			
21	0.00	0.00	0.00	684.45	0.00	0			
22	0.00	0.00	0.00	685.23	0.00	0			
23	0.00	0.00	0.00	685.63	0.00	0			
24	0.00	0.00	0.00	685.94	0.00	0			
25	0.00	0.00	0.00	685.86	0.00	0			
26	0.00	0.00	0.00	685.71	0.00	0			
27	0.00	0.00	0.00	685.79	0.00	0			
28	0.00	0.00	0.00	685.63	0.00	0			
29	0.00	0.00	0.00	685.47	0.00	0			
30	0.00	0.00	0.00	685.23	0.00	0			
31	0.00	0.00	0.00	685.23	0.00	0			
TOTALS	0	0	0	690.99	0	0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE:

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE:
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: July-2011

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	705.09	0.00	0			
2	0.00	0.00	0.00	694.85	0.00	0			
3	0.00	0.00	0.00	693.51	0.00	0			
4	0.00	0.00	0.00	690.12	0.00	0			
5	0.00	0.00	0.00	690.43	0.00	0			
6	0.00	0.00	0.00	691.54	0.00	0			
7	0.00	0.00	0.00	688.23	0.00	0			
8	0.00	0.00	0.00	683.5	0.00	0			
9	0.00	0.00	0.00	685.71	0.00	0			
10	0.00	0.00	0.00	685.79	0.00	0			
11	0.00	0.00	0.00	683.97	0.00	0			
12	0.00	0.00	0.00	682.48	0.00	0			
13	0.00	0.00	0.00	680.35	0.00	0			
14	0.00	0.00	0.00	686.26	0.00	0			
15	0.00	0.00	0.00	680.9	0.00	0			
16	0.00	0.00	0.00	679.8	0.00	0			
17	0.00	0.00	0.00	677.2	0.00	0			
18	0.00	0.00	0.00	Power loss - no data	0.00	0			
19	0.00	0.00	0.00	Power loss - no data	0.00	0			
20	0.00	0.00	0.00	Power loss - no data	0.00	0			
21	0.00	0.00	0.00	674.83	0.00	0			
22	0.00	0.00	0.00	676.01	0.00	0			
23	0.00	0.00	0.00	675.38	0.00	0			
24	0.00	0.00	0.00	674.52	0.00	0			
25	0.00	0.00	0.00	673.81	0.00	0			
26	0.00	0.00	0.00	673.89	0.00	0			
27	0.00	0.00	0.00	673.65	0.00	0			
28	0.00	0.00	0.00	673.26	0.00	0			
29	0.00	0.00	0.00	672.47	0.00	0			
30	0.00	0.00	0.00	671.52	0.00	0			
31	0.00	0.00	0.00	672.23	0.00	0			
TOTALS	0	0	0	705.09	0	0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE:

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE:
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: August-2011

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	685.31	0.00	0.00			
2	0.00	0.00	0.00	685.39	0.00	0.00			
3	0.00	0.00	0.00	684.84	0.00	0.00			
4	0.00	0.00	0.00	685.16	0.00	0.00			
5	0.00	0.00	0.00	685.08	0.00	0.00			
6	0.00	0.00	0.00	684.60	0.00	0.00			
7	0.00	0.00	0.00	684.13	0.00	0.00			
8	0.00	0.00	0.00	684.68	0.00	0.00			
9	0.00	0.00	0.00	684.68	0.00	0.00			
10	0.00	0.00	0.00	684.68	0.00	0.00			
11	0.00	0.00	0.00	684.60	0.00	0.00			
12	0.00	0.00	0.00	686.65	0.00	0.00			
13	0.00	0.00	0.00	684.60	0.00	0.00			
14	0.00	0.00	0.00	684.29	0.00	0.00			
15	0.00	0.00	0.00	684.13	0.00	0.00			
16	0.00	0.00	0.00	684.37	0.00	0.00			
17	0.00	0.00	0.00	684.60	0.00	0.00			
18	0.00	0.00	0.00	684.60	0.00	0.00			
19	0.00	0.00	0.00	684.52	0.00	0.00			
20	0.00	0.00	0.00	684.68	0.00	0.00			
21	0.00	0.00	0.00	684.13	0.00	0.00			
22	0.00	0.00	0.00	684.29	0.00	0.00			
23	0.00	0.00	0.00	686.89	0.00	0.00			
24	0.00	0.00	0.00	684.76	0.00	0.00			
25	0.00	0.00	0.00	684.52	0.00	0.00			
26	4.91	2.35	118.26	777.20	23.02	23.02			
27	0.21	2.68	84.08	715.49	0.64	23.66			
28	0.00	0.00	0.00	681.29	0.00	23.66			
29	11.56	2.92	111.14	862.31	48.20	71.86			
30	23.93	1.79	103.27	925.43	91.82	163.68			
31	23.74	2.02	100.47	926.06	75.87	239.55			
TOTALS	64.34	1.79	118.26	926.06	239.55	239.55			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE:

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE:
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: August-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	672.15	0.00	0.00			
2	0.00	0.00	0.00	671.21	0.00	0.00			
3	0.00	0.00	0.00	668.84	0.00	0.00			
4	0.00	0.00	0.00	670.34	0.00	0.00			
5	0.00	0.00	0.00	670.73	0.00	0.00			
6	0.00	0.00	0.00	668.21	0.00	0.00			
7	0.00	0.00	0.00	666.32	0.00	0.00			
8	0.00	0.00	0.00	669.55	0.00	0.00			
9	0.00	0.00	0.00	668.53	0.00	0.00			
10	0.00	0.00	0.00	669.00	0.00	0.00			
11	0.00	0.00	0.00	669.87	0.00	0.00			
12	0.00	0.00	0.00	673.1	0.00	0.00			
13	0.00	0.00	0.00	667.42	0.00	0.00			
14	0.00	0.00	0.00	667.82	0.00	0.00			
15	0.00	0.00	0.00	667.82	0.00	0.00			
16	0.00	0.00	0.00	669.47	0.00	0.00			
17	0.00	0.00	0.00	669.71	0.00	0.00			
18	0.00	0.00	0.00	669.16	0.00	0.00			
19	0.00	0.00	0.00	668.61	0.00	0.00			
20	0.00	0.00	0.00	669.55	0.00	0.00			
21	0.00	0.00	0.00	668.13	0.00	0.00			
22	0.00	0.00	0.00	668.76	0.00	0.00			
23	0.00	0.00	0.00	674.91	0.00	0.00			
24	0.00	0.00	0.00	670.18	0.00	0.00			
25	0.00	0.00	0.00	670.58	0.00	0.00			
26	4.91	7.12	96.31	778.46	15.42	15.42			
27	0.21	8.53	63.15	715.57	0.50	15.93			
28	0.00	0.00	0.00	681.21	0.00	15.93			
29	11.56	5.68	95.24	861.44	37.04	52.96			
30	23.93	7.43	116.05	923.70	98.57	151.53			
31	23.74	7.76	112.36	925.59	80.59	232.12			
TOTALS	64.34	5.68	116.05	925.59	232.12	232.12			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE:

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 10/11/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: September-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.83	2.08	111.55	917.24	58.67	58.67			
2	23.45	2.09	108.20	923.07	60.81	119.48			
3	23.43	2.37	105.59	922.44	55.70	175.18			
4	23.94	2.77	81.46	908.17	54.35	229.53			
5	12.44	32.87	49.66	889.81	29.94	259.47			
6	0.00	0.00	0.00	719.12	0.00	259.47			
7	7.20	2.40	120.59	923.86	28.46	287.93			
8	23.80	2.46	80.77	925.75	60.49	348.42			
9	23.92	2.48	61.75	922.28	55.47	403.89			
10	23.22	2.26	95.53	923.78	55.65	459.54			
11	12.83	2.33	67.23	924.72	27.86	487.40			
12	13.45	2.23	128.38	924.80	38.44	525.84			
13	23.94	20.12	45.86	924.80	53.16	579.00			
14	23.90	29.05	41.77	921.81	52.95	631.95			
15	23.67	2.13	77.25	925.43	49.06	681.01			
16	23.09	1.97	74.99	926.06	51.24	732.25			
17	23.90	3.24	42.83	925.67	50.56	782.81			
18	23.56	2.12	62.99	925.27	.69	831.49			
19	23.33	2.02	59.11	925.83	52.10	883.59			
20	23.54	2.36	49.83	925.90	50.73	934.32			
21	23.81	2.28	41.97	926.06	48.78	983.11			
22	23.95	13.46	39.50	923.30	49.24	1032.34			
23	23.53	2.37	74.43	925.67	49.59	1081.93			
24	23.17	2.32	44.23	925.90	49.53	1131.47			
25	23.47	2.22	43.01	926.30	48.07	1179.54			
26	23.89	3.85	39.22	924.96	49.81	1229.36			
27	22.83	2.17	68.60	925.59	47.98	1277.33			
28	22.60	2.13	59.09	925.67	47.54	1324.88			
29	23.74	2.02	39.18	925.67	46.87	1371.75			
30	23.68	1.76	58.33	925.67	46.11	1417.86			
31						1417.86			
TOTALS	635.12	1.76	128.38	926.3	1417.86	1417.86			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Services & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 10/11/2011
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: September-2011

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.83	6.45	119.58	916.05	60.44	60.44			
2	23.45	2.76	120.97	922.12	67.40	127.84			
3	23.43	5.68	120.16	921.73	61.64	189.48			
4	23.94	7.98	91.12	907.62	56.75	246.23			
5	12.44	33.55	51.53	889.42	30.31	276.54			
6	0.00	0.00	0.00	751.19	0.00	276.54			
7	7.20	3.09	112.71	922.52	28.43	304.97			
8	23.80	7.73	95.35	925.04	68.76	373.73			
9	23.92	7.88	75.98	922.04	63.22	436.95			
10	23.22	6.33	126.05	922.36	63.48	500.42			
11	12.83	7.97	73.52	923.78	31.87	532.30			
12	13.45	8.57	85.54	924.25	45.01	577.31			
13	23.94	24.21	55.59	923.86	65.40	642.70			
14	23.90	33.84	49.00	921.89	63.19	705.90			
15	23.67	5.67	106.99	924.64	61.66	767.56			
16	23.09	7.74	99.21	925.75	68.11	835.67			
17	23.90	9.59	53.56	925.35	64.61	900.27			
18	23.56	8.82	85.74	924.8	64.29	964.56			
19	23.33	8.24	86.00	925.04	68.09	1032.65			
20	23.54	7.29	64.34	925.2	64.11	1096.76			
21	23.81	7.03	51.22	925.04	60.22	1156.98			
22	23.95	13.11	47.72	923.07	61.82	1218.80			
23	23.53	8.80	104.71	924.96	66.07	1284.88			
24	23.17	6.41	65.61	925.12	68.84	1353.72			
25	23.47	10.14	63.97	926.06	71.42	1425.13			
26	23.89	8.82	57.43	924.64	65.07	1490.20			
27	22.83	7.59	90.30	925.12	64.03	1554.23			
28	22.60	8.15	85.99	925.27	64.53	1618.76			
29	23.74	8.61	54.60	925.12	65.94	1684.70			
30	23.68	8.48	85.03	924.8	67.63	1752.33			
31						1752.33			
TOTALS	635.12	2.76	126.05	926.06	1752.33	1752.33			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Services & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: October-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.50	1.70	63.06	925.67	48.15	48.15			
2	23.63	1.49	72.06	925.83	47.31	95.46			
3	15.00	1.58	73.57	925.83	31.63	127.08			
4	15.21	1.71	87.43	925.83	33.79	160.88			
5	21.66	1.80	79.19	925.90	40.63	201.50			
6	22.70	1.98	126.83	926.22	40.36	241.86			
7	23.18	1.75	58.49	926.61	40.65	282.51			
8	23.57	2.06	62.58	926.38	40.42	322.93			
9	22.21	2.04	63.54	926.54	41.68	364.61			
10	22.81	1.95	68.92	925.90	42.29	406.90			
11	23.15	2.17	63.08	925.83	41.06	447.96			
12	22.99	2.16	77.50	925.67	44.16	492.12			
13	22.41	2.03	62.88	926.61	42.23	534.35			
14	18.71	1.67	80.64	925.51	33.97	568.31			
15	19.40	1.60	70.75	925.35	33.04	601.35			
16	20.77	1.56	64.48	925.90	41.13	642.47			
17	21.53	1.64	81.21	926.22	41.84	684.32			
18	22.99	1.79	60.30	925.83	39.96	724.28			
19	22.33	1.88	68.88	925.90	42.28	766.56			
20	22.92	1.55	73.54	925.43	45.66	812.23			
21	20.94	1.61	75.97	925.75	37.05	849.27			
22	21.71	1.47	67.79	925.67	40.91	890.18			
23	21.05	1.50	71.00	925.90	41.51	931.69			
24	22.16	1.87	58.83	925.83	41.20	972.88			
25	21.79	1.64	68.72	925.98	42.35	1015.23			
26	21.98	1.74	57.96	925.67	41.25	1056.48			
27	23.16	1.66	53.54	925.12	42.67	1099.15			
28	23.71	1.39	60.01	925.27	43.06	1142.21			
29	23.21	1.27	56.57	925.59	42.08	1184.29			
30	21.79	1.27	46.79	925.90	41.31	1225.60			
31	23.05	1.31	44.70	925.67	39.53	1265.13			
TOTALS	675.20	1.27	126.83	926.61	1265.13	1265.13			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/26/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: October-2011

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.50	8.04	92.43	924.25	71.47	71.47			
2	23.63	5.40	116.47	924.64	75.78	147.24			
3	15.00	8.90	109.06	924.56	49.76	197.01			
4	15.21	4.69	136.52	924.8	55.72	252.72			
5	21.66	2.57	134.04	925.27	68.73	321.45			
6	22.70	4.46	90.00	925.51	78.17	399.62			
7	23.18	9.34	90.86	925.9	77.12	476.74			
8	23.57	9.00	101.06	925.9	80.37	557.11			
9	22.21	9.79	104.09	925.9	83.16	640.27			
10	22.81	10.47	110.19	924.8	69.54	709.81			
11	23.15	8.97	102.57	924.72	64.32	774.13			
12	22.99	2.67	124.35	924.88	70.62	844.75			
13	22.41	7.16	93.25	925.98	66.72	911.47			
14	18.71	1.20	113.75	924.88	53.71	965.18			
15	19.40	6.64	117.57	924.25	57.29	1022.47			
16	20.77	5.60	101.98	924.8	68.24	1090.71			
17	21.53	1.33	134.84	925.27	69.73	1160.44			
18	22.99	7.98	92.40	924.96	66.38	1226.81			
19	22.33	8.01	108.44	925.27	67.10	1293.91			
20	22.92	1.06	114.63	924.09	74.30	1368.21			
21	20.94	0.00	125.86	924.56	65.16	1433.37			
22	21.71	1.85	110.97	924.8	69.85	1503.22			
23	21.05	1.90	118.09	925.12	68.78	1572.00			
24	22.16	7.04	91.76	924.56	69.99	1641.99			
25	21.79	4.29	105.70	925.12	70.39	1712.37			
26	21.98	7.84	98.77	924.64	69.07	1781.44			
27	23.16	1.17	93.56	924.01	72.52	1853.96			
28	23.71	5.16	106.44	924.01	73.28	1927.24			
29	23.21	5.90	107.03	924.33	74.71	2001.95			
30	21.79	5.77	74.00	924.8	72.26	2074.21			
31	23.05	6.37	70.97	924.33	68.78	2143.00			
TOTALS	675.20	1.06	136.52	925.98	2143.00	2143.00			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/27/2011
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: November-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.75	1.43	54.43	925.51	41.15	41.15			
2	23.95	13.77	37.85	923.15	38.46	79.61			
3	14.91	1.97	45.73	924.80	23.39	103.00			
4	0.00				0.00	103.00			
5	0.00				0.00	103.00			
6	0.00				0.00	103.00			
7	0.00				0.00	103.00			
8	0.00				0.00	103.00			
9	0.00				0.00	103.00			
10	0.00				0.00	103.00			
11	0.00				0.00	103.00			
12	0.00				0.00	103.00			
13	0.00				0.00	103.00			
14	0.00				0.00	103.00			
15	0.00				0.00	103.00			
16	0.00				0.00	103.00			
17	0.00				0.00	103.00			
18	0.00				0.00	103.00			
19	0.00				0.00	103.00			
20	0.00				0.00	103.00			
21	0.00				0.00	103.00			
22	0.00				0.00	103.00			
23	0.00				0.00	103.00			
24	0.00				0.00	103.00			
25	0.00				0.00	103.00			
26	0.00				0.00	103.00			
27	0.00				0.00	103.00			
28	0.00				0.00	103.00			
29	0.00				0.00	103.00			
30	0.00				0.00	103.00			
31						103.00			
TOTALS	62.61	1.43	54.43	925.51	103.00	103.00			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

Appendix E
CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/27/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: November-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.75	1.50	101.56	924.72	71.58	71.58			
2	23.95	28.90	61.89	921.49	67.12	138.70			
3	14.91	6.76	67.15	924.09	43.66	182.37			
4	0.00				0.00	182.37			
5	0.00				0.00	182.37			
6	0.00				0.00	182.37			
7	0.00				0.00	182.37			
8	0.00				0.00	182.37			
9	0.00				0.00	182.37			
10	0.00				0.00	182.37			
11	0.00				0.00	182.37			
12	0.00				0.00	182.37			
13	0.00				0.00	182.37			
14	0.00				0.00	182.37			
15	0.00				0.00	182.37			
16	0.00				0.00	182.37			
17	0.00				0.00	182.37			
18	0.00				0.00	182.37			
19	0.00				0.00	182.37			
20	0.00				0.00	182.37			
21	0.00				0.00	182.37			
22	0.00				0.00	182.37			
23	0.00				0.00	182.37			
24	0.00				0.00	182.37			
25	0.00				0.00	182.37			
26	0.00				0.00	182.37			
27	0.00				0.00	182.37			
28	0.00				0.00	182.37			
29	0.00				0.00	182.37			
30	0.00				0.00	182.37			
31						182.37			
TOTALS	62.61	1.5	101.56	924.72	182.37	182.37			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/27/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: December-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0				0	0			
2	0				0	0			
3	0				0	0			
4	0				0	0			
5	0				0	0			
6	0				0	0			
7	0				0	0			
8	0				0	0			
9	0				0	0			
10	0				0	0			
11	0				0	0			
12	0				0	0			
13	0				0	0			
14	0				0	0			
15	0				0	0			
16	0				0	0			
17	0				0	0			
18	0				0	0			
19	0				0	0			
20	0				0	0			
21	0				0	0			
22	0				0	0			
23	0				0	0			
24	0				0	0			
25	0				0	0			
26	0				0	0			
27	0				0	0			
28	0				0	0			
29	0				0	0			
30	0				0	0			
31	0				0	0			
TOTALS	0	0	0	0	0	0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/27/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: December-2011

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0				0	0			
2	0				0	0			
3	0				0	0			
4	0				0	0			
5	0				0	0			
6	0				0	0			
7	0				0	0			
8	0				0	0			
9	0				0	0			
10	0				0	0			
11	0				0	0			
12	0				0	0			
13	0				0	0			
14	0				0	0			
15	0				0	0			
16	0				0	0			
17	0				0	0			
18	0				0	0			
19	0				0	0			
20	0				0	0			
21	0				0	0			
22	0				0	0			
23	0				0	0			
24	0				0	0			
25	0				0	0			
26	0				0	0			
27	0				0	0			
28	0				0	0			
29	0				0	0			
30	0				0	0			
31	0				0	0			
TOTALS	0	0	0	0	0	0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/12/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: January-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0				0	0			
2	0				0	0			
3	0				0	0			
4	0				0	0			
5	0				0	0			
6	0				0	0			
7	0				0	0			
8	0				0	0			
9	3.0	0.0	167.9	910.5	11.45	11.45			
10	2.4	0.4	153.2	936.7	13.21	24.67			
11	0				0.00	24.67			
12	0				0.00	24.67			
13	0				0.00	24.67			
14	0				0.00	24.67			
15	0				0.00	24.67			
16	0				0.00	24.67			
17	0				0.00	24.67			
18	0				0.00	24.67			
19	0				0.00	24.67			
20	0				0.00	24.67			
21	0				0.00	24.67			
22	0				0.00	24.67			
23	0				0.00	24.67			
24	0				0.00	24.67			
25	0				0.00	24.67			
26	0				0.00	24.67			
27	0				0.00	24.67			
28	0				0.00	24.67			
29	0				0.00	24.67			
30	0				0.00	24.67			
31	0				0.00	24.67			
TOTALS	5.4	0.38	167.91	936.7	24.67	24.67			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Field Svcs.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/12/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: January-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0				0	0			
2	0				0	0			
3	0				0	0			
4	0				0	0			
5	0				0	0			
6	0				0	0			
7	0				0	0			
8	0				0	0			
9	3.0	0.0	207.3	904.6	17.69	17.69			
10	2.4	7.3	207.3	930.5	24.46	42.16			
11	0				0.00	42.16			
12	0				0.00	42.16			
13	0				0.00	42.16			
14	0				0.00	42.16			
15	0				0.00	42.16			
16	0				0.00	42.16			
17	0				0.00	42.16			
18	0				0.00	42.16			
19	0				0.00	42.16			
20	0				0.00	42.16			
21	0				0.00	42.16			
22	0				0.00	42.16			
23	0				0.00	42.16			
24	0				0.00	42.16			
25	0				0.00	42.16			
26	0				0.00	42.16			
27	0				0.00	42.16			
28	0				0.00	42.16			
29	0				0.00	42.16			
30	0				0.00	42.16			
31	0				0.00	42.16			
TOTALS	5.38	7.26	207.28	930.48	42.16	42.16			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Mgr. Field Svcs.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/12/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: February-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0				0.00	0.00			
2	0				0.00	0.00			
3	0				0.00	0.00			
4	0				0.00	0.00			
5	0				0.00	0.00			
6	0				0.00	0.00			
7	0				0.00	0.00			
8	0				0.00	0.00			
9	0				0.00	0.00			
10	0				0.00	0.00			
11	0				0.00	0.00			
12	0				0.00	0.00			
13	0				0.00	0.00			
14	0				0.00	0.00			
15	0				0.00	0.00			
16	0				0.00	0.00			
17	0				0.00	0.00			
18	0				0.00	0.00			
19	0				0.00	0.00			
20	0				0.00	0.00			
21	0				0.00	0.00			
22	0				0.00	0.00			
23	0				0.00	0.00			
24	0				0.00	0.00			
25	0				0.00	0.00			
26	0				0.00	0.00			
27	0				0.00	0.00			
28	0				0.00	0.00			
29	0				0.00	0.00			
30	0				0.00	0.00			
31	0				0.00	0.00			
TOTALS	0	0	0	0	0.00	0.00			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Mgr. Field Svcs.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/12/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: February-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0				0.00	0.00			
2	0				0.00	0.00			
3	0				0.00	0.00			
4	0				0.00	0.00			
5	0				0.00	0.00			
6	0				0.00	0.00			
7	0				0.00	0.00			
8	0				0.00	0.00			
9	0				0.00	0.00			
10	0				0.00	0.00			
11	0				0.00	0.00			
12	0				0.00	0.00			
13	0				0.00	0.00			
14	0				0.00	0.00			
15	0				0.00	0.00			
16	0				0.00	0.00			
17	0				0.00	0.00			
18	0				0.00	0.00			
19	0				0.00	0.00			
20	0				0.00	0.00			
21	0				0.00	0.00			
22	0				0.00	0.00			
23	0				0.00	0.00			
24	0				0.00	0.00			
25	0				0.00	0.00			
26	0				0.00	0.00			
27	0				0.00	0.00			
28	0				0.00	0.00			
29	0				0.00	0.00			
30	0				0.00	0.00			
31	0				0.00	0.00			
TOTALS	0	0	0	0	0.00	0.00			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Mgr. Field Svcs

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/12/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: March-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00				0.00	0.00			
2	1.53	-0.13	185.64	823.06	8.65	8.65			
3	0.00				0.00	8.65			
4	0.00				0.00	8.65			
5	0.00				0.00	8.65			
6	0.00				0.00	8.65			
7	3.24	-0.83	207.28	882.64	21.61	30.26			
8	0.00				0.00	30.26			
9	0.89				0.00	30.26			
10	0.00				0.00	30.26			
11	0.00				0.00	30.26			
12	0.00				0.00	30.26			
13	0.00				0.00	30.26			
14	0.00				0.00	30.26			
15	0.00				0.00	30.26			
16	1.96	-0.86	186.08	864.44	9.29	39.54			
17	0.00				0.00	39.54			
18	0.00				0.00	39.54			
19	0.00				0.00	39.54			
20	0.00				0.00	39.54			
21	0.00				0.00	39.54			
22	0.00				0.00	39.54			
23	1.33	-0.72	207.28	786.50	2.54	42.08			
24	0.00				0.00	42.08			
25	0.00				0.00	42.08			
26	0.00				0.00	42.08			
27	0.00				0.00	42.08			
28	0.00				0.00	42.08			
29	0.00				0.00	42.08			
30	1.55	-1.43	207.28	728.02	12.96	55.03			
31	0.00				0.00	55.03			
TOTALS	10.50	-1.43	207.28	882.64	55.03	55.03			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Mgr. Field Svcs

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/12/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: March-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00				0.00	0.00			
2	1.53	6.61	207.28	827.87	10.96	10.96			
3	0.00				0.00	10.96			
4	0.00				0.00	10.96			
5	0.00				0.00	10.96			
6	0.00				0.00	10.96			
7	3.24	0.00	207.28	881.69	25.85	36.81			
8	0.00				0.00	36.81			
9	0.89				0.00	36.81			
10	0.00				0.00	36.81			
11	0.00				0.00	36.81			
12	0.00				0.00	36.81			
13	0.00				00	36.81			
14	0.00				0.00	36.81			
15	0.00				0.00	36.81			
16	1.96	0.00	207.28	863.81	12.89	49.70			
17	0.00				0.00	49.70			
18	0.00				0.00	49.70			
19	0.00				0.00	49.70			
20	0.00				0.00	49.70			
21	0.00				0.00	49.70			
22	0.00				0.00	49.70			
23	1.33	0.00	207.28	785.40	3.95	53.65			
24	0.00				0.00	53.65			
25	0.00				0.00	53.65			
26	0.00				0.00	53.65			
27	0.00				0.00	53.65			
28	0.00				0.00	53.65			
29	0.00				0.00	53.65			
30	1.55	0.00	202.20	726.61	2.86	56.51			
31	0.00				0.00	56.51			
TOTALS	10.50	6.61	207.28	881.69	56.51	56.51			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Engr. Field Svcs

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 5/7/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: April-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	684.21	0	0			
2	0.00	0.00	0.00	680.82	0	0			
3	0.00	0.00	0.00	685.86	0	0			
4	0.00	0.00	0.00	681.69	0	0			
5	0.00	0.00	0.00	680.98	0	0			
6	0.00	0.00	0.00	681.85	0	0			
7	0.00	0.00	0.00	682.48	0	0			
8	0.00	0.00	0.00	681.14	0	0			
9	0.00	0.00	0.00	673.96	0	0			
10	3.29	0.00	178.26	933.39	22.27	22.27			
11	4.68	0.00	127.87	939.77	17.21	39.48			
12	0.00	0.00	0.00	753.72	0	39.48			
13	2.88	0.00	128.38	942.61	6.64	46.12			
14	0.00	0.00	0.00	745.05	0	46.12			
15	0.00	0.00	0.00	718.49	0	46.12			
16	0.00	0.00	0.00	730.94	0	46.12			
17	0.00	0.00	0.00	710.06	0	46.12			
18	0.00	0.00	0.00	698.71	0	46.12			
19	0.00	0.00	0.00	697.05	0	46.12			
20	0.00	0.00	0.00	702.18	0	46.12			
21	0.00	0.00	0.00	658.76	0	46.12			
22	0.00	0.00	0.00	653.87	0	46.12			
23	0.00	0.00	0.00	670.42	0	46.12			
24	0.00	0.00	0.00	683.58	0	46.12			
25	0.00	0.00	0.00	686.26	0	46.12			
26	0.00	0.00	0.00	677.67	0	46.12			
27	0.00	0.00	0.00	681.69	0	46.12			
28	0.00	0.00	0.00	675.78	0	46.12			
29	0.00	0.00	0.00	683.50	0	46.12			
30	3.46	0.00	159.39	936.94	17.26	63.38			
31						63.38			
TOTALS	14.3	0.00	178.26	942.61	63.38412833	63.38			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

Appendix E

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 5/7/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: April-2012

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	676.64	0	0			
2	0.00	0.00	0.00	674.67	0	0			
3	0.00	0.00	0.00	677.2	0	0			
4	0.00	0.00	0.00	674.2	0	0			
5	0.00	0.00	0.00	674.2	0	0			
6	0.00	0.00	0.00	673.89	0	0			
7	0.00	0.00	0.00	674.12	0	0			
8	0.00	0.00	0.00	673.57	0	0			
9	0.00	0.00	0.00	666.64	0	0			
10	3.29	0.00	198.10	930.87	29.00	29.00			
11	4.68	0.00	207.28	937.25	38.59	67.59			
12	0.00	0.00	0.00	704.62	0	67.59			
13	2.88	0.00	207.28	938.43	22.36	89.95			
14	0.00	0.00	0.00	689.25	0	89.95			
15	0.00	0.00	0.00	684.76	0	89.95			
16	0.00	0.00	0.00	681.06	0	89.95			
17	0.00	0.00	0.00	678.3	0	89.95			
18	0.00	0.00	0.00	676.49	0	89.95			
19	0.00	0.00	0.00	682.71	0	89.95			
20	0.00	0.00	0.00	682.48	0	89.95			
21	0.00	0.00	0.00	662.46	0	89.95			
22	0.00	0.00	0.00	658.76	0	89.95			
23	0.00	0.00	0.00	665.3	0	89.95			
24	0.00	0.00	0.00	673.81	0	89.95			
25	0.00	0.00	0.00	676.8	0	89.95			
26	0.00	0.00	0.00	673.73	0	89.95			
27	0.00	0.00	0.00	677.98	0	89.95			
28	0.00	0.00	0.00	671.76	0	89.95			
29	0.00	0.00	0.00	678.77	0	89.95			
30	3.46	0.00	202.66	931.34	25.72	115.67			
31						115.67			
TOTALS	14.3	0.00	207.28	938.43	115.67177	115.67			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 7/3/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: May-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	684.45	0.00	0.00			
2	0.00	0.00	0.00	664.67	0.00	0.00			
3	3.53	0.00	152.93	943.24	13.96	13.96			
4	0.00	0.00	0.00	712.19	0.00	13.96			
5	0.00	0.00	0.00	664.27	0.00	13.96			
6	0.00	0.00	0.00	666.56	0.00	13.96			
7	0.00	0.00	0.00	666.71	0.00	13.96			
8	4.09	0.00	149.95	937.41	18.80	32.76			
9	0.00	0.00	0.00	716.2	0.00	32.76			
10	0.00	0.00	0.00	688.15	0.00	32.76			
11	0.00	0.00	0.00	692.33	0.00	32.76			
12	0.00	0.00	0.00	686.02	0.00	32.76			
13	0.00	0.00	0.00	669.32	0.00	32.76			
14	0.00	0.00	0.00	662.07	0.00	32.76			
15	0.00	0.00	0.00	665.14	0.00	32.76			
16	0.00	0.00	0.00	674.28	0.00	32.76			
17	0.00	0.00	0.00	678.3	0.00	32.76			
18	0.00	0.00	0.00	684.84	0.00	32.76			
19	0.00	0.00	0.00	681.45	0.00	32.76			
20	0.00	0.00	0.00	679.95	0.00	32.76			
21	0.00	0.00	0.00	678.61	0.00	32.76			
22	0.00	0.00	0.00	670.18	0.00	32.76			
23	0.00	0.00	0.00	670.34	0.00	32.76			
24	0.00	0.00	0.00	672.86	0.00	32.76			
25	4.10	0.00	183.15	932.92	24.53	57.29			
26	0.00	0.00	0.00	675.07	0.00	57.29			
27	0.00	0.00	0.00	669.87	0.00	57.29			
28	0.00	0.00	0.00	666.56	0.00	57.29			
29	0.00	0.00	0.00	665.22	0.00	57.29			
30	0.00	0.00	0.00	664.19	0.00	57.29			
31	1.73	0.00	132.74	825.98	9.22	66.51			
TOTALS	13.46	0.00	183.15	943.24	66.51	66.51			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 7/3/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: May-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0	0	702.96	0.00	0.00			
2	0.00	0	0	674.75	0.00	0.00			
3	3.53	0	205.87	940.64	27.45	27.45			
4	0.00	0	0	710.53	0.00	27.45			
5	0.00	0	0	677.12	0.00	27.45			
6	0.00	0	0	674.60	0.00	27.45			
7	0.00	0	0	672.94	0.00	27.45			
8	4.09	0	205.81	934.02	30.90	58.35			
9	0.00	0	0	717.23	0.00	58.35			
10	0.00	0	0	685.71	0.00	58.35			
11	0.00	0	0	689.49	0.00	58.35			
12	0.00	0	0	684.60	0.00	58.35			
13	0.00	0	0	669.47	0.00	58.35			
14	0.00	0	0	667.03	0.00	58.35			
15	0.00	0	0	670.97	0.00	58.35			
16	0.00	0	0	673.10	0.00	58.35			
17	0.00	0	0	677.27	0.00	58.35			
18	0.00	0	0	685.39	0.00	58.35			
19	0.00	0	0	679.95	0.00	58.35			
20	0.00	0	0	676.64	0.00	58.35			
21	0.00	0	0	674.91	0.00	58.35			
22	0.00	0	0	670.58	0.00	58.35			
23	0.00	0	0	670.58	0.00	58.35			
24	0.00	0	0	670.89	0.00	58.35			
25	4.10	0	178.49	932.21	28.30	86.65			
26	0.00	0	0	711.24	0.00	86.65			
27	0.00	0	0	677.27	0.00	86.65			
28	0.00	0	0	673.96	0.00	86.65			
29	0.00	0	0	672.70	0.00	86.65			
30	0.00	0	0	671.68	.00	86.65			
31	1.73	0	129.22	825.98	9.49	96.14			
TOTALS	13.46	0	205.87	940.64	96.14	96.14			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 7/16/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: June-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00			669.16		0			
2	0.00			675.93		0			
3	0.00			681.61		0			
4	0.00			679.40		0			
5	0.00			680.19		0			
6	0.00			678.77		0			
7	0.06	0	0.06	684.13	0	0			
8	0.00			681.45		0			
9	0.00			681.92		0			
10	0.00			679.88		0			
11	2.61	-0.32	186.24	798.24	11.019	11.019			
12	0.00			677.59		11.019			
13	0.00			673.10		11.019			
14	0.00			683.03		11.019			
15	0.00			678.69		11.019			
16	0.00			676.80		11.019			
17	0.00			673.41		11.019			
18	0.00			673.26		11.019			
19	0.00			673.89		11.019			
20	0.00			674.52		11.019			
21	0.00			674.83		11.019			
22	0.00			675.15		11.019			
23	0.00			679.64		11.019			
24	0.00			677.75		11.019			
25	0.00			676.17		11.019			
26	0.00			686.02		11.019			
27	0.00			685.86		11.019			
28	0.00			682.00		11.019			
29	0.00	Power loss at site. No data collection				11.019			
30	0.00	Power loss at site. No data collection				11.019			
31						11.019			
TOTALS	2.67	-0.32	186.24	798.24	11.019	11.019			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 7/16/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: June-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00			680.03		0.000			
2	0.00			675.15		0.000			
3	0.00			679.48		0.000			
4	0.00			675.93		0.000			
5	0.00			676.57		0.000			
6	0.00			673.89		0.000			
7	0.06	5.52	49.21	681.92	0.03	0.032			
8	0.00			674.52		0.032			
9	0.00			674.75		0.032			
10	0.00			672.07		0.032			
11	2.61	-0.42	166.26	798.48	10.95	10.982			
12	0.00			683.18		10.982			
13	0.00			672.47		10.982			
14	0.00			678.22		10.982			
15	0.00			671.99		10.982			
16	0.00			670.97		10.982			
17	0.00			670.73		10.982			
18	0.00			670.65		10.982			
19	0.00			671.21		10.982			
20	0.00			671.52		10.982			
21	0.00			671.36		10.982			
22	0.00			671.21		10.982			
23	0.00			671.44		10.982			
24	0.00			671.60		10.982			
25	0.00			671.29		10.982			
26	0.00			677.75		10.982			
27	0.00			678.06		10.982			
28	0.00			672.07		10.982			
29	0.00	Power loss at site. No data collection				10.982			
30	0.00	Power loss at site. No data collection				10.982			
31						10.982			
TOTALS	2.67	-0.42	166.26	798.48	10.982	10.982			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 9/27/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: July-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	power outage, no data	0.00	0.00			
2	0.00	0.00	0.00	power outage, no data	0.00	0.00			
3	0.00	0.00	0.00	power outage, no data	0.00	0.00			
4	0.00	0.00	0.00	power outage, no data	0.00	0.00			
5	0.00	0.00	0.00	power outage, no data	0.00	0.00			
6	0.00	0.00	0.00	power outage, no data	0.00	0.00			
7	0.00	0.00	0.00	power outage, no data	0.00	0.00			
8	0.00	0.00	0.00	power outage, no data	0.00	0.00			
9	0.00	0.00	0.00	power outage, no data	0.00	0.00			
10	0.00	0.00	0.00	power outage, no data	0.00	0.00			
11	0.00	0.00	0.00	power outage, no data	0.00	0.00			
12	0.00	0.00	0.00	power outage, no data	0.00	0.00			
13	0.00	0.00	0.00	power outage, no data	0.00	0.00			
14	0.00	0.00	0.00	power outage, no data	0.00	0.00			
15	0.00	0.00	0.00	power outage, no data	0.00	0.00			
16	0.00	0.00	0.00	power outage, no data	0.00	0.00			
17	0.00	0.00	0.00	power outage, no data	0.00	0.00			
18	5.64	0.00	180.74	912.74	34.13	34.13			
19	0.00	0.00	0.00	677.43	0.00	34.13			
20	0.00	0.00	0.00	675.15	0.00	34.13			
21	0.00	0.00	0.00	675.86	0.00	34.13			
22	0.00	0.00	0.00	676.72	0.00	34.13			
23	8.42	0.00	184.47	912.11	43.44	77.57			
24	18.23	0.00	145.54	935.36	30.95	108.51			
25	23.94	4.28	32.83	926.30	28.40	136.92			
26	15.72	0.00	118.22	963.10	18.73	155.65			
27	0.00	0.00	0.00	694.61	0.00	155.65			
28	10.23	0.00	144.76	930.48	23.42	179.07			
29	23.93	3.37	30.15	926.77	27.70	206.77			
30	11.66	0.00	30.13	926.38	12.83	219.60			
31	13.82	0.00	155.58	935.28	23.66	243.26			
TOTALS	131.60	3.37	184.47	963.1	243.26	243.26			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 9/27/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: July-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0	0	power outage, no data	0.00	0.00			
2	0.00	0	0	power outage, no data	0.00	0.00			
3	0.00	0	0	power outage, no data	0.00	0.00			
4	0.00	0	0	power outage, no data	0.00	0.00			
5	0.00	0	0	power outage, no data	0.00	0.00			
6	0.00	0	0	power outage, no data	0.00	0.00			
7	0.00	0	0	power outage, no data	0.00	0.00			
8	0.00	0	0	power outage, no data	0.00	0.00			
9	0.00	0	0	power outage, no data	0.00	0.00			
10	0.00	0	0	power outage, no data	0.00	0.00			
11	0.00	0	0	power outage, no data	0.00	0.00			
12	0.00	0	0	power outage, no data	0.00	0.00			
13	0.00	0	0	power outage, no data	0.00	0.00			
14	0.00	0	0	power outage, no data	0.00	0.00			
15	0.00	0	0	power outage, no data	0.00	0.00			
16	0.00	0	0	power outage, no data	0.00	0.00			
17	0.00	0	0	power outage, no data	0.00	0.00			
18	5.64	0.00	160.01	912.74	29.46	29.46			
19	0.03	0.94	1.00	681.21	0.00	29.46			
20	0.00	0.00	0.00	678.61	0.00	29.46			
21	0.00	0.00	0.00	674.2	0.00	29.46			
22	0.00	0.00	0.00	674.28	0.00	29.46			
23	8.42	0.00	177.43	912.03	52.88	82.34			
24	18.23	0.00	207.28	932.6	81.84	164.18			
25	23.94	52.96	84.69	925.67	92.40	256.58			
26	15.72	0.07	189.09	962.23	60.48	317.06			
27	0.01	4.01	4.07	724.64	0.00	317.06			
28	10.23	1.36	156.69	929.37	45.80	362.86			
29	23.93	45.85	71.57	926.06	84.79	447.66			
30	11.66	44.05	64.55	925.75	38.24	485.90			
31	13.82	0.55	207.28	934.81	53.56	539.46			
TOTALS	131.63	0.07	207.28	962.23	539.46	539.46			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 9/27/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: August-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.95	0.00	52.13	942.69	25.68	25.68			
2	21.17	0.00	29.00	926.30	21.89	47.56			
3	12.79	0.00	59.46	928.03	19.67	67.23			
4	23.94	3.05	29.17	926.54	24.88	92.11			
5	23.95	4.87	39.09	926.69	25.65	117.76			
6	8.02	0.00	92.10	934.65	13.78	131.54			
7	0.77	0.00	158.90	903.92	3.90	135.44			
8	0.00	0.00	0.00	721.72	0.00	135.44			
9	0.43	0.00	106.15	766.40	1.59	137.03			
10	0.00	0.00	0.00	676.01	0.00	137.03			
11	0.00	0.00	0.00	666.87	0.00	137.03			
12	0.00	0.00	0.00	666.48	0.00	137.03			
13	0.22	0.00	207.28	743.86	1.01	138.04			
14	0.00	0.00	0.00	670.18	0.00	138.04			
15	0.00	0.00	0.00	669.95	0.00	138.04			
16	0.00	0.00	0.00	674.36	0.00	138.04			
17	0.00	0.00	0.00	671.60	0.00	138.04			
18	0.00	0.00	0.00	674.99	0.00	138.04			
19	0.00	0.00	0.00	682.55	0.00	138.04			
20	0.00	0.00	0.00	677.35	0.00	138.04			
21	0.00	0.00	0.00	686.42	0.00	138.04			
22	0.00	0.00	0.00	685.16	0.00	138.04			
23	0.00	0.00	0.00	686.10	0.00	138.04			
24	0.00	0.00	0.00	679.56	0.00	138.04			
25	0.00	0.03	0.05	680.35	0.00	138.04			
26	0.00	0.00	0.00	680.90	0.00	138.04			
27	3.80	0.08	109.84	788.00	14.91	152.94			
28	0.00	0.00	0.00	696.82	0.00	152.94			
29	0.00	0.00	0.00	678.61	0.00	152.94			
30	0.00	0.00	0.00	679.64	0.00	152.94			
31	0.32	0.03	125.16	721.64	1.18	154.12			
TOTALS	119.4	0.03	207.28	942.69	154.12	154.12			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 9/27/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: August-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	23.95	8.49	102.16	941.35	73.16	73.16			
2	21.17	37.58	57.65	925.98	59.95	133.11			
3	12.79	4.62	99.13	927.17	43.46	176.57			
4	23.94	34.85	57.19	925.98	65.70	242.28			
5	23.95	33.04	56.64	926.38	63.08	305.36			
6	8.02	0.02	146.26	933.55	28.87	334.23			
7	0.77	0.00	134.96	903.37	4.25	338.48			
8	0.00	0.00	0.00	735.04	0.00	338.48			
9	0.43	1.21	51.98	766.72	0.77	339.25			
10	0.00	0.00	0.00	703.04	0.00	339.25			
11	0.00	0.00	0.00	691.3	0.00	339.25			
12	0.00	0.00	0.00	685.71	0.00	339.25			
13	0.22	0.04	108.45	745.44	0.51	339.76			
14	0.00	0.00	0.00	683.58	0.00	339.76			
15	0.00	0.00	0.00	680.03	0.00	339.76			
16	0.00	0.00	0.00	680.11	0.00	339.76			
17	0.00	0.00	0.00	675.46	0.00	339.76			
18	0.00	0.00	0.00	677.59	0.00	339.76			
19	0.00	0.00	0.00	679.48	0.00	339.76			
20	0.00	0.00	0.00	676.64	0.00	339.76			
21	0.00	0.00	0.00	686.81	0.00	339.76			
22	0.00	0.00	0.00	681.45	0.00	339.76			
23	0.00	0.00	0.00	682.48	0.00	339.76			
24	0.00	0.00	0.00	677.59	0.00	339.76			
25	0.00	0.00	0.00	678.06	0.00	339.77			
26	0.00	0.00	0.00	677.67	0.00	339.77			
27	3.80	2.66	114.42	788.31	8.24	348.00			
28	0.00	0.00	0.00	707.3	0.00	348.00			
29	0.00	0.00	0.00	678.38	0.00	348.00			
30	0.00	0.00	0.00	677.9	0.00	348.00			
31	0.32	0.01	101.45	721.72	0.86	348.86			
TOTALS	119.4	0.01	146.26	941.35	348.86	348.86			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/10/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: September-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	679.80	0.00	0.00			
2	0.00	0.00	0.00	679.95	0.00	0.00			
3	0.00	0.00	0.00	680.58	0.00	0.00			
4	0.00	0.00	0.00	681.45	0.00	0.00			
5	0.00	0.00	0.00	681.69	0.00	0.00			
6	0.00	0.00	0.00	681.77	0.00	0.00			
7	9.70	0.00	121.74	862.62	39.80	39.80			
8	20.32	0.00	123.92	932.52	47.53	87.33			
9	0.00	0.00	0.00	807.30	0.00	87.33			
10	8.49	0.00	105.50	970.51	26.02	113.35			
11	20.28	0.00	207.28	1383.80	53.79	167.15			
12	14.33	0.00	137.99	933.47	26.52	193.67			
13	24.00	0.00	75.56	931.66	31.08	224.75			
14	24.00	2.69	37.67	926.22	33.00	257.75			
15	24.00	4.33	36.75	926.06	32.37	290.13			
16	24.00	0.00	71.33	937.41	31.34	321.47			
17	24.00	0.00	36.73	926.30	30.19	351.66			
18	20.42	0.00	207.28	933.63	30.59	382.26			
19	24.00	0.00	105.08	936.94	29.38	411.63			
20	24.00	0.00	34.50	931.26	28.17	439.80			
21	24.00	0.00	90.12	953.72	28.05	467.85			
22	24.00	6.00	47.00	926.77	31.24	499.08			
23	24.00	0.00	34.13	926.22	28.05	527.13			
24	24.00	0.00	58.59	938.51	29.62	556.75			
25	24.00	0.00	37.16	926.69	27.48	584.22			
26	24.00	0.00	128.09	932.21	24.52	608.74			
27	24.00	0.00	109.26	966.57	26.67	635.41			
28	24.00	0.00	31.39	926.30	28.15	663.57			
29	24.00	0.00	32.83	926.93	24.92	688.48			
30	24.00	0.00	41.22	926.69	25.92	714.40			
31						714.40			
TOTALS	501.52	2.69	207.28	1383.8	714.40	714.40			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/10/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: September-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	649.77	0.00	0.00			
2	0.00	0.00	0.00	648.59	0.00	0.00			
3	0.00	0.00	0.00	648.75	0.00	0.00			
4	0.00	0.00	0.00	667.35	0.00	0.00			
5	0.00	0.00	0.00	673.26	0.00	0.00			
6	0.00	0.00	0.00	674.75	0.00	0.00			
7	9.70	0.00	119.56	861.99	26.92	26.92			
8	20.32	5.10	130.93	930.71	71.16	98.08			
9	0.00	0.00	0.00	809.43	0.00	98.08			
10	8.49	0.00	108.71	968.22	35.47	133.55			
11	20.28	0.00	207.28	1116.6	109.15	242.70			
12	14.33	0.00	191.29	930.08	65.08	307.78			
13	24.00	8.63	108.37	930.32	84.57	392.35			
14	24.00	43.49	66.44	925.12	77.14	469.49			
15	24.00	41.29	61.60	925.35	74.61	544.10			
16	24.00	30.12	97.45	935.83	72.53	616.63			
17	24.00	36.07	58.34	925.67	69.16	685.79			
18	20.42	0.00	148.54	931.66	1.87	750.66			
19	24.00	0.00	87.73	936.54	67.77	818.44			
20	24.00	26.38	63.32	930.55	65.92	884.35			
21	24.00	6.15	129.42	952.38	62.63	946.98			
22	24.00	32.17	55.33	926.46	62.63	1009.61			
23	24.00	29.38	55.63	926.06	63.98	1073.59			
24	24.00	6.28	86.67	936.94	63.97	1137.56			
25	24.00	27.93	58.51	925.43	62.40	1199.96			
26	24.00	0.00	103.25	931.58	52.32	1252.29			
27	24.00	0.00	164.35	963.89	60.83	1313.11			
28	24.00	30.58	50.47	925.98	59.41	1372.52			
29	24.00	28.08	52.13	926.14	60.21	1432.73			
30	24.00	26.44	55.02	925.75	60.89	1493.62			
31						1493.62			
TOTALS	501.52	5.10	207.28	1116.60	1493.62	1493.62			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/10/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: October-2012

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	0.00	35.46	926.77	23.35	23.35			
2	24.00	0.00	44.70	931.26	22.44	45.79			
3	24.00	0.00	99.12	963.73	24.98	70.77			
4	24.00	0.00	33.43	926.77	27.83	98.60			
5	24.00	0.00	31.61	929.29	24.03	122.63			
6	24.00	0.00	111.26	961.45	26.66	149.30			
7	24.00	0.00	43.35	926.54	24.17	173.47			
8	23.64	0.00	34.42	926.69	21.52	194.98			
9	24.00	0.00	70.93	961.37	25.42	220.40			
10	24.00	0.00	63.60	936.23	22.39	242.79			
11	24.00	0.00	35.39	927.48	24.32	267.11			
12	24.00	0.00	39.59	928.51	24.05	291.16			
13	24.00	0.00	33.39	927.80	24.04	315.20			
14	24.00	0.00	30.69	926.77	22.78	337.98			
15	24.00	0.00	66.32	930.32	22.13	360.11			
16	24.00	0.00	39.46	926.69	24.22	384.33			
17	24.00	0.00	35.26	927.80	22.91	407.24			
18	24.00	0.00	55.18	929.06	22.14	429.38			
19	21.42	0.00	97.49	927.56	23.39	452.77			
20	24.00	0.00	65.29	928.19	21.07	473.84			
21	24.00	0.00	32.94	929.53	22.60	496.44			
22	24.00	0.00	40.35	933.55	22.94	519.38			
23	24.00	0.00	30.32	926.93	21.58	540.96			
24	24.00	0.00	32.14	929.84	19.35	560.31			
25	24.00	0.00	30.72	930.08	23.29	583.61			
26	24.00	0.00	34.57	927.56	20.91	604.51			
27	24.00	0.00	52.06	927.56	20.92	625.43			
28	24.00	0.00	125.84	968.85	26.29	651.72			
29	23.83	0.00	39.98	927.48	25.85	677.57			
30	0.51	0.00	26.53	926.38	0.47	678.04			
31	0.00	0.00	0.00	724.64	0.00	678.04			
TOTALS	693.4	0.00	125.84	968.85	678.04	678.04			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

Appendix E
CONSOL Energy Inc.
Page 86 of 115

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/10/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: October-2012

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	11.72	53.25	926.22	59.25	59.25			
2	24.00	12.01	59.52	930.40	57.99	117.24			
3	24.00	8.29	140.29	961.45	57.47	174.71			
4	24.00	26.58	49.43	926.22	56.95	231.66			
5	24.00	29.42	50.51	928.66	57.87	289.53			
6	24.00	0.00	156.11	959.48	62.23	351.76			
7	24.00	30.53	56.60	925.43	61.64	413.40			
8	23.64	31.07	56.11	925.43	61.61	475.01			
9	24.00	0.00	161.77	959.00	62.18	537.19			
10	24.00	2.69	88.46	934.57	62.08	599.28			
11	24.00	0.00	55.85	926.93	63.17	662.45			
12	24.00	5.50	57.39	927.72	64.11	726.56			
13	24.00	3.44	56.72	927.40	61.42	787.98			
14	24.00	27.03	52.46	926.06	57.03	845.01			
15	24.00	25.93	71.36	929.69	60.32	905.32			
16	24.00	7.38	62.97	926.14	61.41	966.73			
17	24.00	5.72	59.03	927.48	60.30	1027.03			
18	24.00	4.79	60.12	928.51	61.41	1088.43			
19	21.42	0.00	74.39	926.38	57.25	1145.68			
20	24.00	12.02	70.81	927.40	61.57	1207.25			
21	24.00	5.82	58.47	928.90	62.46	1269.71			
22	24.00	7.20	69.88	933.23	60.72	1330.43			
23	24.00	26.67	54.38	925.83	57.50	1387.93			
24	24.00	7.05	54.69	929.06	57.69	1445.62			
25	24.00	6.81	52.22	929.37	58.64	1504.26			
26	24.00	7.39	54.78	927.01	58.38	1562.64			
27	24.00	30.42	64.24	926.22	62.26	1624.91			
28	24.00	0.00	173.77	966.02	68.40	1693.30			
29	23.83	35.60	81.71	926.77	76.63	1769.93			
30	0.51	0.00	76.35	925.20	1.83	1771.76			
31	0.00	0.00	0.00	793.35	0.00	1771.76			
TOTALS	693.4	2.69	173.77	966.02	1771.76	1771.76			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/10/2012
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: November-2012

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	688.7	0.00	0.00			
2	0.00	0.00	0.00	683.9	0.00	0.00			
3	0.00	0.00	0.00	671.8	0.00	0.00			
4	0.00	0.00	0.00	665.1	0.00	0.00			
5	0.00	0.00	0.00	661.1	0.00	0.00			
6	0.00	0.00	0.00	681.2	0.00	0.00			
7	0.00	0.00	0.00	660.1	0.00	0.00			
8	0.00	0.00	0.00	660.3	0.00	0.00			
9	0.00	0.00	0.00	676.9	0.00	0.00			
10	0.00	0.00	0.00	680.0	0.00	0.00			
11	0.00	0.00	0.00	679.2	0.00	0.00			
12	14.83	0.00	101.11	961.4	52.52	52.52			
13	24.00	0.00	58.26	988.5	34.60	87.12			
14	24.00	0.00	41.13	927.6	26.80	113.92			
15	4.31	0.00	27.70	926.0	4.32	118.24			
16	0.00	0.00	0.00	703.7	0.00	118.24			
17	0.00	0.00	0.00	672.1	0.00	118.24			
18	0.00	0.00	0.00	666.2	0.00	118.24			
19	14.32	0.00	207.28	924.7	36.75	154.99			
20	24.00	0.00	36.57	930.1	27.10	182.09			
21	24.00	0.00	36.74	927.6	24.49	206.58			
22	24.00	0.00	31.34	927.1	22.48	229.06			
23	24.00	0.00	34.58	928.2	20.57	249.63			
24	24.00	0.00	29.91	926.8	19.87	269.50			
25	24.00	0.00	33.22	927.5	18.85	288.35			
26	19.69	0.00	69.57	933.5	16.94	305.28			
27	24.00	0.00	48.75	933.1	16.84	322.13			
28	24.00	0.00	37.28	930.1	18.38	340.51			
29	24.00	0.00	27.86	926.7	16.84	357.35			
30	24.00	0.00	31.03	928.4	17.52	374.86			
31						374.86			
TOTALS	341.14	0	207.28	988.5	374.86	374.86			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 12/10/2012
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: November-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	767.8	0.00	0.00			
2	0.00	0.00	0.00	749.1	0.00	0.00			
3	0.00	0.00	0.00	734.9	0.00	0.00			
4	0.00	0.00	0.00	723.1	0.00	0.00			
5	0.00	0.00	0.00	712.3	0.00	0.00			
6	0.00	0.00	0.00	702.9	0.00	0.00			
7	0.00	0.00	0.00	694.8	0.00	0.00			
8	0.00	0.00	0.00	687.7	0.00	0.00			
9	0.00	0.00	0.00	682.6	0.00	0.00			
10	0.00	0.00	0.00	689.3	0.00	0.00			
11	0.00	0.00	0.00	687.7	0.00	0.00			
12	14.83	5.67	130.32	959.0	64.81	64.81			
13	24.00	26.56	134.33	985.7	102.45	167.26			
14	24.00	42.43	80.05	927.1	87.60	254.86			
15	4.31	47.13	68.63	925.0	14.98	269.85			
16	0.00	0.00	0.00	752.8	0.00	269.85			
17	0.00	0.00	0.00	725.0	0.00	269.85			
18	0.00	0.00	0.00	708.6	0.00	269.85			
19	14.32	2.12	207.28	922.5	62.94	332.79			
20	24.00	45.00	80.53	928.4	86.31	419.10			
21	24.00	34.61	73.28	926.4	78.74	497.84			
22	24.00	33.18	67.16	925.8	73.48	571.32			
23	24.00	33.41	70.92	927.6	71.65	642.97			
24	24.00	33.03	63.21	925.8	67.79	710.77			
25	24.00	31.75	62.67	926.7	69.87	780.63			
26	19.69	0.00	91.30	932.2	54.94	835.58			
27	24.00	36.49	99.72	931.3	65.90	901.47			
28	24.00	0.00	72.25	929.5	66.75	968.22			
29	24.00	28.61	60.37	926.1	65.38	1033.61			
30	24.00	7.08	59.91	927.4	64.27	1097.88			
31						1097.88			
TOTALS	341.14	2.12	207.28	985.7	1097.88	1097.88			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: _____

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/18/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: December-2012

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24	-0.29	30.11	928.51	19.02	19.02			
2	24	-0.29	35.55	927.24	16.67	35.69			
3	24	-0.26	36.78	926.93	16.70	52.39			
4	24	-0.25	49.44	927.32	22.03	74.42			
5	24	-0.26	35.59	927.95	18.28	92.69			
6	24	-0.30	27.29	926.61	16.27	108.96			
7	24	-0.25	36.61	926.30	17.92	126.88			
8	24	-0.25	37.38	926.93	12.84	139.72			
9	24	-0.36	49.69	942.69	18.01	157.73			
10	24	-0.26	47.12	928.27	18.19	175.92			
11	24	-0.27	38.01	926.46	16.88	192.80			
12	24	-0.39	57.27	942.22	18.42	211.23			
13	24	-0.24	26.51	926.93	16.14	227.36			
14	24	-0.30	26.77	926.93	16.00	243.36			
15	24	-0.32	28.88	926.77	14.88	258.24			
16	24	-0.28	27.94	926.85	15.06	273.30			
17	24	-0.24	57.97	932.37	15.36	288.66			
18	24	-0.37	61.20	946.95	16.94	305.60			
19	24	-0.30	28.17	927.17	15.16	320.75			
20	24	-0.30	48.73	927.17	17.91	338.66			
21	24	-0.30	30.75	927.09	14.67	353.33			
22	15	-0.26	111.14	927.09	12.89	366.22			
23	24	-0.32	24.52	926.77	13.38	379.60			
24	24	-0.30	31.53	926.54	13.57	393.17			
25	24	-0.32	33.40	926.61	14.99	408.17			
26	24	-0.30	32.70	927.17	14.32	422.49			
27	24	-0.30	28.91	926.54	13.86	436.35			
28	24	-0.29	31.76	927.17	15.55	451.90			
29	24	-0.31	29.99	926.61	16.31	468.22			
30	24	-0.28	25.63	926.22	12.93	481.15			
31	24	-0.29	29.36	926.61	14.69	495.83			
TOTALS	734	-0.39	111.14	946.95	495.83	495.83			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: _____

TITLE: Manager, Field Services & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 1/18/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: December-2012

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24	12.48	63.08	927.24	64.88	64.88			
2	24	11.13	65.80	926.38	64.11	128.99			
3	24	28.91	56.81	925.83	60.74	189.73			
4	24	27.96	73.52	926.69	64.04	253.77			
5	24	27.31	67.44	927.32	66.60	320.36			
6	24	27.96	60.41	925.67	65.18	385.54			
7	24	33.02	68.33	925.43	68.89	454.43			
8	24	28.81	61.03	925.98	62.78	517.21			
9	24	-0.57	106.52	941.27	64.93	582.14			
10	24	27.60	73.13	927.56	68.04	650.18			
11	24	30.60	66.25	925.59	67.42	717.60			
12	24	-0.57	115.71	940.88	69.86	787.46			
13	24	29.20	64.64	926.06	68.15	855.62			
14	24	30.77	63.46	926.14	68.89	924.51			
15	24	29.74	60.76	925.83	67.46	991.97			
16	24	28.84	58.38	925.83	63.61	1055.58			
17	24	30.66	92.70	931.58	68.11	1123.69			
18	24	-0.48	120.61	945.45	69.65	1193.34			
19	24	30.68	61.87	925.75	67.86	1261.20			
20	24	31.86	86.52	926.06	74.07	1335.27			
21	24	-0.30	72.83	926.3	69.75	1405.02			
22	15	-0.24	139.70	926.3	42.99	1448.01			
23	24	29.72	67.91	926.22	73.77	1521.78			
24	24	33.11	68.75	925.59	70.31	1592.09			
25	24	36.77	65.25	925.83	71.38	1663.47			
26	24	31.21	88.71	925.98	76.90	1740.36			
27	24	33.89	74.89	925.43	71.64	1812.00			
28	24	32.62	70.29	926.14	72.18	1884.18			
29	24	37.10	69.08	925.83	74.93	1959.11			
30	24	35.59	64.61	925.04	73.89	2033.01			
31	24	36.63	76.28	925.2	75.30	2108.31			
TOTALS	734	-0.57	139.7	945.45	2108.31	2108.31			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Services & Operations

Appendix E

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/7/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: January-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	0.00	30.37	926.38	16.5	16.5			
2	24.00	0.00	28.51	926.77	14.7	31.2			
3	18.77	0.00	93.44	928.35	15.8	47.0			
4	23.00	0.00	167.60	929.21	13.5	60.5			
5	24.00	0.00	25.13	927.48	13.2	73.7			
6	24.00	0.00	30.66	926.77	15.5	89.2			
7	24.00	0.00	29.35	926.46	15.9	105.2			
8	24.00	0.00	23.64	926.30	13.1	118.3			
9	24.00	0.00	32.08	926.46	14.9	133.2			
10	24.00	0.00	25.76	926.46	14.1	147.3			
11	24.00	0.00	76.96	933.47	12.7	160.1			
12	24.00	0.00	25.47	926.46	13.6	173.7			
13	24.00	0.00	40.84	927.01	19.0	192.7			
14	24.00	0.00	44.91	927.32	17.3	210.0			
15	24.00	0.00	73.24	932.13	14.2	224.2			
16	24.00	0.00	28.96	926.46	13.9	238.1			
17	24.00	0.00	27.72	927.09	15.4	253.4			
18	24.00	0.00	29.37	927.24	14.8	268.2			
19	24.00	0.00	26.84	926.77	14.3	282.5			
20	24.00	0.00	30.02	927.64	14.5	297.0			
21	20.84	0.00	78.30	926.69	17.1	314.1			
22	24.00	0.00	33.05	927.24	23.1	337.2			
23	14.50	0.00	150.28	931.81	13.6	350.8			
24	22.11	0.00	85.26	1025.20	28.1	378.9			
25	24.00	0.00	103.32	1058.40	43.1	422.0			
26	17.58	0.00	127.09	1047.10	34.0	456.0			
27	17.48	18.59	43.26	1051.50	31.0	487.0			
28	9.22	0.00	167.29	932.13	8.9	495.9			
29	24.00	0.00	73.00	1039.90	29.3	525.1			
30	19.30	0.00	135.15	1055.00	35.0	560.1			
31	22.62	0.00	73.13	1045.60	36.4	596.6			
TOTALS	689.41	0.00	167.6	1058.4	596.6	596.6			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Services & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/7/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: January-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 933 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	39.49	66.96	925.27	73.6	73.6			
2	24.00	37.12	66.68	925.67	75.7	149.2			
3	18.77	0.00	100.52	927.48	63.3	212.6			
4	23.00	0.00	195.49	927.87	70.3	282.9			
5	24.00	31.65	67.23	926.85	74.6	357.4			
6	24.00	37.17	67.44	925.83	72.7	430.1			
7	24.00	34.87	65.63	925.51	72.7	502.9			
8	24.00	32.73	64.08	925.51	72.0	574.9			
9	24.00	34.72	74.94	925.75	74.3	649.2			
10	24.00	36.64	65.51	925.98	73.2	722.4			
11	24.00	0.00	141.24	931.81	70.6	793.0			
12	24.00	30.08	59.32	925.35	65.9	858.9			
13	24.00	31.64	69.09	926.06	67.1	926.0			
14	24.00	34.88	76.74	926.69	71.6	997.6			
15	24.00	0.00	154.74	929.61	75.1	1072.7			
16	24.00	33.22	65.11	925.43	73.0	1145.8			
17	24.00	36.27	65.79	926.14	73.1	1218.9			
18	24.00	30.51	74.19	926.46	74.8	1293.7			
19	24.00	27.03	67.90	925.83	72.1	1365.8			
20	24.00	29.15	73.11	926.46	74.1	1439.9			
21	20.84	0.00	140.96	925.75	73.2	1513.0			
22	24.00	44.80	87.28	926.14	89.3	1602.4			
23	14.50	0.00	174.48	928.27	58.6	1660.9			
24	22.11	0.00	197.47	1020.9	156.1	1817.0			
25	24.00	100.06	207.28	1038.2	251.2	2068.2			
26	17.58	0.00	207.28	1042.3	180.6	2248.8			
27	17.48	152.73	197.76	1047	185.8	2434.6			
28	9.22	0.00	200.73	928.19	45.6	2480.2			
29	24.00	59.09	207.28	1035.5	203.5	2683.6			
30	19.30	0.00	203.22	1050.7	205.4	2889.1			
31	22.62	0.00	207.28	1041.2	240.2	3129.3			
TOTALS	689.41	0.00	207.28	1050.7	3129.3	3129.3			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Services & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 3/1/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: February-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.0	8.16	41.52	1045.2	35.7	35.7			
2	24.0	9.59	35.48	1048.2	37.3	73.0			
3	24.0	5.49	36.76	1050.5	39.7	112.7			
4	24.0	17.09	38.83	1050.9	39.7	152.4			
5	20.9	0.00	104.39	1053.9	36.4	188.8			
6	24.0	18.03	38.38	1049.5	38.9	227.8			
7	24.0	14.18	38.98	1054.2	38.8	266.5			
8	24.0	17.06	207.28	1377.3	148.3	414.8			
9	24.0	149.69	198.41	1350.5	250.9	665.7			
10	24.0	150.27	202.06	1305.4	255.7	921.4			
11	11.5	0.00	201.74	1293.2	123.4	1044.8			
12	0.0	0.00	0.00	940.4	0.0	1044.8			
13	0.0	0.00	0.00	819.4	0.0	1044.8			
14	0.0	0.00	0.00	762.3	0.0	1044.8			
15	0.0	0.00	0.00	728.0	0.0	1044.8			
16	0.0	0.00	0.00	708.7	0.0	1044.8			
17	0.0	0.00	0.00	704.5	0.0	1044.8			
18	0.0	0.00	0.00	701.3	0.0	1044.8			
19	0.0	0.00	0.00	701.7	0.0	1044.8			
20	0.0	0.00	0.00	697.8	0.0	1044.8			
21	0.0	0.00	0.00	694.4	0.0	1044.8			
22	0.0	0.00	0.00	694.5	0.0	1044.8			
23	0.0	0.00	0.00	693.2	0.0	1044.8			
24	0.0	0.00	0.00	688.9	0.0	1044.8			
25	0.0	0.00	0.00	688.2	0.0	1044.8			
26	0.0	0.00	0.00	683.6	0.0	1044.8			
27	0.0	0.00	0.00	681.9	0.0	1044.8			
28	0.0	0.00	0.00	679.6	0.0	1044.8			
29						1044.8			
30						1044.8			
31						1044.8			
TOTALS	248.4	0	207.28	1377.3	1044.8	1044.8			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 3/1/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: February-2013

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.0	150.94	198.12	1040.8	256.6	256.6			
2	24.0	144.45	200.17	1043.2	256.8	513.4			
3	24.0	146.30	198.23	1045.8	257.6	771.0			
4	24.0	147.10	199.62	1046.6	258.7	1029.7			
5	20.9	0.00	204.82	1049.1	223.5	1253.2			
6	24.0	153.11	197.20	1044.9	255.2	1508.3			
7	24.0	155.35	201.01	1049.4	256.9	1765.2			
8	24.0	5.87	198.67	1044.3	128.3	1893.5			
9	24.0	0.00	20.54	851.0	14.6	1908.1			
10	24.0	3.32	21.91	795.9	15.5	1923.7			
11	11.5	4.80	20.17	766.2	8.5	1932.2			
12	0.0	0.00	0.00	744.9	0.0	1932.2			
13	0.0	0.00	0.00	727.9	0.0	1932.2			
14	0.0	0.00	0.00	715.4	0.0	1932.2			
15	0.0	0.00	0.00	704.5	0.0	1932.2			
16	0.0	0.00	0.00	695.4	0.0	1932.2			
17	0.0	0.00	0.00	687.0	0.0	1932.2			
18	0.0	0.00	0.00	683.3	0.0	1932.2			
19	0.0	0.00	0.00	673.8	0.0	1932.2			
20	0.0	0.00	0.00	668.2	0.0	1932.2			
21	0.0	0.00	0.00	665.0	0.0	1932.2			
22	0.0	0.00	0.00	685.9	0.0	1932.2			
23	0.0	0.00	0.00	691.3	0.0	1932.2			
24	0.0	0.00	0.00	685.1	0.0	1932.2			
25	0.0	0.00	0.00	688.2	0.0	1932.2			
26	0.0	0.00	0.00	682.2	0.0	1932.2			
27	0.0	0.00	0.00	686.8	0.0	1932.2			
28	0.0	0.00	0.00	683.6	0.0	1932.2			
29						1932.2			
30						1932.2			
31						1932.2			
TOTALS	248.4	0	204.82	1049.4	1932.2	1932.2			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/24/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: March-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	677.04	0.00	0.00			
2	0.02	7.84	10.91	674.44	0.01	0.01			
3	0.00	0.00	0.00	672.23	0.00	0.01			
4	0.00	0.00	0.00	671.13	0.00	0.01			
5	0.00	0.00	0.00	668.84	0.00	0.01			
6	0.00	0.00	0.00	666.56	0.00	0.01			
7	0.00	0.00	0.00	664.98	0.00	0.01			
8	0.00	0.00	0.00	663.17	0.00	0.01			
9	0.00	0.00	0.00	665.14	0.00	0.01			
10	0.00	0.00	0.00	663.64	0.00	0.01			
11	9.21	0.00	207.28	1334.30	93.16	93.17			
12	17.57	0.00	188.09	1343.80	177.92	271.09			
13	0.04	0.00	0.00	970.59	0.00	271.09			
14	0.00	0.00	0.00	787.92	0.00	271.09			
15	0.00	0.00	0.00	744.81	0.00	271.09			
16	0.00	0.00	0.00	740.71	0.00	271.09			
17	0.00	0.00	0.00	736.3	0.00	271.09			
18	0.00	0.00	0.00	728.02	0.00	271.09			
19	0.00	0.00	0.00	724.72	0.00	271.09			
20	0.00	0.00	0.00	713.92	0.00	271.09			
21	0.04	0.00	194.37	711.55	0.19	271.28			
22	0.00	0.00	0.00	709.27	0.00	271.28			
23	0.00	0.00	0.00	722.19	0.00	271.28			
24	0.00	0.00	0.00	702.89	0.00	271.28			
25	0.00	0.00	0.00	699.89	0.00	271.28			
26	0.00	0.00	0.00	698.63	0.00	271.28			
27	0.00	0.00	0.00	696.35	0.00	271.28			
28	0.00	0.00	0.00	694.38	0.00	271.28			
29	0.00	0.00	0.00	701.7	0.00	271.28			
30	0.00	0.00	0.00	709.11	0.00	271.28			
31	0.00	0.00	0.00	687.83	0.00	271.28			
TOTALS	26.88	0.00	207.28	1343.8	271.28	271.28			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 4/24/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: March-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	682.95	0.00	0.00			
2	0.02	5.27	5.48	680.66	0.01	0.01			
3	0.00	0.00	0.00	677.98	0.00	0.01			
4	0.00	0.00	0.00	679.64	0.00	0.01			
5	0.00	0.00	0.00	680.66	0.00	0.01			
6	0.00	0.00	0.00	679.95	0.00	0.01			
7	0.00	0.00	0.00	681.06	0.00	0.01			
8	0.00	0.00	0.00	680.51	0.00	0.01			
9	0.00	0.00	0.00	684.52	0.00	0.01			
10	0.00	0.00	0.00	694.69	0.00	0.01			
11	9.21	3.76	16.24	686.18	3.84	3.85			
12	17.57	6.03	37.69	678.85	31.15	35.00			
13	0.04	6.08	6.23	678.22	0.01	35.01			
14	0.00	0.00	0.00	675.15	0.00	35.01			
15	0.00	0.00	0.00	678.93	0.00	35.01			
16	0.00	0.00	0.00	679.56	0.00	35.01			
17	0.00	0.00	0.00	675.46	0.00	35.01			
18	0.00	0.00	0.00	677.12	0.00	35.01			
19	0.00	0.00	0.00	679.88	0.00	35.01			
20	0.00	0.00	0.00	673.33	0.00	35.01			
21	0.04	4.96	5.79	668.92	0.01	35.03			
22	0.00	0.00	0.00	670.34	0.00	35.03			
23	0.00	0.00	0.00	677.12	0.00	35.03			
24	0.00	0.00	0.00	670.34	0.00	35.03			
25	0.00	0.00	0.00	671.29	0.00	35.03			
26	0.00	0.00	0.00	674.44	0.00	35.03			
27	0.00	0.00	0.00	673.49	0.00	35.03			
28	0.00	0.00	0.00	674.91	0.00	35.03			
29	0.00	0.00	0.00	677.98	0.00	35.03			
30	0.00	0.00	0.00	683.74	0.00	35.03			
31	0.00	0.00	0.00	674.99	0.00	35.03			
TOTALS	26.88	0.00	37.69	694.69	35.03	35.03			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 6/10/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: April-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	688.31	0.0	0.0			
2	0.00	0.00	0.00	687.91	0.0	0.0			
3	0.00	0.00	0.00	692.01	0.0	0.0			
4	0.00	0.00	0.00	692.56	0.0	0.0			
5	0.00	0.00	0.00	701.23	0.0	0.0			
6	0.00	0.00	0.00	699.66	0.0	0.0			
7	0.00	0.00	0.00	719.20	0.0	0.0			
8	0.00	0.00	0.00	722.67	0.0	0.0			
9	0.00	0.00	0.00	722.90	0.0	0.0			
10	0.00	0.00	0.00	712.66	0.0	0.0			
11	0.00	0.00	0.00	674.44	0.0	0.0			
12	0.00	0.00	0.00	a	0.0	0.0			
13	0.00	0.00	0.00	a	0.0	0.0			
14	0.00	0.00	0.00	a	0.0	0.0			
15	0.00	0.00	0.00	a	0.0	0.0			
16	0.00	0.00	0.00	664.19	0.0	0.0			
17	0.00	0.00	0.00	661.83	0.0	0.0			
18	0.00	0.00	0.00	660.49	0.0	0.0			
19	0.00	0.00	0.00	659.23	0.0	0.0			
20	0.00	0.00	0.00	655.60	0.0	0.0			
21	0.00	0.00	0.00	655.29	0.0	0.0			
22	0.00	0.00	0.00	653.79	0.0	0.0			
23	8.72	0.00	207.28	1323.40	85.21	85.2			
24	24.00	130.94	179.75	1350.70	223.43	308.6			
25	24.00	134.56	188.98	1334.00	229.25	537.9			
26	24.00	123.16	204.60	1316.20	239.01	776.9			
27	24.00	151.63	207.28	1299.80	261.03	1037.9			
28	24.00	159.64	207.28	1268.20	267.25	1305.2			
29	22.40	0.00	207.28	1249.00	249.08	1554.3			
30	23.94	154.73	207.28	1248.50	265.49	1819.8			
31						1819.8			
TOTALS	175.06	0.00	207.28	1350.7	1819.8	1819.8			

a - Data collection system offline due to power interruption.

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 6/10/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: April-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	674.36	0.0	0.0			
2	0.00	0.00	0.00	672.23	0.0	0.0			
3	0.00	0.00	0.00	675.23	0.0	0.0			
4	0.00	0.00	0.00	676.09	0.0	0.0			
5	0.00	0.00	0.00	683.26	0.0	0.0			
6	0.00	0.00	0.00	682.32	0.0	0.0			
7	0.00	0.00	0.00	686.81	0.0	0.0			
8	0.00	0.00	0.00	689.17	0.0	0.0			
9	0.00	0.00	0.00	688.94	0.0	0.0			
10	0.00	0.00	0.00	685.23	0.0	0.0			
11	0.00	0.00	0.00	687.68	0.0	0.0			
12	0.00	0.00	0.00	a	0.0	0.0			
13	0.00	0.00	0.00	a	0.0	0.0			
14	0.00	0.00	0.00	a	0.0	0.0			
15	0.00	0.00	0.00	a	0.0	0.0			
16	0.00	0.00	0.00	685.23	0.0	0.0			
17	0.00	0.00	0.00	682.63	0.0	0.0			
18	0.00	0.00	0.00	688.46	0.0	0.0			
19	0.00	0.00	0.00	682.95	0.0	3.2			
20	0.00	0.00	0.00	684.6	0.0	13.2			
21	0.00	0.00	0.00	684.13	0.0	37.9			
22	0.00	0.00	0.00	686.42	0.0	55.1			
23	8.72	1.86	7.02	687.52	3.21	75.6			
24	24.00	5.60	10.56	687.44	9.94	84.6			
25	24.00	2.52	37.37	686.81	24.79	92.9			
26	24.00	2.26	37.42	687.91	17.20	101.7			
27	24.00	2.82	37.68	687.6	20.47	101.7			
28	24.00	5.36	6.98	686.02	8.94	203.4			
29	22.40	5.42	6.90	685.94	8.36	203.4			
30	23.94	3.08	7.43	689.65	8.78	203.4			
31						203.4			
TOTALS	175.06	0.00	37.68	689.65	101.7	203.4			

a - Data collection system offline due to power interruption.

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 6/10/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: May-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	9.28	156.24	207.28	1235.00	102.94	102.9			
2	0.00	0.00	0.00	922.28	0.0	102.9			
3	0.70	0.00	207.28	1119.60	6.53	109.5			
4	0.00	0.00	0.00	801.23	0.0	109.5			
5	0.00	0.00	0.00	793.04	0.0	109.5			
6	0.00	0.00	0.00	805.65	0.0	109.5			
7	0.00	0.00	0.00	767.35	0.0	109.5			
8	0.00	0.00	0.00	762.62	0.0	109.5			
9	0.00	0.00	0.00	758.29	0.0	109.5			
10	0.00	0.00	0.00	753.64	0.0	109.5			
11	0.00	0.00	0.00	a	0.0	109.5			
12	0.00	0.00	0.00	a	0.0	109.5			
13	0.00	0.00	0.00	a	0.0	109.5			
14	0.00	0.00	0.00	a	0.0	109.5			
15	0.00	0.00	0.00	a	0.0	109.5			
16	0.00	0.00	0.00	a	0.0	109.5			
17	0.00	0.00	0.00	a	0.0	109.5			
18	0.00	0.00	0.00	a	0.0	109.5			
19	0.00	0.00	0.00	a	0.0	109.5			
20	0.00	0.00	0.00	a	0.0	109.5			
21	0.00	0.00	0.00	a	0.0	109.5			
22	0.00	0.00	0.00	a	0.0	109.5			
23	0.00	0.00	0.00	712.34	0.0	109.5			
24	0.00	0.00	0.00	707.69	0.0	109.5			
25	0.00	0.00	0.00	706.98	0.0	109.5			
26	0.00	0.00	0.00	705.33	0.0	109.5			
27	0.00	0.00	0.00	701.78	0.0	109.5			
28	0.00	0.00	0.00	701.47	0.0	109.5			
29	0.00	0.00	0.00	700.52	0.0	109.5			
30	0.00	0.00	0.00	699.26	0.0	109.5			
31	0.00	0.00	0.00	697.29	0.0	109.5			
TOTALS	9.98	0.00	207.28	1235.00	109.5	109.5			

a - Data collection system offline due to power interruption.

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 6/10/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: May-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	9.28	5.76	7.20	689.25	3.53	3.5			
2	0.00	0.00	0.00	690.75	0.0	3.5			
3	0.70	5.15	6.62	690.36	0.25	3.8			
4	0.00	0	0	690.12	0.0	3.8			
5	0.00	0	0	690.51	0.0	3.8			
6	0.00	0	0	687.13	0.0	3.8			
7	0.00	0	0	683.42	0.0	3.8			
8	0.00	0	0	684.84	0.0	3.8			
9	0.00	0	0	685.31	0.0	3.8			
10	0.00	0	0	684.37	0.0	3.8			
11	0.00	0.00	0.00	a	0.0	3.8			
12	0.00	0.00	0.00	a	0.0	3.8			
13	0.00	0.00	0.00	a	0.0	3.8			
14	0.00	0.00	0.00	a	0.0	3.8			
15	0.00	0.00	0.00	a	0.0	3.8			
16	0.00	0.00	0.00	a	0.0	3.8			
17	0.00	0.00	0.00	a	0.0	3.8			
18	0.00	0.00	0.00	a	0.0	3.8			
19	0.00	0.00	0.00	a	0.0	3.8			
20	0.00	0.00	0.00	a	0.0	3.8			
21	0.00	0.00	0.00	a	0.0	3.8			
22	0.00	0.00	0.00	a	0.0	3.8			
23	0.00	0.00	0.00	682.87	0.0	3.8			
24	0.00	0.00	0.00	697.05	0.0	3.8			
25	0.00	0.00	0.00	713.92	0.0	3.8			
26	0.00	0.00	0.00	723.38	0.0	3.8			
27	0.00	0.00	0.00	721.25	0.0	3.8			
28	0.00	0.00	0.00	721.64	0.0	3.8			
29	0.00	0.00	0.00	720.62	0.0	3.8			
30	0.00	0.00	0.00	719.12	0.0	3.8			
31	0.00	0.00	0.00	718.10	0.0	3.8			
TOTALS	9.98	0.00	7.20	723.38	3.8	3.8			

a - Data collection system offline due to power interruption.

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 7/8/2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: June-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.0	0.00	0.00	695.64	0.0	0.0			
2	0.0	0.00	0.00	693.51	0.0	0.0			
3	0.0	0.00	0.00	691.70	0.0	0.0			
4	0.0	0.00	0.00	690.36	0.0	0.0			
5	0.0	0.00	0.00	689.25	0.0	0.0			
6	0.0	0.00	0.00	686.81	0.0	0.0			
7	0.0	0.00	0.00	685.16	0.0	0.0			
8	0.0	0.00	0.00	683.74	0.0	0.0			
9	0.0	0.00	0.00	683.11	0.0	0.0			
10	0.0	0.00	0.00	680.66	0.0	0.0			
11	0.0	0.00	0.00	679.01	0.0	0.0			
12	0.0	0.00	0.00	677.90	0.0	0.0			
13	0.0	0.00	0.00	675.78	0.0	0.0			
14	0.0	0.00	0.00	674.12	0.0	0.0			
15	0.0	0.00	0.00	673.41	0.0	0.0			
16	0.0	0.00	0.00	670.42	0.0	0.0			
17	0.0	0.00	0.00	669.71	0.0	0.0			
18	0.0	0.00	0.00	667.74	0.0	0.0			
19	0.0	0.00	0.00	666.16	0.0	0.0			
20	0.0	0.00	0.00	665.61	0.0	0.0			
21	0.0	0.00	0.00	665.77	0.0	0.0			
22	0.0	0.00	0.00	668.21	0.0	0.0			
23	0.0	0.00	0.00	670.65	0.0	0.0			
24	11.4	0.00	207.28	1199.50	119.21	119.2			
25	16.4	132.98	200.09	1266.80	167.44	286.7			
26	10.8	0.00	207.28	1275.30	110.44	397.1			
27	14.7	0.00	204.53	1283.30	154.09	551.2			
28	14.3	0.00	207.28	1278.30	148.39	699.6			
29	19.6	0.00	207.28	1286.20	216.04	915.6			
30	24.0	155.78	203.29	1274.80	260.90	1176.5			
31						1176.5			
TOTALS	111.2	0	207.28	1286.2	1176.5	1176.5			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 7/8/2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: June-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	716.83	0.0	0.0			
2	0.00	0.00	0.00	715.18	0.0	0.0			
3	0.00	0.00	0.00	713.6	0.0	0.0			
4	0.00	0.00	0.00	731.1	0.0	0.0			
5	0.00	0.00	0.00	740.55	0.0	0.0			
6	0.00	0.00	0.00	736.85	0.0	0.0			
7	0.00	0.00	0.00	735.51	0.0	0.0			
8	0.00	0.00	0.00	736.38	0.0	0.0			
9	0.00	0.00	0.00	741.11	0.0	0.0			
10	0.00	0.00	0.00	737.95	0.0	0.0			
11	0.00	0.00	0.00	741.58	0.0	0.0			
12	0.00	0.00	0.00	746.31	0.0	0.0			
13	0.00	0.00	0.00	747.49	0.0	0.0			
14	0.00	0.00	0.00	757.26	0.0	0.0			
15	0.00	0.00	0.00	761.36	0.0	0.0			
16	0.00	0.00	0.00	758.92	0.0	0.0			
17	0.00	0.00	0.00	763.17	0.0	0.0			
18	0.00	0.00	0.00	765.54	0.0	0.0			
19	0.00	0.00	0.00	771.84	0.0	0.0			
20	0.00	0.00	0.00	782.79	0.0	0.0			
21	0.00	0.00	0.00	785.63	0.0	0.0			
22	0.00	0.00	0.00	786.81	0.0	0.0			
23	0.00	0.00	0.00	786.26	0.0	0.0			
24	0.00	0.00	0.00	789.81	0.00	0.0			
25	0.00	0.00	0.00	792.8	0.00	0.0			
26	0.00	0.00	0.00	794.77	0.00	0.0			
27	0.00	0.00	0.00	798.16	0.00	0.0			
28	0.00	0.00	0.00	802.34	0.00	0.0			
29	0.00	0.00	0.00	806.04	0.00	0.0			
30	0.00	0.00	0.00	809.75	0.00	0.0			
31						0.0			
TOTALS	0.00	0.00	0.00	809.75	0.0	0.0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: July-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	157.13	206.04	1262.50	264.40	264.4			
2	24.00	158.41	205.56	1254.30	265.17	529.6			
3	24.00	155.97	202.73	1246.10	261.76	791.3			
4	24.00	155.53	205.65	1242.70	262.74	1054.1			
5	24.00	158.47	205.38	1239.70	264.33	1318.4			
6	19.86	0.00	207.28	1237.80	216.56	1535.0			
7	24.00	158.14	204.90	1235.80	265.08	1800.0			
8	24.00	156.45	203.56	1236.60	263.70	2063.7			
9	22.08	0.00	207.28	1231.90	243.95	2307.7			
10	24.00	156.06	205.31	1230.30	264.37	2572.0			
11	24.00	159.75	205.20	1226.60	265.76	2837.8			
12	24.00	160.42	206.70	1225.80	266.69	3104.5			
13	22.94	0.00	207.28	1224.10	254.55	3359.1			
14	24.00	154.70	204.08	1224.20	263.94	3623.0			
15	20.43	121.83	203.95	1223.50	223.97	3847.0			
16	15.76	0.00	207.28	1208.80	175.04	4022.0			
17	24.00	155.23	206.10	1224.00	264.69	4286.7			
18	24.00	155.49	204.06	1226.70	263.74	4550.4			
19	24.00	88.68	203.86	1223.30	228.56	4779.0			
20	24.00	58.70	207.28	1216.10	241.76	5020.7			
21	24.00	66.63	207.28	1211.70	239.94	5260.7			
22	22.74	0.00	207.28	1203.10	242.85	5503.5			
23	23.06	0.00	207.28	1209.90	243.37	5746.9			
24	22.66	0.00	207.28	1205.10	255.61	6002.5			
25	24.00	157.06	207.28	1207.90	269.66	6272.2			
26	23.12	0.00	228.01	1204.00	246.00	6518.2			
27	23.90	164.91	215.27	1211.10	276.54	6794.7			
28	21.29	0.00	215.56	1207.70	245.22	7039.9			
29	23.79	0.00	213.75	1208.50	243.39	7283.3			
30	23.89	0.00	188.23	1167.80	218.76	7502.1			
31	20.77	0.00	193.83	1152.80	188.25	7690.3			
TOTALS	714.29	0.00	228.01	1262.5	7690.3	7690.3			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: July-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	812.43	0.00	0.0			
2	0.00	0.00	0.00	816.13	0.0	0.0			
3	0.00	0.00	0.00	819.52	0.0	0.0			
4	0.00	0.00	0.00	821.57	0.0	0.0			
5	0.00	0.00	0.00	823.06	0.0	0.0			
6	0.00	0.00	0.00	825.43	0.0	0.0			
7	0.00	0.00	0.00	824.48	0.0	0.0			
8	0.00	0.00	0.00	826.37	0.0	0.0			
9	0.00	0.00	0.00	826.93	0.0	0.0			
10	0.00	0.00	0.00	828.42	0.0	0.0			
11	0.00	0.00	0.00	827.08	0.0	0.0			
12	0.00	0.00	0.00	827.00	0.0	0.0			
13	0.00	0.00	0.00	828.27	0.0	0.0			
14	0.00	0.00	0.00	830.39	0.0	0.0			
15	0.00	0.00	0.00	832.84	0.0	0.0			
16	0.00	0.00	0.00	838.43	0.0	0.0			
17	0.00	0.00	0.00	843.32	0.0	0.0			
18	0.00	0.00	0.00	842.92	0.0	0.0			
19	0.00	0.00	0.00	864.59	0.0	0.0			
20	0.00	0.00	0.00	877.91	0.0	0.0			
21	0.00	0.00	0.00	892.1	0.0	0.0			
22	0.00	0.00	0.00	889.89	0.0	0.0			
23	0.00	0.00	0.00	884.3	0.0	0.0			
24	0.00	0.00	0.00	816.76	0.0	0.0			
25	0.00	0.00	0.00	713.92	0.0	0.0			
26	0.00	0.00	0.00	883.9	0.0	0.0			
27	0.00	0.00	0.00	721.72	0.0	0.0			
28	0.00	0.00	0.00	708.95	0.0	0.0			
29	12.00	0.00	207.28	919.36	80.92	80.9			
30	23.89	0.00	128.62	957.58	154.72	235.6			
31	20.77	8.91	121.11	965.46	139.23	374.9			
TOTALS	56.66	0.00	207.28	965.46	374.9	374.9			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: August-2013

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	112.65	180.43	1155.70	213.87	213.9			
2	19.92	0.00	198.02	1155.20	184.66	398.5			
3	15.01	0.00	195.69	1152.80	137.86	536.4			
4	15.17	0.00	191.40	1136.30	130.20	666.6			
5	24.00	99.31	174.29	1147.70	202.70	869.3			
6	18.38	111.85	176.61	1159.80	162.72	1032.0			
7	12.55	0.00	192.50	1148.60	110.46	1142.5			
8	14.74	0.00	182.64	1138.30	126.73	1269.2			
9	24.00	106.44	175.88	1151.00	206.98	1476.2			
10	20.40	0.00	184.60	1153.90	180.15	1656.3			
11	14.04	0.00	190.56	1147.30	127.80	1784.1			
12	24.00	103.00	179.22	1150.20	209.00	1993.1			
13	18.76	0.00	192.86	1152.30	167.48	2160.6			
14	20.20	0.00	189.73	1142.30	181.81	2342.4			
15	18.75	0.00	200.56	1148.10	153.89	2496.3			
16	24.00	0.00	183.20	1133.10	188.64	2685.0			
17	13.91	0.00	228.01	1114.40	106.63	2791.6			
18	16.53	0.00	164.10	1112.90	127.16	2918.7			
19	24.00	84.70	152.36	1122.60	180.48	3099.2			
20	18.18	0.00	166.88	1121.80	138.18	3237.4			
21	18.25	0.00	169.19	1119.30	143.09	3380.5			
22	24.00	95.00	160.30	1129.30	188.19	3568.7			
23	20.31	0.00	165.38	1129.80	160.32	3729.0			
24	16.77	0.00	160.61	1114.80	128.96	3858.0			
25	20.42	0.00	165.76	1118.70	152.62	4010.6			
26	24.00	86.19	156.27	1120.00	182.90	4193.5			
27	15.16	0.00	163.84	1117.90	117.12	4310.6			
28	24.00	91.83	157.59	1118.90	183.24	4493.9			
29	21.54	0.00	164.48	1122.20	164.99	4658.8			
30	15.11	0.00	167.61	1116.00	117.99	4776.8			
31	17.15	0.00	161.94	1113.00	132.96	4909.8			
TOTALS	597.2638889	0	228.01	1159.8	4909.8	4909.8			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930

OPERATOR NAME: CNX Gas Company

MONTH: August-2013

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	24.00	109.49	120.38	973.19	163.70	163.7			
2	19.92	4.72	116.47	974.61	129.09	292.8			
3	15.01	0.00	127.87	972.24	98.34	391.1			
4	15.17	0.02	131.30	977.05	110.16	501.3			
5	24.00	111.27	131.78	984.54	175.21	676.5			
6	18.38	111.01	119.83	990.29	128.30	804.8			
7	12.55	0.00	127.65	983.12	87.71	892.5			
8	14.74	6.05	128.24	981.38	106.30	998.8			
9	24.00	110.56	128.35	985.95	171.77	1170.6			
10	20.40	8.88	117.92	985.8	138.42	1309.0			
11	14.04	1.72	118.98	983.98	93.67	1402.7			
12	24.00	110.50	122.60	986.19	166.27	1569.0			
13	18.76	0.21	121.33	988.95	126.79	1695.8			
14	20.20	0.00	122.18	985.24	138.94	1834.7			
15	18.75	0.00	207.28	987.53	127.84	1962.6			
16	24.00	0.00	207.28	1008.8	188.66	2151.2			
17	13.91	0.00	146.13	1001	112.82	2264.0			
18	16.53	0.00	143.06	994.86	133.60	2397.6			
19	24.00	132.39	143.29	1005.7	197.90	2595.5			
20	18.18	0.00	143.58	1008.5	147.24	2742.8			
21	18.25	0.00	140.52	1001.5	143.55	2886.3			
22	24.00	124.06	135.47	1002.6	186.62	3072.9			
23	20.31	0.00	140.95	1006.4	158.81	3231.8			
24	16.77	0.00	143.17	1004.7	135.34	3367.1			
25	20.42	0.00	143.83	1008.1	164.37	3531.5			
26	24.00	128.56	139.68	1010.6	192.63	3724.1			
27	15.16	0.00	138.60	1007.8	118.97	3843.1			
28	24.00	126.40	138.54	1007.7	190.98	4034.0			
29	21.54	4.10	136.36	1015.9	167.54	4201.6			
30	15.11	0.00	135.98	1008.5	115.95	4317.5			
31	17.15	0.00	147.58	1003.9	136.16	4453.7			
TOTALS	597.26	0.00	207.28	1015.9	4453.7	4453.7			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928

OPERATOR NAME: CNX Gas Company

MONTH: September-2013

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	22.90	0.00	159.55	1114.00	175.66	175.7			
2	22.13	0.00	163.11	1118.00	170.07	345.7			
3	24.00	89.61	156.26	1116.50	186.82	532.6			
4	13.71	89.87	157.53	1116.30	108.94	641.5			
5	0.00	0.00	0.00	919.28	0.0	641.5			
6	0.00	0.00	0.00	867.83	0.0	641.5			
7	0.00	0.00	0.00	849.23	0.0	641.5			
8	0.00	0.00	0.00	833.31	0.0	641.5			
9	0.00	0.00	0.00	814.08	0.0	641.5			
10	0.00	0.00	0.00	788.23	0.0	641.5			
11	0.00	0.00	0.00	776.25	0.0	641.5			
12	0.00	0.00	0.00	779.48	0.0	641.5			
13	0.00	a				641.5			
14	0.00	a				641.5			
15	0.00	a				641.5			
16	0.00	0.00	0.00	820.94	0.0	641.5			
17	0.00	0.00	0.00	840.48	0.0	641.5			
18	0.00	0.00	0.00	831.42	0.0	641.5			
19	0.00	0.00	0.00	835.91	0.0	641.5			
20	0.00	0.00	0.00	830.63	0.0	641.5			
21	0.00	0.00	0.00	804.15	0.0	641.5			
22	0.00	0.00	0.00	821.57	0.0	641.5			
23	0.00	0.00	0.00	807.07	0.0	641.5			
24	0.00	0.00	0.00	836.07	0.0	641.5			
25	0.00	0.00	0.00	838.67	0.0	641.5			
26	0.00	0.00	0.00	833.78	0.0	641.5			
27	0.00	0.00	0.00	833.47	0.0	641.5			
28	0.00	0.00	0.00	828.58	0.0	641.5			
29	0.00	0.00	0.00	830.16	0.0	641.5			
30	0.00	0.00	0.00	815.34	0.0	641.5			
31						641.5			
TOTALS	82.73055556	0	163.11	1118	641.5	641.5			

a - Power loss. No data collected.

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: September-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	22.90	0.00	143.40	1009.8	183.80	183.8			
2	22.13	0.00	138.69	1014.5	172.95	356.8			
3	24.00	126.35	138.47	1016.5	190.51	547.3			
4	13.71	125.47	137.51	1017.2	108.27	655.5			
5	0.00	0.00	0.00	904.08	0.0	655.5			
6	0.00	0.00	0.00	853.33	0.0	655.5			
7	0.00	0.00	0.00	825.19	0.0	655.5			
8	0.00	0.00	0.00	809.67	0.0	655.5			
9	0.00	0.00	0.00	794.06	0.0	655.5			
10	0.00	0.00	0.00	773.42	0.0	655.5			
11	0.00	0.00	0.00	760.57	0.0	655.5			
12	0.00	0.00	0.00	751.59	0.0	655.5			
13	0.00	a				655.5			
14	0.00	a				655.5			
15	0.00	a				655.5			
16	0.00	0.00	0.00	734.57	0.0	655.5			
17	0.00	0.00	0.00	744.18	0.0	655.5			
18	0.00	0.00	0.00	734.33	0.0	655.5			
19	0.00	0.00	0.00	708.72	0.0	655.5			
20	0.00	0.00	0.00	702.81	0.0	655.5			
21	0.00	0.00	0.00	695.24	0.0	655.5			
22	0.00	0.00	0.00	704.7	0.0	655.5			
23	0.00	0.00	0.00	712.97	0.0	655.5			
24	0.00	0.00	0.00	723.38	0.0	655.5			
25	0.00	0.00	0.00	724.32	0.0	655.5			
26	0.00	0.00	0.00	711.71	0.0	655.5			
27	0.00	0.00	0.00	720.14	0.0	655.5			
28	0.00	0.00	0.00	718.33	0.0	655.5			
29	0.00	0.00	0.00	715.49	0.0	655.5			
30	0.00	0.00	0.00	691.46	0.0	655.5			
31						655.5			
TOTALS	82.73	0.00	143.40	1017.2	655.5	655.5			

a - Power loss. No data collected.

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: October-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	824.96	0.0	0.0			
2	0.00	0.00	0.00	826.93	0.0	0.0			
3	0.00	0.00	0.00	821.72	0.0	0.0			
4	0.00	0.00	0.00	820.23	0.0	0.0			
5	0.00	0.00	0.00	819.52	0.0	0.0			
6	0.00	0.00	0.00	815.26	0.0	0.0			
7	0.00	0.00	0.00	797.22	0.0	0.0			
8	0.00	0.00	0.00	811.48	0.0	0.0			
9	0.00	0.00	0.00	810.22	0.0	0.0			
10	0.00	0.00	0.00	809.59	0.0	0.0			
11	0.00	0.00	0.00	779.56	0.0	0.0			
12	0.00	0.00	0.00	804.47	0.0	0.0			
13	0.00	0.00	0.00	806.59	0.0	0.0			
14	0.00	0.00	0.00	776.88	0.0	0.0			
15	0.00	0.00	0.00	798.63	0.0	0.0			
16	0.00	0.00	0.00	785.47	0.0	0.0			
17	0.00	0.00	0.00	769.48	0.0	0.0			
18	0.00	0.00	0.00	791.07	0.0	0.0			
19	0.00	0.00	0.00	767.43	0.0	0.0			
20	0.00	0.00	0.00	775.86	0.0	0.0			
21	0.00	0.00	0.00	791.31	0.0	0.0			
22	0.00	0.00	0.00	771.37	0.0	0.0			
23	0.00	0.00	0.00	762.07	0.0	0.0			
24	14.84	0.00	228.01	1131.50	134.01	134.0			
25	10.97	133.56	157.55	1143.80	97.15	231.2			
26	0.00	0.00	0.00	803.76	0.0	231.2			
27	0.00	0.00	0.00	779.56	0.0	231.2			
28	14.71	0.00	209.41	1158.00	129.94	361.1			
29	24.00	133.01	163.36	1172.90	213.74	574.8			
30	24.00	133.15	162.38	1174.80	214.49	789.3			
31	24.00	133.42	160.50	1173.30	213.56	1002.9			
TOTALS	112.51	0.00	228.01	1174.80	1002.9	1002.9			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: Nov. 12, 2013
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: October-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	688.15	0.0	0.0			
2	0.00	0.00	0.00	705.88	0.0	0.0			
3	0.00	0.00	0.00	683.34	0.0	0.0			
4	0.00	0.00	0.00	682.87	0.0	0.0			
5	0.00	0.00	0.00	682.71	0.0	0.0			
6	0.00	0.00	0.00	682.63	0.0	0.0			
7	0.00	0.00	0.00	686.57	0.0	0.0			
8	0.00	0.00	0.00	710.69	0.0	0.0			
9	0.00	0.00	0.00	712.11	0.0	0.0			
10	0.00	0.00	0.00	707.77	0.0	0.0			
11	0.00	0.00	0.00	690.75	0.0	0.0			
12	0.00	0.00	0.00	691.07	0.0	0.0			
13	0.00	0.00	0.00	690.28	0.0	0.0			
14	0.00	0.00	0.00	680.03	0.0	0.0			
15	0.00	0.00	0.00	683.03	0.0	0.0			
16	0.00	0.00	0.00	692.41	0.0	0.0			
17	0.00	0.00	0.00	682.63	0.0	0.0			
18	0.00	0.00	0.00	711.63	0.0	0.0			
19	0.00	0.00	0.00	694.30	0.0	0.0			
20	0.00	0.00	0.00	717.94	0.0	0.0			
21	0.00	0.00	0.00	726.69	0.0	0.0			
22	0.00	0.00	0.00	700.92	0.0	0.0			
23	0.00	0.00	0.00	680.19	0.0	0.0			
24	0.00	0.00	0.00	685.16	0.0	0.0			
25	0.00	0.00	0.00	701.07	0.0	0.0			
26	0.00	0.00	0.00	715.18	0.0	0.0			
27	0.00	0.00	0.00	722.11	0.0	0.0			
28	0.00	0.00	0.00	733.07	0.0	0.0			
29	0.00	0.00	0.00	739.85	0.0	0.0			
30	0.00	0.00	0.00	735.98	0.0	0.0			
31	0.00	0.00	0.00	747.81	0.0	0.0			
TOTALS	0.00	0.00	0.00	747.81	0.0	0.0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/12/2014
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: November-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	2.29	0	158.44	1166.30	20.3	20.3			
2	0.29	0	228.01	943.87	1.9	22.2			
3	0.00	0	0	796.51	0.0	22.2			
4	0.00	0	0	764.20	0.0	22.2			
5	0.00	0	0	750.48	0.0	22.2			
6	0.00	0	0	775.07	0.0	22.2			
7	0.00	0	0	771.53	0.0	22.2			
8	0.00	0	0	777.36	0.0	22.2			
9	0.00	0	0	786.10	0.0	22.2			
10	0.00	0	0	782.40	0.0	22.2			
11	0.00	0	0	784.53	0.0	22.2			
12	0.00	0	0	779.48	0.0	22.2			
13	0.00	0	0	781.06	0.0	22.2			
14	0.00	0	0	781.53	0.0	22.2			
15	0.00	0	0	782.64	0.0	22.2			
16	0.00	0	0	779.72	0.0	22.2			
17	0.00	0	0	775.86	0.0	22.2			
18	0.00	0	0	775.94	0.0	22.2			
19	0.00	0	0	769.56	0.0	22.2			
20	0.00	0	0	772.63	0.0	22.2			
21	0.00	0	0	772.31	0.0	22.2			
22	0.00	0	0	767.11	0.0	22.2			
23	0.00	0	0	764.20	0.0	22.2			
24	0.00	0	0	763.57	0.0	22.2			
25	0.00	0	0	764.28	0.0	22.2			
26	0.00	0	0	760.89	0.0	22.2			
27	0.00	0	0	758.60	0.0	22.2			
28	0.00	0	0	758.92	0.0	22.2			
29	0.00	0	0	759.23	0.0	22.2			
30	0.00	0	0	757.10	0.0	22.2			
31						22.2			
TOTALS	2.58	0	228.01	1166.3	22.2	22.2			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

CONSOL Energy Inc.

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/12/2014
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: November-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	2.29	0.00	0.00	745.20	0.0	0.0			
2	0.29	0.00	0.00	698.47	0.0	0.0			
3	0.00	0.00	0.00	705.01	0.0	0.0			
4	0.00	0.00	0.00	694.93	0.0	0.0			
5	0.00	0.00	0.00	714.79	0.0	0.0			
6	0.00	0.00	0.00	734.25	0.0	0.0			
7	0.00	0.00	0.00	712.26	0.0	0.0			
8	0.00	0.00	0.00	691.77	0.0	0.0			
9	0.00	0.00	0.00	729.84	0.0	0.0			
10	0.00	0.00	0.00	695.32	0.0	0.0			
11	0.00	0.00	0.00	704.30	0.0	0.0			
12	0.00	0.00	0.00	683.97	0.0	0.0			
13	0.00	0.00	0.00	692.80	0.0	0.0			
14	0.00	0.00	0.00	706.20	0.0	0.0			
15	0.00	0.00	0.00	712.50	0.0	0.0			
16	0.00	0.00	0.00	711.87	0.0	0.0			
17	0.00	0.00	0.00	707.06	0.0	0.0			
18	0.00	0.00	0.00	698.32	0.0	0.0			
19	0.00	0.00	0.00	665.61	0.0	0.0			
20	0.00	0.00	0.00	697.05	0.0	0.0			
21	0.00	0.00	0.00	715.02	0.0	0.0			
22	0.00	0.00	0.00	700.92	0.0	0.0			
23	0.00	0.00	0.00	676.64	0.0	0.0			
24	0.00	0.00	0.00	671.05	0.0	0.0			
25	0.00	0.00	0.00	673.26	0.0	0.0			
26	0.00	0.00	0.00	669.16	0.0	0.0			
27	0.00	0.00	0.00	668.76	0.0	0.0			
28	0.00	0.00	0.00	673.26	0.0	0.0			
29	0.00	0.00	0.00	701.86	0.0	0.0			
30	0.00	0.00	0.00	684.29	0.0	0.0			
31						0.0			
TOTALS	2.58	0.00	0.00	745.2	0.0	0.0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/12/2014
WELL NO. MH-18
API PERMIT NO. 47- 051 -00928
MONTH: December-2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0	0	756.32	0.0	0.0			
2	0.00	0	0	755.69	0.0	0.0			
3	0.00	0	0	754.42	0.0	0.0			
4	0.00	0	0	754.90	0.0	0.0			
5	0.00	0	0	752.14	0.0	0.0			
6	0.00	0	0	747.65	0.0	0.0			
7	0.00	0	0	747.02	0.0	0.0			
8	0.00	0	0	746.39	0.0	0.0			
9	0.00	0	0	745.68	0.0	0.0			
10	0.00	0	0	744.34	0.0	0.0			
11	0.00	0	0	745.13	0.0	0.0			
12	0.00	0	0	743.08	0.0	0.0			
13	0.00	0	0	743.79	0.0	0.0			
14	0.00	0	0	741.34	0.0	0.0			
15	0.00	0	0	740.63	0.0	0.0			
16	0.00	0	0	738.58	0.0	0.0			
17	0.00	0	0	738.58	0.0	0.0			
18	0.00	0	0	737.48	0.0	0.0			
19	0.00	0	0	739.61	0.0	0.0			
20	0.00	0	0	738.90	0.0	0.0			
21	0.00	0	0	737.40	0.0	0.0			
22	0.00	0	0	741.89	0.0	0.0			
23	0.00	0	0	734.17	0.0	0.0			
24	0.00	0	0	733.54	0.0	0.0			
25	0.00	0	0	734.57	0.0	0.0			
26	0.00	0	0	734.33	0.0	0.0			
27	0.00	0	0	734.01	0.0	0.0			
28	0.00	0	0	734.80	0.0	0.0			
29	0.00	0	0	731.89	0.0	0.0			
30	0.00	0	0	731.10	0.0	0.0			
31	0.00	0	0	729.60	0.0	0.0			
TOTALS	0.00	0	0	756.32	0.0	0.0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

WR-40CS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

DATE: 2/12/2014
WELL NO. MH-20
API PERMIT NO. 47- 051 -00930
MONTH: ~~November~~ December -2013

OPERATOR NAME: CNX Gas Company

********MAXIMUM PERMITTED INJECTION PRESSURE 1,400 PSIG.********

DAY	OPERATING HOURS	INJECTION RATES (CFM)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	VOLUME OF CO2 INJECTED (MCF)		ANNULUS PRESSURE (PSIG)	RATE IN GALLONS PER MINUTE	
		MIN	MAX		DAILY	ACCUMULATED		AVERAGE	MAXIMUM
1	0.00	0.00	0.00	685.79	0.0	0.0			
2	0.00	0.00	0.00	701.15	0.0	0.0			
3	0.00	0.00	0.00	693.82	0.0	0.0			
4	0.00	0.00	0.00	705.49	0.0	0.0			
5	0.00	0.00	0.00	683.66	0.0	0.0			
6	0.00	0.00	0.00	668.68	0.0	0.0			
7	0.00	0.00	0.00	666.64	0.0	0.0			
8	0.00	0.00	0.00	663.33	0.0	0.0			
9	0.00	0.00	0.00	663.25	0.0	0.0			
10	0.00	0.00	0.00	663.01	0.0	0.0			
11	0.00	0.00	0.00	665.53	0.0	0.0			
12	0.00	0.00	0.00	660.33	0.0	0.0			
13	0.00	0.00	0.00	683.26	0.0	0.0			
14	0.00	0.00	0.00	659.86	0.0	0.0			
15	0.00	0.00	0.00	660.33	0.0	0.0			
16	0.00	0.00	0.00	659.54	0.0	0.0			
17	0.00	0.00	0.00	661.59	0.0	0.0			
18	0.00	0.00	0.00	661.36	0.0	0.0			
19	0.00	0.00	0.00	700.05	0.0	0.0			
20	0.00	0.00	0.00	697.05	0.0	0.0			
21	0.00	0.00	0.00	698.79	0.0	0.0			
22	0.00	0.00	0.00	679.8	0.0	0.0			
23	0.00	0.00	0.00	674.6	0.0	0.0			
24	0.00	0.00	0.00	673.81	0.0	0.0			
25	0.00	0.00	0.00	668.53	0.0	0.0			
26	0.00	0.00	0.00	684.45	0.0	0.0			
27	0.00	0.00	0.00	697.37	0.0	0.0			
28	0.00	0.00	0.00	708.32	0.0	0.0			
29	0.00	0.00	0.00	679.56	0.0	0.0			
30	0.00	0.00	0.00	674.44	0.0	0.0			
31	0.00	0.00	0.00	674.36	0.0	0.0			
TOTALS	0.00	0.00	0.00	708.32	0.0	0.0			

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY:

TITLE: Manager, Field Testing & Operations

Appendix F

1,400 psig Injection Pressure Increase Material

west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
dep.wv.gov

January 16, 2013

Consol Energy Inc.
Research and Development
Attn: James E. Locke
4000 Brownsville Road
South Park, PA 15129

RE: UIC Permit 2R05101AP

Dear Sir or Madam:

The maximum wellhead injection pressure increase request of 1400psi has been approved. Step-rate tests conducted per permit modification requirement #7 on injection wells (MH-18/MH-20) was performed to verify that the injection formation will not part at such pressure.

Please continue to submit daily injection pressure readings / operational information monthly on Form WR-40 to the Office of Oil and Gas.

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

Sincerely,

James Peterson
Environmental Resources Analyst

west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

UIC Permit - Modification
- Pressure Increase

CNX GAS COMPANY LLC
1000 CONSOL ENERGY DRIVE
CANNONSBURG, PA 15317-6506

Dear Applicant:

Enclosed you will find Underground Injection Control Permit Number UIC2R05101AP dated October 03, 2011. Be advised that the duration of the permit is for a period of five (5) years. Expires from initial issuance on May 2, 2013
Also be advised that all conditions established by UIC Permit Number UIC2R05101AP either expressly or incorporated by reference, must be strictly adhered to. All monitoring forms shall be submitted to the Office of Oil and Gas in the manner and frequency prescribed. The monitoring forms will be compared with the scope of permitted activity to verify compliance.

Please review the permit carefully and be aware of all permit conditions. Compliance of all permit conditions will be strictly enforced.

The operation of this injection well facility in general, including maintenance of all related surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of the state.

James Martin
Chief,
Office of Oil and Gas

Enclosures as stated

FORM WW-3 (A)
10/07

1) Date: October 5, 2007
2) Operator's Well No. MH18
3) API Well No.: 47 - 051 - 00928
State County Permit
4) UIC Permit No. 2R05101AP

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OF WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS,

5) Surface Owner(S) To Be Served
(a) Name: Consolidation Coal Company
Address: 1800 Washington Road
Pittsburgh, PA 15241-1421
(b) Name: David M. & Kristin Gilmore
Address: R.D. #5, Box 473
Cameron, WV 26033
(c) Name:
Address:

6) Inspector: Bill Hatfield
Address: P.O. Box 522
Buckhannon, WV 25201
Telephone: (304) 767-1828

7) (a) Coal Operator
Name: None
Address:

7) (b) Coal Owner(S) With Declaration Of Record
Name: Consolidation Coal Company
Address: 1800 Washington Road
Pittsburgh, PA 15241-1421
Name:
Address:

7) (c) Coal Lessee with Declaration Of Record
Name: None
Address:

TO THE PERSONS NAMED ABOVE: You should have received this form and the following documents

(1) The Application For A Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work;
(2) The plat (surveyor's map) showing the well location on Form WW-6; and
(3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is December 1 20 07 .

THE REASON YOU HAVE RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION [(FORM WW-3(B)] DESIGNATED TO YOU. HOWEVER YOU ARE NOT REQUIRED TO TAKE ACTION AT ALL.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of the mailing or delivery to the Chief.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: CNX Gas Company, LLC
Address: 1800 Washington Road
Pittsburgh, PA 15241-1421
By: Randall M. Albert
Its: Vice President
Signature: Randall M. Albert

FORM WW-3 (B)
10/07

1) Date: January 25, 2008
2) Operator's Well No. MH18
3) API Well No.: 47 - 051 - 00928
State County Permit
4) UIC Permit No. 2R05101AP

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

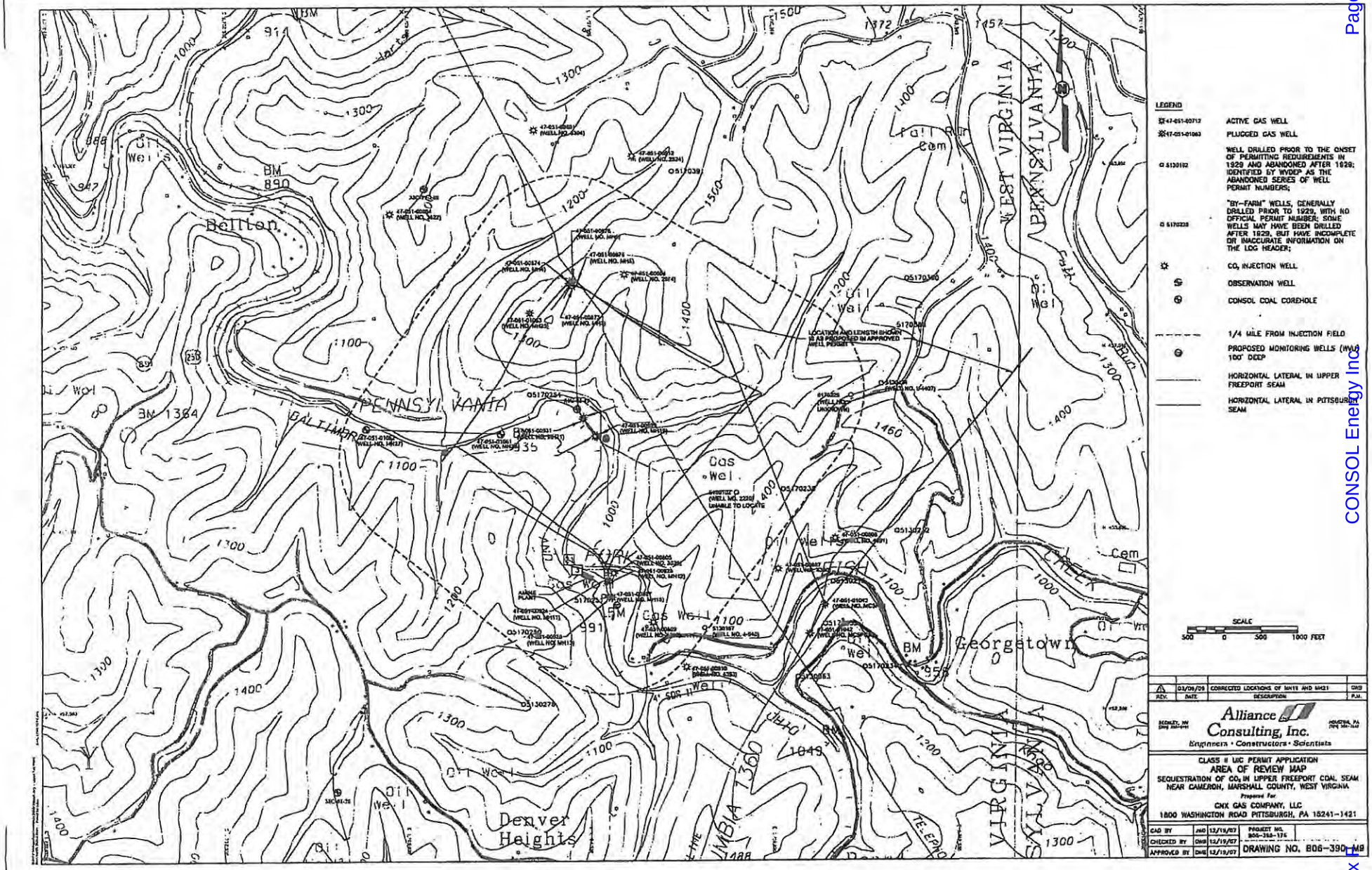
5) WELL TYPE: Liquid Injection ____ / Gas Injection (not storage) ____ / Waste Disposal ____ / CO_2 Sequestration X
6) LOCATION: Elevation: 930' Watershed: Pennsylvania Fork Fish Creek
District: Liberty County Marshall Quadrangle Littleton
7) WELL OPERATOR: CNX Gas Company, LLC
Address 1800 Washington Road
Pittsburgh, PA 15241-1421
8) DESIGNATED AGENT John H. Johnston
Address P.O. Box 1588
Charleston, WV 25326-1588
9) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Bill Hatfield
Address P.O. Box 522
Buckhannon, WV 26201
10) DRILLING CONTRACTOR
Name N/A -- Injection Well Is Already Drilled
Address
11) PROPOSED WELL WORK Drill ____ / Drill deeper ____ / Redrill ____ / Stimulate ____
Plug off old formation ____ / Perforate new formation ____ Convert ____
Other physical change in well (specify) Well To Be Used for Sequestration of CO_2 Gas
12) GEOLOGIC TARGET FORMATION Upper Freeport Coal Seam Depth 1258 Feet (top) to 1261 Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 1525 Feet
14) Approximate water strata depths: Fresh 200 Feet Salt N/A Feet
15) Approximate coal seam depths: 597', 665', 1204' and 1260'
16) Is coal being mined in the area? Yes ____ No X
17) Virgin reservoir pressure in target formation 50 psig Source Methane
18) Estimated reservoir fracture pressure 3000 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 0.56 tons Bottom hole pressure 700 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES CO_2 gas
21) FILTERS (IF ANY) N/A
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL N/A
23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor	13-3/8"	.250 LIM	37#/ft	X		30'	30'	--	Kinds IPP SSRR Single
Fresh Water	9-5/8"	.250 LIM	26#/ft	X		300'	300'	100 sks	Set Rotational Release
Coal	7"	.231 LIM	17#/ft	X		1520.8'	1520.8'	235 sks	Sizes 7" diameter
Intermediate									
Production									Depths set approximately
Tubing	2-3/8" CS	R-2	4.7 #/ft	X			1230'		1210-1220'
Tubing	2-3/8" SS	Sch 40 Grade 304		X			30' bottom		Perforations
Liners									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Northern Reserve Coal Company & Southern Reserve Coal Company
by deed X / lease ____ / other contract ____ / dated August 31, 1966 of record in the
Marshall County Clerk's office in Moundsville, WV Book 387 Pages 116,121,131

CS = Carbon Steel
SS = Stainless Steel

ATTACHMENT A



Page 5 of 73
CONSOL Energy Inc
Appendix F

ATTACHMENT B

CONSOL Energy – Marshall County CO_2 Sequestration Gas Monitoring Points

API No.	Well No.	Continued Sampling	Note
47-051-00873	MH-3	Yes	
47-051-00874	MH-4	Yes	
47-051-00875	MH-5	Yes	
47-051-00004	2974	Yes	
051-70225	2287	No	Abandoned well, casing collapsed at ~ 10 ft.
47-051-01061	MH-26	Yes	
47-051-01062	MH-27	Yes	
47-051-00804	3622	Yes	
47-051-00805	3038	No	Annulus access restricted to less than 1 ft.
47-051-00924	MH-11	Yes	
47-051-00925	MH-12	Yes	
47-051-00809	4392	No	Access road impassable, unsafe to drive upon.
51-30434	L-4407	Yes	
47-051-01043	MC5PG	Yes	
NA	WVU-1	Yes	
NA	WVU-2	Yes	
NA	WVU-3	Yes	

CONSOL Energy – Marshall County CO_2 Sequestration Water Monitoring Points

Well ID	Well Type	Sampling By	Analysis By	Continued Sampling
MH-11	CBM Production	CONSOL	CONSOL	Yes
MH-12	CBM Production	CONSOL	CONSOL	Yes
MC5PG	CBM Production	CONSOL	CONSOL	Yes
GWW	Residential Water	CONSOL	CONSOL	Yes
WVU-1	Shallow Monitoring	WVU	CONSOL	Yes
WVU-2	Shallow Monitoring	WVU	CONSOL	Yes
WVU-3	Shallow Monitoring	WVU	CONSOL	Yes

UIC PERMIT (MODIFICATION) NO. UIC2R05101AP
ECBM \ CO2 SEQUESTRATION MARSHALL COUNTY WV PROJECT

UNDERGROUND INJECTION CONTROL PERMIT
FOR
DEPARTMENT OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS AND DIVISION OF WATER AND WASTE MANAGEMENT
FOR
CLASS II SECONDARY RECOVERY

This document consists of the Underground Injection Control (UIC) Permit required by the Department of Environmental Protection, Office of Oil and Gas, and the Division of Water and Waste Management. The permitted is allowed to engage in underground injection in accordance with the terms and conditions of this permit based upon an approved UIC Permit. The purpose of this permit (project) is to sequester carbon dioxide (CO2), a greenhouse gas, in an unminable coal seam (Upper Freeport) while simultaneously enhancing coalbed methane gas production.

The Underground Injection Control Permit No. **UIC2R05101AP** consists of Forms WW-3A and WW-3B and the terms and conditions below:

1. The underground injection activity authorized by this permit shall not allow the movement of fluid, as per (47CSR13-2.26) into any subsurface area other than that which is specified and may not cause a violation of any primary drinking water regulation promulgated under 40 CFR Chapter 1, Part 141 or any water quality standard promulgated by the Department of Environmental Protection.

2. This permit is issued in accordance with the provisions of Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.

3. All reports required by this permit shall be submitted to the Office of Oil and Gas with exception to paragraph 4 below.

4. The following activities require the immediate cessation of facility operations and prompt notification of the Director of Water and Waste Management. 47CSR13-13.6.d and 47CSR13-13.12.1.6.

   (a) Any monitoring or other information which indicates that any contaminant has caused or may cause an endangerment to an underground source of drinking water;

   (b) Any non-compliance with a permit condition or any malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water; and

   (c) Any non-compliance which may endanger health or environment.

5. The permittee must satisfy the requirement of the Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the area of review. Corrective action will be in the form of "monitoring" for each well within the ¼ mile review area. See Attachment A.

6. This permit authorizes injection of only gaseous CO2 into the Upper Freeport coal seam for the enhanced recovery of coalbed methane and sequestration of the CO2. On occasion, small quantities of perfluorocarbon tracer compounds may be added to help detect any possible leakage of CO2 from the subsurface. The field boundary (horizontal laterals in the Pittsburgh coal seam) for the injection operations is established by the ¼ mile review area. Injection is approved for wells MH-18 (47-051-0928) and MH-20 (47 -051-0930). Production will be through wells MH-5 (47-051-0875) and MH-11 (47-051 -0924).

7. **The maximum wellhead injection pressure is approved for an increase and established at 1,400psi from an initial permitted pressure of 700 psi per this permit modification.** A step-rate test shall be performed by the permittee to verify the formation will not part up to this established pressure.

8. The permittee shall conduct an MIT (Mechanical Integrity Test) on the tubing annulus of the injection wells. Authorization to inject is contingent upon submission and approval of the Office of Oil and Gas Form WR-37 for each injection well. Construction modifications from the proposed work plan (O&G Form WW-3) and mechanical integrity will be evaluated at this time. Operational conditions will be finalized at this time. Upon approval of Form WR-37, conditions established on this form are incorporated by reference as conditions of this permit. FORM WR-37 SHALL BE SUBMITTED WITHIN 30 DAYS AFTER THE EFFECTIVE DATE OF THE UIC PERMIT.

9. A well head pressure gauge shall be installed and maintained on the injection tubing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported monthly on Form WR-40. This form shall be submitted to the Office of Oil and Gas.

10. The permittee shall monitor any open casing annuli, on the injection wells, with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection of any leaks from the injection zone or tubing. The results of such monitoring shall be reported monthly on Form WR-40 to the Office of Oil and Gas.

11. All gas injection lines shall be inspected, maintained, operated and monitored to allow early detection of any leakage and so that the occurrence of leaks will be minimized.

12. The permittee shall develop a plan to monitor the movement of the CO2. Wells have already been established for monitoring and are listed in the Table labeled as Attachment B. The plan shall also include the Upper Freeport production wells/laterals and the Pittsburgh wells/laterals as monitoring points. The Office of Oil and Gas shall approve such plan prior to any injection activities and the monitoring results will be submitted at a frequency approved by the Office of Oil and Gas.

13. West Virginia University plans to drill three groundwater monitoring wells within the permitted area. These wells will be one hundred feet deep and their approximate locations are shown on Attachment A. The Office of Oil and Gas shall be notified if CO2 levels, in any of the wells, become elevated by 10% over baseline (i.e., when the concentration of CO2 in the coalbed methane produced from any of the wells being monitored increases by 10 percentage points over its baseline concentration).

14. Prior to any injection operations the permittee shall gather baseline CO2 levels in all of the wells planned for monitoring, including the three groundwater monitoring wells provided in Item 13 above. This will also include monitoring of the meadow area and water wells on the Gilmore property.

15. The permittee shall temporarily cease injection if CO2 concentrations in any monitoring well (see Attachment B) increases 10% above established baseline levels (i.e., when the concentration of CO2 from any of the wells being monitored attains a sustained increase of 10 percentage points over its baseline concentration). The Office of Oil and Gas will be notified immediately and discussions will ensue as to the course of action to be taken in regard to the permitted activities.

    The permittee shall permanently cease injection when the CO2 levels attain a sustained increase of 10% for a period of 90 days (i.e., when the concentration of CO2 from any of the wells being monitored attains a sustained increase of 10 percentage points over its baseline concentration).

    This permit will expire two years after injection is permanently ceased. This time will be used for continued monitoring and scientific data collection. The permittee at this point will apply for plugging permits, through the Office of Oil and Gas, for all of the Upper Freeport access, injection, observation and production wells.

16. The permittee shall fulfill the requirements of the Office of Oil and Gas regarding maintaining financial responsibility and resources to close, plug, and abandon permitted wells.

17. The permittee must satisfy the requirement of the Office of Oil and Gas for plugging and abandonment of permitted injection wells in such a manner as to ensure that no fluid movement, which includes gas, occurs either from the injection zone into an underground source of drinking water or from one underground source of drinking water to another.

18. All fluids produced within the boundary of the permitted area shall be gathered and contained in an Office of Oil & Gas approved diked holding tank(s), as per Office of Oil and Gas requirements. Fluids will be hauled to an approved facility for proper disposal.

19. Haulers of liquid CO2 and produced fluids shall have the necessary licenses and/or permits.

20. The permittee or its affiliates currently operates a gathering system including a scrubber plant (or other CO2 removal system) to collect and treat all coalbed methane produced. Any CO2 removed in this plant may be piped and injected into either of the two injection wells, thus reducing the volume needing to be delivered.

21. The permittee shall provide security for all operations including, but not limited to the CO2 holding tank, gathering system, wells and injection operations.

22. The permittee or its affiliates currently operates a gathering system including a scrubber plant (or other CO2 removal system) to collect and treat all coalbed methane produced. Any CO2 removed in this plant may be piped and injected into either of the two injection wells, thus reducing the volume needing to be delivered.

23. The permittee shall provide security for all operations including, but not limited to the CO2 holding tank, gathering system, wells and injection operations.

24. Permittee shall post a $50,000 bond from the Office of Oil and Gas prior to the permit issuance date. The bond shall remain in effect until the permittee has fulfilled all of the requirements of the Office of Oil and Gas in regard to this permit and its activities.

25. The herein-described activity is to be extended, modified, added to, made, enlarged, acquired, constructed or installed, and operated, used and maintained strictly in accordance with the terms and conditions of this permit; with the information submitted with the Permit Application No. **2R05101AP** with the plan of maintenance and method of operation thereof submitted with such application(s); and with any applicable rules and regulations promulgated by the Department of Environmental Protection.

26. Failure to comply with the terms and conditions of this permit, with the plans and specifications submitted with the Permit Application No. **2R05101AP** and with the plan of maintenance and method of operation thereof submitted with such application(s) shall constitute grounds for the revocation or suspension of this permit and for the invocation of all the enforcement procedures set forth in Article 11 and 12, Chapter 22, of the Code of West Virginia and Legislative Rule 47CSR13.

27. The operation of this injection well facility in general, including maintenance of all unrelated surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the air, or the surface or ground waters of this State

28. Permit is valid for five years from initial issuance of May 2, 2008. Therefore this permit will expire on May 2, 2013. UIC permits are valid for five years at which time the permittee can apply for renewal.

ATTACHMENT A

Injection Fluid Analyses Parameters

Parameter	Ranges
PH	>2 - 10
TDS	0 - 265,000 mg/1
TSS	0 - 1000 mg/1
Aluminum	0 - 10 mg/1
Arsenic	0 - 10 mg
Barium	0 – 1500 mg/1
Cadmium	0 – 2 mg/1
Chromium	0 – 1 mg/1
Iron	0 – 1000 mg/1
Lead	0 – 7.5 mg/1
Magnesium	0 – 5000 mg/1
Manganese	0 – 15 mg/1
Potassium	0 – 5000 mg/1
Sodium	0 – 110,000 mg/1
Zinc	0 – 15 mg/1
Surfactants	0 – 10 mg/1
TKN	0 – 25 mg/1
Oil and Grease	0 – 100 mg/1
TOC	0 – 10,000 mg/1
COD	0 – 30,000 mg/1
Acidity	0 – 500 mg/1
Chloride	0 – 250,000 mg/1
Sulfate	0 – 500 mg/1
Cyanide	0 – 1 mg/1
Phenols	0 – 10 mg/1
Calcium	0 – 60,000 mg/1
BNA – Extractables	Trace
Purgeable Aromatics	Trace
Purgeable Halocarbons	Trace
PCBs	<MDL or 50 ppm

MOUNDSVILLE DAILY ECHO
SINCE 1891

(304) 845-2660
P.O. BOX 369
MOUNDSVILLE
WEST VIRGINIA
26041

AFFIDAVIT OF PUBLICATION

STATE OF WEST VIRGINIA,
COUNTY OF MARSHALL, to wit:

I, Alleah M. Fahey, being first duly sworn upon my oath, do depose and say:

- that I am Legal Advertising Manager of the MOUNDSVILLE DAILY ECHO, a Republican newspaper;
- that I have been duly authorized to execute this affidavit;
- that such newspaper has been published for over 119 years, is regularly published afternoons daily except Saturdays and Sundays, for at least fifty weeks during the calendar year, in the municipality of Moundsville, Marshall County, West Virginia.
- that such newspaper is a newspaper of "general circulation" as defined in Art. 3, Chap. 59 of the Code of West Virginia 1931 as amended, within Moundsville and Marshall County;
- that such newspaper averages in length four or more pages, exclusive of any cover, per issue;
- that such newspaper is circulated to the general public at a definite price or consideration;
- that such newspaper is a newspaper to which the general public resorts for passing events of a political, religious, commercial and social nature and for current happenings, announcements, miscellaneous reading matters, advertisements and other notices;
- and that the annexed notice described as follows:

PARTY(ies)
CNX Gas Company

NATURE (and agency if heard before one
Permit Application No. UIC2R05101AP

CERTIF-BILL TO

Consol Energy Inc.
Research & Development
4000 Brownsville Road
South Park, PA 15129

WAS PUBLISHED IN-SAID NEWSPAPER AS FOLLOWS:

TIMES	DATES
1	August 30, 2011

BY WORDS	PUBLICATION CHARGES
533@.115	$61.30

(signed) Alleah M. Fahey

NOTARIZATION
OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
LINDA M. MASSIE
Moundsville Daily Echo
P.O. Box 369
Moundsville, West Virginia 26041
My Commission Expires Jan. 9, 2016

Notary's oath and subscribed before me this 1st day of Sept., 2011.

Linda M. Massie
Notary Public

LEGAL ADVERTISEMENT

PUBLIC NOTICE

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0450
Fax: (304) 926-0452
Re: UIC Permit Application
UIC2R05101AP

APPLICATION FOR STATE UNDERGROUND INJECTION CONTROL PERMIT

Public Notice Number: UIC-2011-005

Public Notice Date: August 30, 2011

PAPER: THE MOUNDSVILLE ECHO, POST OFFICE BOX 369, MOUNDSVILLE, WV 26041-0369

The following applicant has applied for a State Underground Injection Control (UIC) Permit for this facility or activity.

Applicant: CNX GAS COMPANY LLC, 1000 CONSOL ENERGY DRIVE, CANONSBURG, PA 15317-6506

Application Number: UIC2R05101AP

Business Conducted: Oil and/or natural gas production

Location: On Pennsylvania Fork of Fish Creek in Liberty District of Marshall County. Approximate NAD 27 UTM coordinate-Northing 4399799.8 Easting 539394.5

Activity: Modification of a carbon dioxide (CO_2) sequestration underground injection control (UIC) permit. Injection pressure increase request. CO_2, a greenhouse gas, will continue to be sequestered in an unmineable (Upper Freeport) coal seam while simultaneously enhancing coalbed methane production.

The state of West Virginia will act on the above application in accordance with the West Virginia Legislative Rules, Title 47, Series 13, Section 13.24 issued pursuant to Chapter 22, Article 11 & 12.

Any interested person may submit written comments on the draft permit and may request a public hearing within 30 days of the date of this public notice. Such comments or requests should be addressed to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: James Martin

Comments received within this period will be considered prior to acting on the permit application. Correspondence should include the name, address, and telephone number of the writer and a concise statement of the nature of the issues raised. A public hearing may be held if the Chief considers significant the degree of public interest raised on issues relevant to the draft permit.

Interested persons may contact the person identified above at (304) 926-0450 to obtain further information.

The application, draft permit, and any required fact sheet are on file and may be inspected by appointment, or copies obtained, at a nominal cost, at the Office of Oil and Gas, 601 57th Street SE, Charleston, WV 25304, between 8:00 a.m. and 4:00 p.m. on business days.

PUBLISH: August 30, 2011.

CONSOL Energy Inc.
Research & Development
4000 Brownsville Road
South Park, PA 15129-9566
phone: 412/854-6607
fax: 412/854-6613
web: www.consolenergy.com

October 26, 2012

Mr. James Martin
Chief, Office of Oil and Gas
West Virginia Department of Environmental Protection
601 – 57th Street
Charleston, WV 25304

Re: Step Rate Testing Results – UIC Permit No. UIC2R05101AP

Dear Mr. Martin:

On September 11, 2012, CONSOL Energy Inc. (CONSOL) conducted a test on the carbon dioxide (CO_2) injection wells to satisfy the conditions of the referenced underground injection control (UIC) permit that was modified to allow for an increase in the injection pressure to 1,400 pounds per square inch gage (psig).

Introduction

CONSOL received tentative approval from the West Virginia Department of Environmental Protection (WVDEP) Office of Oil and Gas (OOG) to increase the injection pressure to 1,400 psig, pending verification that the increased pressure would not fracture the injection formation (the Upper Freeport (UF) coal seam.) CONSOL planned to demonstrate this by performing a stepped injection pressure increase from the existing injection pressure limit of 933 psig to 1,400 psig. To conduct this test, the CO_2 injection pump rate would be increased to achieve pressure readings of 1,050 psig, 1,250 psig, and 1,400 psig, holding the pressure at those levels for 30 minutes in injection wells MH-18 and MH-20 and observing the pressure and injection rates for signs of formation parting that would be indicated by a sudden drop in pressure with a simultaneous increase of the injection rate.

Pressure was measured and recorded by Greene's Energy Group (GEG), using a calibrated electronic pressure gauge that was mounted on each wellhead. Flow rate was monitored by the existing injection system flow meters, which monitor flow to each well, separately.

Test Results

Testing was performed on September 11, 2012. The injection system had been in operation overnight and, the morning of the test, was operating at an injection pressure that was near, but below the existing pressure limit of 933 psig.

CONSOL and GEG arrived at 08:30 h and began to prepare for the test. When GEG had completed connecting their pressure gauges, we began to increase the injection pressure to both wells to the first pressure step of 1,050 psig. At 955 psig, a pressure relief valve (PRV) that protects an auxiliary CO_2 vapor storage tank activated venting vapor-phase CO_2 and

preventing further pressure increase. The system was inspected and we determined the PRV could be isolated to allow us to continue the testing.

At 11:30 h GEG began logging pressure data on the injection wells. Pressure was held for 30 minutes at a range of 1,056 psig to 1,062 psig, in MH-18 and 1,050 psig to 1,056 psig in MH-20. Pressure variability correlated with vaporizer temperature fluctuations. No evidence of formation parting was observed.

At 13:20 h we began to increase injection pressure to the second step of 1,250 psig. After 60 minutes, pressure had only achieved 1,087 psig in MH-18 and 1,080 psig in MH-20. To improve response time, we closed MH-20 and directed all injection flow into MH-18. A pressure of 1,250 psig was achieved in MH-18 at 14:50 h and the second step point was tested for 30 minutes at a pressure range of 1,262 psig to 1,269 psig. No evidence of formation parting was observed.

Pressure was allowed to increase in MH-18 to the third pressure step of 1,400 psig from 15:20 h to 16:30 h. To prevent the pressure from exceeding 1,400 psig, we maintained the test pressure range from 1,390 psig to 1,398 psig for 30 minutes from 16:30 h to 17:00 h, without evidence of formation parting.

At 17:00 h, we opened flow to MH-20 and shut in MH-18, to allow us to observe the pressure response in MH-20. By 20:00 h, the pressure in MH-20 had only increased from 940 psig to 1,129 psig and the rate of pressure increase was observed to be 1 – 2 psig every 15 minutes.

During this period, in an attempt to achieve the target pressure of 1,400 psig, we were injecting at a rate that was above the upper limit of the MH-20 flow meter (24 pounds per minute (lb/min)). At 2(00, we decreased the flow rate to an observable level of 23 lb/min to test the pressure response. Within 30 minutes, the pressure dropped from 1,129 psig to approximately 1,090 psig, where it stayed for 15 minutes at 23 lb/min flow rate, before we shut the injection system down.

Plots of the observed pressure versus flow rate for MH-18 and MH-20 are attached as Figure 1 and Figure 2, respectively, as are the pressure trends for each well for the test period (Figure 3) and tabular pressure readings, which were recorded at five-second intervals (Table 1.)

Discussion

CONSOL has evaluated the data from the testing and cannot identify any characteristic that would result in the delayed pressure response observed in well MH-20 that was similar to that observed following the commencement of initial injection activities.

After discussing options with our research partners from West Virginia University (WVU) and the U. S. Department of Energy (DOE) National Energy Technology Laboratory (NETL), we determined the best approach would be to limit the injection rate to a flow rate of 37 lb/min, total for the two wells, as limited by the UIC permit, and allowing the well pressure to gradually come up to 1,400 psig (or a stable reading, if less than 1,400 psig), while observing the pressures and flow rates for any indication that would suggest the target formation may have fractured. The slow response exhibited by MH-20 will dictate the overall pressure increase and will provide what will essentially amount to an extended duration step rate test.

During the period of pressure increase, CONSOL will collect weekly samples of gas from the monitoring wells to verify the formation is unaffected and continue this until a stable pressure

level is reached. When a stable flow rate is achieved, NETL scientists will perform a tracer gas injection investigation. Two tracer gases will be injected, one per injection well, and surface and production gas samples will be collected and analyzed for the presence of these tracers to evaluate the occurrence of microseepage.

If the pressure reaches a stable level and the evaluation efforts show no sign of leakage, CONSOL will prepare a request to the WVDEP asking for final approval to confirm the revised UIC permit at the maximum achieved pressure level, if less than 1,400 psig.

Closing

CONSOL can begin this evaluation immediately, if acceptable to WVDEP. NETL has the appropriate tracers and can initiate the tracer injection program as soon as the flow rate stabilizes. We are also open to any optional approaches that WVDEP may offer for consideration. Please call me at (412) 854-6607 with any questions regarding this report or to notify CONSOL of your decision regarding this matter.

Respectfully,

J. E. Locke

Manager, Field Testing & Operations

Attachments

cc: A. R. Goodell
S. E. Winberg
R. A. Winschel

ATTACHMENTS

Figure 1. Plot of the average flow rates and average observed pressure readings recorded during each 30-minute step during testing of injection well MH-18.

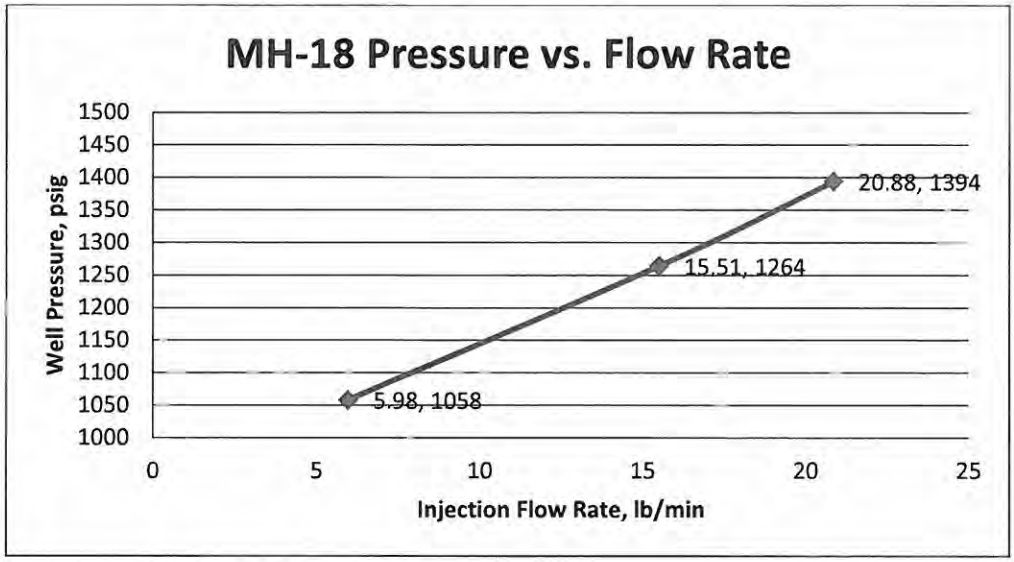


Figure 2. Plot of the average flow rates and aver ge observed pressure readings recorded during each 30-minute step during testing of injection well MH-20.

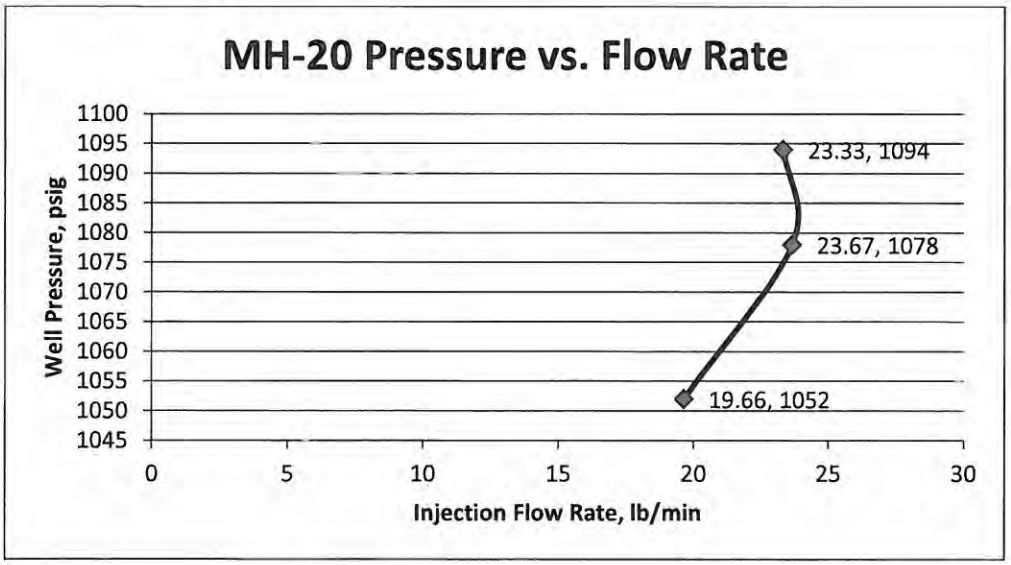


Figure 3. Greene's Energy Pressure Data Plot

DATE/TIME	MH18, psig	MH18, lb/min	MH20, psig	MH20, lb/min	AMBIENT
11:27:10	955	5.86	950	13.63	78
11:27:20	955	6.63	950	14.07	78
11:27:30	955	6.86	952	14.46	78
11:27:40	955	6.38	952	14.15	78
11:27:50	956	6.23	952	13.59	78
11:28:00	956	7.19	952	14.53	78
11:28:10	957	6.55	952	14.37	78
11:28:20	957	6.65	952	14.25	78
11:28:30	957	6.69	953	14.11	78
11:28:40	958	6.49	953	14.08	78
11:28:50	958	7.02	953	14.54	78
11:29:00	958	6.75	954	14.15	78
11:29:10	958	6.47	954	13.96	78
11:29:20	958	6.55	954	14.26	78
11:29:30	958	6.80	954	14.39	78
11:29:40	958	6.60	954	14.33	78
11:29:50	958	6.49	954	14.39	78
11:30:00	958	6.68	954	14.67	78
11:30:10	958	6.52	954	14.59	78
11:30:20	958	6.05	954	13.93	78
11:30:30	958	5.75	954	13.63	78
11:30:40	958	5.47	954	13.13	78
11:30:50	958	5.85	954	13.24	78
11:31:00	958	5.41	954	13.08	77
11:31:10	959	6.13	954	13.65	78
11:31:20	959	5.52	954	13.16	78
11:31:30	959	5.78	955	13.56	78
11:31:40	959	5.42	955	13.52	78
11:31:50	959	5.80	955	13.49	77
11:32:00	959	5.83	955	13.44	78
11:32:10	959	5.48	955	13.00	77
11:32:20	959	5.48	955	13.69	78
11:32:30	959	5.58	955	13.17	78
11:32:40	959	5.37	955	13.12	78
11:32:50	959	6.17	955	13.73	78
11:33:00	959	5.53	955	13.65	78
11:33:10	959	5.07	956	12.90	78
11:33:20	959	5.34	956	12.82	78
11:33:30	959	5.92	956	13.34	78
11:33:40	959	5.67	956	13.32	78
11:33:50	959	5.40	956	13.40	78
11:34:00	960	5.21	956	13.25	78
11:34:10	959	5.36	956	13.34	78
11:34:20	960	5.68	956	13.25	78
11:34:30	960	5.62	956	12.91	78
11:34:40	961	5.39	957	12.64	78
11:34:50	961	4.88	957	12.62	78
11:35:00	962	5.56	958	12.97	78
11:35:10	963	5.05	959	12.84	78
11:35:20	963	5.44	959	13.00	78
11:35:30	964	5.15	960	12.61	78
11:35:40	964	5.05	961	12.35	78
11:35:50	965	7.23	961	14.10	78
11:36:00	966	7.25	961	14.90	79
11:36:10	967	7.16	962	14.58	79
11:36:20	967	7.55	964	14.99	79
11:36:30	968	7.73	964	15.12	79
11:36:40	969	7.77	965	15.21	79
11:36:50	969	7.81	966	15.22	79

11:37:00	970	7.80	966	15.21	79
11:37:10	971	7.90	967	15.27	79
11:37:20	972	8.64	968	15.79	79
11:37:30	973	9.03	969	16.32	79
11:37:40	974	9.00	970	16.58	79
11:37:50	974	8.92	970	16.57	79
11:38:00	975	9.00	971	16.49	79
11:38:10	975	9.01	971	16.60	79
11:38:20	976	9.56	972	17.02	79
11:38:30	977	10.31	973	17.69	79
11:38:40	977	10.28	973	17.94	79
11:38:50	978	10.20	974	17.95	79
11:39:00	979	10.27	974	18.14	79
11:39:10	979	10.22	975	17.82	79
11:39:20	980	10.18	975	17.97	79
11:39:30	980	10.27	976	18.09	79
11:39:40	981	10.22	976	18.22	79
11:39:50	981	10.29	977	18.29	79
11:40:00	982	10.29	978	18.32	79
11:40:10	983	10.25	978	18.30	79
11:40:20	984	10.27	979	18.36	80
11:40:30	984	10.25	979	18.43	80
11:40:40	985	10.30	980	18.91	80
11:40:50	985	10.35	980	19.10	80
11:41:00	986	10.72	981	19.14	80
11:41:10	986	11.87	981	20.17	80
11:41:20	987	11.67	982	20.37	80
11:41:30	988	11.53	983	20.20	80
11:41:40	989	11.37	983	20.18	80
11:41:50	989	11.39	984	20.05	80
11:42:00	990	11.40	985	20.19	80
11:42:10	991	11.68	985	20.27	80
11:42:20	991	11.80	986	20.52	80
11:42:30	992	11.73	986	20.78	80
11:42:40	992	11.46	986	20.76	80
11:42:50	993	12.61	987	21.57	80
11:43:00	993	12.20	987	21.46	80
11:43:10	993	12.21	988	21.57	80
11:43:20	993	12.28	988	21.61	80
11:43:30	994	12.14	989	21.47	80
11:43:40	994	12.18	990	21.37	81
11:43:50	995	11.84	989	21.23	81
11:44:00	995	11.47	989	21.14	81
11:44:10	995	11.43	990	21.17	81
11:44:20	994	11.14	990	20.80	81
11:44:30	995	11.02	990	20.70	81
11:44:40	995	10.98	990	20.50	81
11:44:50	994	10.70	989	20.38	81
11:45:00	994	10.44	989	20.11	81
11:45:10	994	10.09	989	19.81	82
11:45:20	994	9.76	989	19.49	82
11:45:30	994	9.35	989	19.02	82
11:45:40	994	8.94	989	18.55	82
11:45:50	994	8.44	989	18.13	82
11:46:00	995	7.72	989	17.41	82
11:46:10	995	7.38	990	17.14	82
11:46:20	995	7.23	990	16.68	82
11:46:30	996	7.49	991	16.75	82
11:46:40	996	7.86	991	17.13	83
11:46:50	997	8.05	992	17.35	83
11:47:00	997	8.27	993	17.72	83
11:47:10	998	8.46	993	17.92	83

11:47:20	998	8.62	993	18.09	83
11:47:30	999	8.80	993	18.39	83
11:47:40	1000	8.83	994	18.44	84
11:47:50	1000	9.03	994	18.49	84
11:48:00	1000	9.14	996	18.65	84
11:48:10	1001	9.24	996	18.71	84
11:48:20	1001	9.38	996	18.78	85
11:48:30	1002	9.65	996	19.08	85
11:48:40	1002	9.79	997	19.33	85
11:48:50	1003	9.94	998	19.40	85
11:49:00	1003	10.03	998	19.57	86
11:49:10	1003	9.95	999	19.73	86
11:49:20	1004	10.13	999	19.89	86
11:49:30	1004	10.03	999	19.80	87
11:49:40	1005	10.17	1000	19.90	87
11:49:50	1005	10.17	1000	20.08	87
11:50:00	1006	10.10	1000	20.01	87
11:50:10	1006	10.17	1001	20.05	87
11:50:20	1007	10.17	1001	20.13	87
11:50:30	1007	10.20	1001	20.19	87
11:50:40	1007	10.21	1002	20.25	87
11:50:50	1007	10.45	1003	20.48	87
11:51:00	1008	10.41	1003	20.55	87
11:51:10	1009	10.43	1003	20.62	87
11:51:20	1008	10.53	1003	20.82	87
11:51:30	1009	10.53	1004	20.87	88
11:51:40	1010	10.43	1004	20.92	88
11:51:50	1010	10.54	1004	21.01	89
11:52:00	1010	10.55	1005	20.99	89
11:52:10	1011	10.64	1005	21.10	89
11:52:20	1011	10.57	1005	21.13	90
11:52:30	1011	10.62	1006	21.38	90
11:52:40	1011	10.58	1006	21.34	90
11:52:50	1012	10.57	1007	21.39	91
11:53:00	1012	10.60	1007	21.51	92
11:53:10	1012	10.62	1007	21.53	92
11:53:20	1012	10.56	1007	21.65	93
11:53:30	1012	10.48	1007	21.52	93
11:53:40	1013	10.40	1007	21.61	94
11:53:50	1013	10.39	1007	21.64	94
11:54:00	1013	10.13	1007	21.43	95
11:54:10	1012	9.95	1007	21.24	96
11:54:20	1013	9.89	1007	21.28	96
11:54:30	1012	9.82	1007	21.19	96
11:54:40	1012	9.47	1007	20.88	97
11:54:50	1012	9.38	1007	20.60	98
11:55:00	1012	9.24	1007	20.59	98
11:55:10	1012	9.05	1007	20.41	98
11:55:20	1012	8.86	1007	20.02	99
11:55:30	1011	8.63	1007	19.84	100
11:55:40	1011	8.46	1007	19.53	100
11:55:50	1011	8.15	1007	19.23	100
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11:56:10	1011	7.68	1006	18.55	101
11:56:20	1010	7.50	1006	18.24	102
11:56:30	1011	7.16	1006	18.03	102
11:56:40	1011	6.89	1006	17.56	103
11:56:50	1011	6.60	1007	17.21	103
11:57:00	1011	6.46	1007	17.12	103
11:57:10	1012	6.77	1007	17.43	102
11:57:20	1012	7.19	1007	17.74	101
11:57:30	1012	7.35	1008	18.07	100

11:57:40	1013	7.62	1008	18.41	99
11:57:50	1014	7.85	1009	18.57	98
11:58:00	1014	7.96	1010	18.66	97
11:58:10	1014	8.22	1010	18.71	97
11:58:20	1014	8.40	1010	18.93	96
11:58:30	1015	8.54	1010	19.12	95
11:58:40	1016	8.50	1011	19.10	94
11:58:50	1016	8.73	1012	19.18	94
11:59:00	1017	8.87	1012	19.03	93
11:59:10	1017	8.97	1013	19.09	92
11:59:20	1017	9.07	1013	19.16	92
11:59:30	1018	9.17	1013	19.27	91
11:59:40	1018	9.29	1014	19.48	90
11:59:50	1019	9.23	1014	19.48	89
12:00:00	1019	9.41	1015	19.51	88
12:00:10	1020	9.35	1015	19.59	88
12:00:20	1020	9.50	1016	19.73	88
12:00:30	1021	9.63	1016	19.76	87
12:00:40	1021	9.62	1016	19.85	87
12:00:50	1022	9.69	1016	19.91	87
12:01:00	1022	9.68	1016	19.98	87
12:01:10	1022	9.78	1017	20.14	86
12:01:20	1022	9.82	1017	20.07	86
12:01:30	1023	9.66	1017	20.24	86
12:01:40	1023	9.81	1017	20.29	85
12:01:50	1023	9.70	1018	20.32	85
12:02:00	1023	9.76	1018	20.31	85
12:02:10	1024	9.74	1019	20.51	85
12:02:20	1024	9.70	1019	20.52	85
12:02:30	1024	9.72	1019	20.73	85
12:02:40	1025	9.64	1020	20.71	85
12:02:50	1025	9.80	1020	20.79	84
12:03:00	1025	9.67	1020	20.97	84
12:03:10	1025	9.69	1020	20.97	84
12:03:20	1025	9.77	1020	21.06	84
12:03:30	1025	9.84	1021	21.18	84
12:03:40	1025	9.84	1020	21.25	84
12:03:50	1026	9.70	1020	21.14	83
12:04:00	1025	9.52	1020	21.08	83
12:04:10	1025	9.35	1021	20.88	83
12:04:20	1025	9.24	1021	20.80	83
12:04:30	1025	9.01	1020	20.73	83
12:04:40	1025	8.81	1020	20.45	83
12:04:50	1025	8.67	1020	20.30	83
12:05:00	1025	8.43	1020	20.23	83
12:05:10	1025	8.29	1020	20.00	82
12:05:20	1024	8.03	1019	19.72	82
12:05:30	1024	7.82	1019	19.55	82
12:05:40	1024	7.66	1019	19.27	82
12:05:50	1023	7.40	1019	19.14	82
12:06:00	1023	7.12	1019	18.76	82
12:06:10	1023	6.82	1018	18.46	82
12:06:20	1023	6.61	1018	18.11	82
12:06:30	1022	6.36	1018	17.93	82
12:06:40	1022	6.20	1018	17.57	82
12:06:50	1023	6.13	1018	17.47	82
12:07:00	1023	5.83	1018	17.45	82
12:07:10	1023	5.92	1018	17.34	82
12:07:20	1024	6.39	1018	17.68	82
12:07:30	1024	6.63	1019	17.84	82
12:07:40	1024	6.90	1019	18.15	82
12:07:50	1025	7.10	1019	18.15	82

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12:08:10	1025	7.45	1021	18.56	82
12:08:20	1025	7.61	1021	18.46	82
12:08:30	1026	7.72	1021	18.60	82
12:08:40	1026	7.74	1022	18.58	82
12:08:50	1027	7.88	1022	18.72	82
12:09:00	1027	7.98	1023	18.89	81
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12:10:30	1031	8.99	1026	19.49	81
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12:11:30	1033	9.08	1028	20.02	81
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12:11:50	1034	9.17	1028	20.30	81
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12:12:30	1035	9.24	1029	20.79	81
12:12:40	1035	9.09	1029	20.89	81
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12:13:00	1035	9.19	1030	21.11	81
12:13:10	1035	9.21	1030	21.44	82
12:13:20	1035	9.20	1029	21.30	82
12:13:30	1035	8.96	1029	21.10	82
12:13:40	1035	8.81	1029	21.08	82
12:13:50	1035	8.63	1030	20.99	82
12:14:00	1034	8.47	1029	20.87	82
12:14:10	1035	8.23	1029	20.60	82
12:14:20	1034	8.05	1029	20.40	82
12:14:30	1034	7.75	1029	20.17	82
12:14:40	1034	7.59	1029	19.87	82
12:14:50	1033	7.33	1028	19.70	82
12:15:00	1033	7.14	1028	19.50	82
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12:16:40	1031	5.32	1026	17.58	82
12:16:50	1031	5.33	1026	17.50	82
12:17:00	1031	5.73	1026	17.79	82
12:17:10	1032	6.06	1026	18.03	82
12:17:20	1032	6.35	1027	18.11	82
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12:17:40	1032	6.64	1027	18.42	82
12:17:50	1033	6.83	1028	18.43	82
12:18:00	1033	7.06	1028	18.53	82
12:18:10	1033	7.18	1028	18.42	82

12:18:20	1034	7.33	1028	18.64	82
12:18:30	1034	7.53	1028	18.74	82
12:18:40	1034	7.78	1029	18.83	82
12:18:50	1035	7.89	1029	18.97	82
12:19:00	1035	7.96	1030	18.87	82
12:19:10	1036	8.14	1030	18.98	82
12:19:20	1036	8.29	1031	18.97	82
12:19:30	1036	8.29	1031	19.08	82
12:19:40	1037	8.37	1031	19.07	81
12:19:50	1037	8.39	1032	19.20	82
12:20:00	1037	0.00	1032	0.00	82
12:20:10	1038	8.76	1032	21.20	82
12:20:20	1038	8.58	1032	21.48	82
12:20:30	1038	8.64	1033	21.49	82
12:20:40	1039	8.69	1033	21.56	82
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12:21:00	1040	8.72	1033	21.80	82
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12:21:30	1041	8.22	1034	21.45	82
12:21:40	1041	8.18	1034	21.37	82
12:21:50	1041	7.97	1035	21.06	82
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12:22:10	1042	7.29	1035	20.66	82
12:22:20	1042	7.12	1036	20.36	82
12:22:30	1042	7.04	1036	20.24	82
12:22:40	1042	6.72	1036	19.97	82
12:22:50	1042	6.67	1036	19.64	82
12:23:00	1042	6.38	1036	19.39	82
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12:23:20	1042	6.13	1036	18.81	83
12:23:30	1041	6.09	1036	18.49	83
12:23:40	1041	5.98	1036	18.43	83
12:23:50	1041	5.85	1036	18.32	83
12:24:00	1040	5.72	1035	18.31	83
12:24:10	1040	5.43	1035	17.95	83
12:24:20	1040	5.33	1035	17.89	83
12:24:30	1039	5.20	1034	17.94	82
12:24:40	1039	5.39	1034	17.94	82
12:24:50	1039	5.70	1034	18.19	82
12:25:00	1038	6.09	1034	18.42	82
12:25:10	1038	6.28	1033	18.47	82
12:25:20	1038	6.48	1033	18.61	82
12:25:30	1037	6.62	1033	18.53	82
12:25:40	1037	6.85	1032	18.64	82
12:25:50	1037	6.94	1032	18.67	83
12:26:00	1037	7.13	1032	18.80	83
12:26:10	1037	7.30	1032	18.71	83
12:26:20	1037	7.32	1032	18.82	83
12:26:30	1037	7.53	1032	18.94	83
12:26:40	1037	7.58	1032	18.97	82
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12:27:20	1038	8.10	1033	19.38	82
12:27:30	1038	8.24	1033	19.48	82
12:27:40	1039	8.20	1033	19.74	82
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12:28:00	1039	8.45	1034	20.02	82
12:28:10	1040	8.59	1034	20.25	82
12:28:20	1040	8.62	1035	20.23	82
12:28:30	1040	8.49	1035	20.69	82

12:28:40	1041	8.42	1036	20.98	82
12:28:50	1041	8.34	1036	21.21	82
12:29:00	1041	8.29	1037	21.44	82
12:29:10	1042	8.25	1037	21.64	82
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12:29:30	1043	8.31	1037	22.03	82
12:29:40	1043	8.36	1037	22.29	82
12:29:50	1043	8.27	1037	22.22	82
12:30:00	1044	8.47	1037	22.32	82
12:30:10	1044	8.45	1038	22.54	82
12:30:20	1044	8.50	1038	22.72	82
12:30:30	1044	8.56	1038	22.66	82
12:30:40	1045	8.51	1039	22.85	82
12:30:50	1045	8.19	1039	22.66	82
12:31:00	1046	7.92	1039	22.45	82
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12:31:20	1046	7.66	1040	22.03	81
12:31:30	1047	7.52	1040	21.60	82
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12:31:50	1047	7.07	1041	21.13	81
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12:41:30	1053	8.38	1047	22.82	80
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12:42:00	1054	8.19	1047	22.34	80
12:42:10	1054	7.65	1048	21.54	80
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12:42:30	1055	7.31	1049	20.94	81
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12:43:00	1055	6.97	1050	20.25	81
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12:47:00	1051	7.48	1046	19.20	80
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12:47:20	1052	7.72	1047	19.37	80
12:47:30	1052	7.86	1048	19.65	80
12:47:40	1052	7.95	1048	19.66	80
12:47:50	1053	7.96	1048	19.90	80
12:48:00	1053	8.04	1049	20.18	80
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12:52:50	1059	5.48	1054	20.27	80
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12:53:10	1059	5.22	1054	19.67	80
12:53:20	1059	5.08	1054	19.45	80
12:53:30	1059	4.91	1053	19.09	80
12:53:40	1059	4.72	1053	18.68	80
12:53:50	1058	4.52	1053	18.40	80
12:54:00	1058	4.29	1053	18.15	80
12:54:10	1058	4.17	1053	17.82	80
12:54:20	1058	3.92	1053	17.55	80
12:54:30	1057	3.80	1053	17.35	80
12:54:40	1057	4.12	1052	17.50	80
12:54:50	1057	4.39	1051	17.89	80
12:55:00	1057	4.61	1051	18.18	80
12:55:10	1056	4.88	1051	18.27	80
12:55:20	1055	5.12	1050	18.25	80
12:55:30	1055	5.37	1050	18.41	80
12:55:40	1055	5.54	1050	18.51	80
12:55:50	1055	5.79	1050	18.61	80
12:56:00	1054	5.94	1050	18.62	80
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12:56:20	1055	6.29	1049	18.85	80
12:56:30	1055	6.39	1049	18.99	80
12:56:40	1055	6.50	1050	19.23	80
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12:57:00	1055	6.54	1050	19.41	80
12:57:10	1056	6.62	1050	19.44	80
12:57:20	1056	6.72	1051	19.65	80
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12:57:40	1057	6.79	1051	19.74	80
12:57:50	1057	6.82	1052	19.94	80
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12:58:10	1057	6.98	1052	20.12	80
12:58:20	1058	6.89	1052	20.30	80
12:58:30	1058	6.97	1053	20.57	81
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12:58:50	1058	6.89	1053	20.77	81
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12:59:10	1059	6.91	1054	21.03	81
12:59:20	1059	6.80	1054	21.12	81
12:59:30	1060	6.83	1054	21.24	81

12:59:40	1060	6.83	1054	21.47	81
12:59:50	1060	6.75	1054	21.62	81
13:00:00	1060	6.74	1054	21.72	81
13:00:10	1061	6.20	1054	21.56	81
13:00:20	1061	6.08	1054	21.21	81
13:00:30	1061	5.96	1055	21.15	81
13:00:40	1061	5.92	1055	21.13	81
13:00:50	1061	5.84	1055	20.93	81
13:01:00	1061	5.83	1055	20.81	81
13:01:10	1061	5.79	1055	20.68	81
13:01:20	1061	5.69	1055	20.57	81
13:01:30	1061	5.55	1055	20.45	81
13:01:40	1061	5.46	1055	20.32	81
13:01:50	1060	5.36	1055	20.10	81
13:02:00	1060	5.27	1055	20.02	81
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13:02:20	1060	5.00	1054	19.42	81
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13:02:40	1060	4.74	1054	18.89	82
13:02:50	1060	4.50	1054	18.61	82
13:03:00	1059	4.40	1054	18.41	82
13:03:10	1059	4.38	1054	18.18	82
13:03:20	1059	4.05	1054	17.75	82
13:03:30	1059	3.90	1054	17.53	82
13:03:40	1058	3.74	1053	17.29	82
13:03:50	1058	3.71	1053	17.08	82
13:04:00	1058	3.89	1053	17.24	81
13:04:10	1057	4.19	1053	17.63	81
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13:04:30	1057	4.69	1052	18.01	81
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13:04:50	1056	5.25	1051	18.15	81
13:05:00	1056	5.53	1051	18.34	81
13:05:10	1055	5.69	1050	18.49	81
13:05:20	1055	5.86	1050	18.56	82
13:05:30	1055	6.06	1050	18.71	82
13:05:40	1056	6.17	1050	18.89	82
13:05:50	1056	6.26	1050	18.86	82
13:06:00	1056	6.39	1050	19.08	82
13:06:10	1056	6.56	1051	19.27	82
13:06:20	1056	6.54	1051	19.41	82
13:06:30	1057	6.56	1052	19.64	82
13:06:40	1057	6.59	1052	19.62	82
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13:07:00	1058	6.82	1052	19.87	81
13:07:10	1058	6.64	1053	20.00	81
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13:07:40	1059	6.86	1053	20.44	81
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13:08:00	1059	6.55	1054	20.47	81
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13:09:40	1061	6.20	1056	21.19	81
13:09:50	1062	6.07	1056	21.09	81

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13:10:10	1062	5.88	1056	20.95	82
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13:10:40	1062	5.67	1056	20.57	81
13:10:50	1062	5.60	1056	20.52	81
13:11:00	1062	5.47	1056	20.35	81
13:11:10	1062	5.41	1056	20.20	81
13:11:20	1062	5.18	1056	19.86	81
13:11:30	1062	5.06	1056	19.53	81
13:11:40	1062	4.89	1056	19.25	80
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13:12:40	1060	3.98	1055	17.63	80
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13:15:50	1057	5.98	1053	19.17	81
13:16:00	1058	6.08	1053	19.30	81
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13:16:30	1059	6.25	1053	19.51	81
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13:18:00	1061	6.39	1055	20.41	81
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13:18:20	1061	6.45	1055	20.62	81
13:18:30	1061	6.42	1055	20.72	81
13:18:40	1062	6.33	1055	20.56	81
13:18:50	1062	6.12	1055	20.61	81
13:19:00	1062	6.10	1056	20.58	81
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13:19:20	1062	5.82	1056	20.40	81
13:19:30	1062	5.81	1056	20.33	81
13:19:40	1062	5.65	1056	20.23	81
13:19:50	1062	5.62	1056	20.13	81
13:20:00	1062	5.47	1056	20.07	81
13:20:10	1062	5.40	[illegible]	19.86	81

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13:21:00	1062	4.80	1056	18.56	81
13:21:10	1062	5.50	1056	18.81	81
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13:21:40	1061	4.76	1055	18.57	81
13:21:50	1061	4.49	1055	18.12	81
13:22:00	1061	4.19	1055	17.81	81
13:22:10	1061	4.23	1055	17.82	81
13:22:20	1061	4.60	1055	18.21	81
13:22:30	1061	4.88	1054	18.43	81
13:22:40	1060	5.05	1054	18.55	81
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13:23:10	1059	5.66	1054	18.98	81
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13:23:40	1059	6.27	1053	19.26	80
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13:24:00	1059	6.56	1053	19.63	80
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13:25:40	1062	7.46	1056	21.69	80
13:25:50	1062	7.65	1056	21.95	80
13:26:00	1063	7.93	1057	22.20	80
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13:26:20	1064	7.90	1057	22.80	80
13:26:30	1064	7.86	1058	22.86	80
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13:26:50	1064	7.67	1059	23.27	80
13:27:00	1065	7.80	1059	23.31	80
13:27:10	1066	7.66	1059	23.53	80
13:27:20	1066	7.70	1059	23.62	80
13:27:30	1066	7.68	1059	23.79	80
13:27:40	1067	7.57	1060	23.89	80
13:27:50	1067	7.72	1060	23.97	80
13:28:00	1067	7.63	1061	24.12	80
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13:28:30	1068	8.16	1062	24.18	80
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13:31:00	1073	6.80	1066	23.45	81
13:31:10	1073	6.51	1066	22.97	81
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13:31:50	1073	5.12	1066	21.48	81
13:32:00	1073	4.76	1066	21.07	81
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13:32:50	1072	3.70	1065	20.19	81
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13:33:40	1068	5.08	1062	20.70	82
13:33:50	1068	5.40	1062	20.73	82
13:34:00	1068	5.60	1061	21.01	82
13:34:10	1067	5.84	1061	21.12	82
13:34:20	1067	6.01	1061	21.23	82
13:34:30	1067	6.18	1061	21.29	81
13:34:40	1067	6.46	1060	21.39	81
13:34:50	1067	6.54	1060	21.41	81
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13:35:30	1067	7.00	1060	21.72	81
13:35:40	1068	7.11	1060	21.86	81
13:35:50	1068	6.96	1061	22.20	81
13:36:00	1068	6.76	1061	22.54	81
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13:36:20	1068	6.59	1062	23.14	82
13:36:30	1068	6.47	1062	23.47	82
13:36:40	1069	6.48	1062	23.60	82
13:36:50	1069	6.61	1062	24.18	82
13:37:00	1069	6.76	1062	24.18	82
13:37:10	1069	6.74	1062	24.18	82
13:37:20	1070	6.85	1062	24.18	82
13:37:30	1070	6.81	1062	24.18	82
13:37:40	1070	6.98	1062	24.18	82
13:37:50	1070	7.14	1062	24.18	82
13:38:00	1070	7.20	1062	24.18	82
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13:38:20	1071	7.57	1063	24.18	82
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13:38:50	1071	7.77	1063	24.18	82
13:39:00	1072	7.82	1064	24.18	82
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13:40:30	1075	8.36	1067	24.18	82
13:40:40	1075	8.39	1068	24.18	82
13:40:50	1076	8.38	1068	24.18	82

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13:41:50	1078	8.58	1070	24.18	82
13:42:00	1079	8.70	1070	24.18	82
13:42:10	1079	8.70	1070	24.18	82
13:42:20	1080	8.70	1071	24.18	82
13:42:30	1080	8.81	1071	24.18	82
13:42:40	1081	8.80	1072	24.18	82
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13:43:00	1081	8.31	1073	24.18	82
13:43:10	1081	8.18	1073	24.18	82
13:43:20	1082	7.92	1073	24.18	82
13:43:30	1082	7.76	1074	24.18	82
13:43:40	1082	7.39	1074	24.18	82
13:43:50	1083	7.12	1074	24.13	82
13:44:00	1083	6.81	1074	23.64	82
13:44:10	1083	6.49	1074	23.27	82
13:44:20	1083	6.11	1074	22.75	82
13:44:30	1083	5.84	1075	22.47	81
13:44:40	1083	5.45	1075	21.95	81
13:44:50	1083	5.17	1075	21.64	81
13:45:00	1082	4.80	1075	21.42	81
13:45:10	1082	4.46	1075	21.01	81
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13:46:00	1080	4.27	1073	20.80	81
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13:46:30	1078	4.85	1071	21.44	81
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13:46:50	1076	5.22	1069	21.63	81
13:47:00	1076	5.45	1069	21.75	81
13:47:10	1075	5.76	1068	21.86	82
13:47:20	1075	5.99	1068	22.14	82
13:47:30	1075	6.20	1068	22.35	82
13:47:40	1074	6.28	1067	22.45	82
13:47:50	1074	6.37	1067	22.57	82
13:48:00	1074	6.45	1067	22.81	82
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13:48:20	1074	6.82	1067	22.86	81
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13:51:40	1077	7.37	1068	24.18	81
13:51:50	1078	7.43	1068	24.18	81
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13:52:20	1078	7.73	1069	24.18	82
13:52:30	1079	7.74	1069	24.18	81
13:52:40	1079	7.87	1070	24.18	81
13:52:50	1079	7.97	1070	24.18	82
13:53:00	1079	8.12	1070	24.18	82
13:53:10	1080	8.22	1071	24.18	82
13:53:20	1080	8.33	1071	24.18	82
13:53:30	1080	8.30	1072	24.18	82
13:53:40	1081	8.46	1072	24.18	82
13:53:50	1081	8.45	1072	24.18	82
13:54:00	1082	8.53	1073	24.18	82
13:54:10	1082	8.70	1073	24.18	82
13:54:20	1082	8.81	1073	24.18	82
13:54:30	1082	8.84	1074	24.18	82
13:54:40	1083	8.89	1074	24.18	82
13:54:50	1083	8.90	1075	24.18	82
13:55:00	1084	8.89	1076	24.18	82
13:55:10	1084	8.97	1076	24.18	82
13:55:20	1084	8.95	1076	24.18	82
13:55:30	1085	8.94	1077	24.18	82
13:55:40	1085	8.97	1077	24.18	81
13:55:50	1086	8.98	1077	24.18	81
13:56:00	1086	9.09	1078	24.18	81
13:56:10	1087	9.06	1079	24.18	81
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13:56:40	1088	9.17	1080	24.18	81
13:56:50	1088	9.19	1080	24.18	81
13:57:00	1089	9.11	1080	24.18	81
13:57:10	1089	8.73	1081	24.18	81
13:57:20	1089	8.45	1081	24.18	81
13:57:30	1090	8.13	1081	24.18	81
13:57:40	1090	7.85	1081	24.18	81
13:57:50	1090	7.36	1082	24.18	81
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13:58:40	1091	5.61	1082	23.14	81
13:58:50	1090	5.30	1083	22.74	82
13:59:00	1090	5.02	1082	22.48	81
13:59:10	1090	4.71	1082	22.21	81
13:59:20	1090	4.36	1082	21.91	81
13:59:30	1089	3.99	1082	21.85	81
13:59:40	1089	3.73	1081	21.67	81
13:59:50	1088	3.68	1081	21.42	81
14:00:00	1088	3.95	1080	21.58	81
14:00:10	1087	4.14	1079	21.80	81
14:00:20	1086	4.37	1079	22.10	81
14:00:30	1086	4.46	1078	22.31	81
14:00:40	1085	4.67	1077	22.35	81
14:00:50	1084	4.86	1077	22.62	81
14:01:00	1084	5.01	1076	22.66	81
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14:01:20	1082	5.51	1075	22.83	81
14:01:30	1082	5.63	1074	23.05	81

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14:03:00	1080	6.10	1073	24.18	81
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14:11:00	1094	8.24	1085	24.18	81
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14:11:50	1095	6.72	1086	24.18	81

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14:12:30	1095	5.35	1086	23.23	80
14:12:40	1095	5.08	1086	22.87	80
14:12:50	1095	4.69	1086	22.64	80
14:13:00	1095	4.33	1086	22.31	80
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14:13:30	1093	3.60	1085	21.84	80
14:13:40	1093	3.62	1085	21.50	80
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14:14:10	1091	4.06	1083	22.46	80
14:14:20	1090	4.34	1083	22.63	81
14:14:30	1090	4.36	1082	22.71	81
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14:15:00	1087	5.02	1080	23.03	80
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14:22:00	1090	13.86	1081	20.68	81
14:22:10	1091	13.40	1081	21.26	81

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14:23:00	1096	11.19	1082	23.59	81
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14:23:30	1100	16.19	1081	18.69	81
14:23:40	1101	16.43	1081	18.66	81
14:23:50	1101	15.85	1082	19.26	81
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14:24:20	1103	13.95	1082	20.56	81
14:24:30	1104	13.27	1082	20.80	81
14:24:40	1106	12.58	1082	20.91	81
14:24:50	1107	18.48	1081	14.49	81
14:25:00	1109	16.99	1081	15.02	81
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14:25:30	1112	13.76	1080	15.98	81
14:25:40	1112	12.93	1080	16.20	81
14:25:50	1113	12.09	1079	16.37	81
14:26:00	1115	11.28	1078	16.49	81
14:26:10	1116	10.71	1077	16.52	81
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14:26:30	1117	9.47	1076	16.62	81
14:26:40	1117	8.91	1076	16.57	81
14:26:50	1118	23.41	1075	2.66	81
14:27:00	1117	23.44	1074	2.79	81
14:27:10	1117	23.21	1074	2.69	81
14:27:20	1117	23.62	1073	2.73	81
14:27:30	1117	24.01	1073	2.84	81
14:27:40	1117	24.18	1072	2.75	80
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14:28:10	1123	24.18	1061	2.63	80
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14:28:30	1126	24.18	1056	2.15	80
14:28:40	1128	24.18	1053	2.16	79
14:28:50	1129	24.18	1051	1.80	79
14:29:00	1131	22.61	1050	1.55	80
14:29:10	1133	22.81	1048	1.53	79
14:29:20	1135	22.24	1046	1.44	79
14:29:30	1137	22.10	1044	1.38	79
14:29:40	1139	22.26	1042	1.42	79
14:29:50	1140	22.47	1041	1.40	79
14:30:00	1142	22.78	1040	1.40	79
14:30:10	1143	22.92	1038	1.43	80
14:30:20	1145	23.04	1037	1.50	80
14:30:30	1147	23.16	1036	1.48	80
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14:30:50	1149	23.50	1033	1.56	80
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14:31:30	1154	24.14	1030	1.65	80
14:31:40	1155	24.14	1029	1.68	80
14:31:50	1156	23.68	1028	1.58	80
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14:34:30	1175	21.52	1016	1.78	80
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14:35:40	1185	19.62	1012	1.72	80
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14:37:00	1192	22.30	1008	1.73	80
14:37:10	1193	22.56	1008	1.66	80
14:37:20	1193	22.71	1008	1.66	80
14:37:30	1194	22.83	1007	1.63	80
14:37:40	1196	23.1	1006	1.59	80
14:37:50	1197	23.34	1006	1.52	80
14:38:00	1198	23.50	1005	1.49	80
14:38:10	1199	23.66	1005	1.38	80
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14:42:30	1231	20.09	996	1.36	81
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14:43:30	1233	20.20	994	1.31	81
14:43:40	1234	20.62	994	1.23	82
14:43:50	1233	20.82	994	1.27	82
14:44:00	1234	21.16	993	1.21	82
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14:45:00	1236	22.55	991	1.20	82
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14:46:00	1242	23.68	990	1.23	82
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14:46:40	1246	22.60	988	1.05	82
14:46:50	1247	22.39	988	1.10	82
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14:47:20	1251	21.17	987	0.99	82
14:47:30	1252	20.94	987	0.91	82
14:47:40	1253	20.72	987	0.88	82
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14:48:00	1255	20.48	987	1.03	82
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14:51:20	1257	17.42	981	1.20	82
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14:51:40	1257	18.03	980	1.24	82
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14:52:00	1257	18.52	980	1.12	82
14:52:10	1256	18.63	980	1.17	82
14:52:20	1257	18.64	979	1.10	82
14:52:30	1257	18.79	979	1.12	82
14:52:40	1257	18.99	979	1.12	82
14:52:50	1257	18.76	978	1.15	82
14:53:00	1258	18.92	978	1.20	82
14:53:10	1258	18.98	978	1.20	82

14:53:20	1259	18.84	978	1.15	82
14:53:30	1259	18.90	978	1.17	82
14:53:40	1260	18.46	978	1.02	82
14:53:50	1260	18.37	977	0.99	82
14:54:00	1261	18.37	977	0.96	82
14:54:10	1262	18.26	977	0.77	82
14:54:20	1263	18.14	976	0.82	82
14:54:30	1263	16.94	976	0.80	82
14:54:40	1264	16.58	976	0.84	82
14:54:50	1264	16.46	976	0.88	82
14:55:00	1264	16.28	976	0.90	82
14:55:10	1265	16.29	976	0.91	82
14:55:20	1265	16.25	975	0.97	82
14:55:30	1266	16.12	975	0.99	82
14:55:40	1266	16.05	975	0.96	82
14:55:50	1266	16.02	975	1.00	82
14:56:00	1266	15.89	975	1.05	82
14:56:10	1266	15.74	974	1.06	82
14:56:20	1266	15.69	974	1.06	82
14:56:30	1266	15.58	974	1.04	82
14:56:40	1266	15.42	973	1.08	82
14:56:50	1265	15.29	973	1.09	82
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14:57:10	1265	14.98	973	1.12	82
14:57:20	1265	14.89	973	1.05	82
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14:57:40	1265	14.60	972	1.11	82
14:57:50	1265	14.41	972	1.10	82
14:58:00	1265	14.22	972	1.06	82
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14:58:20	1264	13.91	971	1.10	82
14:58:30	1264	15.10	971	1.43	82
14:58:40	1264	15.22	971	1.44	82
14:58:50	1263	15.84	970	1.44	82
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15:00:00	1261	17.16	969	1.14	82
15:00:10	1262	17.31	969	1.16	82
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15:00:30	1262	16.55	968	0.96	82
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15:03:30	1268	15.84	965	1.06	82

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15:08:10	1264	15.52	960	1.03	82
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15:10:50	1267	14.49	957	1.08	82
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15:11:50	1267	13.90	956	1.11	82
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15:13:50	1265	12.90	954	[illegible]	82

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15:15:10	1262	14.59	952	1.05	82
15:15:20	1261	14.76	952	1.09	82
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15:15:40	1261	14.93	952	1.00	82
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15:16:40	1263	15.19	951	0.99	82
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15:17:20	1263	14.75	950	1.02	82
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15:18:00	1265	14.56	949	0.97	82
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15:23:00	1267	20.72	945	1.38	81
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15:24:30	1276	23.54	943	1.45	81
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15:28:40	1295	19.69	940	1.61	81
15:28:50	1294	19.92	940	1.62	81
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15:29:50	1294	21.85	939	1.61	82
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15:30:20	1294	22.47	938	1.62	82
15:30:30	1294	22.67	938	1.61	82
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15:31:00	1296	23.28	938	1.48	81
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15:31:30	1298	23.68	937	1.43	81
15:31:40	1299	23.86	937	1.42	81
15:31:50	1300	24.14	937	1.47	81
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15:32:20	1303	23.54	937	1.35	81
15:32:30	1303	23.25	937	1.37	81
15:32:40	1304	22.92	936	1.39	81
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15:33:00	1306	22.48	936	1.38	81
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15:33:40	1309	21.17	936	1.42	81
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15:34:30	1311	19.72	935	1.49	81

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15:36:00	1311	19.83	933	1.59	82
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15:37:00	1310	21.74	933	1.55	82
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15:37:30	1310	22.30	932	1.51	82
15:37:40	1311	22.55	932	1.56	82
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15:38:00	1312	22.93	932	1.52	82
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15:39:10	1317	23.81	931	1.48	82
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15:40:10	1323	22.19	930	1.66	82
15:40:20	1324	21.95	930	1.66	82
15:40:30	1325	21.33	930	1.71	82
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15:41:00	1327	20.60	929	1.72	82
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15:42:00	1327	19.06	929	1.73	82
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15:42:40	1327	18.76	928	1.53	82
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15:44:20	1324	21.69	927	1.67	82
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15:44:50	1325	22.35	927	1.65	82

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15:45:20	1326	23.09	927	1.61	81
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15:45:50	1328	23.48	926	1.51	81
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15:46:20	1331	23.46	926	1.49	81
15:46:30	1332	23.16	926	1.48	81
15:46:40	1333	22.78	926	1.55	81
15:46:50	1334	22.65	926	1.49	81
15:47:00	1335	22.37	925	1.51	81
15:47:10	1336	22.08	925	1.58	81
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15:47:30	1337	21.43	925	1.61	81
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15:47:50	1339	20.95	925	1.58	81
15:48:00	1340	20.62	925	1.65	81
15:48:10	1341	20.35	925	1.61	81
15:48:20	1341	20.10	924	1.64	81
15:48:30	1341	19.89	924	1.60	81
15:48:40	1341	19.43	924	1.64	80
15:48:50	1341	19.25	924	1.63	80
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15:49:40	1341	18.58	924	1.67	80
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15:50:50	1338	20.51	923	1.63	80
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15:51:20	1337	21.41	922	1.59	79
15:51:30	1336	21.59	922	1.59	79
15:51:40	1337	21.87	922	1.60	79
15:51:50	1337	22.09	922	1.62	79
15:52:00	1337	22.36	922	1.55	79
15:52:10	1337	22.59	922	1.57	79
15:52:20	1337	22.76	922	1.53	79
15:52:30	1338	22.93	922	1.60	79
15:52:40	1339	23.08	921	1.58	79
15:52:50	1339	23.22	921	1.51	79
15:53:00	1340	23.30	921	1.51	79
15:53:10	1341	23.50	921	1.55	79
15:53:20	1342	23.60	921	1.52	79
15:53:30	1343	23.26	921	1.56	79
15:53:40	1343	22.93	921	1.60	79
15:53:50	1344	22.67	921	1.61	79
15:54:00	1345	22.45	921	1.67	79
15:54:10	1346	22.20	920	1.70	79
15:54:20	1347	21.85	920	1.71	79
15:54:30	1348	21.50	920	1.77	79
15:54:40	1349	21.33	920	1.75	79
15:54:50	1349	21.01	920	1.81	80
15:55:00	1350	20.81	920	1.77	80
15:55:10	1351	20.17	920	1.79	80

15:55:20	1351	20.15	920	1.82	80
15:55:30	1351	19.89	920	1.80	80
15:55:40	1352	19.69	920	1.80	80
15:55:50	1352	19.37	919	1.81	80
15:56:00	1352	19.07	919	1.82	80
15:56:10	1352	18.99	919	1.82	80
15:56:20	1352	18.81	919	1.78	80
15:56:30	1351	18.59	919	1.81	80
15:56:40	1351	18.45	919	1.78	80
15:56:50	1351	18.54	919	1.72	80
15:57:00	1350	18.92	918	1.67	80
15:57:10	1350	19.29	918	1.60	80
15:57:20	1349	19.50	918	1.77	80
15:57:30	1349	19.84	918	1.58	80
15:57:40	1349	19.96	918	1.72	81
15:57:50	1348	20.29	918	1.72	81
15:58:00	1348	20.52	918	1.72	81
15:58:10	1347	20.86	917	1.75	81
15:58:20	1347	21.06	917	1.78	81
15:58:30	1347	21.34	917	1.74	81
15:58:40	1346	21.55	917	1.80	81
15:58:50	1346	21.74	917	1.74	81
15:59:00	1346	22.00	917	1.76	81
15:59:10	1346	22.27	917	1.77	81
15:59:20	1347	22.41	917	1.73	81
15:59:30	1347	22.60	916	1.75	81
15:59:40	1347	22.78	916	1.70	81
15:59:50	1348	23.02	916	1.76	81
16:00:00	1349	23.12	916	1.75	81
16:00:10	1349	23.24	916	1.80	82
16:00:20	1350	23.31	916	1.75	82
16:00:30	1350	23.23	916	1.80	82
16:00:40	1351	22.85	916	1.78	82
16:00:50	1352	22.63	916	1.85	82
16:01:00	1352	22.28	916	1.82	82
16:01:10	1353	22.20	916	1.82	82
16:01:20	1354	21.95	916	1.81	82
16:01:30	1355	21.63	916	1.86	82
16:01:40	1356	21.26	916	1.92	82
16:01:50	1357	21.02	915	1.90	82
16:02:00	1358	20.78	915	1.91	82
16:02:10	1358	20.46	915	1.90	82
16:02:20	1359	20.11	915	1.90	82
16:02:30	1359	19.86	914	1.90	82
16:02:40	1359	19.63	915	1.85	82
16:02:50	1359	19.35	915	1.91	82
16:03:00	1359	19.10	914	1.91	82
16:03:10	1359	18.90	914	1.82	82
16:03:20	1359	18.87	914	1.88	82
16:03:30	1359	18.59	914	1.88	82
16:03:40	1358	18.45	914	1.92	82
16:03:50	1358	18.73	914	1.79	82
16:04:00	1357	19.12	914	1.72	82
16:04:10	1357	19.45	914	1.73	82
16:04:20	1357	19.73	914	1.73	82
16:04:30	1356	20.11	914	1.73	82
16:04:40	1356	20.41	914	1.69	82
16:04:50	1355	20.62	914	1.69	82
16:05:00	1355	20.97	913	1.80	82
16:05:10	1354	21.23	913	1.79	82
16:05:20	1354	21.45	913	1.78	82
16:05:30	1354	21.68	913	1.80	82

16:05:40	1354	21.99	913	1.86	82
16:05:50	1353	22.15	913	1.77	82
16:06:00	1354	22.38	913	1.85	82
16:06:10	1353	22.58	913	1.84	82
16:06:20	1354	22.81	912	1.78	82
16:06:30	1354	22.98	912	1.91	82
16:06:40	1354	23.09	912	1.75	82
16:06:50	1355	23.36	912	1.78	82
16:07:00	1355	23.48	912	1.75	82
16:07:10	1356	23.71	912	1.78	82
16:07:20	1357	23.86	912	1.70	82
16:07:30	1357	24.07	912	1.74	82
16:07:40	1358	23.64	912	1.74	81
16:07:50	1359	23.37	912	1.77	81
16:08:00	1360	23.03	912	1.88	81
16:08:10	1360	22.73	912	1.88	81
16:08:20	1361	22.44	911	1.84	81
16:08:30	1362	22.29	911	1.97	81
16:08:40	1363	21.91	911	1.88	81
16:08:50	1364	21.61	911	1.86	81
16:09:00	1365	21.30	911	1.99	81
16:09:10	1366	21.13	911	1.94	81
16:09:20	1366	20.82	911	1.97	81
16:09:30	1366	21.04	911	2.11	81
16:09:40	1367	20.91	911	2.10	81
16:09:50	1367	21.18	911	2.11	80
16:10:00	1367	20.88	911	2.14	80
16:10:10	1367	20.76	911	2.16	80
16:10:20	1367	20.54	911	2.21	80
16:10:30	1367	20.32	910	2.23	80
16:10:40	1367	20.07	910	2.12	80
16:10:50	1367	19.92	910	2.12	80
16:11:00	1366	20.24	910	1.99	80
16:11:10	1366	20.53	910	2.06	80
16:11:20	1366	20.85	910	1.99	80
16:11:30	1366	21.16	909	2.07	80
16:11:40	1366	21.40	909	2.14	80
16:11:50	1365	21.55	909	2.19	80
16:12:00	1365	21.91	909	2.19	80
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16:12:20	1364	22.25	909	2.18	80
16:12:30	1364	22.58	909	2.07	79
16:12:40	1364	23.19	909	2.00	79
16:12:50	1363	23.50	909	1.93	79
16:13:00	1364	23.68	909	1.95	79
16:13:10	1364	23.98	909	1.93	79
16:13:20	1364	24.18	909	1.80	79
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16:13:40	1364	24.18	909	1.90	79
16:13:50	1364	24.18	909	1.89	79
16:14:00	1365	24.18	909	1.99	79
16:14:10	1366	24.18	908	1.85	79
16:14:20	1367	24.18	908	1.86	79
16:14:30	1368	24.18	908	1.90	79
16:14:40	1369	24.18	908	1.96	79
16:14:50	1369	24.18	908	1.97	79
16:15:00	1370	24.18	908	1.89	79
16:15:10	1371	24.18	908	2.05	79
16:15:20	1372	24.18	908	1.99	79
16:15:30	1374	24.18	907	1.94	79
16:15:40	1374	24.13	907	2.05	79
16:15:50	1376	23.77	907	2.04	79

16:16:00	1376	23.30	907	2.13	79
16:16:10	1377	23.14	907	2.03	79
16:16:20	1378	22.72	907	2.11	79
16:16:30	1379	22.50	907	2.17	79
16:16:40	1379	22.19	907	2.08	79
16:16:50	1380	22.02	907	2.09	79
16:17:00	1380	21.83	907	2.27	79
16:17:10	1380	21.56	907	2.31	79
16:17:20	1380	21.36	907	2.21	79
16:17:30	1381	21.21	906	2.26	79
16:17:40	1381	20.85	906	2.38	79
16:17:50	1380	20.84	906	2.18	80
16:18:00	1380	20.58	906	2.27	80
16:18:10	1380	20.81	906	2.14	79
16:18:20	1380	21.22	906	2.09	80
16:18:30	1380	21.32	906	2.24	80
16:18:40	1379	21.77	906	2.19	80
16:18:50	1379	21.87	906	2.32	80
16:19:00	1378	22.16	905	2.29	80
16:19:10	1378	22.32	905	2.30	80
16:19:20	1378	22.54	905	2.28	80
16:19:30	1377	22.73	905	2.26	80
16:19:40	1378	23.05	905	2.14	80
16:19:50	1377	23.17	905	2.16	80
16:20:00	1377	23.53	905	2.09	80
16:20:10	1377	23.76	905	1.98	80
16:20:20	1377	23.94	905	2.03	80
16:20:30	1378	23.65	905	1.99	80
16:20:40	1378	23.84	905	2.02	80
16:20:50	1378	24.02	905	1.96	80
16:21:00	1379	24.18	905	1.91	80
16:21:10	1379	23.80	905	2.02	80
16:21:20	1379	24.08	905	2.03	80
16:21:30	1380	24.16	904	1.95	80
16:21:40	1381	24.16	904	2.02	80
16:21:50	1382	23.86	904	2.02	80
16:22:00	1382	23.96	904	1.94	80
16:22:10	1383	23.94	904	1.91	80
16:22:20	1384	23.94	904	1.99	80
16:22:30	1385	22.71	904	1.99	80
16:22:40	1385	22.17	904	1.96	80
16:22:50	1386	22.02	904	2.01	80
16:23:00	1387	21.77	903	2.02	80
16:23:10	1387	21.49	903	1.97	80
16:23:20	1388	21.48	903	2.03	80
16:23:30	1389	21.32	903	1.99	80
16:23:40	1389	21.13	903	1.99	80
16:23:50	1389	20.90	903	2.06	80
16:24:00	1390	20.63	903	1.95	80
16:24:10	1390	20.31	903	1.92	80
16:24:20	1390	20.04	903	1.96	80
16:24:30	1390	19.95	903	2.05	80
16:24:40	1390	19.56	903	1.98	80
16:24:50	1390	19.43	903	1.91	81
16:25:00	1389	19.14	903	1.94	81
16:25:10	1389	19.14	903	2.03	81
16:25:20	1389	19.27	902	1.95	81
16:25:30	1389	19.60	902	1.86	81
16:25:40	1388	19.97	902	1.86	81
16:25:50	1388	20.35	902	1.95	81
16:26:00	1388	20.55	902	1.86	81
16:26:10	1387	20.77	902	1.81	81

16:26:20	1387	20.50	902	2.10	81
16:26:30	1386	20.73	901	2.10	81
16:26:40	1385	21.09	901	2.11	81
16:26:50	1385	22.71	901	2.12	81
16:27:00	1384	23.07	901	2.16	81
16:27:10	1384	23.42	901	2.08	81
16:27:20	1384	23.61	901	2.13	81
16:27:30	1384	23.77	901	2.17	81
16:27:40	1384	24.01	901	2.10	81
16:27:50	1384	23.98	901	2.05	81
16:28:00	1384	24.18	901	2.08	81
16:28:10	1385	24.18	901	2.12	81
16:28:20	1385	24.18	901	2.10	81
16:28:30	1386	24.18	901	2.05	81
16:28:40	1387	24.18	901	2.16	81
16:28:50	1388	24.18	900	2.15	81
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16:29:10	1389	22.73	900	2.18	81
16:29:20	1390	22.37	900	2.18	81
16:29:30	1391	22.10	900	2.15	81
16:29:40	1392	21.54	900	1.93	80
16:29:50	1393	21.12	900	1.93	80
16:30:00	1394	21.00	900	2.00	80
16:30:10	1395	20.79	900	2.02	80
16:30:20	1396	20.46	900	2.03	80
16:30:30	1396	20.20	900	1.93	80
16:30:40	1397	19.94	899	1.91	80
16:30:50	1397	19.79	899	2.05	80
16:31:00	1397	19.55	899	1.96	80
16:31:10	1397	19.30	899	1.89	80
16:31:20	1397	19.15	89[illegible]	1.96	80
16:31:30	1396	19.12	899	2.07	80
16:31:40	1396	19.36	899	1.99	80
16:31:50	1395	19.75	899	1.92	80
16:32:00	1395	20.07	899	1.83	80
16:32:10	1394	20.31	898	1.91	80
16:32:20	1393	20.50	898	1.82	79
16:32:30	1393	20.84	898	1.83	79
16:32:40	1392	21.07	898	1.92	79
16:32:50	1392	21.20	898	1.89	79
16:33:00	1391	21.48	898	1.96	79
16:33:10	1391	21.75	898	1.94	79
16:33:20	1390	21.96	898	1.97	79
16:33:30	1390	22.16	898	1.96	78
16:33:40	1390	22.24	898	1.90	78
16:33:50	1389	22.57	898	1.89	78
16:34:00	1389	22.66	897	2.00	78
16:34:10	1390	22.87	897	2.01	78
16:34:20	1390	22.97	897	1.98	78
16:34:30	1390	23.20	897	2.00	78
16:34:40	1390	23.34	897	2.00	78
16:34:50	1390	23.14	897	2.01	78
16:35:00	1390	22.74	897	1.97	78
16:35:10	1391	22.54	897	1.94	78
16:35:20	1392	22.21	897	2.01	78
16:35:30	1392	22.06	896	1.91	78
16:35:40	1393	21.82	896	1.95	78
16:35:50	1393	21.56	896	2.00	78
16:36:00	1394	21.29	896	2.07	78
16:36:10	1395	21.04	896	2.03	78
16:36:20	1395	[illegible].68	896	1.97	78
16:36:30	1396	20.46	896	2.02	78

16:36:40	1396	20.26	896	2.05	78
16:36:50	1396	19.89	896	2.01	78
16:37:00	1396	19.81	896	1.93	78
16:37:10	1397	19.59	896	1.91	78
16:37:20	1397	19.40	896	2.00	78
16:37:30	1396	19.16	896	1.98	78
16:37:40	1396	18.99	895	1.98	78
16:37:50	1396	19.38	895	2.03	78
16:38:00	1396	19.73	895	2.08	78
16:38:10	1395	20.05	895	2.00	78
16:38:20	1395	20.23	895	1.86	78
16:38:30	1394	20.50	895	1.92	78
16:38:40	1394	20.84	895	1.93	78
16:38:50	1393	21.03	895	1.94	78
16:39:00	1392	21.22	895	1.91	78
16:39:10	1392	21.51	895	1.99	78
16:39:20	1391	21.43	895	1.97	78
16:39:30	1391	21.61	895	2.04	78
16:39:40	1391	21.77	894	1.95	78
16:39:50	1391	22.01	894	2.07	78
16:40:00	1390	22.21	894	1.91	78
16:40:10	1390	22.35	894	1.96	78
16:40:20	1390	22.59	894	2.04	78
16:40:30	1391	22.71	894	2.01	78
16:40:40	1391	22.84	894	2.00	78
16:40:50	1391	22.90	893	2.03	78
16:41:00	1391	22.71	894	1.99	78
16:41:10	1392	22.43	893	2.07	78
16:41:20	1392	22.15	893	2.10	78
16:41:30	1393	21.96	893	2.01	78
16:41:40	1393	21.76	893	2.14	78
16:41:50	1394	21.41	893	2.07	78
16:42:00	1394	21.17	893	2.00	78
16:42:10	1395	20.95	893	2.04	78
16:42:20	1396	20.60	893	1.95	78
16:42:30	1396	20.50	893	2.03	78
16:42:40	1397	20.18	893	2.01	78
16:42:50	1397	19.90	893	2.08	78
16:43:00	1397	19.65	893	2.00	78
16:43:10	1397	19.50	893	2.13	78
16:43:20	1397	19.33	893	2.24	78
16:43:30	1397	19.00	893	2.12	77
16:43:40	1397	18.90	892	2.18	77
16:43:50	1397	18.75	892	2.20	77
16:44:00	1397	18.82	892	2.24	78
16:44:10	1397	19.25	892	2.20	77
16:44:20	1396	19.48	892	2.17	77
16:44:30	1396	19.81	892	2.10	77
16:44:40	1395	20.09	892	2.10	77
16:44:50	1395	20.27	892	2.00	77
16:45:00	1395	20.58	892	2.08	77
16:45:10	1394	20.69	891	1.94	77
16:45:20	1393	21.07	891	1.96	77
16:45:30	1393	21.28	891	1.99	77
16:45:40	1392	21.38	891	1.91	77
16:45:50	1391	21.66	891	1.94	77
16:46:00	1391	21.92	891	1.95	77
16:46:10	1391	22.02	891	1.97	77
16:46:20	1391	22.21	891	1.98	77
16:46:30	1391	22.32	891	1.95	77
16:46:40	1391	22.56	891	2.02	77
16:46:50	1391	22.67	891	1.97	77

16:47:00	1392	22.97	891	1.97	77
16:47:10	1392	22.75	891	2.01	77
16:47:20	1392	22.38	891	2.02	77
16:47:30	1393	22.21	891	2.04	77
16:47:40	1394	21.92	891	2.07	77
16:47:50	1394	21.54	890	1.97	77
16:48:00	1394	21.49	890	2.10	77
16:48:10	1395	21.31	890	2.06	77
16:48:20	1396	21.03	890	2.03	77
16:48:30	1397	20.84	890	2.08	77
16:48:40	1397	20.48	890	2.07	77
16:48:50	1397	20.27	890	1.99	77
16:49:00	1398	19.95	890	2.03	77
16:49:10	1398	19.77	889	2.00	77
16:49:20	1398	19.51	889	2.12	77
16:49:30	1398	19.36	889	2.12	77
16:49:40	1399	19.15	889	2.12	77
16:49:50	1398	18.88	889	2.17	77
16:50:00	1398	18.66	889	2.14	77
16:50:10	1398	18.78	889	2.21	77
16:50:20	1398	19.15	889	2.20	77
16:50:30	1397	19.50	889	2.20	77
16:50:40	1397	19.72	889	2.05	77
16:50:50	1397	20.13	889	2.06	77
16:51:00	1396	20.36	889	2.10	77
16:51:10	1396	20.56	889	1.98	77
16:51:20	1395	20.82	889	2.12	77
16:51:30	1395	21.07	888	2.07	77
16:51:40	1394	21.24	888	2.02	77
16:51:50	1394	21.53	888	1.99	77
16:52:00	1393	21.62	888	1.93	77
16:52:10	1393	21.80	888	2.02	76
16:52:20	1393	22.06	888	2.04	76
16:52:30	1393	22.11	888	2.00	76
16:52:40	1392	22.42	888	2.08	76
16:52:50	1393	22.54	888	2.06	76
16:53:00	1393	22.69	888	2.00	76
16:53:10	1393	22.81	888	2.08	76
16:53:20	1393	22.83	888	2.00	76
16:53:30	1393	22.62	888	2.05	76
16:53:40	1394	22.32	888	2.05	76
16:53:50	1394	22.07	888	2.08	76
16:54:00	1394	21.98	887	2.11	76
16:54:10	1395	21.53	887	2.04	76
16:54:20	1396	21.36	887	2.14	76
16:54:30	1396	20.88	887	2.03	76
16:54:40	1397	20.54	887	2.00	76
16:54:50	1397	20.20	887	1.97	76
16:55:00	1398	19.70	887	1.89	76
16:55:10	1398	19.47	887	1.89	76
16:55:20	1399	19.25	886	1.83	76
16:55:30	1399	19.04	886	1.87	76
16:55:40	1399	18.84	886	1.83	76
16:55:50	1399	18.63	886	1.82	76
16:56:00	1399	18.41	886	1.93	76
16:56:10	1399	18.35	886	1.90	76
16:56:20	1398	18.15	886	1.79	76
16:56:30	1398	18.35	886	1.84	76
16:56:40	1398	18.88	886	1.85	76
16:56:50	1397	19.11	886	1.80	76
16:57:00	1397	19.32	886	1.82	76
16:57:10	1396	19.75	886	1.95	75

16:57:20	1396	19.90	886	1.83	75
16:57:30	1396	20.10	885	1.91	75
16:57:40	1395	20.46	885	1.97	75
16:57:50	1394	20.49	885	1.92	76
16:58:00	1393	20.71	885	1.86	76
16:58:10	1393	21.02	885	1.91	76
16:58:20	1393	21.19	885	1.93	76
16:58:30	1392	21.29	885	1.92	76
16:58:40	1392	21.44	885	1.90	76
16:58:50	1391	21.67	885	1.88	76
16:59:00	1391	21.89	885	1.88	76
16:59:10	1391	21.95	885	1.89	76
16:59:20	1392	22.22	885	1.89	76
16:59:30	1392	22.13	885	1.84	76
16:59:40	1392	-0.16	884	24.18	76
16:59:50	1393	-0.16	884	24.18	76
17:00:00	1393	-0.01	884	24.18	76
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17:00:20	1394	-0.02	884	17.92	76
17:00:30	1394	-0.02	884	17.28	76
17:00:40	1395	-0.02	884	17.57	76
17:00:50	1396	-0.02	884	19.50	76
17:01:00	1395	-0.02	887	19.03	76
17:01:10	1390	-0.02	895	18.63	76
17:01:20	1385	-0.02	903	18.61	76
17:01:30	1380	-0.02	909	18.25	76
17:01:40	1376	-0.03	912	18.31	76
17:01:50	1372	-0.02	914	19.26	76
17:02:00	1367	-0.01	916	18.68	76
17:02:10	1364	-0.01	918	18.88	76
17:02:20	1360	-0.01	920	18.90	75
17:02:30	1357	-0.01	921	19.23	75
17:02:40	1353	-0.01	923	19.33	75
17:02:50	1350	-0.01	924	20.32	75
17:03:00	1347	-0.01	926	20.46	75
17:03:10	1344	-0.01	927	20.50	75
17:03:20	1341	-0.01	929	21.58	75
17:03:30	1338	-0.01	930	22.05	75
17:03:40	1335	-0.01	931	21.82	75
17:03:50	1332	-0.01	932	21.84	75
17:04:00	1330	-0.01	934	21.86	75
17:04:10	1327	-0.01	935	21.80	75
17:04:20	1325	-0.02	936	22.83	75
17:04:30	1322	-0.01	937	23.59	75
17:04:40	1319	-0.01	938	24.18	75
17:04:50	1317	-0.01	938	24.18	75
17:05:00	1315	-0.01	940	24.18	75
17:05:10	1312	-0.01	940	23.99	75
17:05:20	1310	-0.01	941	23.73	75
17:05:30	1308	-0.01	941	23.62	75
17:05:40	1306	-0.01	942	23.97	75
17:05:50	1304	-0.01	942	24.08	75
17:06:00	1302	-0.01	943	24.18	75
17:06:10	1300	-0.01	943	23.97	74
17:06:20	1297	-0.01	945	23.76	74
17:06:30	1295	-0.01	945	23.38	74
17:06:40	1293	-0.01	946	23.44	74
17:06:50	1291	-0.01	946	23.45	74
17:07:00	1289	-0.01	947	23.30	74
17:07:10	1288	-0.01	947	23.02	74
17:07:20	1286	-0.01	948	23.26	74
17:07:30	1284	-0.01	948	23.51	7[illegible]

17:07:40	1282	-0.01	949	23.52	74
17:07:50	1280	-0.01	949	23.41	74
17:08:00	1278	-0.01	949	22.96	74
17:08:10	1277	-0.01	950	22.70	74
17:08:20	1275	-0.01	951	22.89	74
17:08:30	1273	-0.01	951	23.16	74
17:08:40	1272	-0.01	951	23.35	74
17:08:50	1270	-0.01	951	22.63	74
17:09:00	1268	-0.01	952	23.19	75
17:09:10	1267	-0.01	953	22.86	75
17:09:20	1265	-0.01	953	23.05	75
17:09:30	1264	-0.01	953	23.13	75
17:09:40	1262	-0.01	954	23.46	75
17:09:50	1261	-0.01	955	22.96	75
17:10:00	1259	-0.01	955	23.36	75
17:10:10	1258	-0.01	956	23.42	75
17:10:20	1256	-0.01	957	23.18	74
17:10:30	1255	-0.01	957	23.37	74
17:10:40	1254	-0.01	957	23.56	74
17:10:50	1252	-0.01	958	23.27	73
17:11:00	1251	-0.01	958	23.16	73
17:11:10	1249	-0.01	959	23.60	73
17:11:20	1248	-0.01	960	23.50	72
17:11:30	1247	-0.01	960	23.56	72
17:11:40	1245	-0.01	961	24.10	72
17:11:50	1244	-0.01	961	24.01	72
17:12:00	1243	-0.01	962	23.21	72
17:12:10	1241	-0.01	963	23.72	72
17:12:20	1240	-0.01	964	24.18	72
17:12:30	1238	-0.01	964	23.82	72
17:12:40	1237	-0.01	965	24.05	72
17:12:50	1236	-0.01	965	24.11	72
17:13:00	1235	-0.01	966	24.14	72
17:13:10	1234	-0.01	966	23.85	72
17:13:20	1232	-0.01	967	23.75	72
17:13:30	1231	-0.01	967	24.08	72
17:13:40	1230	-0.01	968	23.67	71
17:13:50	1228	-0.01	968	23.86	71
17:14:00	1228	-0.01	969	23.77	71
17:14:10	1226	-0.01	969	23.47	71
17:14:20	1225	-0.01	970	23.61	71
17:14:30	1224	-0.01	970	23.27	71
17:14:40	1223	-0.01	970	23.59	71
17:14:50	1222	-0.01	971	22.82	71
17:15:00	1221	-0.01	971	23.25	71
17:15:10	1220	-0.01	971	22.99	71
17:15:20	1218	-0.01	972	22.68	71
17:15:30	1217	-0.01	972	22.84	70
17:15:40	1217	-0.01	972	22.36	70
17:15:50	1215	-0.01	973	22.46	70
17:16:00	1214	-0.02	973	22.63	70
17:16:10	1213	-0.02	973	22.79	70
17:16:20	1212	-0.01	974	22.85	70
17:16:30	1211	-0.01	974	22.81	70
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17:17:00	1208	-0.01	975	22.89	70
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17:17:20	1206	-0.01	975	23.12	70
17:17:30	1205	-0.01	975	22.96	70
17:17:40	1204	-0.01	976	23.14	70
17:17:50	1203	-0.01	976	23.32	70

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17:18:10	1202	-0.01	977	23.49	70
17:18:20	1201	-0.01	977	23.52	70
17:18:30	1200	-0.01	977	23.22	70
17:18:40	1199	-0.01	978	23.70	70
17:18:50	1198	-0.01	979	23.68	70
17:19:00	1197	-0.01	979	23.41	70
17:19:10	1196	-0.01	979	23.91	70
17:19:20	1195	-0.01	979	23.64	70
17:19:30	1194	-0.01	980	23.78	70
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17:19:50	1193	-0.01	980	23.81	70
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17:21:00	1186	-0.01	983	24.18	70
17:21:10	1185	-0.01	983	24.18	70
17:21:20	1185	-0.01	983	24.18	70
17:21:30	1183	-0.01	984	24.18	70
17:21:40	1183	-0.01	984	24.18	70
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17:22:00	1181	-0.01	986	24.18	70
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17:22:20	1179	-0.01	987	24.15	70
17:22:30	1179	-0.01	987	24.18	70
17:22:40	1178	-0.01	987	24.18	70
17:22:50	1177	-0.01	988	24.18	70
17:23:00	1176	-0.01	988	24.18	70
17:23:10	1175	-0.01	988	23.83	70
17:23:20	1174	-0.02	989	24.18	69
17:23:30	1173	-0.01	989	24.18	69
17:23:40	1172	-0.01	990	24.18	69
17:23:50	1172	-0.01	990	24.18	69
17:24:00	1171	-0.01	990	23.66	69
17:24:10	1171	-0.01	990	24.18	69
17:24:20	1170	-0.01	991	24.18	69
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17:24:40	1168	-0.01	992	24.18	69
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17:25:00	1166	-0.01	993	24.18	69
17:25:10	1166	-0.02	993	24.18	69
17:25:20	1165	-0.01	993	24.18	69
17:25:30	1164	-0.01	993	24.18	69
17:25:40	1164	-0.01	994	24.18	69
17:25:50	1163	-0.01	994	24.18	69
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17:26:20	1160	-0.01	995	23.84	69
17:26:30	1160	-0.01	995	23.87	69
17:26:40	1159	-0.01	996	24.18	69
17:26:50	1158	-0.01	996	24.18	69
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17:27:10	1157	-0.01	997	24.18	69
17:27:20	1157	-0.01	997	23.87	69
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17:27:40	1155	-0.01	997	23.64	69
17:27:50	1154	-0.01	997	24.15	69
17:28:00	1154	-0.01	997	24.13	69
17:28:10	1153	-0.01	998	22.70	69

17:28:20	1153	-0.01	998	23.35	69
17:28:30	1152	-0.01	998	24.18	69
17:28:40	1151	-0.01	998	24.18	69
17:28:50	1150	-0.01	998	24.14	69
17:29:00	1150	-0.01	998	24.18	69
17:29:10	1149	-0.01	998	24.18	69
17:29:20	1149	-0.01	999	24.18	69
17:29:30	1148	-0.01	999	24.18	69
17:29:40	1147	-0.01	999	24.18	69
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17:30:10	1145	-0.01	999	24.18	69
17:30:20	1145	-0.01	1000	24.18	69
17:30:30	1144	-0.01	1000	24.18	69
17:30:40	1143	-0.01	1001	24.18	69
17:30:50	1143	-0.01	1001	24.18	69
17:31:00	1142	-0.01	1001	24.18	69
17:31:10	1142	-0.01	1002	24.18	69
17:31:20	1141	-0.01	1003	24.18	69
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17:31:40	1140	-0.01	1003	24.18	69
17:31:50	1139	-0.01	1004	24.18	69
17:32:00	1139	-0.01	1004	24.18	69
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17:32:20	1137	-0.01	1005	24.18	69
17:32:30	1137	-0.01	1006	24.18	69
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17:32:50	1135	-0.01	1007	24.18	69
17:33:00	1135	-0.01	1008	24.18	69
17:33:10	1134	-0.01	1008	24.18	69
17:33:20	1133	-0.01	1008	24.18	69
17:33:30	1133	-0.01	1009	24.18	69
17:33:40	1132	-0.01	1009	24.18	69
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17:34:20	1130	-0.01	1010	24.18	69
17:34:30	1129	-0.01	1010	24.18	69
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17:34:50	1128	-0.01	1011	24.18	69
17:35:00	1128	-0.01	1011	24.18	69
17:35:10	1127	-0.01	1012	24.18	69
17:35:20	1127	-0.01	1012	24.18	69
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17:35:40	1125	-0.01	1013	24.18	69
17:35:50	1125	-0.01	1013	24.18	69
17:36:00	1124	-0.01	1014	24.18	69
17:36:10	1124	-0.01	1014	24.18	69
17:36:20	1123	-0.01	1014	23.92	69
17:36:30	1123	-0.01	1014	23.87	69
17:36:40	1122	-0.01	1014	24.18	69
17:36:50	1122	-0.01	1014	24.18	69
17:37:00	1121	-0.01	1015	24.18	69
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17:37:20	1120	-0.01	1015	24.18	69
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17:37:40	1119	-0.01	1015	24.18	69
17:37:50	1119	-0.01	1015	24.18	69
17:38:00	1118	-0.02	1015	24.18	69
17:38:10	1118	-0.01	1015	24.18	69
17:38:20	1117	-0.01	1016	24.18	69
17:38:30	1116	-0.01	1016	24.18	69

17:38:40	1116	-0.01	1017	24.18	69
17:38:50	1116	-0.01	1017	24.18	69
17:39:00	1115	-0.01	1017	24.18	69
17:39:10	1115	0.63	1018	24.18	69
17:39:20	1114	0.84	1019	24.18	69
17:39:30	1114	1.04	1019	24.18	69
17:39:40	1113	1.07	1020	24.18	69
17:39:50	1113	1.06	1020	24.18	69
17:40:00	1112	1.04	1021	24.18	69
17:40:10	1112	1.06	1021	24.18	69
17:40:20	1111	1.04	1022	24.18	69
17:40:30	1111	1.03	1022	24.18	69
17:40:40	1110	1.05	1023	24.18	69
17:40:50	1109	1.04	1023	24.18	68
17:41:00	1109	1.05	1023	24.18	68
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17:41:20	1108	1.02	1024	24.18	68
17:41:30	1108	1.03	1025	24.18	68
17:41:40	1107	1.12	1025	24.18	68
17:41:50	1107	1.11	1025	24.18	67
17:42:00	1106	1.07	1026	24.18	67
17:42:10	1106	1.10	1026	24.18	67
17:42:20	1106	1.13	1026	24.18	67
17:42:30	1105	1.11	1026	24.18	67
17:42:40	1105	1.10	1026	24.18	67
17:42:50	1104	1.14	1027	24.18	67
17:43:00	1104	1.09	1027	24.18	67
17:43:10	1103	1.18	1027	24.18	68
17:43:20	1103	1.18	1027	24.18	68
17:43:30	1102	1.20	1028	24.18	68
17:43:40	1102	1.18	1028	24.18	68
17:43:50	1101	1.17	1028	24.18	68
17:44:00	1101	1.20	1029	24.18	68
17:44:10	1100	1.21	1029	24.18	68
17:44:20	1100	1.14	1029	24.18	68
17:44:30	1100	1.21	1029	24.18	68
17:44:40	1099	1.22	1028	24.18	68
17:44:50	1098	1.22	1029	24.18	68
17:45:00	1098	1.23	1029	24.18	68
17:45:10	1098	1.20	1029	24.18	68
17:45:20	1097	1.21	1029	24.18	68
17:45:30	1097	1.18	1028	24.18	68
17:45:40	1096	1.27	1029	24.18	68
17:45:50	1096	1.24	1029	24.18	68
17:46:00	1096	1.27	1029	24.18	68
17:46:10	1095	1.30	1029	24.18	68
17:46:20	1095	1.31	1029	24.18	68
17:46:30	1094	1.32	1030	24.18	68
17:46:40	1093	1.35	1030	24.18	67
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17:47:00	1093	1.44	1030	24.18	67
17:47:10	1093	1.41	1031	24.18	67
17:47:20	1092	1.37	1031	24.18	67
17:47:30	1092	1.41	1031	24.18	67
17:47:40	1091	1.40	1031	24.18	67
17:47:50	1091	1.38	1032	24.18	67
17:48:00	1090	1.39	1032	24.18	67
17:48:10	1090	1.36	1033	24.18	67
17:48:20	1089	1.34	1033	24.18	67
17:48:30	1089	1.33	1034	24.18	67
17:48:40	1088	1.33	1034	24.18	67
17:48:50	1088	1.36	1035	24.18	67

17:49:00	1088	1.29	1035	24.18	67
17:49:10	1087	1.27	1036	24.18	67
17:49:20	1087	1.32	1036	24.18	67
17:49:30	1087	1.32	1037	24.18	67
17:49:40	1086	1.35	1037	24.18	67
17:49:50	1086	1.41	1038	24.18	67
17:50:00	1085	1.43	1038	24.18	67
17:50:10	1085	1.49	1039	24.18	67
17:50:20	1084	1.85	1039	24.18	67
17:50:30	1084	1.95	1039	24.18	67
17:50:40	1084	2.21	1040	24.18	67
17:50:50	1083	2.26	1040	24.18	67
17:51:00	1083	2.39	1040	24.18	68
17:51:10	1082	2.48	1040	24.18	68
17:51:20	1082	2.56	1041	24.18	68
17:51:30	1082	2.58	1041	24.18	68
17:51:40	1081	2.64	1041	24.18	68
17:51:50	1081	2.67	1041	24.18	68
17:52:00	1080	2.70	1042	24.18	68
17:52:10	1080	2.72	1041	24.18	68
17:52:20	1080	2.71	1042	24.18	68
17:52:30	1080	2.71	1042	24.18	68
17:52:40	1079	2.73	1041	24.18	68
17:52:50	1079	2.72	1041	24.18	68
17:53:00	1078	2.72	1041	24.18	68
17:53:10	1078	2.72	1041	24.18	68
17:53:20	1078	2.69	1041	24.18	68
17:53:30	1077	2.66	1041	24.18	68
17:53:40	1077	2.66	1042	24.18	68
17:53:50	1076	2.60	1042	24.18	68
17:54:00	1076	2.54	1042	24.18	68
17:54:10	1076	2.47	1043	24.18	68
17:54:20	1075	2.46	1042	24.18	68
17:54:30	1075	2.41	1043	24.18	68
17:54:40	1075	2.38	1043	24.18	68
17:54:50	1074	1.81	1044	24.18	68
17:55:00	1074	1.53	1044	24.18	68
17:55:10	1073	1.35	1044	24.18	67
17:55:20	1073	1.17	1045	24.18	67
17:55:30	1073	1.11	1046	24.18	67
17:55:40	1072	1.01	1046	24.18	67
17:55:50	1072	0.94	1046	24.18	67
17:56:00	1072	0.92	1046	24.18	67
17:56:10	1072	0.97	1047	24.18	67
17:56:20	1071	0.94	1047	24.18	67
17:56:30	1071	0.96	1048	24.18	67
17:56:40	1070	1.03	1048	24.18	67
17:56:50	1070	1.03	1049	24.18	67
17:57:00	1070	0.99	1049	24.18	67
17:57:10	1069	0.98	1049	24.18	66
17:57:20	1069	0.98	1050	24.18	66
17:57:30	1068	0.99	1050	24.18	66
17:57:40	1068	0.99	1051	24.18	66
17:57:50	1068	1.04	1051	24.18	66
17:58:00	1067	1.08	1051	24.18	66
17:58:10	1067	1.06	1051	24.18	66
17:58:20	1067	1.07	1052	24.18	66
17:58:30	1066	1.12	1052	24.18	66
17:58:40	1066	1.06	1052	24.18	66
17:58:50	1066	0.98	1053	24.18	66
17:59:00	1065	0.94	1053	24.18	66
17:59:10	1065	0.99	1053	24.18	66

17:59:20	1065	0.96	1053	24.18	66
17:59:30	1064	1.17	1054	24.18	66
17:59:40	1064	1.23	1054	24.18	66
17:59:50	1064	1.20	1054	24.18	66
18:00:00	1064	1.22	1053	24.18	67
18:00:10	1063	1.16	1053	24.18	67
18:00:20	1063	1.20	1054	24.18	67
18:00:30	1062	1.13	1054	24.18	67
18:00:40	1062	1.16	1053	24.18	67
18:00:50	1062	1.15	1053	24.18	67
18:01:00	1062	1.09	1053	24.18	67
18:01:10	1061	1.03	1054	24.18	67
18:01:20	1061	1.03	1054	24.18	67
18:01:30	1061	1.04	1055	24.18	67
18:01:40	1060	1.03	1055	24.18	67
18:01:50	1060	1.08	1055	24.18	67
18:02:00	1060	1.08	1056	24.18	67
18:02:10	1059	0.94	1057	24.18	67
18:02:20	1059	1.01	1058	24.18	67
18:02:30	1059	1.04	1058	24.18	67
18:02:40	1059	1.01	1059	24.18	67
18:02:50	1058	1.05	1059	24.18	67
18:03:00	1058	1.03	1060	24.18	67
18:03:10	1058	1.03	1061	24.18	67
18:03:20	1057	1.08	1061	24.18	67
18:03:30	1057	1.03	1062	24.18	67
18:03:40	1056	0.99	1063	24.18	67
18:03:50	1056	1.00	1063	24.18	67
18:04:00	1056	1.02	1063	24.18	67
18:04:10	1056	0.98	1064	24.18	66
18:04:20	1055	0.99	1064	24.18	66
18:04:30	1055	0.98	1065	24.18	66
18:04:40	1054	0.92	1065	24.18	66
18:04:50	1054	0.90	1065	24.18	66
18:05:00	1054	0.87	1066	24.18	66
18:05:10	1053	0.82	1066	24.18	66
18:05:20	1053	0.84	1066	24.18	66
18:05:30	1053	0.87	1067	24.18	66
18:05:40	1052	0.85	1067	24.18	66
18:05:50	1052	0.79	1068	24.18	66
18:06:00	1052	0.81	1068	24.18	66
18:06:10	1052	0.76	1068	24.18	66
18:06:20	1051	0.78	1069	24.18	66
18:06:30	1051	0.80	1069	24.18	66
18:06:40	1051	0.75	1070	24.18	66
18:06:50	1050	0.80	1070	24.18	66
18:07:00	1050	0.73	1070	24.18	66
18:07:10	1050	0.72	1071	24.18	66
18:07:20	1049	0.77	1071	24.18	66
18:07:30	1049	0.88	1072	24.18	66
18:07:40	1049	0.89	1072	24.18	66
18:07:50	1048	0.87	1073	24.18	66
18:08:00	1048	0.80	1073	24.18	66
18:08:10	1048	0.74	1074	24.18	66
18:08:20	1048	0.63	1074	24.18	66
18:08:30	1048	0.58	1074	24.18	67
18:08:40	1047	0.59	1074	24.18	67
18:08:50	1046	0.56	1075	24.18	67
18:09:00	1046	0.62	1074	24.18	67
18:09:10	1046	0.60	1075	24.18	67
18:09:20	1046	0.65	1075	24.18	67
18:09:30	1046	0.70	1075	24.18	67

18:09:40	1045	0.68	1075	24.18	67
18:09:50	1045	0.76	1074	24.18	66
18:10:00	1044	0.86	1074	24.18	66
18:10:10	1044	0.81	1074	24.18	66
18:10:20	1044	0.73	1073	24.18	66
18:10:30	1044	0.68	1073	24.18	66
18:10:40	1044	0.81	1073	24.18	66
18:10:50	1043	0.79	1073	24.18	66
18:11:00	1043	0.59	1073	24.18	65
18:11:10	1043	0.67	1073	24.18	65
18:11:20	1043	0.66	1073	24.18	65
18:11:30	1042	0.72	1073	24.18	65
18:11:40	1042	0.66	1074	24.18	65
18:11:50	1042	0.75	1074	24.18	65
18:12:00	1041	0.73	1074	24.18	65
18:12:10	1041	0.70	1075	24.18	65
18:12:20	1041	0.63	1075	24.18	65
18:12:30	1040	0.61	1075	24.18	65
18:12:40	1040	0.63	1075	24.18	65
18:12:50	1040	0.68	1075	24.18	65
18:13:00	1040	0.71	1076	24.18	65
18:13:10	1039	0.63	1076	24.18	65
18:13:20	1039	0.62	1076	24.18	65
18:13:30	1039	0.66	1076	24.18	65
18:13:40	1038	1.15	1076	24.18	65
18:13:50	1038	1.27	1076	24.18	65
18:14:00	1038	1.25	1076	24.18	65
18:14:10	1037	1.31	1077	24.18	65
18:14:20	1037	1.28	1077	24.18	65
18:14:30	1037	1.24	1077	24.18	66
18:14:40	1036	1.25	1077	24.18	66
18:14:50	1036	1.22	1077	24.18	66
18:15:00	1036	1.20	1078	24.18	66
18:15:10	1035	1.18	1078	24.18	66
18:15:20	1035	1.20	1078	24.18	66
18:15:30	1035	1.19	1079	24.18	66
18:15:40	1035	1.18	1079	24.18	66
18:15:50	1035	1.08	1079	24.18	66
18:16:00	1034	1.17	1079	24.18	66
18:16:10	1034	1.09	1079	24.18	66
18:16:20	1034	1.09	1079	24.18	66
18:16:30	1034	1.06	1079	24.18	66
18:16:40	1034	1.08	1079	24.18	66
18:16:50	1033	1.06	1079	24.18	66
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18:17:20	1032	1.08	1080	24.18	66
18:17:30	1032	1.08	1080	24.18	66
18:17:40	1032	1.08	1079	24.18	65
18:17:50	1032	1.01	1079	24.18	66
18:18:00	1031	1.08	1079	24.18	65
18:18:10	1031	1.13	1079	24.18	65
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18:18:30	1030	1.03	1078	24.18	65
18:18:40	1030	1.04	1078	24.18	65
18:18:50	1030	0.98	1078	24.18	65
18:19:00	1029	0.89	1078	24.18	65
18:19:10	1029	0.99	1078	24.18	65
18:19:20	1029	0.93	1078	24.18	65
18:19:30	1029	0.92	1078	24.18	65
18:19:40	1028	0.87	1078	24.18	65
18:19:50	1028	0.90	1079	24.18	65

18:20:00	1028	0.97	1079	24.18	65
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18:20:20	1027	1.02	1080	24.18	65
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18:20:40	1027	1.06	1080	24.18	65
18:20:50	1027	1.07	1081	24.18	65
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18:21:40	1025	1.05	1083	24.18	65
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18:22:00	1025	1.04	1084	24.18	65
18:22:10	1025	1.01	1084	24.18	65
18:22:20	1025	0.97	1084	24.18	65
18:22:30	1025	0.92	1085	24.18	65
18:22:40	1024	0.89	1086	24.18	65
18:22:50	1024	0.84	1086	24.18	65
18:23:00	1024	0.83	1086	24.18	65
18:23:10	1023	0.89	1087	24.18	64
18:23:20	1023	0.84	1087	24.18	64
18:23:30	1023	0.86	1088	24.18	64
18:23:40	1022	0.79	1088	24.18	64
18:23:50	1022	0.83	1089	24.18	64
18:24:00	1022	0.82	1089	24.18	64
18:24:10	1022	0.84	1089	24.18	64
18:24:20	1022	0.88	1090	24.18	64
18:24:30	1021	0.87	1090	24.18	64
18:24:40	1021	0.87	1090	24.18	64
18:24:50	1021	0.85	1091	24.18	64
18:25:00	1021	0.86	1091	24.18	64
18:25:10	1020	0.88	1091	24.18	64
18:25:20	1020	0.85	1092	24.18	64
18:25:30	1020	0.91	1092	24.18	64
18:25:40	1020	0.96	1093	24.18	65
18:25:50	1019	0.99	1093	24.18	65
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18:26:20	1018	1.17	1094	24.18	65
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18:27:40	1017	1.68	1095	24.18	64
18:27:50	1016	1.66	1095	24.18	65
18:28:00	1016	1.67	1096	24.18	64
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18:28:30	1016	1.63	1095	24.18	65
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18:29:50	1014	1.47	1093	24.18	64
18:30:00	1013	1.42	1093	24.18	64
18:30:10	1013	1.47	1093	24.18	64

18:30:20	1013	1.44	1093	24.18	64
18:30:30	1013	1.42	1093	24.18	64
18:30:40	1012	1.42	1094	24.18	64
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18:31:00	1012	1.41	1094	24.18	64
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18:33:20	1009	1.51	1096	24.18	64
18:33:30	1009	1.48	1096	24.18	64
18:33:40	1008	1.48	1096	24.18	64
18:33:50	1008	1.52	1096	24.18	64
18:34:00	1008	1.45	1096	24.18	64
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18:34:50	1007	1.52	1097	24.18	64
18:35:00	1007	1.52	1098	24.18	64
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18:36:20	1005	1.56	1100	24.18	64
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18:36:50	1004	1.56	1101	24.18	64
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18:37:20	1004	1.61	1102	24.18	64
18:37:30	1003	1.65	1102	24.18	64
18:37:40	1003	1.67	1102	24.18	64
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18:38:00	1003	1.64	1102	24.18	64
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18:38:20	1002	1.62	1102	24.18	64
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18:38:40	1002	1.63	1101	24.18	64
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18:40:30	1000	1.17	1099	24.18	64

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18:45:50	993	1.41	1103	24.18	64
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18:47:50	991	1.10	1105	24.18	64
18:48:00	991	1.12	1105	24.18	64
18:48:10	990	1.10	1105	24.18	63
18:48:20	990	0.99	1104	24.18	64
18:48:30	990	1.00	1103	24.18	63
18:48:40	990	1.06	1103	24.18	63
18:48:50	990	1.52	1102	24.18	63
18:49:00	989	1.87	1102	24.18	63
18:49:10	989	1.90	1102	24.18	63
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18:49:30	989	1.84	1101	24.18	63
18:49:40	988	1.89	1101	24.18	63
18:49:50	988	1.88	1101	24.18	63
18:50:00	988	1.88	1100	24.18	63
18:50:10	988	1.87	1100	24.18	63
18:50:20	988	1.85	1100	24.18	63
18:50:30	988	1.84	1100	24.18	63
18:50:40	987	1.84	1101	24.18	63
18:50:50	987	1.91	1102	24.18	63

18:51:00	987	0.96	1102	24.18	63
18:51:10	987	0.78	1102	24.18	63
18:51:20	987	0.75	1102	24.18	63
18:51:30	987	0.65	1103	24.18	63
18:51:40	986	0.54	1103	24.18	63
18:51:50	986	0.70	1104	24.18	63
18:52:00	986	0.53	1104	24.18	63
18:52:10	986	-0.02	1104	24.18	63
18:52:20	986	0.67	1104	24.18	63
18:52:30	986	0.42	1105	24.18	63
18:52:40	985	-0.01	1105	24.18	63
18:52:50	985	0.75	1105	24.18	63
18:53:00	985	-0.02	1105	24.18	63
18:53:10	985	0.43	1106	24.18	63
18:53:20	985	0.39	1106	24.18	63
18:53:30	984	0.58	1106	24.18	63
18:53:40	984	0.39	1107	24.18	63
18:53:50	984	0.63	1107	24.18	63
18:54:00	984	0.45	1107	24.18	63
18:54:10	984	0.42	1108	24.18	63
18:54:20	984	0.62	1108	24.18	63
18:54:30	984	0.79	1108	24.18	63
18:54:40	983	0.54	1108	24.18	63
18:54:50	983	0.68	1108	24.18	63
18:55:00	983	-0.01	1109	24.18	63
18:55:10	983	-0.01	1109	24.18	63
18:55:20	983	-0.01	1109	24.18	63
18:55:30	983	-0.02	1110	24.18	63
18:55:40	982	-0.02	1110	24.18	63
18:55:50	982	-0.02	1110	24.18	63
18:56:00	982	-0.02	1110	24.18	63
18:56:10	982	-0.02	1111	24.18	63
18:56:20	982	-0.02	1111	24.18	63
18:56:30	982	-0.01	1111	24.18	63
18:56:40	981	-0.01	1111	24.18	63
18:56:50	981	-0.02	1112	24.18	63
18:57:00	981	-0.01	1112	24.18	63
18:57:10	981	-0.02	1112	24.18	63
18:57:20	981	-0.01	1112	24.18	63
18:57:30	981	-0.02	1113	24.18	63
18:57:40	980	0.38	1114	24.18	63
18:57:50	980	-0.02	1114	24.18	63
18:58:00	980	-0.01	1114	24.18	63
18:58:10	979	0.44	1115	24.18	63
18:58:20	979	-0.01	1115	24.18	63
18:58:30	979	0.59	1115	24.18	63
18:58:40	979	-0.02	1115	24.18	63
18:58:50	979	0.53	1116	24.18	63
18:59:00	979	-0.02	1116	24.18	63
18:59:10	979	0.32	1116	24.18	63
18:59:20	979	-0.02	1117	24.18	63
18:59:30	979	-0.02	1117	24.18	62
18:59:40	979	-0.02	1117	24.18	63
18:59:50	978	-0.01	1117	24.18	62
19:00:00	978	-0.01	1117	24.18	62
19:00:10	978	-0.01	1117	24.18	62
19:00:20	977	-0.02	1118	24.18	62
19:00:30	977	-0.02	1118	24.18	62
19:00:40	977	0.46	1118	24.18	62
19:00:50	977	-0.02	1118	24.18	62
19:01:00	977	-0.02	1118	24.18	62
19:01:10	977	-0.02	1117	24.18	62

19:01:20	976	0.49	1116	24.18	62
19:01:30	976	0.44	1116	24.18	62
19:01:40	976	0.65	1115	24.18	62
19:01:50	976	0.65	1115	24.18	62
19:02:00	976	0.74	1114	24.18	62
19:02:10	976	0.82	1113	24.18	62
19:02:20	975	0.65	1113	24.18	62
19:02:30	975	0.69	1112	24.18	62
19:02:40	975	0.50	1111	24.18	62
19:02:50	975	-0.02	1110	24.18	62
19:03:00	975	-0.01	1110	24.18	62
19:03:10	975	0.38	1109	24.18	62
19:03:20	975	-0.01	1109	24.18	62
19:03:30	974	-0.02	1109	24.18	62
19:03:40	974	0.54	1109	24.18	62
19:03:50	974	-0.02	1109	24.18	62
19:04:00	973	0.46	1109	24.18	62
19:04:10	973	-0.01	1108	24.18	62
19:04:20	973	-0.02	1109	24.18	62
19:04:30	973	-0.01	1109	24.18	62
19:04:40	973	-0.02	1108	24.18	62
19:04:50	973	-0.01	1108	24.18	62
19:05:00	973	-0.01	1108	24.18	62
19:05:10	972	-0.02	1108	24.18	62
19:05:20	972	-0.01	1108	24.18	62
19:05:30	972	-0.02	1108	24.18	62
19:05:40	972	-0.02	1108	24.18	62
19:05:50	972	-0.01	1108	24.18	62
19:06:00	972	-0.02	1108	24.18	62
19:06:10	971	-0.01	1108	24.18	62
19:06:20	971	-0.01	1109	24.18	62
19:06:30	971	-0.01	1108	24.18	62
19:06:40	971	-0.02	1109	24.18	62
19:06:50	971	-0.01	1110	24.18	62
19:07:00	971	-0.02	1110	24.18	62
19:07:10	971	-0.02	1109	24.18	62
19:07:20	971	-0.02	1110	24.18	62
19:07:30	970	-0.02	1110	24.18	62
19:07:40	970	-0.02	1111	24.18	62
19:07:50	970	-0.01	1111	24.18	62
19:08:00	970	-0.02	1111	24.18	62
19:08:10	969	-0.01	1112	24.18	62
19:08:20	969	-0.01	1112	24.18	62
19:08:30	969	-0.01	1112	24.18	62
19:08:40	969	-0.01	1113	24.18	62
19:08:50	969	-0.01	1113	24.18	62
19:09:00	969	-0.02	1113	24.18	62
19:09:10	969	-0.02	1113	24.18	62
19:09:20	969	-0.01	1114	24.18	62
19:09:30	968	-0.02	1115	24.18	62
19:09:40	968	-0.01	1115	24.18	62
19:09:50	968	-0.02	1115	24.18	62
19:10:00	968	-0.02	1116	24.18	62
19:10:10	968	-0.02	1116	24.18	62
19:10:20	967	-0.02	1116	24.18	62
19:10:30	967	0.40	1117	24.18	62
19:10:40	967	-0.01	1117	24.18	62
19:10:50	967	-0.01	1118	24.18	62
19:11:00	967	0.37	1118	24.18	62
19:11:10	967	-0.02	1118	24.18	62
19:11:20	966	-0.02	1118	24.18	62
19:11:30	966	0.51	1119	24.18	62

19:11:40	966	-0.02	1119	24.18	62
19:11:50	966	0.46	1119	24.18	62
19:12:00	966	-0.02	1119	24.18	61
19:12:10	966	0.55	1120	24.18	61
19:12:20	965	0.42	1120	24.18	62
19:12:30	965	0.51	1120	24.18	61
19:12:40	965	0.35	1120	24.18	61
19:12:50	965	0.52	1121	24.18	61
19:13:00	965	0.46	1121	24.18	61
19:13:10	965	0.55	1121	24.18	61
19:13:20	965	0.60	1122	24.18	61
19:13:30	965	0.57	1122	24.18	61
19:13:40	964	0.49	1122	24.18	61
19:13:50	964	0.68	1122	24.18	61
19:14:00	964	0.61	1123	24.18	61
19:14:10	964	0.71	1122	24.18	61
19:14:20	964	0.61	1122	24.18	61
19:14:30	964	0.48	1122	24.18	61
19:14:40	964	-0.02	1122	24.18	61
19:14:50	963	-0.02	1123	24.18	61
19:15:00	963	-0.02	1123	24.18	61
19:15:10	963	1.60	1123	24.18	61
19:15:20	963	1.73	1123	24.18	61
19:15:30	963	1.68	1123	24.18	61
19:15:40	963	1.66	1124	24.18	61
19:15:50	962	1.62	1124	24.18	61
19:16:00	962	1.68	1124	24.18	61
19:16:10	962	1.57	1124	24.18	61
19:16:20	962	1.66	1124	24.18	61
19:16:30	961	1.59	1123	24.18	61
19:16:40	961	1.65	1123	24.18	61
19:16:50	961	1.62	1122	24.18	61
19:17:00	961	1.72	1121	24.18	61
19:17:10	961	0.82	1121	24.18	61
19:17:20	961	-0.02	1120	24.18	61
19:17:30	961	-0.02	1119	24.18	61
19:17:40	961	-0.02	1118	24.18	61
19:17:50	961	-0.02	1117	24.18	61
19:18:00	960	-0.02	1116	24.18	61
19:18:10	960	-0.02	1116	24.18	61
19:18:20	960	-0.02	1115	24.18	61
19:18:30	960	-0.02	1115	24.18	61
19:18:40	960	-0.01	1115	24.18	61
19:18:50	960	-0.01	1114	24.18	61
19:19:00	960	-0.02	1114	24.18	61
19:19:10	959	-0.01	1114	24.18	61
19:19:20	959	-0.02	1114	24.18	61
19:19:30	959	-0.01	1114	24.18	61
19:19:40	959	-0.02	1114	24.18	61
19:19:50	959	-0.02	1114	24.18	61
19:20:00	959	-0.01	1114	24.18	61
19:20:10	958	-0.02	1114	24.18	61
19:20:20	958	-0.01	1114	24.18	61
19:20:30	958	-0.02	1114	24.18	61
19:20:40	958	0.38	1113	24.18	61
19:20:50	958	-0.02	1113	24.18	61
19:21:00	958	0.50	1113	24.18	61
19:21:10	958	0.48	1113	24.18	61
19:21:20	958	0.53	1113	24.18	61
19:21:30	957	0.54	1113	24.18	61
19:21:40	957	0.59	1113	24.18	61
19:21:50	957	0.58	1113	24.18	61

19:22:00	957	0.52	1114	24.18	61
19:22:10	957	0.68	1113	24.18	61
19:22:20	957	0.92	1113	24.18	61
19:22:30	957	0.64	1113	24.18	61
19:22:40	957	0.95	1114	24.18	61
19:22:50	956	0.73	1114	24.18	61
19:23:00	956	1.00	1115	24.18	61
19:23:10	956	0.97	1115	24.18	61
19:23:20	956	0.87	1115	24.18	61
19:23:30	955	1.05	1115	24.18	61
19:23:40	955	0.92	1116	24.18	61
19:23:50	955	1.07	1116	24.18	61
19:24:00	955	1.08	1116	24.18	61
19:24:10	955	1.16	1117	24.18	61
19:24:20	955	0.92	1117	24.18	61
19:24:30	955	0.94	1118	24.18	61
19:24:40	955	1.02	1118	24.18	61
19:24:50	955	1.15	1118	24.18	61
19:25:00	954	1.08	1118	24.18	61
19:25:10	954	1.03	1118	24.18	61
19:25:20	954	1.10	1119	24.18	61
19:25:30	954	1.12	1119	24.18	61
19:25:40	954	1.19	1119	24.18	61
19:25:50	954	1.19	1120	24.18	61
19:26:00	953	1.04	1120	24.18	61
19:26:10	953	1.12	1121	24.18	61
19:26:20	953	1.29	1121	24.18	61
19:26:30	953	1.15	1121	24.18	61
19:26:40	953	1.22	1121	24.18	61
19:26:50	953	1.28	1122	24.18	61
19:27:00	953	1.28	1122	24.18	60
19:27:10	953	1.32	1122	24.18	61
19:27:20	953	1.24	1122	24.18	61
19:27:30	952	1.30	1123	24.18	61
19:27:40	952	1.39	1123	24.18	61
19:27:50	952	1.23	1123	24.18	61
19:28:00	952	1.28	1124	24.18	61
19:28:10	952	1.25	1124	24.18	61
19:28:20	952	1.24	1124	24.18	61
19:28:30	952	1.32	1124	24.18	61
19:28:40	952	1.31	1124	24.18	61
19:28:50	951	1.15	1124	24.18	61
19:29:00	951	1.27	1124	24.18	60
19:29:10	951	1.29	1125	24.18	60
19:29:20	950	1.30	1125	24.18	61
19:29:30	950	1.24	1125	24.18	60
19:29:40	950	1.17	1125	24.18	60
19:29:50	950	1.19	1125	24.18	60
19:30:00	950	1.20	1126	24.18	60
19:30:10	950	0.93	1126	24.18	60
19:30:20	950	0.95	1126	24.18	60
19:30:30	950	0.92	1126	24.18	60
19:30:40	950	0.86	1126	24.18	60
19:30:50	949	0.77	1127	24.18	60
19:31:00	949	0.95	1126	24.18	60
19:31:10	949	0.76	1126	24.18	60
19:31:20	949	0.98	1126	24.18	60
19:31:30	949	0.82	1126	24.18	60
19:31:40	949	0.94	1125	24.18	60
19:31:50	949	0.90	1125	24.18	60
19:32:00	949	0.88	1124	24.18	60
19:32:10	948	0.89	1124	24.18	60

19:32:20	948	0.85	1123	24.18	60
19:32:30	948	0.80	1122	24.18	60
19:32:40	948	0.78	1122	24.18	60
19:32:50	948	0.98	1120	24.18	60
19:33:00	948	0.94	1120	24.18	60
19:33:10	948	0.81	1119	24.18	60
19:33:20	947	0.89	1119	24.18	60
19:33:30	947	0.81	1119	24.18	60
19:33:40	947	0.90	1118	24.18	60
19:33:50	947	0.85	1117	24.18	60
19:34:00	947	0.84	1117	24.18	60
19:34:10	947	0.79	1117	24.18	60
19:34:20	947	0.87	1117	24.18	60
19:34:30	947	0.96	1117	24.18	60
19:34:40	946	0.99	1117	24.18	60
19:34:50	946	1.00	1116	24.18	60
19:35:00	946	1.09	1116	24.18	60
19:35:10	946	1.08	1116	24.18	60
19:35:20	946	1.05	1116	24.18	60
19:35:30	946	1.35	1115	24.18	60
19:35:40	946	1.04	1115	24.18	60
19:35:50	945	1.30	1115	24.18	60
19:36:00	945	1.19	1115	24.18	60
19:36:10	945	1.35	1115	24.18	61
19:36:20	945	1.28	1115	24.18	61
19:36:30	945	1.36	1114	24.18	61
19:36:40	945	1.35	1115	24.18	61
19:36:50	945	1.25	1115	24.18	61
19:37:00	945	1.23	1115	24.18	61
19:37:10	945	1.40	1115	24.18	61
19:37:20	944	1.34	1115	24.18	62
19:37:30	944	1.38	1115	24.18	61
19:37:40	944	1.46	1115	24.18	62
19:37:50	944	1.44	1116	24.18	62
19:38:00	944	1.38	1116	24.18	62
19:38:10	944	1.48	1116	24.18	62
19:38:20	943	1.64	1117	24.18	62
19:38:30	943	1.54	1117	24.18	62
19:38:40	943	1.53	1117	24.18	61
19:38:50	943	1.56	1117	24.18	61
19:39:00	943	1.56	1118	24.18	61
19:39:10	943	1.55	1119	24.18	61
19:39:20	943	1.57	1119	24.18	61
19:39:30	942	1.52	1119	24.18	62
19:39:40	942	1.67	1120	24.18	62
19:39:50	942	1.66	1120	24.18	62
19:40:00	942	1.63	1120	24.18	61
19:40:10	942	1.63	1120	24.18	62
19:40:20	942	1.67	1120	24.18	62
19:40:30	942	1.72	1121	24.18	62
19:40:40	942	1.68	1121	24.18	62
19:40:50	942	1.75	1122	24.18	62
19:41:00	941	1.70	1122	24.18	62
19:41:10	941	1.67	1122	24.18	61
19:41:20	941	1.74	1123	24.18	61
19:41:30	941	1.69	1123	24.18	61
19:41:40	941	1.76	1124	24.18	61
19:41:50	941	1.76	1124	24.18	61
19:42:00	941	1.85	1124	24.18	61
19:42:10	941	1.80	1124	24.18	61
19:42:20	941	1.76	1125	24.18	61
19:42:30	940	1.79	1125	24.18	61

19:42:40	940	1.81	1125	24.18	61
19:42:50	940	1.88	1125	24.18	61
19:43:00	940	1.79	1126	24.18	61
19:43:10	940	1.84	1126	24.18	61
19:43:20	940	1.90	1126	24.18	61
19:43:30	940	1.93	1126	24.18	61
19:43:40	940	1.86	1126	24.18	61
19:43:50	940	1.85	1126	24.18	61
19:44:00	940	1.85	1126	24.18	61
19:44:10	939	1.87	1127	24.18	61
19:44:20	939	1.94	1127	24.18	61
19:44:30	939	1.88	1127	24.18	61
19:44:40	939	1.88	1127	24.18	61
19:44:50	939	1.75	1127	24.18	61
19:45:00	939	1.77	1128	24.18	61
19:45:10	938	1.73	1128	24.18	61
19:45:20	938	1.81	1128	24.18	61
19:45:30	938	1.90	1129	24.18	61
19:45:40	938	1.83	1128	24.18	61
19:45:50	938	1.84	1129	24.18	61
19:46:00	938	1.88	1129	24.18	61
19:46:10	938	1.88	1129	24.18	61
19:46:20	938	1.88	1129	24.18	61
19:46:30	938	1.87	1129	24.18	61
19:46:40	937	1.85	1128	24.18	61
19:46:50	937	1.90	1128	24.18	61
19:47:00	937	1.90	1128	24.18	61
19:47:10	937	1.90	1127	24.18	61
19:47:20	937	1.85	1126	24.18	61
19:47:30	937	1.90	1126	24.18	61
19:47:40	937	1.57	1125	24.18	61
19:47:50	937	1.63	1124	24.18	61
19:48:00	937	1.57	1123	24.18	61
19:48:10	936	1.59	1122	24.18	61
19:48:20	936	1.59	1122	24.18	61
19:48:30	936	1.64	1121	24.18	61
19:48:40	936	1.66	1120	24.18	61
19:48:50	936	1.68	1120	24.18	61
19:49:00	935	1.66	1120	24.18	61
19:49:10	935	1.73	1120	24.18	61
19:49:20	935	1.77	1119	24.18	61
19:49:30	936	1.70	1119	24.18	61
19:49:40	935	1.70	1119	24.18	61
19:49:50	935	1.74	1118	24.18	61
19:50:00	935	1.75	1118	24.18	61
19:50:10	935	1.77	1118	24.18	61
19:50:20	935	1.78	1118	24.18	61
19:50:30	935	1.82	1118	24.18	61
19:50:40	934	1.84	1118	24.18	61
19:50:50	934	1.83	1118	24.18	61
19:51:00	934	1.85	1118	24.18	61
19:51:10	934	1.90	1118	24.18	61
19:51:20	934	1.88	1117	24.18	61
19:51:30	934	1.91	1117	24.18	61
19:51:40	934	1.90	1117	24.18	61
19:51:50	934	1.93	1118	24.18	61
19:52:00	933	1.93	1117	24.18	61
19:52:10	933	1.99	1117	24.18	60
19:52:20	933	1.91	1118	24.18	61
19:52:30	933	2.00	1118	24.18	60
19:52:40	933	1.97	1118	24.18	60
19:52:50	933	2.02	1118	24.18	60

19:53:00	933	1.95	1118	24.18	60
19:53:10	932	2.00	1119	24.18	61
19:53:20	933	1.97	1118	24.18	61
19:53:30	932	2.01	1119	24.18	61
19:53:40	932	2.00	1119	24.18	61
19:53:50	933	2.01	1119	24.18	61
19:54:00	932	2.04	1120	24.18	61
19:54:10	932	2.07	1120	24.18	61
19:54:20	932	2.04	1120	24.18	61
19:54:30	932	1.85	1120	24.18	61
19:54:40	932	1.85	1121	24.18	61
19:54:50	932	1.86	1121	24.18	61
19:55:00	932	1.78	1121	24.18	61
19:55:10	932	1.84	1121	24.18	61
19:55:20	932	1.88	1122	24.18	61
19:55:30	931	1.90	1122	24.18	60
19:55:40	931	1.85	1122	24.18	61
19:55:50	931	1.93	1123	24.18	61
19:56:00	931	1.85	1123	24.18	60
19:56:10	931	1.92	1123	24.18	61
19:56:20	931	1.97	1124	24.18	61
19:56:30	930	1.87	1124	24.18	60
19:56:40	930	1.92	1124	24.18	60
19:56:50	930	1.96	1124	24.18	60
19:57:00	930	1.93	1125	24.18	60
19:57:10	930	1.87	1125	24.18	60
19:57:20	930	1.92	1126	24.18	60
19:57:30	930	1.87	1126	24.18	61
19:57:40	929	1.89	1126	24.18	61
19:57:50	929	1.95	1126	24.18	61
19:58:00	929	1.90	1127	24.18	61
19:58:10	929	1.98	1127	24.18	61
19:58:20	929	1.97	1127	24.18	61
19:58:30	929	1.95	1127	24.18	61
19:58:40	929	1.99	1128	24.18	61
19:58:50	929	1.97	1128	24.18	61
19:59:00	929	2.02	1128	24.18	61
19:59:10	928	2.02	1128	24.18	61
19:59:20	928	1.99	1129	24.18	61
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19:59:40	928	2.01	1129	24.18	61
19:59:50	929	2.03	1129	24.18	61
20:00:00	928	2.03	1129	24.18	61
20:00:10	928	1.62	1129	24.18	61
20:00:20	928	1.04	1130	24.18	61
20:00:30	928	0.91	1130	24.18	61
20:00:40	928	1.45	1130	24.18	61
20:00:50	927	0.80	1130	24.18	61
20:01:00	927	0.92	1130	24.18	61
20:01:10	927	1.46	1131	24.18	61
20:01:20	927	1.57	1131	24.09	61
20:01:30	927	1.63	1131	23.79	61
20:01:40	927	-0.02	1131	21.98	61
20:01:50	927	1.51	1131	23.05	61
20:02:00	927	1.61	1131	23.21	61
20:02:10	926	1.61	1131	23.26	61
20:02:20	926	1.66	1131	23.03	61
20:02:30	926	1.55	1130	22.80	60
20:02:40	926	1.60	1129	22.97	60
20:02:50	926	1.67	1128	23.36	60
20:03:00	926	1.70	1127	23.43	60
20:03:10	926	1.64	1125	23.46	60

20:03:20	926	1.73	1124	23.67	60
20:03:30	926	1.71	1123	23.62	60
20:03:40	925	1.72	1121	23.83	60
20:03:50	925	1.68	1120	23.90	60
20:04:00	925	1.69	1119	24.08	60
20:04:10	925	1.68	1118	24.17	60
20:04:20	925	1.66	1117	24.18	60
20:04:30	925	1.64	1116	24.18	60
20:04:40	925	1.62	1115	24.18	60
20:04:50	925	1.66	1115	24.18	60
20:05:00	925	1.67	1114	24.18	60
20:05:10	925	1.51	1113	24.18	60
20:05:20	924	1.60	1113	24.18	60
20:05:30	924	1.64	1112	24.18	59
20:05:40	924	1.61	1112	24.18	59
20:05:50	924	1.57	1111	24.18	59
20:06:00	924	1.44	1111	24.18	59
20:06:10	924	1.61	1111	24.18	59
20:06:20	924	1.59	1111	24.18	59
20:06:30	924	1.39	1110	24.18	59
20:06:40	924	1.53	1110	24.18	59
20:06:50	924	1.55	1110	24.18	59
20:07:00	924	1.41	1110	24.18	59
20:07:10	923	1.48	1110	24.18	59
20:07:20	923	1.55	1110	24.18	59
20:07:30	923	1.48	1109	24.18	59
20:07:40	923	1.46	1109	24.18	59
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20:08:00	922	1.60	1109	24.18	59
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20:08:20	922	1.52	1109	24.18	59
20:08:30	922	1.52	1108	24.18	59
20:08:40	922	1.60	1108	24.18	59
20:08:50	922	1.57	1108	24.18	59
20:09:00	922	1.49	1108	23.99	59
20:09:10	922	1.58	1108	23.70	59
20:09:20	922	1.51	1108	23.50	59
20:09:30	922	1.59	1108	23.29	59
20:09:40	922	1.60	1108	22.99	59
20:09:50	921	1.63	1107	23.13	59
20:10:00	921	1.58	1107	23.26	59
20:10:10	921	1.66	1107	23.60	59
20:10:20	921	1.55	1107	23.55	59
20:10:30	921	1.62	1107	23.70	60
20:10:40	921	1.62	1107	23.80	60
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20:11:00	921	1.51	1106	23.92	59
20:11:10	921	1.60	1105	24.14	59
20:11:20	921	1.60	1105	24.10	59
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20:11:50	920	1.52	1105	24.18	59
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20:12:20	920	1.58	1104	24.18	60
20:12:30	920	1.44	1104	24.18	60
20:12:40	920	1.45	1104	24.18	60
20:12:50	919	1.49	1104	24.18	60
20:13:00	919	1.55	1104	24.18	60
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20:13:30	919	1.35	1104	24.18	60

20:13:40	919	1.46	1104	24.18	60
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20:14:00	919	1.45	1104	24.18	60
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20:14:20	918	1.45	1104	24.18	60
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20:14:40	918	1.24	1104	24.18	60
20:14:50	918	1.41	1104	24.18	60
20:15:00	918	1.23	1104	24.18	60
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20:15:30	918	-0.02	1103	24.02	60
20:15:40	918	-0.01	1103	23.95	60
20:15:50	918	-0.02	1103	23.44	60
20:16:00	917	-0.02	1103	23.15	60
20:16:10	917	-0.02	1103	22.92	60
20:16:20	917	-0.02	1103	22.89	60
20:16:30	917	-0.02	1103	22.67	60
20:16:40	917	-0.01	1103	22.43	60
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20:17:00	917	-0.02	1102	22.03	60
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20:17:30	916	-0.02	1102	22.31	60
20:17:40	916	-0.02	1102	22.45	60
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20:18:00	916	-0.02	1101	23.01	60
20:18:10	916	0.31	1101	23.22	60
20:18:20	916	-0.02	1101	23.34	60
20:18:30	916	-0.02	1100	23.51	60
20:18:40	916	-0.02	1100	23.60	60
20:18:50	916	-0.02	1099	23.48	60
20:19:00	916	-0.02	1099	23.66	60
20:19:10	916	-0.02	1098	23.81	60
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20:19:30	915	-0.02	1098	23.92	60
20:19:40	915	-0.02	1098	24.10	60
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20:20:30	915	-0.02	1098	23.96	60
20:20:40	914	-0.02	1098	23.97	60
20:20:50	914	-0.02	1098	24.06	60
20:21:00	914	-0.03	1098	24.08	60
20:21:10	914	-0.02	1097	24.18	60
20:21:20	914	-0.02	1098	24.18	60
20:21:30	914	-0.02	1097	24.03	60
20:21:40	914	-0.02	1098	23.89	60
20:21:50	914	-0.02	1098	23.60	60
20:22:00	914	-0.02	1098	23.61	60
20:22:10	914	-0.02	1098	23.47	60
20:22:20	914	-0.02	1097	23.48	59
20:22:30	914	-0.02	1097	23.40	59
20:22:40	913	-0.02	1098	23.26	59
20:22:50	913	-0.02	1097	23.14	59
20:23:00	913	-0.02	1097	23.10	59
20:23:10	913	-0.02	1097	22.98	59
20:23:20	913	-0.02	1097	22.84	59
20:23:30	913	-0.02	1097	22.62	59
20:23:40	913	-0.02	1097	22.63	59
20:23:50	913	-0.02	1097	22.33	59

20:24:00	913	-0.02	1097	22.28	59
20:24:10	913	-0.02	1096	22.02	59
20:24:20	913	-0.02	1096	21.86	59
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20:25:30	912	-0.02	1095	22.52	59
20:25:40	911	-0.01	1095	22.55	59
20:25:50	911	-0.02	1095	22.71	59
20:26:00	911	-0.02	1094	22.80	59
20:26:10	911	-0.02	1094	22.84	59
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20:26:30	911	-0.02	1093	22.99	59
20:26:40	911	-0.02	1093	23.23	59
20:26:50	911	-0.01	1093	23.17	58
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20:27:20	911	-0.02	1093	23.42	58
20:27:30	911	-0.02	1093	23.59	59
20:27:40	911	-0.02	1093	23.54	59
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20:29:20	910	-0.02	1093	23.63	59
20:29:30	909	-0.02	1093	23.52	58
20:29:40	909	-0.02	1093	23.56	58
20:29:50	909	-0.02	1093	23.41	58
20:30:00	909	-0.02	1093	23.34	59
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20:30:40	909	-0.02	1092	22.80	59
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20:31:30	908	-0.02	1092	21.75	58
20:31:40	908	-0.02	1092	21.84	58
20:31:50	908	-0.02	1092	22.07	59
20:32:00	908	-0.02	1092	22.15	59
20:32:10	908	-0.02	1091	22.26	59
20:32:20	908	-0.02	1091	22.45	59
20:32:30	908	-0.02	1091	22.48	59
20:32:40	908	-0.02	1091	22.49	59
20:32:50	908	-0.02	1091	22.98	59
20:33:00	908	-0.02	1090	23.00	59
20:33:10	908	-0.02	1090	23.08	58
20:33:20	908	-0.02	1090	23.23	59
20:33:30	907	-0.02	1090	23.37	59
20:33:40	907	-0.02	1090	23.40	59
20:33:50	907	-0.02	1090	23.57	59
20:34:00	907	-0.02	1090	23.50	59
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20:34:30	907	-0.02	1090	23.92	59
20:34:40	907	-0.02	1089	23.83	59
20:34:50	907	-0.02	1089	24.01	59
20:35:00	906	-0.02	1090	24.18	59
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20:35:20	906	-0.02	1090	24.16	59
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20:35:50	906	-0.02	1090	24.18	59
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20:36:30	906	-0.02	1090	23.99	59
20:36:40	906	-0.02	1090	24.08	58
20:36:50	906	-0.02	1090	23.99	58
20:37:00	906	-0.02	1090	23.82	58
20:37:10	905	-0.02	1090	23.74	58
20:37:20	905	-0.02	1090	23.57	58
20:37:30	905	-0.02	1090	23.57	58
20:37:40	905	-0.02	1090	23.35	58
20:37:50	905	-0.02	1090	23.21	58
20:38:00	905	-0.02	1091	23.10	58
20:38:10	905	-0.02	1091	22.93	58
20:38:20	904	-0.02	1091	22.73	58
20:38:30	904	-0.02	1090	22.55	58
20:38:40	904	-0.02	1090	22.42	58
20:38:50	904	-0.02	1090	22.26	59
20:39:00	904	-0.02	1090	22.49	59
20:39:10	904	-0.02	1090	22.52	59
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20:39:30	904	-0.02	1089	22.67	59
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20:40:20	903	-0.02	1089	23.23	59
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20:40:50	903	-0.02	1088	23.58	59
20:41:00	903	-0.02	1088	23.57	59
20:41:10	903	-0.02	1088	23.63	59
20:41:20	903	-0.02	1088	23.85	59
20:41:30	903	-0.02	1088	23.71	59
20:41:40	903	-0.02	1088	23.84	59
20:41:50	903	-0.02	1088	23.92	59
20:42:00	903	-0.02	1088	23.92	59
20:42:10	902	-0.02	1088	24.18	59
20:42:20	902	-0.02	1088	24.18	59
20:42:30	902	-0.02	1088	24.10	59
20:42:40	902	-0.02	1088	24.18	59
20:42:50	902	-0.02	1088	24.18	59
20:43:00	902	-0.02	1088	24.18	59
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20:43:20	902	-0.02	1089	24.18	59
20:43:30	902	-0.02	1089	24.18	59
20:43:40	902	-0.02	1089	24.18	59
20:43:50	901	-0.02	1089	24.03	59
20:44:00	901	-0.02	1088	24.06	59
20:44:10	901	-0.02	1088	23.88	59
20:44:20	901	-0.02	1088	23.85	59
20:44:30	901	-0.02	1088	23.73	59

20:44:40	901	-0.02	1088	23.59	59
20:44:50	901	-0.02	1088	23.41	59
20:45:00	901	-0.02	1089	23.56	59
20:45:10	901	-0.02	1089	23.56	59
20:45:20	900	-0.02	1089	23.57	59
20:45:30	900	-0.02	1089	23.57	59
20:45:40	901	-0.02	1088	23.57	59
20:45:50	900	-0.02	1089	20.41	59
20:46:00	900	-0.02	1089	19.50	59
20:46:10	900	0.00	1088	1.29	59
20:46:20	900	0.00	1088	1.08	60
20:46:30	900	0.00	1088	1.04	60
20:46:40	900	0.00	1088	1.04	60
20:46:50	900	0.00	1088	1.04	60
20:47:00	900	0.00	1088	1.04	59
20:47:10	900	0.00	1088	1.04	59

Appendix G

CBM Production Records

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/19/2004				1.3	10.92		14.8386
10/20/2004				1.2	354.31	32.0549	14.8386
10/21/2004				1.2	366.45	30.8889	14.8386
10/22/2004					373.05	0	0
10/23/2004							
10/24/2004							
10/25/2004					393.91	0	0
10/26/2004					402.77	0	0
10/27/2004					411.43	0	0
10/28/2004					419.91	0	0
10/29/2004					428.23	0	0
10/30/2004					436.39	0	0
10/31/2004					459.99	0	0
11/1/2004					475.08	0	0
11/2/2004					482.44	0	0
11/3/2004					496.85	0	0
11/4/2004					496.85	0	0
11/5/2004					503.90	0	0
11/6/2004					462.64	0	0
11/7/2004							
11/8/2004					510.15	0	0
11/9/2004					556.05		
11/10/2004					549.83	0	0
11/11/2004					574.28	0	0
11/12/2004					0.00	0	0
11/13/2004					517.70	0	0
11/14/2004					510.85	0	0
11/15/2004					539.36	0	0
11/16/2004					554.68	0	0
11/17/2004					0.00	0	0
11/18/2004							
11/19/2004					383.60	0	
11/20/2004					432.76	0	0
11/21/2004					462.64	0	
11/22/2004					476.88		
11/23/2004							
11/24/2004					435.57	0	0
11/25/2004					541.10		
11/26/2004					558.84	0	0
11/27/2004							
11/28/2004					570.37		
11/29/2004					0.00		
11/30/2004							
12/1/2004							
12/2/2004							
12/3/2004							
12/4/2004							
12/5/2004							
12/6/2004							
12/7/2004					880.82		
12/8/2004							
12/9/2004							
12/10/2004					247.68		
12/11/2004					233.52		
12/12/2004					40.25		
12/13/2004					212.77		
12/14/2004					221.46		
12/15/2004					221.46		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/16/2004					213.33		
12/17/2004					213.33		
12/18/2004					189.77		
12/19/2004					232.42		
12/20/2004					241.65		
12/21/2004					255.08		
12/22/2004					283.31		
12/23/2004					294.88		
12/24/2004					297.92		
12/25/2004					327.14		
12/26/2004					327.14		
12/27/2004					337.20		
12/28/2004					355.64		
12/29/2004					359.67		
12/30/2004					321.80		
12/31/2004					323.49		
1/1/2005					0.00		
1/2/2005							
1/3/2005					0.00		
1/4/2005					92.58		
1/5/2005					0.00		
1/6/2005					639.08		
1/7/2005					207.44		
1/8/2005					207.44		
1/9/2005					207.44		
1/10/2005					241.04		
1/11/2005							
1/12/2005							
1/13/2005							
1/14/2005							
1/15/2005							
1/16/2005							
1/17/2005							
1/18/2005					0.00		
1/19/2005					690.64		
1/20/2005					449.86		
1/21/2005					182.87		
1/22/2005				55.1	200.33	75.2701	36.4086
1/23/2005				32.2	231.32	58.8812	18.2625
1/24/2005				40.0	258.62	52.825	22.3669
1/25/2005				19.1	258.62	47.9654	30.9656
1/26/2005				19.3	200.33	44.2795	28.8756
1/27/2005				19.1	245.35	42.1182	22.3669
1/28/2005				13.3	258.62	39.8837	15.335
1/29/2005				13.3	283.31	38.76	6.2605
1/30/2005				19.6	327.14	37.6027	17.7073
1/31/2005				20.9	346.98	35.8907	19.7973
2/1/2005				19.1	359.67	36.4086	18.7814
2/2/2005				38.3	379.56	32.9232	12.3199
2/3/2005				17.4	431.73	30.9656	15.335
2/4/2005				17.4	450.87	30.2849	19.4796
2/5/2005				22.6	516.75	78.0782	60.4791
2/6/2005				17.4	498.51	60.2019	33.1574
2/7/2005				15.6	438.62	40.8912	19.3703
2/8/2005						40.8912	19.3703
2/9/2005				17.4	490.70	39.9962	0
2/10/2005				21.5	394.51	39.9962	32.0393
2/11/2005				19.6	490.70	39.9962	42.3841
2/12/2005				11.4	370.23	145.412	35.1741
2/13/2005				17.6	497.47	1.1027	31.1144

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
2/14/2005				19.0	504.15	43.1603	31.022
2/15/2005				14.5	504.15	39.0455	19.3703
2/16/2005				15.1	517.25	38.4106	19.3703
2/17/2005				16.5	517.25	36.5319	20.7757
2/18/2005				10.7	503.23	35.8211	15.7049
2/19/2005				9.8	496.88	35.1173	15.3837
2/20/2005					518.81	31.8753	9.9553
2/21/2005				8.9	528.33	31.8753	9.9553
2/22/2005				8.9	528.33	31.8753	10.0799
2/23/2005				23.3	517.25		
2/24/2005					592.56	14.9392	0
2/25/2005				8.7	584.71	31.3103	22.3669
2/26/2005				17.9	716.67	37.1081	18.8013
2/27/2005				8.4	608.19	34.4969	14.3771
2/28/2005					465.84	30.4985	18.2625
3/1/2005				6.7	465.84	32.0471	14.4378
3/2/2005				9.5	470.37		
3/3/2005				9.1	537.68	30.9736	14.2551
3/4/2005					509.11	42.806	23.4458
3/5/2005				12.9	706.92	26.9435	17.243
3/6/2005				6.1	571.04	32.9989	14.9392
3/7/2005				8.5	576.75	26.5703	14.9392
3/8/2005				8.2	604.96	26.3817	14.2551
3/9/2005				8.4	590.72	26.3817	14.2551
3/10/2005				8.9	583.48	29.4957	37.3094
3/11/2005				8.4	553.53	26.1918	14.6011
3/12/2005				6.0	549.34	26.1918	14.6011
3/13/2005				7.7	620.12	26.1918	16.5787
3/14/2005				7.7	634.06	26.1918	16.5787
3/15/2005				7.6	571.66	34.3954	19.3252
3/16/2005				7.6	581.72	31.844	15.2779
3/17/2005				7.8	578.27	32.0783	15.2779
3/18/2005				9.5	578.47	31.844	13.665
3/19/2005				5.3	571.66	31.844	12.1053
3/20/2005				7.5	571.66	31.6079	12.1053
3/21/2005				7.7	564.76	31.6079	12.1053
3/22/2005				6.0	461.28	31.6079	12.1053
3/23/2005				6.1	498.51	31.6079	12.1053
3/24/2005				8.6	480.38	31.6079	12.1053
3/25/2005				7.4	480.38	32.0783	12.1053
3/26/2005				6.1	475.42	32.0783	12.1053
3/27/2005				6.1	482.84	32.0783	12.1053
3/28/2005				6.1	480.38	32.0783	12.1053
3/29/2005				5.3	80.66	29.2833	12.1053
3/30/2005				6.2	508.65	29.2833	12.1053
3/31/2005				6.2	499.48	32.0783	12.1053
4/1/2005				6.1	485.29	28.8539	12.1053
4/2/2005				5.9	489.53	28.8539	12.1053
4/3/2005				6.0	471.05	27.3733	12.1053
4/4/2005				6.1	461.53	28.8539	12.1053
4/5/2005				8.6	461.53	28.8539	12.1053
4/6/2005				6.1	461.53	28.8539	12.1053
4/7/2005				6.1	450.87	29.0694	17.1195
4/8/2005				8.4	510.69	28.8539	17.1195
4/9/2005				8.3	595.39	28.1976	12.0018
4/10/2005				7.0	566.61	28.4181	16.9731
4/11/2005				8.3	584.05	28.4181	16.9731
4/12/2005				7.0	554.68	21.8418	16.9731
4/13/2005					675.27	21.8418	11.8973
4/14/2005				8.1	554.68	25.4179	11.8973

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
4/15/2005				7.0	548.62	25.2207	12.0018
4/16/2005				6.8	535.05	28.1976	12.0018
4/17/2005							
4/18/2005					423.35	28.1976	12.0018
4/19/2005				6.6	531.15	29.5739	12.0018
4/20/2005				6.8	517.25	28.1976	16.8253
4/21/2005				7.0	543.55	25.2207	16.8253
4/22/2005				5.7	524.25	25.0219	11.8973
4/23/2005				5.7	549.83	25.0219	11.8973
4/24/2005				5.7	524.25	25.0219	11.8973
4/25/2005				5.6	504.20	25.0219	11.8973
4/26/2005				5.6	510.97	25.0219	11.8973
4/27/2005				5.7	510.97	25.0219	12.0018
4/28/2005				5.6	510.97	25.0219	11.8973
4/29/2005				5.6	497.34	25.0219	11.8973
4/30/2005				5.6	490.70	25.0219	16.8253
5/1/2005				5.4	489.70	25.0219	16.8253
5/2/2005							
5/3/2005				5.4	497.34	25.0219	16.8253
5/4/2005				5.4	490.39	25.0219	12.0018
5/5/2005				5.6	497.34	25.0219	11.8973
5/6/2005				5.4	489.70	47.3368	16.8253
5/7/2005				9.9	503.90	25.0219	16.8253
5/8/2005				6.5	459.99	0	0
5/9/2005				5.3	476.17	0	0
5/10/2005					0.00	16.0741	0
5/11/2005					0.00	0	0
5/12/2005				5.4	476.17	29.9284	0
5/13/2005							
5/14/2005				0.0	180.52	47.0564	31.0742
5/15/2005				8.1	530.02	29.5929	15.3756
5/16/2005				5.4	483.33		0
5/17/2005							
5/18/2005				5.4	476.17	25.6282	0
5/19/2005				5.4	468.90	29.5929	15.3756
5/20/2005				5.4	468.90	29.5929	15.3756
5/21/2005				5.4	468.90	29.2535	15.3756
5/22/2005				5.3	459.99	29.5929	15.3756
5/23/2005							
5/24/2005							
5/25/2005				5.4	459.99	25.6282	15.3756
5/26/2005				5.4	467.60	25.6282	15.3756
5/27/2005				5.4	459.99	25.6282	15.3756
5/28/2005				5.4	467.60	25.6282	15.3756
5/29/2005				5.3	459.99	25.6282	15.3756
5/30/2005				5.3	444.39	25.6282	15.3756
5/31/2005				5.3	452.26	25.6282	15.3756
6/1/2005				5.3	452.26	25.6282	0
6/2/2005				5.3	452.26	25.6282	15.3756
6/3/2005							
6/4/2005				5.3	452.26	25.6282	15.3756
6/5/2005				5.3	452.26	25.6282	15.3756
6/6/2005							
6/7/2005							
6/8/2005				5.6	444.39	13.2946	15.3756
6/9/2005				5.6	444.39	25.4816	0
6/10/2005				5.6	444.39	25.4816	15.2942
6/11/2005				5.6	444.39	25.4816	15.2942
6/12/2005				5.6	0.00	25.4816	15.2942
6/13/2005				4.0	468.90	25.4816	15.3756

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
6/14/2005							
6/15/2005				4.0	537.68	25.6282	15.3756
6/16/2005				4.0	461.51	25.6282	15.4566
6/17/2005							
6/18/2005				4.0	462.64	25.4816	15.3756
6/19/2005				4.0	462.64	25.6282	15.3756
6/20/2005				4.0	456.29	25.4816	15.3756
6/21/2005				4.0	456.29	25.4816	15.2942
6/22/2005							
6/23/2005				3.9	463.37	25.4816	15.2942
6/24/2005							
6/25/2005							
6/26/2005				3.9	449.86	25.4816	15.2942
6/27/2005				3.9	449.86	25.4816	15.2942
6/28/2005							
6/29/2005				3.8	424.96	25.4816	15.2942
6/30/2005				3.8	432.76	25.4816	15.2942
7/1/2005				3.8	424.96	25.4816	15.2942
7/2/2005						25.4816	15.2942
7/3/2005				3.8	424.96	25.4816	15.2942
7/4/2005				3.8	424.96	25.4816	15.2942
7/5/2005					0.00	0	0
7/6/2005				3.8	424.96	25.4816	15.2942
7/7/2005				3.8	424.96	25.4816	15.2942
7/8/2005				3.8	424.96	25.4816	15.2942
7/9/2005				3.8	424.96	25.4816	15.2942
7/10/2005							
7/11/2005				3.8	424.96	25.4816	15.2942
7/12/2005				3.8	424.96	25.4816	15.2942
7/13/2005				3.8	424.96	25.4816	15.2942
7/14/2005				3.8	424.96	25.4816	15.2942
7/15/2005				3.8	424.96	25.4816	15.2942
7/16/2005				3.8	424.96	25.4816	15.2942
7/17/2005				3.8	424.96	25.4816	15.2942
7/18/2005				3.8	424.96	25.4816	15.2942
7/19/2005				3.8	424.96	25.4816	15.2942
7/20/2005				3.8	424.96	25.4816	15.2942
7/21/2005				3.8	424.96	25.4816	15.2942
7/22/2005				3.8	424.96	25.4816	15.2942
7/23/2005				3.8	424.96	25.4816	15.2942
7/24/2005				5.5	424.96	25.4816	15.2942
7/25/2005				3.8	424.96	25.4816	15.2942
7/26/2005				7.9	438.62	20.6853	15.2942
7/27/2005				3.9	438.62	25.4816	15.2942
7/28/2005				3.9	438.62	25.4816	15.2942
7/29/2005				3.9	438.62	25.4816	15.2942
7/30/2005				3.9	438.62	25.4816	15.2942
7/31/2005				3.9	438.62	25.4816	15.2942
8/1/2005				3.7	438.62	25.4816	15.2942
8/2/2005				3.7	411.30	20.6853	15.2942
8/3/2005				3.7	424.96	20.6853	15.2942
8/4/2005							
8/5/2005				3.7	411.30	20.6853	15.2942
8/6/2005				3.7	411.30	20.6853	15.2942
8/7/2005				3.7	424.96	20.6853	15.2942
8/8/2005				3.7	411.30	20.6853	15.2942
8/9/2005				14.0	405.50	20.6853	15.2942
8/10/2005				14.0	411.30	20.6853	15.2942
8/11/2005				14.0	411.30	20.6853	15.2942
8/12/2005				14.0	411.30	21.6293	15.2942

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
8/13/2005				14.0	411.30	20.6853	15.2942
8/14/2005				14.0	405.50	20.6853	15.2942
8/15/2005				9.7	405.50	20.6853	15.2942
8/16/2005				6.6	405.50	20.6853	15.2942
8/17/2005				6.6	405.50	20.6853	15.2942
8/18/2005							
8/19/2005				7.0	397.62	20.8057	15.2942
8/20/2005				7.0	405.50	20.8057	15.2942
8/21/2005							
8/22/2005					405.50	20.6853	15.2942
8/23/2005				7.0	405.50	20.8057	15.2942
8/24/2005				6.6	405.50	20.6853	15.2942
8/25/2005				6.6	405.50	20.6853	15.2942
8/26/2005				6.6	405.50	20.6853	15.2942
8/27/2005					405.50	20.6853	15.2942
8/28/2005				6.6	405.50	0	15.2942
8/29/2005				6.6	405.50	20.6853	15.2942
8/30/2005				6.6	405.50	0	15.2942
8/31/2005				6.6	405.50	20.6853	15.2942
9/1/2005				6.6	405.50	62.6326	15.2942
9/2/2005					0.00	0.00	0.00
9/3/2005					0.00	0.00	0.00
9/4/2005					0.00	0.00	0.00
9/5/2005				6.6	405.50	14.6267	15.2942
9/6/2005				6.6	405.50	14.6267	15.2942
9/7/2005				6.6	405.50	14.6267	15.2942
9/8/2005				6.5	391.85	20.6853	15.2942
9/9/2005				6.6	405.50	20.6853	15.2942
9/10/2005				6.6	405.50	20.6853	15.2942
9/11/2005				6.6	405.50	20.6853	15.2942
9/12/2005				6.6	405.50	20.6853	15.2942
9/13/2005				6.5	385.99	20.3201	15.2942
9/14/2005				6.5	385.99	20.3201	15.2124
9/15/2005				6.5	385.99	20.3201	15.2124
9/16/2005				6.6	391.85	20.6853	15.2124
9/17/2005					385.99	20.3201	15.2942
9/18/2005					385.99	20.3201	15.2124
9/19/2005					385.99	20.3201	15.2124
9/20/2005					0.00	0.00	0.00
9/21/2005					0.00	0.00	0.00
9/22/2005					0.00	0.00	0.00
9/23/2005					0.00	0.00	0.00
9/24/2005					0.00	0.00	0.00
9/25/2005					0.00	0.00	0.00
9/26/2005					0.00	0.00	0.00
9/27/2005					0.00	0.00	0.00
9/28/2005				6.3	385.99	20.3201	0
9/29/2005					0.00	0.00	0.00
9/30/2005					0.00	0.00	0.00
10/1/2005					401.13	20.4425	15.2942
10/2/2005					0.00	0.00	0.00
10/3/2005				6.3	385.99	0	10.7568
10/4/2005					0.00	0.00	0.00
10/5/2005				6.3	378.19	20.3201	15.2124
10/6/2005					0.00	0	0
10/7/2005					385.99	53.2439	55.291
10/8/2005					0.00	0.00	0.00
10/9/2005					0.00	0.00	0.00
10/10/2005					0.00	0	0
10/11/2005					0.00	0.00	0.00

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/12/2005					0.00	0	0
10/13/2005					0.00	0	0
10/14/2005				6.3	0.00	20.3201	15.2124
10/15/2005					0.00	0	0
10/16/2005					0.00	0.00	0.00
10/17/2005					0.00	0	0
10/18/2005					0.00	0	0
10/19/2005					0.00	0.00	0.00
10/20/2005					0.00	0.00	0.00
10/21/2005					0.00	0.00	0.00
10/22/2005					0.00	0	0
10/23/2005					0.00	0.00	0.00
10/24/2005					0.00	0	0
10/25/2005					0.00	0.00	0.00
10/26/2005					0.00	0.00	0.00
10/27/2005				6.5	393.64	14.3684	15.2124
10/28/2005				6.5	393.64	0	15.2124
10/29/2005					0.00	0.00	0.00
10/30/2005				15.2	378.19	21.3563	15.2124
10/31/2005					0.00	0.00	0.00
11/1/2005					378.19		15.2124
11/2/2005				6.3	378.19	14.3684	15.2942
11/3/2005				6.3	378.19	20.3201	15.2942
11/4/2005				6.3	378.19	20.3201	0
11/5/2005				6.3	378.19	20.3201	0
11/6/2005				6.3	378.19	20.3201	15.2942
11/7/2005				6.3	0.00	0	0
11/8/2005					0.00	0.00	0.00
11/9/2005					0.00	0	0
11/10/2005					0.00	0.00	0.00
11/11/2005					0.00	0.00	0.00
11/12/2005					0.00	0.00	0.00
11/13/2005					0.00	0.00	0.00
11/14/2005					0.00	0.00	0.00
11/15/2005					0.00	0.00	0.00
11/16/2005					0.00	0.00	0.00
11/17/2005					0.00	0.00	0.00
11/18/2005					0.00	0.00	0.00
11/19/2005					0.00	0.00	0.00
11/20/2005					0.00	0.00	0.00
11/21/2005					0.00	0.00	0.00
11/22/2005					0.00	0.00	0.00
11/23/2005					0.00	0.00	0.00
11/24/2005					0.00	0.00	0.00
11/25/2005					0.00	0.00	0.00
11/26/2005					0.00	0.00	0.00
11/27/2005					0.00	0.00	0.00
11/28/2005					0.00	0.00	0.00
11/29/2005					0.00	0.00	0.00
11/30/2005					0.00	0.00	0.00
12/1/2005					353.77	31.8204	18.5204
12/2/2005					0.00	0.00	0.00
12/3/2005					0.00	0	0
12/4/2005					345.24	26.3391	17.1195
12/5/2005					345.24	31.26	22.21
12/6/2005					0.00	0.00	0.00
12/7/2005					0.00	0.00	0.00
12/8/2005					0.00	0.00	0.00
12/9/2005					0.00	0.00	0.00
12/10/2005					375.41	66.47	63.06

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/11/2005					0.00	0.00	0.00
12/12/2005					0.00	0.00	0.00
12/13/2005					0.00	0.00	0.00
12/14/2005					368.78	64.5677	36.0573
12/15/2005					0.00	0.00	0.00
12/16/2005					361.61	25.2849	17.6083
12/17/2005					0.00	0.00	0.00
12/18/2005					0.00	0.00	0.00
12/19/2005					320.27	21.1183	25.9188
12/20/2005					0.00	0.00	0.00
12/21/2005					368.78	49.8039	64.5677
12/22/2005					368.78	64.5677	49.8039
12/23/2005					0.00	0.00	0.00
12/24/2005					0.00	0.00	0.00
12/25/2005					0.00	0.00	0.00
12/26/2005					0.00	0.00	0.00
12/27/2005					375.90	33.72	16.86
12/28/2005					0.00	0.00	0.00
12/29/2005					0.00	0.00	0.00
12/30/2005					0.00	0.00	0.00
12/31/2005					0.00	0.00	0.00
1/1/2006					0.00	0.00	0.00
1/2/2006					0.00	0.00	0.00
1/3/2006					0.00	0.00	0.00
1/4/2006					0.00	0.00	0.00
1/5/2006					0.00	0.00	0.00
1/6/2006					350.84	17.0171	22.4254
1/7/2006				10.8	348.98	24.5993	66.4728
1/8/2006					0.00	23.5521	19.9168
1/9/2006					0.00	0.00	0.00
1/10/2006					0.00	0.00	0.00
1/11/2006					345.08	23.7815	18.0286
1/12/2006					345.08	24.293	18.2351
1/13/2006					0.00	0.00	0.00
1/14/2006					0.00	0.00	0.00
1/15/2006					0.00	0.00	0.00
1/16/2006				9.1	345.08	23.26	16.46
1/17/2006					0.00	0.00	0.00
1/18/2006					0.00	0.00	0.00
1/19/2006					347.98	23.2588	17.6543
1/20/2006					342.17	22.4338	0
1/21/2006					0.00	0.00	0.00
1/22/2006					0.00	0.00	0.00
1/23/2006					347.96	22.72	18.24
1/24/2006					345.08	21.8931	16.4578
1/25/2006					345.08	21.8931	26.5374
1/26/2006					350.84	24.7612	20.3569
1/27/2006					358.73	23.8418	21.2919
1/28/2006					0.00	0.00	0.00
1/29/2006					0.00	0.00	0.00
1/30/2006					345.08	23.43	20.57.64
1/31/2006					345.08	21.8931	16.4578
2/1/2006					345.08	21.8931	16.4578
2/2/2006					345.08	21.6062	16.4578
2/3/2006					334.52	21.6062	16.2671
2/4/2006					334.52	21.6062	0
2/5/2006					327.53	21.0591	0
2/6/2006					334.52	21.8931	17.06
2/7/2006					318.10	0	0
2/8/2006					286.73	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
2/9/2006					286.73	0	0
2/10/2006					308.79	0	0
2/11/2006					0.00	0	0
2/12/2006					298.99	0	0
2/13/2006					303.53	0	0
2/14/2006					339.92	24.9019	18.4394
2/15/2006					322.48	22.724	29.4406
2/16/2006				54.9	0.00	0.00	0.00
2/17/2006				4.1	351.03	28.239	14.99
2/18/2006					308.79	16.0143	13.6571
2/19/2006					327.53	16.0143	13.4252
2/20/2006					327.53	18.27	14.49
2/21/2006				19.1	326.05	21.59	20.47
2/22/2006				14.1	326.05	32.6338	19.4446
2/23/2006				11.3	322.48	31.71	17.61
2/24/2006				10.6	319.92	28.6651	18.4917
2/25/2006				10.7	319.92	0	18.1554
2/26/2006				9.6	0.00	0	0
2/27/2006				7.7	328.69	29.16	18.49
2/28/2006				7.5	328.69	24.9	21.76
3/1/2006				10.6	334.52	25.4963	36.5994
3/2/2006				94.3	463.78	24.6905	16.7053
3/3/2006				16.8	345.08	24.6905	16.4758
3/4/2006				19.2	329.02	18.8411	29.2085
3/5/2006				19.2	396.93	26.0772	18.3126
3/6/2006				19.2	396.93	24.4109	31.7455
3/7/2006				11.9	379.54	23.2749	16.4758
3/8/2006				12.7	383.22	28.1666	19.4234
3/9/2006				13.7	391.24	26.0772	15.8765
3/10/2006				10.6	396.50	25.5281	16.6417
3/11/2006				10.6	392.73	24.967	16.4758
3/12/2006				10.6	387.66	24.6905	16.1789
3/13/2006				10.8	396.50	24.967	16.1947
3/14/2006				10.6	387.66	23.5415	16.4758
3/15/2006				10.6	387.66	28.7803	16.1789
3/16/2006				10.6	387.66	28.7803	15.8765
3/17/2006				10.6	387.66	27.142	15.8765
3/18/2006				11.9	382.53	26.6149	16.4758
3/19/2006				10.2	378.10	27.142	16.4758
3/20/2006				10.3	382.53	26.0772	30.803
3/21/2006				17.8	382.53	25.4963	32.6837
3/22/2006				17.6	372.95	24.4109	17.9664
3/23/2006				10.3	373.61	25.4963	29.8649
3/24/2006				10.4	378.10	24.4109	16.4758
3/25/2006				10.4	382.53	24.4109	15.5682
3/26/2006				10.3	378.10	23.8496	15.4098
3/27/2006				10.4	378.10	24.4109	15.5682
3/28/2006				10.3	368.53	23.5733	15.8765
3/29/2006				10.3	373.61	23.2749	15.8765
3/30/2006				11.5	368.53	27.2201	16.1789
3/31/2006				10.3	368.53	23.0051	16.1789
4/1/2006				10.2	388.46	23.8418	16.4758
4/2/2006				10.2	378.96	23.2936	16.1388
4/3/2006				10.2	383.58	23.8418	16.1388
4/4/2006				10.6	457.41	24.0762	16.1825
4/5/2006				10.4	431.47	27.142	17.6834
4/6/2006				10.7	436.24	26.65	18.31
4/7/2006				10.7	459.97	27	17.97
4/8/2006					0.00	0	0
4/9/2006					0.00	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
4/10/2006				25.2	459.97	28.85	19.96
4/11/2006				9.9	378.92	23.55	15.79
4/12/2006				9.9	374.20	23.84	15.22
4/13/2006				13.6	374.20	23.84	16.13
4/14/2006	6.82			10.2	383.58	22.7322	16.4758
4/15/2006				10.2	378.92	23.8418	16.46
4/16/2006				10.6	397.74	23.8051	16.1947
4/17/2006				10.3	378.63	22.7322	15.2536
4/18/2006	26.52	0.00	1.97	10.4	363.37	21.5657	15.2536
4/19/2006	18.14	0.00		10.4	363.37	23.2749	15.2536
4/20/2006	16.15	0.00	3.14	10.4	363.37	22.0805	15.2536
4/21/2006	8.18	0.00	3.91	10.4	363.37	22.0805	15.2536
4/22/2006					0.00	0	0
4/23/2006					0.00	0	0
4/24/2006	6.68	2.08	3.91	10.4	374.20	25.92	15.57
4/25/2006	6.83	0.00	3.98	10.2	374.03	28.1666	13.964
4/26/2006	7.20	0.00		10.0	364.48	23.2588	15.7947
4/27/2006	7.59	0.00	4.62	10.0	364.48	0.00	0
4/28/2006	6.79	0.00	4.31	10.2	369.37	24.293	16.349
4/29/2006	6.79	0.00	14.03	10.0	369.37	23.2749	15.2536
4/30/2006	6.79	0.00	14.03	10.2	369.37	23.8418	15.2536
5/1/2006	6.79	0.00	3.51	9.9	364.48	24.293	16.349
5/2/2006	7.20	0.00	3.93	9.9	369.07	22.6608	15.7947
5/3/2006	6.60	0.00	15.68	9.9	359.52	21.6062	15.7947
5/4/2006	10.94	0.00	4.52	11.1	440.96	26.0772	18.3126
5/5/2006	6.60	0.00	3.83	10.2	364.48	24.293	16.8852
5/6/2006	10.42	0.00	4.51	10.0	358.79	21.55990909	16.85543688
5/7/2006	10.42	0.00	4.51	9.9	358.79	20.45352566	15.76681747
5/8/2006	6.16	0.00	3.72	9.9	358.79	21.55990909	15.41436308
5/9/2006	6.28	0.00	3.73	10.3	359.92	71.2893	24.2301
5/10/2006	6.40	0.00	4.41	10.2	363.37	35.7862	17.6134
5/11/2006	6.40	0.00	3.93	10.2	368.53	44.2626	17.9095
5/12/2006	5.99	0.00	3.42	10.2	368.53	38.3325	17.2121
5/13/2006	6.41	2.08	3.91	10.1	348.68	36.09599823	16.6681068
5/14/2006	6.41	2.08	3.91	10.1	348.68	33.7647146	16.6681068
5/15/2006	13.30	0.00	4.40	11.5	473.12	35.0176	16.4424
5/16/2006	6.40	0.00	3.83	9.9	383.58	32.756	17.5106
5/17/2006	9.06	0.00	3.83	10.0	364.05	30.3261	16.6982
5/18/2006	6.40	0.00	3.93	10.0	364.05	30.3261	16.5091
5/19/2006	5.99	0.00	3.42	9.9	359.52	29.0351	15.4429
5/20/2006	5.99	0.00	3.52	9.9	354.49	29.0351	15.4429
5/21/2006	5.55	0.00	3.42	9.9	354.49	29.0351	15.4429
5/22/2006	6.50	0.00	3.42	9.7	354.49	27.6838	16.5091
5/23/2006	6.50	4.93	3.42	10.2	347.45	27.6838	16.5091
5/24/2006	6.31	0.00	3.42	10.2	347.45	27.6838	17.4634
5/25/2006	6.50	0.00	3.42	10.2	347.45	27.6838	17.0172
5/26/2006	6.40	0.00	3.93	10.2	347.45	54.07040575	20.39086334
5/27/2006	6.57	0.00	3.51	10.4	357.45	27.64774277	16.47864728
5/28/2006	6.57	0.00	3.51	10.1	357.45	26.22895179	16.98580083
5/29/2006	6.57	0.00	3.51	10.1	357.45	27.19252986	16.47864728
5/30/2006	6.94	0.00	3.93	10.2	352.84	29.0351	16.5091
5/31/2006	6.40	0.00	3.42	10.2	352.84	30.3261	15.4429
6/1/2006	6.58	0.00	3.42	10.2	348.55	28.7803	12.5581
6/2/2006	6.21	0.00	3.47	10.2	348.55	25.3933	15.6198
6/3/2006	6.57	0.00	3.51	10.1	353.09	25.3578925	16.98580083
6/4/2006	6.57	0.00	3.51	10.0	363.33	25.3578925	16.98580083
6/5/2006	14.88	0.00	3.60	10.4	358.15	25.3933	17.4049
6/6/2006	6.94	7.12	3.52	10.2	358.15	25.3933	17.1023
6/7/2006	6.94	0.00	3.52	10.2	352.84	22.0012	17.1023
6/8/2006	7.60	0.00		10.2	449.98	25.3933	17.9095

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
6/9/2006	6.94	0.00	3.42	10.2	363.37	25.3933	17.9095
6/10/2006	6.94	0.00	3.42	10.2	358.96	25.3933	17.4049
6/11/2006	6.94	0.00	3.60	10.2	363.37	25.3933	17.4049
6/12/2006	6.94	0.00	3.42	10.2	363.37	25.3933	17.4049
6/13/2006	6.58	0.00	3.52	10.2	353.79	23.0918	17.1023
6/14/2006	6.21	0.00	3.52	10.2	348.55	23.0918	17.1023
6/15/2006	6.21	0.00	3.52	10.2	353.79	23.0918	17.1023
6/16/2006	6.58	0.00	3.52	10.2	344.21	25.511	17.1023
6/17/2006	6.41	0.00	3.82	10.1	343.51	24.28270331	16.09303826
6/18/2006	6.28	0.00	3.82	10.1	343.51	24.28270331	16.09303826
6/19/2006	6.36	0.00	3.52	10.2	348.55	24.0659	16.1242
6/20/2006	6.36	0.00	3.52	10.2	349.39	22.6552	16.1242
6/21/2006	6.36	0.00	3.52	10.0	344.21	22.2101	16.1242
6/22/2006	6.10	0.00	3.60	10.2	352.84	23.0756	16.3178
6/23/2006	6.71	0.00	4.23	10.2	344.21	23.3177	16.5091
6/24/2006	6.41	0.00	3.82	10.1	348.68	22.62326077	16.47864728
6/25/2006	6.41	0.00	3.82	10.1	348.68	22.17410526	16.47864728
6/26/2006	6.36	0.00	4.03	10.2	348.55	22.2101	15.4429
6/27/2006	6.36	0.00	4.03	10.2	348.55	22.2101	15.7162
6/28/2006	6.36	0.00	4.03	10.0	345.90	22.2101	16.8852
6/29/2006	6.36	0.00	4.03	10.2	344.21	22.2101	16.8852
6/30/2006	6.36	0.00	4.03	10.2	353.79	22.2101	17.1023
7/1/2006	5.61	0.00	3.83	10.2	344.21	22.2101	16.6205
7/2/2006	5.61	0.00	3.93	10.0	348.55	22.2101	16.6205
7/3/2006	5.61	0.00	3.93	10.2	348.55	22.2101	16.1242
7/4/2006	5.61	0.00	3.93	10.2	348.55	22.2101	16.1242
7/5/2006	5.61	0.00	3.93	10.2	341.59	20.7757	15.0828
7/6/2006	5.61	0.00	4.03	9.9	344.21	23.5574	16.6205
7/7/2006	5.61	0.00	3.83	9.9	344.21	22.2101	17.1023
7/8/2006	6.70	0.00	4.19	10.1	343.51	22.17410526	16.58832414
7/9/2006	6.36	0.00	4.19	10.1	343.51	22.17410526	17.06924472
7/10/2006	6.71	0.00	3.83	10.2	343.23	22.2101	17.1023
7/11/2006	6.71	0.00	6.70	10.2	343.23	23.8051	16.1242
7/12/2006	6.71	0.00	6.70	10.2	343.00	21.6062	16.1242
7/13/2006	7.16	0.00	4.74	12.4	421.71	22.6552	16.7264
7/14/2006	13.88	0.00	3.42	10.4	349.39	21.6062	16.8852
7/15/2006	5.41	0.00	3.42	10.2	338.96	21.6062	16.1242
7/16/2006	5.41	0.00	3.42	10.2	344.21	21.6062	17.9095
7/17/2006	6.70	0.00	3.82	10.1	348.68	23.93269763	16.47864728
7/18/2006	5.41	0.00	3.83	10.0	344.21	21.6062	15.2304
7/19/2006	5.41	0.00	3.83	10.0	344.21	22.6608	16.349
7/20/2006	5.41	0.00	3.83	9.9	344.21	23.6684	15.2201
7/21/2006	6.71	0.00	4.19	10.2	344.21	22.6608	17.1023
7/22/2006	7.16	0.00	4.74	10.6	385.92	23.8051	17.9095
7/23/2006	5.41	0.00	3.93	10.2	360.77	22.7322	16.8852
7/24/2006	6.36	0.00	4.19	9.9	338.96	22.6608	16.7006
7/25/2006	5.41	0.00	3.83	9.9	349.39	22.6608	16.8945
7/26/2006	6.36	0.00	3.83	9.9	344.21	22.6608	17.1023
7/27/2006	6.36	0.00	3.83	9.9	344.21	22.6608	17.1023
7/28/2006	6.71	0.00	3.83	9.9	349.39	22.6608	17.571
7/29/2006	5.99	0.00	3.82	10.1	338.27	22.61222342	17.06924472
7/30/2006	6.36	0.00	3.82	10.1	338.27	23.61769709	16.09303826
7/31/2006	6.71	0.00	3.83	10.2	341.98	21.6062	16.6205
8/1/2006	16.16	0.00	4.31	10.3	366.69	23.0268	18.9136
8/2/2006	7.21	0.00	3.52	10.2	344.21	22.6993	12.7473
8/3/2006	7.10	0.00	4.41	10.4	358.15	22.6608	17.0172
8/4/2006	6.54	0.00	4.19	10.2	344.21	22.6608	17.1023
8/5/2006	6.53	0.00	4.19	10.1	337.15	22.61222342	16.86102462
8/6/2006	6.53	0.00	4.19	12.4	327.52	22.61222342	21.76748919
8/7/2006	13.42	0.00	4.19	13.6	405.14	20.8177	18.8012

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
8/8/2006	7.10	0.00	4.08	10.2	333.62	21.6062	17.571
8/9/2006	6.82	0.00	4.08	10.2	358.15	23.6684	17.5106
8/10/2006	3.67	0.00	1.80	10.6	105.78	12.7775	5.2191
8/11/2006	16.02	0.00	3.42	10.4	348.55	12.7775	17.9904
8/12/2006	15.88	0.00	3.42	10.9	355.03	12.7775	17.9904
8/13/2006	6.82	0.00	4.19	10.2	347.45	23.6684	17.5106
8/14/2006	8.90	0.00	4.19	10.2	337.82	23.6684	17.1023
8/15/2006	4.00	0.00	4.19	10.2	341.98	21.6062	17.1023
8/16/2006	6.54	0.00	3.42	10.2	333.62	21.6062	17.1023
8/17/2006	6.50	0.00	3.42	10.2	0.00	0	0
8/18/2006	6.50	0.00	3.42	10.2	0.00	0	0
8/19/2006	6.50	0.00	3.42	10.2	0.00	0	0
8/20/2006	6.80	0.00	3.42	10.2	0.00	0	0
8/21/2006	6.95	0.00	3.42	10.2	338.96	22.6608	17.571
8/22/2006	6.00	0.00	3.42	10.2	332.33	25.5648	16.6205
8/23/2006	6.00	0.00	3.42	10.6	344.45	20.3323	16.7053
8/24/2006	7.35	0.00	3.42	10.2	338.96	19.3252	17.571
8/25/2006	6.36	0.00	4.19	10.2	333.62	23.6684	16.6205
8/26/2006	6.20	0.00			0.00	0	0
8/27/2006	6.10	0.00			0.00	0	0
8/28/2006	6.02	0.00	3.42	10.2	333.62	20.4974	17.1023
8/29/2006	2.12	0.00	2.42	13.0	112.46	9.0351	5.2191
8/30/2006	11.62	0.00	5.53	13.0	346.37	22.7322	17.2531
8/31/2006	6.00	0.00	3.42	9.8	322.99	19.8351	17.7907
9/1/2006	6.00	0.00	3.42	10.2	320.66	39.9806	14.3055
9/2/2006	6.00	0.00	3.42	10.2	325.01	35.9116	16.6841
9/3/2006	6.00	0.00	3.42	9.9	325.01	35.9116	16.6841
9/4/2006	6.00	0.00	3.42	9.9	325.01	35.9116	16.6841
9/5/2006	6.68	0.00	3.83	10.2	330.76	29.0049	16.471
9/6/2006	6.68	0.00	3.42	10.2	325.01	28.5714	16.471
9/7/2006	6.10	0.00	3.42	10.2	325.01	25.555	16.2551
9/8/2006	5.57	0.00	3.93	10.2	325.01	25.555	15.7299
9/9/2006	5.99	0.00	3.82	10.1	324.38	25.912	16.65020082
9/10/2006	5.99	0.00	4.19	10.1	324.38	25.912	15.69795988
9/11/2006	5.57	0.00	3.52	10.2	325.01	25.555	16.007
9/12/2006	5.61	0.00	4.19	10.2	325.01	24.2673	15.3255
9/13/2006	5.61	0.00	4.19	10.2	325.01	23.9045	15.3255
9/14/2006	5.61	0.00	3.93	10.6	330.76	22.4671	17.1023
9/15/2006	5.56	0.00	0.00	10.0	324.38	24.23845655	15.49664403
9/16/2006	5.56	0.00	4.13	9.6	324.38	24.23845655	15.49664403
9/17/2006	5.56	0.00	4.13	10.0	324.38	22.44045026	15.69795988
9/18/2006	5.59	0.00	3.43	10.1	325.66	23.59271056	15.74075799
9/19/2006	5.59	0.00	3.43	10.1	325.66	23.59271056	15.74075799
9/20/2006	8.75	0.00	3.83	7.0	325.01	22.4671	15.7299
9/21/2006	8.75	0.00	4.00	7.0	325.01	22.4671	16.214
9/22/2006	5.61	0.00	4.19	9.9	319.15	22.4671	15.2304
9/23/2006	8.00	0.00	4.30	12.1	322.10	22.4671	15.2304
9/24/2006	8.00	0.00	4.30	9.3	79.52	9.3073	4.4033
9/25/2006	10.59	0.00	4.30	10.6	338.03	22.44045026	17.06924472
9/26/2006	4.81	0.00	4.30	10.0	324.38	28.85566246	15.69795988
9/27/2006	5.00	0.00	4.20	9.9	325.01	20.203	16.6841
9/28/2006	6.00	0.00	4.19	10.0	325.01	20.5096	15.529
9/29/2006	6.00	0.00	4.19	10.0	325.01	20.5096	15.529
9/30/2006	5.65	0.00	4.07	9.9	324.38	20.48523468	15.49664403
10/1/2006	5.65	0.00	3.72	9.9	324.38	20.17827644	15.49664403
10/2/2006	5.61	0.00	3.73	9.9	325.01	20.3569	15.3255
10/3/2006	5.41	0.00	3.83	9.9	325.01	20.5096	16.007
10/4/2006	5.40	0.00	3.00	9.9	325.01	20.5096	15.529
10/5/2006	5.36	0.00	2.96	39.3	130.04	40.66466968	13.59483204
10/6/2006	6.54	0.00	3.83	9.9	319.15	18.3443	15.3255

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/7/2006	5.56	0.00	4.13	9.9	324.38	20.48523468	16.18108667
10/8/2006	5.56	0.00	4.13	9.9	324.38	20.48523468	16.18108667
10/9/2006	5.70	0.00	4.00	9.9	325.01	20.5096	15.7299
10/10/2006	6.00	0.00	4.08	9.9	322.10	19.4571	16.6841
10/11/2006	6.00	0.00	4.08	9.9	325.01	21.4438	15.7299
10/12/2006	9.00	0.00	4.41	9.9	325.01	25.555	17.5106
10/13/2006	9.00	0.00	4.41	10.6	332.77	25.555	17.5106
10/14/2006	9.00	0.00	4.41	9.9	325.01	25.555	17.5106
10/15/2006	9.00	0.00	4.41	10.2	325.01	25.555	17.5106
10/16/2006	5.61	0.00	4.31	9.9	325.01	20.5309	16.471
10/17/2006	5.61	0.00	4.31	10.2	325.01	19.5754	16.2406
10/18/2006	5.61	0.00	4.31	10.2	325.01	17.5088	15.7299
10/19/2006	5.61	0.00	4.31	9.9	326.75	17.5088	15.7299
10/20/2006	19.24	0.00	3.30	0.0	332.58	22.4671	12.7842
10/21/2006	7.08	0.00	4.91	8.3	341.23	23.90765032	17.93838232
10/22/2006	5.99	0.00	4.30	10.6	335.77	23.90765032	18.84495132
10/23/2006	5.61	0.00	3.83	9.9	332.33	20.7336	16.7006
10/24/2006	5.61	0.00	3.83	12.1	332.33	20.7336	16.7006
10/25/2006	5.61	0.00	3.83	12.1	332.33	20.7336	16.7006
10/26/2006	5.61	0.00	3.83	8.8	334.52	20.7336	16.7006
10/27/2006	11.98	0.00	4.02	19.3	335.77	26.84512529	17.99256375
10/28/2006	11.98	0.00	4.02	19.3	335.77	26.84512529	17.99256375
10/29/2006	11.98	0.00	4.02	19.3	335.77	26.84512529	17.99256375
10/30/2006	5.61	0.00	3.83	10.0	332.33	19.8509	17.5576
10/31/2006	5.61	0.00	3.83	10.0	332.33	16.9289	17.1344
11/1/2006	3.83	0.00	6.00	9.9	328.19	18.9271	16.2551
11/2/2006	3.83	0.00	6.00	9.9	328.19	18.9271	16.2551
11/3/2006	5.41	0.00	3.73	9.8	326.69	0	15.529
11/4/2006	5.41	0.00	3.73	16.8	328.19	0	15.529
11/5/2006	5.41	0.00	3.73	9.8	322.68	17.5088	16.9224
11/6/2006	5.00	0.00	4.00	10.0	324.00	17	16
11/7/2006	5.41	0.00	3.73	8.5	326.75	17.5088	15.7972
11/8/2006	5.41	0.00	3.73	9.9	326.75	21.4438	16.471
11/9/2006	5.41	0.00	3.73	9.9	322.68	19.5754	15.7299
11/10/2006	5.41	0.00	3.73	9.9	322.68	21.4438	15.7299
11/11/2006	7.20	0.00	4.19	10.1	327.52	19.54990639	16.66480978
11/12/2006	6.67	0.00	4.52	15.8	327.52	17.48596786	15.76333194
11/13/2006	5.41	0.00	3.73	9.9	322.68	17.2213	15.3255
11/14/2006	5.41	0.00	3.73	9.9	328.19	17.2213	0
11/15/2006	5.41	0.00	3.73	9.9	328.19	17.2213	0
11/16/2006	5.41	0.00	3.73	9.8	322.68	17.2213	0
11/17/2006	5.20	0.00	3.33	7.2	328.19	17.2213	15.7972
11/18/2006	5.20	0.00	3.33	9.9	328.19	19.254	15.7299
11/19/2006	5.20	0.00	3.33	9.9	328.19	19.254	15.3255
11/20/2006	5.20	0.00	3.33	9.9	328.19	19.254	15.7299
11/21/2006	5.20	0.00	3.33	9.9	328.19	19.254	15.3255
11/22/2006	5.20	0.00	3.33	9.9	317.06	19.254	14.8388
11/23/2006	5.20	0.00	3.33	9.9	317.06	19.254	14.8388
11/24/2006	5.61	0.00	3.83	9.9	317.06	17.2213	15.0359
11/25/2006	5.61	0.00	3.83	9.9	317.06	17.2213	15.0359
11/26/2006	5.61	0.00	3.83	9.9	317.06	17.2213	15.0359
11/27/2006	5.61	0.00	3.83	9.9	317.06	21.0917	15.2304
11/28/2006	5.61	0.00	3.83	9.9	317.06	19.254	14.714
11/29/2006	5.61	0.00	3.83	9.9	321.06	19.254	14.714
11/30/2006	5.61	0.00	3.83	9.9	317.06	20.7336	15.529
12/1/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/2/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/3/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/4/2006	6.00	0.00	4.19	9.9	328.19	18.9271	15.2304
12/5/2006	6.00	0.00	4.19	13.7	321.06	17.2213	[illegible]882

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/6/2006	6.00	0.00	4.19	12.1	317.06	18.9271	15.2304
12/7/2006	6.00	0.00	4.19	12.1	317.06	18.9271	15.2304
12/8/2006	5.41	0.00	4.08	9.7	307.37	17.2213	24.2415
12/9/2006	5.41	0.00	4.08	11.8	317.06	17.2213	24.2415
12/10/2006	5.41	0.00	4.08	11.8	317.06	17.2213	24.2415
12/11/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/12/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/13/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/14/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/15/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/16/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/17/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/18/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/19/2006	5.04	0.00	4.69	9.9	317.06	16.9289	15.529
12/20/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/21/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/22/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/23/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/24/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/25/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/26/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/27/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/28/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/29/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/30/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
12/31/2006	5.04	0.00	4.69	11.0	317.92	18.72725455	18.32648182
1/1/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/2/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/3/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/4/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/5/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/6/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/7/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/8/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/9/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/10/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/11/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/12/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/13/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/14/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/15/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/16/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/17/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/18/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/19/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/20/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/21/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/22/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/23/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/24/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/25/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/26/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/27/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/28/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/29/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/30/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
1/31/2007	8.58	0.00	3.94	**11.4**	**320.77**	**23.4516129**	**13.51612903**
2/1/2007	8.54	0.00	5.68	**29.8**	**303.29**	**34.57142857**	**15.71428571**
2/2/2007	8.54	0.00	5.68	**29.8**	**303.29**	**34.57142857**	**15.71428571**
2/3/2007	8.54	0.00	5.68	**29.8**	**303.29**	**34.57142857**	**15.71428571**

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
2/4/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/5/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/6/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/7/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/8/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/9/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/10/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/11/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/12/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/13/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/14/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/15/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/16/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/17/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/18/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/19/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/20/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/21/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/22/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/23/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/24/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/25/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/26/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/27/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
2/28/2007	8.54	0.00	5.68	29.8	303.29	34.57142857	15.71428571
3/1/2007	40.00	0.00	20.00	11.0	275.00	16	13
3/2/2007	40.00	0.00	20.00	11.0	275.00	16	13
3/3/2007	40.00	0.00	20.00	9.0	277.00	16	13
3/4/2007	40.00	0.00	20.00	19.0	274.00	15	13
3/5/2007	40.00	0.00	20.00	15.0	274.00	15	13
3/6/2007	40.00	0.00	20.00	32.0	270.00	15	13
3/7/2007	40.00	0.00	20.00	56.0	272.00	15	14
3/8/2007	40.00	0.00	20.00	24.0	258.00	10	16
3/9/2007	40.00	0.00	20.00	10.0	280.00	16	15
3/10/2007	40.00	0.00	20.00	8.0	275.00	16	14
3/11/2007	40.00	0.00	20.00	7.0	272.00	15	14
3/12/2007	40.00	0.00	20.00	4.0	231.00	9	11
3/13/2007	40.00	0.00	20.00	8.0	294.00	17	16
3/14/2007	40.00	0.00	20.00	6.0	272.00	14	14
3/15/2007	40.00	0.00	20.00	6.0	279.00	16	14
3/16/2007	40.00	0.00	20.00	5.0	275.00	15	13
3/17/2007	40.00	0.00	20.00	4.0	273.00	15	13
3/18/2007	40.00	0.00	20.00	4.0	262.00	14	13
3/19/2007	40.00	0.00	20.00	4.0	284.00	11	13
3/20/2007	40.00	0.00	20.00	0.3	274.00	16	15
3/21/2007	40.00	0.00	20.00	6.0	270.00	16	14
3/22/2007	40.00	0.00	20.00	13.0	272.00	16	14
3/23/2007	40.00	0.00	20.00	13.0	272.00	16	14
3/24/2007	40.00	0.00	20.00	13.0	272.00	16	14
3/25/2007	40.00	0.00	20.00	11.0	271.00	15	14
3/26/2007	40.00	0.00	20.00	10.0	253.00	12	13
3/27/2007	40.00	0.00	20.00	11.0	236.00	10	12
3/28/2007	40.00	0.00	20.00	12.0	286.00	18	15
3/29/2007	40.00	0.00	20.00	10.0	273.00	17	14
3/30/2007	40.00	0.00	20.00	10.0	271.00	16	14
3/31/2007	40.00	0.00	20.00	10.0	276.00	17	14
4/1/2007	16.50	0.00	4.70	10.0	275.00	16	14
4/2/2007	16.50	0.00	4.70	10.0	274.00	17	14
4/3/2007	16.50	0.00	4.70	10.0	274.00	17	14
4/4/2007	16.50	0.00	4.70	9.0	273.00	16	14

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
4/5/2007	16.50	0.00	4.70	9.0	270.00	16	13
4/6/2007	16.50	0.00	4.70	9.0	271.00	16	13
4/7/2007	16.50	0.00	4.70	9.0	207.00	12	10
4/8/2007	16.50	0.00	4.70	9.0	0.00	0	4
4/9/2007	16.50	0.00	4.70	2.0	131.00	3	7
4/10/2007	16.50	0.00	4.70	5.0	198.00	11	10
4/11/2007	16.50	0.00	4.70	2.0	207.00	6	7
4/12/2007	16.50	0.00	4.70	3.0	266.00	14	9
4/13/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/14/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/15/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/16/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/17/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/18/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/19/2007	16.50	0.00	4.70	0.00	0.00	0	0
4/20/2007	16.50	0.00	4.70	0.00	0.00	10	7
4/21/2007	16.50	0.00	4.70	0.00	2.00	14	8
4/22/2007	16.50	0.00	4.70	20.0	8.00	24	18
4/23/2007	16.50	0.00	4.70	16.0	393.00	24	19
4/24/2007	16.50	0.00	4.70	10.0	606.00	16	14
4/25/2007	16.50	0.00	4.70	12.0	392.00	18	14
4/26/2007	16.50	0.00	4.70	3.0	352.00	12	10
4/27/2007	16.50	0.00	4.70	5.0	267.00	13	8
4/28/2007	16.50	0.00	4.70	14.0	260.00	16	9
4/29/2007	16.50	0.00	4.70	16.0	256.00	16	11
4/30/2007	16.50	0.00	4.70	14.0	185.00	16	12
5/1/2007	14.03	0.00	6.23	9.0	203.00	15	11
5/2/2007	14.03	0.00	6.23	19.0	300.00	19	6
5/3/2007	14.03	0.00	6.23	15.0	300.00	23	15
5/4/2007	14.03	0.00	6.23	12.0	318.00	19	22
5/5/2007	14.03	0.00	6.23	11.0	337.00	19	19
5/6/2007	14.03	0.00	6.23	11.0	330.00	18	17
5/7/2007	14.03	0.00	6.23	10.0	320.00	16	16
5/8/2007	14.03	0.00	6.23	10.0	327.00	17	16
5/9/2007	14.03	0.00	6.23	10.0	327.00	17	16
5/10/2007	14.03	0.00	6.23	10.0	324.00	17	16
5/11/2007	14.03	0.00	6.23	10.0	317.00	17	15
5/12/2007	14.03	0.00	6.23	10.0	306.00	17	15
5/13/2007	14.03	0.00	6.23	10.0	302.00	16	15
5/14/2007	14.03	0.00	6.23	9.0	301.00	16	15
5/15/2007	14.03	0.00	6.23	10.0	300.00	17	15
5/16/2007	14.03	0.00	6.23	9.0	299.00	16	15
5/17/2007	14.03	0.00	6.23	9.0	299.00	16	14
5/18/2007	14.03	0.00	6.23	0.0	0.00	0	0
5/19/2007	14.03	0.00	6.23	0.0	0.00	0	0
5/20/2007	14.03	0.00	6.23	9.0	291.00	16	14
5/21/2007	14.03	0.00	6.23	10.0	288.00	17	14
5/22/2007	14.03	0.00	6.23	9.0	287.00	16	14
5/23/2007	14.03	0.00	6.23	5.0	244.00	9	11
5/24/2007	14.03	0.00	6.23	7.0	248.00	0	0
5/25/2007	14.03	0.00	6.23	6.0	199.00	6	9
5/26/2007	14.03	0.00	6.23	7.0	287.00	15	14
5/27/2007	14.03	0.00	6.23	9.0	285.00	17	15
5/28/2007	14.03	0.00	6.23	9.0	276.00	18	16
5/29/2007	14.03	0.00	6.23	6.0	280.00	15	14
5/30/2007	14.03	0.00	6.23	10.0	289.00	16	13
5/31/2007	14.03	0.00	6.23	10.0	290.00	15	15
6/1/2007	8.77	0.00	4.40	10.0	290.00	15	15
6/2/2007	8.77	0.00	4.40	10.0	290.00	16	16
6/3/2007	8.77	0.00	4.40	10.0	287.00	15	15

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
6/4/2007	8.77	0.00	4.40	9.0	287.00	15	15
6/5/2007	8.77	0.00	4.40	9.0	283.00	15	15
6/6/2007	8.77	0.00	4.40	8.0	280.00	15	15
6/7/2007	8.77	0.00	4.40	8.0	280.00	15	15
6/8/2007	8.77	0.00	4.40	4.0	212.00	12	12
6/9/2007	8.77	0.00	4.40	0.0	289.00	4	13
6/10/2007	8.77	0.00	4.40	0.0	278.00	14	16
6/11/2007	8.77	0.00	4.40	0.0	275.00	16	17
6/12/2007	8.77	0.00	4.40	10.0	262.00	13	15
6/13/2007	8.77	0.00	4.40	11.0	251.00	12	14
6/14/2007	8.77	0.00	4.40	8.0	249.00	13	15
6/15/2007	8.77	0.00	4.40	10.0	242.00	10	14
6/16/2007	8.77	0.00	4.40	12.0	208.00	5	11
6/17/2007	8.77	0.00	4.40	11.0	246.00	14	15
6/18/2007	8.77	0.00	4.40	10.0	179.00	18	17
6/19/2007	8.77	0.00	4.40	9.0	148.00	7	12
6/20/2007	8.77	0.00	4.40	12.0	206.00	9	13
6/21/2007	8.77	0.00	4.40	13.0	239.00	6	14
6/22/2007	8.77	0.00	4.40	13.0	253.00	14	16
6/23/2007	8.77	0.00	4.40	14.0	251.00	18	18
6/24/2007	8.77	0.00	4.40	14.0	240.00	16	17
6/25/2007	8.77	0.00	4.40	14.0	238.00	16	16
6/26/2007	8.77	0.00	4.40	15.0	207.00	11	14
6/27/2007	8.77	0.00	4.40	11.0	243.00	16	16
6/28/2007	8.77	0.00	4.40	10.0	235.00	16	16
6/29/2007	8.77	0.00	4.40	11.0	233.00	15	16
6/30/2007	8.77	0.00	4.40	12.0	235.00	15	15
7/1/2007	0.00	0.00	0.00	11.0	232.00	15	15
7/2/2007	0.00	0.00	0.00	13.0	231.00	15	15
7/3/2007	0.00	0.00	0.00	12.0	231.00	15	15
7/4/2007	0.00	0.00	0.00	10.0	230.00	15	15
7/5/2007	0.00	0.00	0.00	12.0	227.00	15	15
7/6/2007	0.00	0.00	0.00	11.0	229.00	15	15
7/7/2007	0.00	0.00	0.00	10.0	229.00	15	15
7/8/2007	0.00	0.00	0.00	11.0	229.00	15	15
7/9/2007	0.00	0.00	0.00	12.0	229.00	15	15
7/10/2007	0.00	0.00	0.00	13.0	227.00	15	15
7/11/2007	0.00	0.00	0.00	11.0	218.00	15	14
7/12/2007	0.00	0.00	0.00	13.0	232.00	15	16
7/13/2007	0.00	0.00	0.00	14.0	219.00	15	16
7/14/2007	0.00	0.00	0.00	12.0	232.00	15	15
7/15/2007	0.00	0.00	0.00	12.0	229.00	15	15
7/16/2007	0.00	0.00	0.00	14.0	195.00	16	16
7/17/2007	0.00	0.00	0.00	11.0	246.00	6	7
7/18/2007	0.00	0.00	0.00	13.0	228.00	0	0
7/19/2007	0.00	0.00	0.00	12.0	226.00	0	0
7/20/2007	0.00	0.00	0.00	14.0	225.00	0	0
7/21/2007	0.00	0.00	0.00	12.0	220.00	0	0
7/22/2007	0.00	0.00	0.00	11.0	220.00	0	0
7/23/2007	0.00	0.00	0.00	11.0	220.00	0	0
7/24/2007	0.00	0.00	0.00	13.0	192.00	0	0
7/25/2007	0.00	0.00	0.00	12.0	209.00	0	0
7/26/2007	0.00	0.00	0.00	12.0	239.00	0	0
7/27/2007	0.00	0.00	0.00	11.0	226.00	0	0
7/28/2007	0.00	0.00	0.00	12.0	224.00	0	0
7/29/2007	0.00	0.00	0.00	12.0	174.00	0	0
7/30/2007	0.00	0.00	0.00	12.0	188.00	0	0
7/31/2007	0.00	0.00	0.00	13.0	251.00	0	0
8/1/2007	0.00	0.00	0.00	143.4	251.40	0	0
8/2/2007	0.00	0.00	0.00	144.1	228.90	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
8/3/2007	0.00	0.00	0.00	143.4	224.70	0	0
8/4/2007	0.00	0.00	0.00	139.3	185.70	0	0
8/5/2007	0.00	0.00	0.00	140.3	244.00	0	0
8/6/2007	0.00	0.00	0.00	139.1	223.30	0	0
8/7/2007	0.00	0.00	0.00	139.1	222.90	0	0
8/8/2007	0.00	0.00	0.00	139.4	221.60	0	0
8/9/2007	0.00	0.00	0.00	143.2	165.00	0	0
8/10/2007	0.00	0.00	0.00	123.3	142.00	0	0
8/11/2007	0.00	0.00	0.00	118.2	196.50	0	0
8/12/2007	0.00	0.00	0.00	139.9	260.90	0	0
8/13/2007	0.00	0.00	0.00	141.2	227.90	0	0
8/14/2007	0.00	0.00	0.00	140.6	222.00	0	0
8/15/2007	0.00	0.00	0.00	14.1	19.30	0	0
8/16/2007	0.00	0.00	0.00	7.6	111.50	0	0
8/17/2007	0.00	0.00	0.00	158.9	323.50	0	0
8/18/2007	0.00	0.00	0.00	151.2	240.20	0	0
8/19/2007	0.00	0.00	0.00	134.0	192.90	0	0
8/20/2007	0.00	0.00	0.00	143.8	258.70	0	0
8/21/2007	0.00	0.00	0.00	142.9	243.80	0	0
8/22/2007	0.00	0.00	0.00	141.7	241.00	0	0
8/23/2007	0.00	0.00	0.00	139.2	221.60	0	0
8/24/2007	0.00	0.00	0.00	141.6	245.50	0	0
8/25/2007	0.00	0.00	0.00	142.3	242.40	0	0
8/26/2007	0.00	0.00	0.00	143.8	222.50	0	0
8/27/2007	0.00	0.00	0.00	134.4	220.40	0	0
8/28/2007	0.00	0.00	0.00	141.3	245.40	0	0
8/29/2007	0.00	0.00	0.00	141.7	240.00	0	0
8/30/2007	0.00	0.00	0.00	141.4	239.00	0	0
8/31/2007	0.00	0.00	0.00	140.6	237.20	0	0
9/1/2007	0.00	0.00	0.00	140.0	236.50	0	0
9/2/2007	0.00	0.00	0.00	138.0	237.30	0	0
9/3/2007	0.00	0.00	0.00	139.4	236.30	0	0
9/4/2007	0.00	0.00	0.00	139.5	235.60	0	0
9/5/2007	0.00	0.00	0.00	139.4	235.40	0	0
9/6/2007	0.00	0.00	0.00	138.7	234.20	0	0
9/7/2007	0.00	0.00	0.00	138.0	233.60	0	0
9/8/2007	0.00	0.00	0.00	137.7	232.60	0	0
9/9/2007	0.00	0.00	0.00	137.4	231.60	0	0
9/10/2007	0.00	0.00	0.00	136.0	230.50	0	0
9/11/2007	0.00	0.00	0.00	131.4	231.90	0	0
9/12/2007	0.00	0.00	0.00	138.3	235.50	0	0
9/13/2007	0.00	0.00	0.00	134.0	232.40	0	0
9/14/2007	0.00	0.00	0.00	135.5	231.20	0	0
9/15/2007	0.00	0.00	0.00	136.7	228.80	0	0
9/16/2007	0.00	0.00	0.00	135.3	229.10	0	0
9/17/2007	0.00	0.00	0.00	132.8	227.50	0	0
9/18/2007	0.00	0.00	0.00	133.2	227.30	0	0
9/19/2007	0.00	0.00	0.00	132.5	226.40	0	0
9/20/2007	0.00	0.00	0.00	132.5	226.10	0	0
9/21/2007	0.00	0.00	0.00	132.3	225.80	0	0
9/22/2007	0.00	0.00	0.00	132.0	225.70	0	0
9/23/2007	0.00	0.00	0.00	131.6	225.70	0	0
9/24/2007	0.00	0.00	0.00	130.7	224.50	0	0
9/25/2007	0.00	0.00	0.00	132.6	227.50	0	0
9/26/2007	0.00	0.00	0.00	119.2	227.30	0	0
9/27/2007	0.00	0.00	0.00	110.0	227.10	0	0
9/28/2007	0.00	0.00	0.00	144.3	224.20	0	0
9/29/2007	0.00	0.00	0.00	139.0	226.20	0	0
9/30/2007	0.00	0.00	0.00	137.2	225.90		
10/ /2007	0.00	0.00	0.00	13.0	224.90	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/2/2007	0.00	0.00	0.00	13.0	218.60	0	0
10/3/2007	0.00	0.00	0.00	14.0	230.90	0	0
10/4/2007	0.00	0.00	0.00	14.0	228.50	0	0
10/5/2007	0.00	0.00	0.00	14.0	226.60	0	0
10/6/2007	0.00	0.00	0.00	13.0	223.90	0	0
10/7/2007	0.00	0.00	0.00	12.0	224.50	0	0
10/8/2007	0.00	0.00	0.00	14.0	224.10	0	0
10/9/2007	0.00	0.00	0.00	12.0	223.90	0	0
10/10/2007	0.00	0.00	0.00	11.0	157.40	0	0
10/11/2007	0.00	0.00	0.00	13.0	201.30	0	0
10/12/2007	0.00	0.00	0.00	14.0	258.50	0	0
10/13/2007	0.00	0.00	0.00	13.0	230.90	0	0
10/14/2007	0.00	0.00	0.00	12.0	181.10	0	0
10/15/2007	0.00	0.00	0.00	13.0	235.40	0	0
10/16/2007	0.00	0.00	0.00	13.0	233.30	0	0
10/17/2007	0.00	0.00	0.00	12.0	226.40	0	0
10/18/2007	0.00	0.00	0.00	14.0	223.80	0	0
10/19/2007	0.00	0.00	0.00	13.0	222.60	0	0
10/20/2007	0.00	0.00	0.00	14.0	222.20	0	0
10/21/2007	0.00	0.00	0.00	14.0	222.80	0	0
10/22/2007	0.00	0.00	0.00	13.0	218.20	0	0
10/23/2007	0.00	0.00	0.00	12.0	217.30	0	0
10/24/2007	0.00	0.00	0.00	12.0	172.00	0	0
10/25/2007	0.00	0.00	0.00	13.0	228.40	0	0
10/26/2007	0.00	0.00	0.00	14.0	236.30	0	0
10/27/2007	0.00	0.00	0.00	14.0	224.40	0	0
10/28/2007	0.00	0.00	0.00	13.0	219.60	0	0
10/29/2007	0.00	0.00	0.00	13.0	215.40	0	0
10/30/2007	0.00	0.00	0.00	14.0	214.00	0	0
10/31/2007	0.00	0.00	0.00	13.0	214.20	0	0
11/1/2007	0.00	0.00	0.00	13.0	214.60	0	0
11/2/2007	0.00	0.00	0.00	13.0	214.60	0	0
11/3/2007	0.00	0.00	0.00	14.0	213.70	0	0
11/4/2007	0.00	0.00	0.00	15.0	213.30	0	0
11/5/2007	0.00	0.00	0.00	14.0	213.30	0	0
11/6/2007	0.00	0.00	0.00	13.0	214.20	0	0
11/7/2007	0.00	0.00	0.00	14.0	213.10	0	0
11/8/2007	0.00	0.00	0.00	12.0	211.90	0	0
11/9/2007	0.00	0.00	0.00	14.0	216.60	0	0
11/10/2007	0.00	0.00	0.00	14.0	224.20	0	0
11/11/2007	0.00	0.00	0.00	13.0	218.90	0	0
11/12/2007	0.00	0.00	0.00	13.0	215.60	0	0
11/13/2007	0.00	0.00	0.00	14.0	215.50	0	0
11/14/2007	0.00	0.00	0.00	12.0	216.00	0	0
11/15/2007	0.00	0.00	0.00	13.0	216.20	0	0
11/16/2007	0.00	0.00	0.00	13.0	215.80	0	0
11/17/2007	0.00	0.00	0.00	14.0	220.60	0	0
11/18/2007	0.00	0.00	0.00	13.0	218.60	0	0
11/19/2007	0.00	0.00	0.00	15.0	217.00	0	0
11/20/2007	0.00	0.00	0.00	14.0	215.90	0	0
11/21/2007	0.00	0.00	0.00	14.0	215.90	0	0
11/22/2007	0.00	0.00	0.00	13.0	216.50	0	0
11/23/2007	0.00	0.00	0.00	13.0	216.90	0	0
11/24/2007	0.00	0.00	0.00	14.0	214.20	0	0
11/25/2007	0.00	0.00	0.00	13.0	213.20	0	0
11/26/2007	0.00	0.00	0.00	14.0	213.40	0	0
11/27/2007	0.00	0.00	0.00	13.0	214.50	0	0
11/28/2007	0.00	0.00	0.00	13.0	213.60	0	0
11/29/2007	0.00	0.00	0.00	14.0	212.40	0	0
11/30/2007	0.00	0.00	0.00	13.0	212.40	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/1/2007	0.00	0.00	0.00	13.0	210.90	0	0
12/2/2007	0.00	0.00	0.00	14.0	209.80	0	0
12/3/2007	0.00	0.00	0.00	13.0	211.20	0	0
12/4/2007	0.00	0.00	0.00	13.0	211.00	0	0
12/5/2007	0.00	0.00	0.00	15.0	210.00	0	0
12/6/2007	0.00	0.00	0.00	12.0	209.00	0	0
12/7/2007	0.00	0.00	0.00	10.0	208.70	0	0
12/8/2007	0.00	0.00	0.00	13.0	212.30	0	0
12/9/2007	0.00	0.00	0.00	14.0	210.90	0	0
12/10/2007	0.00	0.00	0.00	10.0	35.70	0	0
12/11/2007	0.00	0.00	0.00	13.0	244.30	0	0
12/12/2007	0.00	0.00	0.00	13.0	240.40	0	0
12/13/2007	0.00	0.00	0.00	13.0	215.70	0	0
12/14/2007	0.00	0.00	0.00	11.0	211.10	0	0
12/15/2007	0.00	0.00	0.00	13.0	201.20	0	0
12/16/2007	0.00	0.00	0.00	13.0	218.70	0	0
12/17/2007	0.00	0.00	0.00	12.0	213.10	0	0
12/18/2007	0.00	0.00	0.00	11.0	204.70	0	0
12/19/2007	0.00	0.00	0.00	13.0	204.30	0	0
12/20/2007	0.00	0.00	0.00	12.0	203.90	0	0
12/21/2007	0.00	0.00	0.00	13.0	202.90	0	0
12/22/2007	0.00	0.00	0.00	12.0	203.70	0	0
12/23/2007	0.00	0.00	0.00	13.0	203.90	0	0
12/24/2007	0.00	0.00	0.00	11.0	176.70	0	0
12/25/2007	0.00	0.00	0.00	13.0	222.60	0	0
12/26/2007	0.00	0.00	0.00	13.0	218.50	0	0
12/27/2007	0.00	0.00	0.00	13.0	212.30	0	0
12/28/2007	0.00	0.00	0.00	14.0	207.10	0	0
12/29/2007	0.00	0.00	0.00	12.0	207.40	0	0
12/30/2007	0.00	0.00	0.00	11.0	136.10	0	0
12/31/2007	0.00	0.00	0.00	10.0	235.70	0	0
1/1/2008	0.00	0.00	0.00	13.0	220.90	0	0
1/2/2008	0.00	0.00	0.00	12.0	210.80	0	0
1/3/2008	0.00	0.00	0.00	10.0	206.50	0	0
1/4/2008	0.00	0.00	0.00	11.0	203.80	0	0
1/5/2008	0.00	0.00	0.00	12.0	206.50	0	0
1/6/2008	0.00	0.00	0.00	13.0	205.80	0	0
1/7/2008	0.00	0.00	0.00	13.0	203.50	0	0
1/8/2008	0.00	0.00	0.00	12.0	204.80	0	0
1/9/2008	0.00	0.00	0.00	13.0	206.30	0	0
1/10/2008	0.00	0.00	0.00	11.0	206.20	0	0
1/11/2008	0.00	0.00	0.00	14.0	205.40	0	0
1/12/2008	0.00	0.00	0.00	13.0	218.80	0	0
1/13/2008	0.00	0.00	0.00	12.0	211.60	0	0
1/14/2008	0.00	0.00	0.00	13.0	209.90	0	0
1/15/2008	0.00	0.00	0.00	12.0	209.30	0	0
1/16/2008	0.00	0.00	0.00	13.0	206.30	0	0
1/17/2008	0.00	0.00	0.00	13.0	204.60	0	0
1/18/2008	0.00	0.00	0.00	12.0	204.80	0	0
1/19/2008	0.00	0.00	0.00	11.0	203.70	0	0
1/20/2008	0.00	0.00	0.00	13.0	203.90	0	0
1/21/2008	0.00	0.00	0.00	0.0	210.40	0	0
1/22/2008	0.00	0.00	0.00	9.0	237.50	0	0
1/23/2008	0.00	0.00	0.00	14.0	232.70	0	0
1/24/2008	0.00	0.00	0.00	10.0	209.30	0	0
1/25/2008	0.00	0.00	0.00	11.0	211.90	0	0
1/26/2008	0.00	0.00	0.00	11.0	205.00	0	0
1/27/2008	0.00	0.00	0.00	12.0	207.00	0	0
1/28/2008	0.00	0.00	0.00	12.0	204.90	0	0
1/29/2008	0.00	0.00	0.00	13.0	207.70	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
1/30/2008	0.00	0.00	0.00	12.0	211.80	0	0
1/31/2008	0.00	0.00	0.00	12.0	209.20	0	0
2/1/2008	0.00	0.00	0.00	12.0	205.00	0	0
2/2/2008	0.00	0.00	0.00	13.0	205.70	0	0
2/3/2008	0.00	0.00	0.00	12.0	203.90	0	0
2/4/2008	0.00	0.00	0.00	12.0	203.60	0	0
2/5/2008	0.00	0.00	0.00	13.0	203.70	0	0
2/6/2008	0.00	0.00	0.00	12.0	205.10	0	0
2/7/2008	0.00	0.00	0.00	12.0	207.80	0	0
2/8/2008	0.00	0.00	0.00	14.0	204.30	0	0
2/9/2008	0.00	0.00	0.00	12.0	202.50	0	0
2/10/2008	0.00	0.00	0.00	13.0	203.00	0	0
2/11/2008	0.00	0.00	0.00	11.0	113.50	0	0
2/12/2008	0.00	0.00	0.00	3.0	105.10	0	0
2/13/2008	0.00	0.00	0.00	1.0	131.50	0	0
2/14/2008	0.00	0.00	0.00	10.0	103.50	0	0
2/15/2008	0.00	0.00	0.00	14.0	160.30	0	0
2/16/2008	0.00	0.00	0.00	14.0	245.10	0	0
2/17/2008	0.00	0.00	0.00	10.0	253.50	0	0
2/18/2008	0.00	0.00	0.00	14.0	196.80	0	0
2/19/2008	0.00	0.00	0.00	12.0	231.70	0	0
2/20/2008	0.00	0.00	0.00	13.0	212.50	0	0
2/21/2008	0.00	0.00	0.00	11.0	193.20	0	0
2/22/2008	0.00	0.00	0.00	10.0	177.90	0	0
2/23/2008	0.00	0.00	0.00	7.0	110.50	0	0
2/24/2008	0.00	0.00	0.00	10.0	49.10	0	0
2/25/2008	0.00	0.00	0.00	12.0	147.40	0	0
2/26/2008	0.00	0.00	0.00	11.0	273.40	0	0
2/27/2008	0.00	0.00	0.00	11.0	210.00	0	0
2/28/2008	0.00	0.00	0.00	12.0	210.60	0	0
2/29/2008	0.00	0.00	0.00	11.0	206.40	0	0
3/1/2008	0.00	0.00	0.00	12.0	202.00	0	0
3/2/2008	0.00	0.00	0.00	11.0	201.20	0	0
3/3/2008	0.00	0.00	0.00	12.0	200.70	0	0
3/4/2008	0.00	0.00	0.00	12.0	200.80	0	0
3/5/2008	0.00	0.00	0.00	13.0	200.00	0	0
3/6/2008	0.00	0.00	0.00	12.0	198.80	0	0
3/7/2008	0.00	0.00	0.00	12.0	198.10	0	0
3/8/2008	0.00	0.00	0.00	12.0	197.90	0	0
3/9/2008	0.00	0.00	0.00	9.0	196.80	0	0
3/10/2008	0.00	0.00	0.00	11.0	198.40	0	0
3/11/2008	0.00	0.00	0.00	10.0	194.90	0	0
3/12/2008	0.00	0.00	0.00	11.0	198.80	0	0
3/13/2008	0.00	0.00	0.00	11.0	207.40	0	0
3/14/2008	0.00	0.00	0.00	11.0	202.50	0	0
3/15/2008	0.00	0.00	0.00	12.0	202.00	0	0
3/16/2008	0.00	0.00	0.00	11.0	201.70	0	0
3/17/2008	0.00	0.00	0.00	11.0	200.20	0	0
3/18/2008	0.00	0.00	0.00	13.0	197.20	0	0
3/19/2008	0.00	0.00	0.00	12.0	198.00	0	0
3/20/2008	0.00	0.00	0.00	11.0	201.50	0	0
3/21/2008	0.00	0.00	0.00	12.0	199.70	0	0
3/22/2008	0.00	0.00	0.00	11.0	198.20	0	0
3/23/2008	0.00	0.00	0.00	13.0	197.90	0	0
3/24/2008	0.00	0.00	0.00	11.0	196.90	0	0
3/25/2008	0.00	0.00	0.00	11.0	197.10	0	0
3/26/2008	0.00	0.00	0.00	11.0	197.50	0	0
3/27/2008	0.00	0.00	0.00	11.0	199.70	0	0
3/28/2008	0.00	0.00	0.00	11.0	200.00	0	0
3/29/2008	0.00	0.00	0.00	[illegible]	199.80	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
3/30/2008	0.00	0.00	0.00	11.0	197.40	0	0
3/31/2008	0.00	0.00	0.00	9.0	197.50	0	0
4/1/2008	0.00	0.00	0.00	9.0	196.80	0	0
4/2/2008	0.00	0.00	0.00	10.0	200.20	0	0
4/3/2008	0.00	0.00	0.00	11.0	199.10	0	0
4/4/2008	0.00	0.00	0.00	11.0	200.70	0	0
4/5/2008	0.00	0.00	0.00	12.0	202.80	0	0
4/6/2008	0.00	0.00	0.00	11.0	201.90	0	0
4/7/2008	0.00	0.00	0.00	11.0	202.50	0	0
4/8/2008	0.00	0.00	0.00	8.0	141.70	0	0
4/9/2008	0.00	0.00	0.00	10.0	230.70	0	0
4/10/2008	0.00	0.00	0.00	8.0	230.40	0	0
4/11/2008	0.00	0.00	0.00	11.0	210.40	0	0
4/12/2008	0.00	0.00	0.00	7.0	204.90	0	0
4/13/2008	0.00	0.00	0.00	8.0	230.50	0	0
4/14/2008	0.00	0.00	0.00	11.0	210.50	0	0
4/15/2008	0.00	0.00	0.00	8.0	170.30	0	0
4/16/2008	0.00	0.00	0.00	11.0	220.40	0	0
4/17/2008	0.00	0.00	0.00	11.0	222.30	0	0
4/18/2008	0.00	0.00	0.00	11.0	211.30	0	0
4/19/2008	0.00	0.00	0.00	11.0	209.80	0	0
4/20/2008	0.00	0.00	0.00	11.0	209.90	0	0
4/21/2008	0.00	0.00	0.00	11.0	208.80	0	0
4/22/2008	0.00	0.00	0.00	11.0	208.00	0	0
4/23/2008	0.00	0.00	0.00	11.0	206.40	0	0
4/24/2008	0.00	0.00	0.00	9.0	193.70	0	0
4/25/2008	0.00	0.00	0.00	11.0	172.90	0	0
4/26/2008	0.00	0.00	0.00	11.0	228.70	0	0
4/27/2008	0.00	0.00	0.00	11.0	213.00	0	0
4/28/2008	0.00	0.00	0.00	11.0	209.50	0	0
4/29/2008	0.00	0.00	0.00	11.0	208.80	0	0
4/30/2008	0.00	0.00	0.00	11.0	206.80	0	0
5/1/2008	0.00	0.00	0.00	10.0	206.60	0	0
5/2/2008	0.00	0.00	0.00	4.0	199.60	0	0
5/3/2008	0.00	0.00	0.00	13.0	165.10	0	0
5/4/2008	0.00	0.00	0.00	10.0	251.50	0	0
5/5/2008	0.00	0.00	0.00	9.0	215.60	0	0
5/6/2008	0.00	0.00	0.00	11.0	212.20	0	0
5/7/2008	0.00	0.00	0.00	11.0	209.50	0	0
5/8/2008	0.00	0.00	0.00	11.0	208.70	0	0
5/9/2008	0.00	0.00	0.00	11.0	209.80	0	0
5/10/2008	0.00	0.00	0.00	11.0	210.20	0	0
5/11/2008	0.00	0.00	0.00	11.0	209.00	0	0
5/12/2008	0.00	0.00	0.00	9.0	208.50	0	0
5/13/2008	0.00	0.00	0.00	11.0	203.90	0	0
5/14/2008	0.00	0.00	0.00	11.0	210.50	0	0
5/15/2008	0.00	0.00	0.00	9.0	207.60	0	0
5/16/2008	0.00	0.00	0.00	11.0	208.60	0	0
5/17/2008	0.00	0.00	0.00	11.0	206.50	0	0
5/18/2008	0.00	0.00	0.00	11.0	206.30	0	0
5/19/2008	0.00	0.00	0.00	11.0	206.40	0	0
5/20/2008	0.00	0.00	0.00	11.0	205.20	0	0
5/21/2008	0.00	0.00	0.00	11.0	205.80	0	0
5/22/2008	0.00	0.00	0.00	11.0	206.20	0	0
5/23/2008	0.00	0.00	0.00	11.0	205.50	0	0
5/24/2008	0.00	0.00	0.00	11.0	204.30	0	0
5/25/2008	0.00	0.00	0.00	11.0	202.80	0	0
5/26/2008	0.00	0.00	0.00	11.0	202.60	0	0
5/27/2008	0.00	0.00	0.00	11.0	203.40	0	0
5/28/2008	0.00	0.00	0.00	11.0	203.20	0	0

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
5/29/2008	0.00	0.00	0.00	11.0	203.10	0	0
5/30/2008	0.00	0.00	0.00	11.0	203.20	0	0
5/31/2008	0.00	0.00	0.00	11.0	203.60	0	0
6/1/2008	0.00	0.00	0.00	11.0	203.80	0	0
6/2/2008	0.00	0.00	0.00	11.0	204.70	0	0
6/3/2008	0.00	0.00	0.00	11.0	205.10	0	0
6/4/2008	0.00	0.00	0.00	11.0	204.30	0	0
6/5/2008	0.00	0.00	0.00	11.0	203.80	0	0
6/6/2008	0.00	0.00	0.00	8.0	205.20	0	0
6/7/2008	0.00	0.00	0.00	11.0	181.70	0	0
6/8/2008	0.00	0.00	0.00	12.0	230.70	0	0
6/9/2008	0.00	0.00	0.00	13.0	216.30	0	0
6/10/2008	0.00	0.00	0.00	11.0	214.10	0	0
6/11/2008	0.00	0.00	0.00	11.0	211.50	0	0
6/12/2008	0.00	0.00	0.00	12.0	215.90	0	0
6/13/2008	0.00	0.00	0.00	10.0	211.80	0	0
6/14/2008	0.00	0.00	0.00	12.0	210.00	0	0
6/15/2008	0.00	0.00	0.00	7.0	208.60	0	0
6/16/2008	0.00	0.00	0.00	4.0	95.70	0	0
6/17/2008	0.00	0.00	0.00	9.0	145.60	0	0
6/18/2008	0.00	0.00	0.00	11.0	243.40	0	0
6/19/2008	0.00	0.00	0.00	11.0	239.60	0	0
6/20/2008	0.00	0.00	0.00	12.0	210.20	0	0
6/21/2008	0.00	0.00	0.00	9.0	150.70	0	0
6/22/2008	0.00	0.00	0.00	11.0	221.30	0	0
6/23/2008	0.00	0.00	0.00	10.0	216.90	0	0
6/24/2008	0.00	0.00	0.00	7.0	133.00	0	0
6/25/2008	0.00	0.00	0.00	12.0	212.70	0	0
6/26/2008	0.00	0.00	0.00	12.0	226.80	0	0
6/27/2008	0.00	0.00	0.00	3.0	163.80	0	0
6/28/2008	0.00	0.00	0.00	10.0	174.50	0	0
6/29/2008	0.00	0.00	0.00	12.0	232.50	0	0
6/30/2008	0.00	0.00	0.00	11.0	215.60	0	0
7/1/2008	0.00	0.00	0.00	117.5	209.10		
7/2/2008	0.00	0.00	0.00	116.0	205.40		
7/3/2008	0.00	0.00	0.00	115.6	204.70		
7/4/2008	0.00	0.00	0.00	115.3	203.80		
7/5/2008	0.00	0.00	0.00	125.7	153.10		
7/6/2008	0.00	0.00	0.00	84.0	193.70		
7/7/2008	0.00	0.00	0.00	110.9	223.80		
7/8/2008	0.00	0.00	0.00	114.2	209.70		
7/9/2008	0.00	0.00	0.00	114.5	206.50		
7/10/2008	0.00	0.00	0.00	103.8	194.10		
7/11/2008	0.00	0.00	0.00	97.0	165.40		
7/12/2008	0.00	0.00	0.00	71.0	207.50		
7/13/2008	0.00	0.00	0.00	135.7	150.10		
7/14/2008	0.00	0.00	0.00	144.0	219.30		
7/15/2008	0.00	0.00	0.00	66.2	145.10		
7/16/2008	0.00	0.00	0.00	92.9	214.20		
7/17/2008	0.00	0.00	0.00	158.7	206.50		
7/18/2008	0.00	0.00	0.00		182.70		
7/19/2008	0.00	0.00	0.00		201.30		
7/20/2008	0.00	0.00	0.00		198.80		
7/21/2008	0.00	0.00	0.00		153.00		
7/22/2008	0.00	0.00	0.00		151.80		
7/23/2008	0.00	0.00	0.00		216.30		
7/24/2008	0.00	0.00	0.00		191.90		
7/25/2008	0.00	0.00	0.00		192.90		
7/26/2008	0.00	0.00	0.00		163.00		
7/27/2008	0.00	0.00	0.00		206.80		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
7/28/2008	0.00	0.00	0.00		197.40		
7/29/2008	0.00	0.00	0.00		156.90		
7/30/2008	0.00	0.00	0.00		203.00		
7/31/2008	0.00	0.00	0.00		166.60		
8/1/2008	0.00	0.00	0.00		199.90		
8/2/2008	0.00	0.00	0.00		195.10		
8/3/2008	0.00	0.00	0.00		192.90		
8/4/2008	0.00	0.00	0.00		180.20		
8/5/2008	0.00	0.00	0.00		189.60		
8/6/2008	0.00	0.00	0.00		193.50		
8/7/2008	0.00	0.00	0.00		199.00		
8/8/2008	0.00	0.00	0.00		194.40		
8/9/2008	0.00	0.00	0.00		173.70		
8/10/2008	0.00	0.00	0.00		185.40		
8/11/2008	0.00	0.00	0.00		202.20		
8/12/2008	0.00	0.00	0.00		**191.66**		
8/13/2008	0.00	0.00	0.00		**192.07**		
8/14/2008	0.00	0.00	0.00		**192.22**		
8/15/2008	0.00	0.00	0.00		**192.26**		
8/16/2008	0.00	0.00	0.00		**191.65**		
8/17/2008	0.00	0.00	0.00		**191.55**		
8/18/2008	0.00	0.00	0.00		**191.65**		
8/19/2008	0.00	0.00	0.00		**192.02**		
8/20/2008	0.00	0.00	0.00		**192.14**		
8/21/2008	0.00	0.00	0.00		**191.21**		
8/22/2008	0.00	0.00	0.00		**190.92**		
8/23/2008	0.00	0.00	0.00		**191.49**		
8/24/2008	0.00	0.00	0.00		**191.50**		
8/25/2008	0.00	0.00	0.00		**191.52**		
8/26/2008	0.00	0.00	0.00		**191.56**		
8/27/2008	0.00	0.00	0.00		**191.59**		
8/28/2008	0.00	0.00	0.00		**191.60**		
8/29/2008	0.00	0.00	0.00		**191.60**		
8/30/2008	0.00	0.00	0.00		**191.60**		
8/31/2008	0.00	0.00	0.00		**191.62**		
9/1/2008	0.00	0.00	0.00		**184.76**		
9/2/2008	0.00	0.00	0.00		**184.76**		
9/3/2008	0.00	0.00	0.00		**184.76**		
9/4/2008	0.00	0.00	0.00		**184.76**		
9/5/2008	0.00	0.00	0.00		**184.76**		
9/6/2008	0.00	0.00	0.00		**184.76**		
9/7/2008	0.00	0.00	0.00		**184.76**		
9/8/2008	0.00	0.00	0.00		**184.76**		
9/9/2008	0.00	0.00	0.00		**184.76**		
9/10/2008	0.00	0.00	0.00		**184.76**		
9/11/2008	0.00	0.00	0.00		**184.76**		
9/12/2008	0.00	0.00	0.00		**184.76**		
9/13/2008	0.00	0.00	0.00		**184.76**		
9/14/2008	0.00	0.00	0.00		**184.76**		
9/15/2008	0.00	0.00	0.00		**184.76**		
9/16/2008	0.00	0.00	0.00		**184.76**		
9/17/2008	0.00	0.00	0.00		**184.76**		
9/18/2008	0.00	0.00	0.00		**184.76**		
9/19/2008	0.00	0.00	0.00		**184.76**		
9/20/2008	0.00	0.00	0.00		**184.76**		
9/21/2008	0.00	0.00	0.00		**184.76**		
9/22/2008	0.00	0.00	0.00		**184.76**		
9/23/2008	0.00	0.00	0.00		**184.76**		
9/24/2008	0.00	0.00	0.00		**184.76**		
9/25/2008	0.00	0.00	0.00		**184.76**		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
9/26/2008	0.00	0.00	0.00		**184.76**		
9/27/2008	0.00	0.00	0.00		**184.76**		
9/28/2008	0.00	0.00	0.00		**184.76**		
9/29/2008	0.00	0.00	0.00		**184.76**		
9/30/2008	0.00	0.00	0.00		**184.76**		
10/1/2008	0.00	0.00	0.00		186.20		
10/2/2008	0.00	0.00	0.00		185.20		
10/3/2008	0.00	0.00	0.00		187.10		
10/4/2008	0.00	0.00	0.00		188.60		
10/5/2008	0.00	0.00	0.00		151.40		
10/6/2008	0.00	0.00	0.00		193.30		
10/7/2008	0.00	0.00	0.00		193.80		
10/8/2008	0.00	0.00	0.00		189.40		
10/9/2008	0.00	0.00	0.00		186.10		
10/10/2008	0.00	0.00	0.00		181.80		
10/11/2008	0.00	0.00	0.00		182.80		
10/12/2008	0.00	0.00	0.00		185.60		
10/13/2008	0.00	0.00	0.00		189.50		
10/14/2008	0.00	0.00	0.00		189.50		
10/15/2008	0.00	0.00	0.00		185.00		
10/16/2008	0.00	0.00	0.00		145.00		
10/17/2008	0.00	0.00	0.00	7.4	240.60		
10/18/2008	0.00	0.00	0.00	0.2	184.60		
10/19/2008	0.00	0.00	0.00	0.2	170.40		
10/20/2008	0.00	0.00	0.00	0.4	162.90		
10/21/2008	0.00	0.00	0.00	0.4	167.50		
10/22/2008	0.00	0.00	0.00	0.3	114.30		
10/23/2008	0.00	0.00	0.00	0.4	204.70		
10/24/2008	0.00	0.00	0.00	0.2	193.00		
10/25/2008	0.00	0.00	0.00	0.3	180.60		
10/26/2008	0.00	0.00	0.00	0.3	175.60		
10/27/2008	0.00	0.00	0.00	0.4	174.90		
10/28/2008	0.00	0.00	0.00	0.3	176.40		
10/29/2008	0.00	0.00	0.00	0.4	173.40		
10/30/2008	0.00	0.00	0.00	0.3	172.00		
10/31/2008	0.00	0.00	0.00	0.3	183.00		
11/1/2008	0.00	0.00	0.00	0.4	184.60		
11/2/2008	0.00	0.00	0.00	0.4	186.00		
11/3/2008	0.00	0.00	0.00	0.3	184.80		
11/4/2008	0.00	0.00	0.00	0.4	182.00		
11/5/2008	0.00	0.00	0.00	0.2	118.50		
11/6/2008	0.00	0.00	0.00	0.4	222.10		
11/7/2008	0.00	0.00	0.00	0.4	205.50		
11/8/2008	0.00	0.00	0.00	0.3	191.80		
11/9/2008	0.00	0.00	0.00	0.4	187.00		
11/10/2008	0.00	0.00	0.00	0.1	74.80		
11/11/2008	0.00	0.00	0.00	0.5	215.40		
11/12/2008	0.00	0.00	0.00	0.3	215.00		
11/13/2008	0.00	0.00	0.00	0.3	192.00		
11/14/2008	0.00	0.00	0.00		189.60		
11/15/2008	0.00	0.00	0.00	15.9	190.50		
11/16/2008	0.00	0.00	0.00	15.7	186.20		
11/17/2008	0.00	0.00	0.00	15.5	173.50		
11/18/2008	0.00	0.00	0.00	15.2	192.40		
11/19/2008	0.00	0.00	0.00	15.9	195.90		
11/20/2008	0.00	0.00	0.00	15.2	187.70		
11/21/2008	0.00	0.00	0.00	13.6	157.00		
11/22/2008	0.00	0.00	0.00	12.9	124.70		
11/23/2008	0.00	0.00	0.00	16.1	216.00		
11/24/2008	0.00	0.00	0.00	11.9	197.70		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
11/25/2008	0.00	0.00	0.00	16.6	228.50		
11/26/2008	0.00	0.00	0.00	15.2	193.50		
11/27/2008	0.00	0.00	0.00	15.7	181.40		
11/28/2008	0.00	0.00	0.00	14.7	187.50		
11/29/2008	0.00	0.00	0.00	14.1	182.70		
11/30/2008	0.00	0.00	0.00	14.3	184.50		
12/1/2008	0.00	0.00	0.00	13.6	181.20		
12/2/2008	0.00	0.00	0.00	13.3	178.80		
12/3/2008	0.00	0.00	0.00	12.3	170.30		
12/4/2008	0.00	0.00	0.00	13.1	176.50		
12/5/2008	0.00	0.00	0.00	11.6	175.10		
12/6/2008	0.00	0.00	0.00	10.6	189.90		
12/7/2008	0.00	0.00	0.00	12.3	186.00		
12/8/2008	0.00	0.00	0.00	15.0	175.10		
12/9/2008	0.00	0.00	0.00	12.4	140.70		
12/10/2008	0.00	0.00	0.00	14.8	198.30		
12/11/2008	0.00	0.00	0.00	14.2	158.00		
12/12/2008	0.00	0.00	0.00	13.4	197.50		
12/13/2008	0.00	0.00	0.00	13.1	186.30		
12/14/2008	0.00	0.00	0.00	13.4	183.30		
12/15/2008	0.00	0.00	0.00	13.3	181.70		
12/16/2008	0.00	0.00	0.00	13.1	177.00		
12/17/2008	0.00	0.00	0.00	13.1	175.50		
12/18/2008	0.00	0.00	0.00	12.8	172.30		
12/19/2008	0.00	0.00	0.00	12.9	173.50		
12/20/2008	0.00	0.00	0.00	12.8	169.70		
12/21/2008	0.00	0.00	0.00	12.2	165.50		
12/22/2008	0.00	0.00	0.00	12.6	188.50		
12/23/2008	0.00	0.00	0.00	12.4	166.20		
12/24/2008	0.00	0.00	0.00	13.7	99.90		
12/25/2008	0.00	0.00	0.00	12.6	222.90		
12/26/2008	0.00	0.00	0.00	11.8	159.90		
12/27/2008	0.00	0.00	0.00	13.3	190.50		
12/28/2008	0.00	0.00	0.00	12.5	164.80		
12/29/2008	0.00	0.00	0.00	14.0	186.10		
12/30/2008	0.00	0.00	0.00	14.0	186.10		
12/31/2008	0.00	0.00	0.00	13.3	176.50		
1/1/2009	0.00	0.00	0.00	12.0	201.40		
1/2/2009	0.00	0.00	0.00	12.0	186.10		
1/3/2009	0.00	0.00	0.00	12.0	182.20		
1/4/2009	0.00	0.00	0.00	12.0	182.90		
1/5/2009	0.00	0.00	0.00	11.3	178.10		
1/6/2009	0.00	0.00	0.00	10.8	167.70		
1/7/2009	0.00	0.00	0.00	10.8	167.90		
1/8/2009	0.00	0.00	0.00	9.8	166.30		
1/9/2009	0.00	0.00	0.00	9.8	162.40		
1/10/2009	0.00	0.00	0.00	10.3	162.80		
1/11/2009	0.00	0.00	0.00	10.8	161.60		
1/12/2009	0.00	0.00	0.00	10.0	161.30		
1/13/2009	0.00	0.00	0.00	10.5	165.60		
1/14/2009	0.00	0.00	0.00	10.3	167.40		
1/15/2009	0.00	0.00	0.00	11.5	165.10		
1/16/2009	0.00	0.00	0.00	11.0	179.80		
1/17/2009	0.00	0.00	0.00	7.8	158.20		
1/18/2009	0.00	0.00	0.00	8.0	97.80		
1/19/2009	0.00	0.00	0.00	5.6	194.00		
1/20/2009	0.00	0.00	0.00	15.7	215.90		
1/21/2009	0.00	0.00	0.00	16.9	172.10		
1/22/2009	0.00	0.00	0.00	6.2	94.10		
1/23/2009	0.00	0.00	0.00	7.0	59.20		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
1/24/2009	0.00	0.00	0.00	9.9	161.50		
1/25/2009	0.00	0.00	0.00	12.2	200.20		
1/26/2009	0.00	0.00	0.00	14.8	186.80		
1/27/2009	0.00	0.00	0.00	9.0	168.10		
1/28/2009	0.00	0.00	0.00	8.0	165.60		
1/29/2009	0.00	0.00	0.00	8.0	186.10		
1/30/2009	0.00	0.00	0.00	11.7	183.30		
1/31/2009	0.00	0.00	0.00	13.3	166.50		
2/1/2009	0.00	0.00	0.00	10.7	175.20		
2/2/2009	0.00	0.00	0.00	10.5	173.70		
2/3/2009	0.00	0.00	0.00	10.4	175.70		
2/4/2009	0.00	0.00	0.00	14.4	174.10		
2/5/2009	0.00	0.00	0.00	17.1	185.90		
2/6/2009	0.00	0.00	0.00	9.0	167.90		
2/7/2009	0.00	0.00	0.00	8.8	170.50		
2/8/2009	0.00	0.00	0.00	8.7	171.70		
2/9/2009	0.00	0.00	0.00	8.6	170.30		
2/10/2009	0.00	0.00	0.00	8.6	170.30		
2/11/2009	0.00	0.00	0.00	10.0	145.00		
2/12/2009	0.00	0.00	0.00	10.0	0.00		
2/13/2009	0.00	0.00	0.00	9.0	0.00		
2/14/2009	0.00	0.00	0.00	9.0	0.00		
2/15/2009	0.00	0.00	0.00	8.5	1.20		
2/16/2009	0.00	0.00	0.00	11.0	170.00		
2/17/2009	0.00	0.00	0.00	9.5	184.20		
2/18/2009	0.00	0.00	0.00	9.0	247.70		
2/19/2009	0.00	0.00	0.00	7.0	190.90		
2/20/2009	0.00	0.00	0.00	7.0	183.30		
2/21/2009	0.00	0.00	0.00	7.5	173.90		
2/22/2009	0.00	0.00	0.00	7.3	174.60		
2/23/2009	0.00	0.00	0.00	7.9	178.70		
2/24/2009	0.00	0.00	0.00	8.7	166.90		
2/25/2009	0.00	0.00	0.00	7.4	166.10		
2/26/2009	0.00	0.00	0.00	7.5	166.60		
2/27/2009	0.00	0.00	0.00	8.0	179.00		
2/28/2009	0.00	0.00	0.00	7.0	173.00		
3/1/2009	0.00	0.00	0.00	7.0	173.00		
3/2/2009	0.00	0.00	0.00	8.0	189.00		
3/3/2009	0.00	0.00	0.00	7.4	176.10		
3/4/2009	0.00	0.00	0.00	7.1	160.80		
3/5/2009	0.00	0.00	0.00	6.0	162.00		
3/6/2009	0.00	0.00	0.00	7.0	166.00		
3/7/2009	0.00	0.00	0.00	7.0	175.00		
3/8/2009	0.00	0.00	0.00	9.0	124.00		
3/9/2009	0.00	0.00	0.00	8.0	14.00		
3/10/2009	0.00	0.00	0.00	7.0	298.70		
3/11/2009	0.00	0.00	0.00	7.9	204.70		
3/12/2009	0.00	0.00	0.00	7.5	187.70		
3/13/2009	0.00	0.00	0.00	7.3	185.50		
3/14/2009	0.00	0.00	0.00	7.4	188.20		
3/15/2009	0.00	0.00	0.00	7.3	189.90		
3/16/2009	0.00	0.00	0.00	5.0	189.60		
3/17/2009	0.00	0.00	0.00	6.8	180.50		
3/18/2009	0.00	0.00	0.00	7.4	196.00		
3/19/2009	0.00	0.00	0.00	5.9	161.50		
3/20/2009	0.00	0.00	0.00	6.6	178.10		
3/21/2009	0.00	0.00	0.00	6.8	173.50		
3/22/2009	0.00	0.00	0.00	7.9	195.60		
3/23/2009	0.00	0.00	0.00	6.3	172.90		
3/24/2009	0.00	0.00	0.00	6.7	175.40		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
3/25/2009	0.00	0.00	0.00	7.0	180.90		
3/26/2009	0.00	0.00	0.00	7.0	181.80		
3/27/2009	0.00	0.00	0.00	6.6	176.50		
3/28/2009	0.00	0.00	0.00	6.7	176.80		
3/29/2009	0.00	0.00	0.00	6.2	164.30		
3/30/2009	0.00	0.00	0.00	6.3	165.50		
3/31/2009	0.00	0.00	0.00	6.5	165.60		
4/1/2009	0.00	0.00	0.00	7.0	179.30		
4/2/2009	0.00	0.00	0.00	6.5	179.60		
4/3/2009	0.00	0.00	0.00	6.3	170.30		
4/4/2009	0.00	0.00	0.00	6.9	175.70		
4/5/2009	0.00	0.00	0.00	6.5	179.00		
4/6/2009	0.00	0.00	0.00	6.3	167.70		
4/7/2009	0.00	0.00	0.00	6.5	171.30		
4/8/2009	0.00	0.00	0.00	6.4	176.60		
4/9/2009	0.00	0.00	0.00	6.1	169.60		
4/10/2009	0.00	0.00	0.00	6.6	178.40		
4/11/2009	0.00	0.00	0.00	6.3	171.50		
4/12/2009	0.00	0.00	0.00	5.8	161.60		
4/13/2009	0.00	0.00	0.00	5.7	160.20		
4/14/2009	0.00	0.00	0.00	5.8	160.10		
4/15/2009	0.00	0.00	0.00	5.7	156.40		
4/16/2009	0.00	0.00	0.00	5.7	157.90		
4/17/2009	0.00	0.00	0.00	6.3	166.00		
4/18/2009	0.00	0.00	0.00	5.9	167.20		
4/19/2009	0.00	0.00	0.00	5.6	161.00		
4/20/2009	0.00	0.00	0.00	6.0	162.60		
4/21/2009	0.00	0.00	0.00	5.6	155.70		
4/22/2009	0.00	0.00	0.00	5.8	157.20		
4/23/2009	0.00	0.00	0.00	6.7	174.20		
4/24/2009	0.00	0.00	0.00	6.1	170.80		
4/25/2009	0.00	0.00	0.00	5.9	167.60		
4/26/2009	0.00	0.00	0.00	5.9	166.60		
4/27/2009	0.00	0.00	0.00	6.5	180.60		
4/28/2009	0.00	0.00	0.00	5.5	160.80		
4/29/2009	0.00	0.00	0.00	6.1	166.30		
4/30/2009	0.00	0.00	0.00	5.7	162.30		
5/1/2009	0.00	0.00	3.58	6.7	180.70		
5/2/2009	0.00	0.00	3.58	7.4	199.10		
5/3/2009	0.00	0.00	3.58	7.0	201.60		
5/4/2009	0.00	0.00	3.58	6.6	194.60		
5/5/2009	0.00	0.00	3.58	6.1	188.00		
5/6/2009	0.00	0.00	3.58	4.5	161.20		
5/7/2009	0.00	0.00	3.58	5.4	170.20		
5/8/2009	0.00	0.00	3.58	7.1	191.10		
5/9/2009	0.00	0.00	3.58	6.8	194.90		
5/10/2009	0.00	0.00	3.58	6.5	192.10		
5/11/2009	0.00	0.00	3.58	6.2	187.30		
5/12/2009	0.00	0.00	3.58	6.1	187.50		
5/13/2009	0.00	0.00	3.58	6.1	189.40		
5/14/2009	0.00	0.00	3.58	6.3	193.50		
5/15/2009	0.00	0.00	3.58	5.3	179.60		
5/16/2009	0.00	0.00	3.58	6.7	192.60		
5/17/2009	0.00	0.00	3.58	5.7	173.80		
5/18/2009	0.00	0.00	3.58	6.5	196.30		
5/19/2009	0.00	0.00	3.58	4.6	165.90		
5/20/2009	0.00	0.00	3.58	6.4	184.50		
5/21/2009	0.00	0.00	3.58	6.0	185.00		
5/22/2009	0.00	0.00	3.58	6.2	192.00		
5/23/2009	0.00	0.00	3.58	5.9	189.20		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
5/24/2009	0.00	0.00	3.58	5.9	190.30		
5/25/2009	0.00	0.00	3.58	5.9	192.00		
5/26/2009	0.00	0.00	3.58	5.3	175.70		
5/27/2009	0.00	0.00	3.58	5.5	179.90		
5/28/2009	0.00	0.00	3.58	5.5	177.10		
5/29/2009	0.00	0.00	3.58	5.4	174.20		
5/30/2009	0.00	0.00	3.58	5.5	178.10		
5/31/2009	0.00	0.00	3.58	5.5	175.00		
6/1/2009	0.00	0.00	5.50	5.6	179.80		
6/2/2009	0.00	0.00	5.50	6.0	190.00		
6/3/2009	0.00	0.00	5.50	5.6	178.70		
6/4/2009	0.00	0.00	5.50	4.9	164.60		
6/5/2009	0.00	0.00	5.50	5.1	167.60		
6/6/2009	0.00	0.00	5.50	5.2	169.80		
6/7/2009	0.00	0.00	5.50	5.6	178.70		
6/8/2009	0.00	0.00	5.50	5.4	178.50		
6/9/2009	0.00	0.00	5.50	5.1	170.90		
6/10/2009	0.00	0.00	5.50	5.4	175.50		
6/11/2009	0.00	0.00	5.50	5.6	180.80		
6/12/2009	0.00	0.00	5.50	5.5	180.60		
6/13/2009	0.00	0.00	5.50	5.0	170.40		
6/14/2009	0.00	0.00	5.50	5.1	171.20		
6/15/2009	0.00	0.00	5.50	5.9	188.60		
6/16/2009	0.00	0.00	5.50	5.6	187.00		
6/17/2009	0.00	0.00	5.50	5.4	187.20		
6/18/2009	0.00	0.00	5.50	5.3	187.80		
6/19/2009	0.00	0.00	5.50	5.4	190.60		
6/20/2009	0.00	0.00	5.50	5.4	189.80		
6/21/2009	0.00	0.00	5.50	5.4	188.70		
6/22/2009	0.00	0.00	5.50	5.9	176.70		
6/23/2009	0.00	0.00	5.50	5.8	166.90		
6/24/2009	0.00	0.00	5.50	5.3	168.90		
6/25/2009	0.00	0.00	5.50	5.3	171.30		
6/26/2009	0.00	0.00	5.50	4.6	195.70		
6/27/2009	0.00	0.00	5.50	4.5	190.60		
6/28/2009	0.00	0.00	5.50	4.5	186.60		
6/29/2009	0.00	0.00	5.50	4.5	187.10		
6/30/2009	0.00	0.00	5.50	4.1	179.70		
7/1/2009	0.00	0.00	4.77	4.0	187.00		
7/2/2009	0.00	0.00	4.77	4.5	185.80		
7/3/2009	0.00	0.00	4.77	4.1	173.90		
7/4/2009	0.00	0.00	4.77	4.7	194.70		
7/5/2009	0.00	0.00	4.77	4.5	187.40		
7/6/2009	0.00	0.00	4.77	4.3	185.20		
7/7/2009	0.00	0.00	4.77	4.3	184.70		
7/8/2009	0.00	0.00	4.77	4.4	189.00		
7/9/2009	0.00	0.00	4.77	4.9	202.80		
7/10/2009	0.00	0.00	4.77	4.6	198.20		
7/11/2009	0.00	0.00	4.77	4.5	196.70		
7/12/2009	0.00	0.00	4.77	4.4	195.70		
7/13/2009	0.00	0.00	4.77	4.2	190.80		
7/14/2009	0.00	0.00	4.77	4.1	189.00		
7/15/2009	0.00	0.00	4.77	4.1	190.30		
7/16/2009	0.00	0.00	4.77	5.2	208.30		
7/17/2009	0.00	0.00	4.77	3.3	185.20		
7/18/2009	0.00	0.00	4.77	3.8	180.60		
7/19/2009	0.00	0.00	4.77	3.8	180.10		
7/20/2009	0.00	0.00	4.77	3.7	180.60		
7/21/2009	0.00	0.00	4.77	3.6	180.70		
7/22/2009	0.00	0.00	4.77	3.4	176.00		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
7/23/2009	0.00	0.00	4.77	4.8	195.80		
7/24/2009	0.00	0.00	4.77	4.6	201.90		
7/25/2009	0.00	0.00	4.77	4.2	197.20		
7/26/2009	0.00	0.00	4.77	4.0	194.00		
7/27/2009	0.00	0.00	4.77	3.8	190.10		
7/28/2009	0.00	0.00	4.77	3.7	184.20		
7/29/2009	0.00	0.00	4.77	2.9	175.50		
7/30/2009	0.00	0.00	4.77	5.2	205.20		
7/31/2009	0.00	0.00	4.77	3.4	184.80		
8/1/2009	0.16	0.32	4.58	3.5	197.30		
8/2/2009	0.16	0.32	4.58	3.3	184.00		
8/3/2009	0.16	0.32	4.58	5.4	211.10		
8/4/2009	0.16	0.32	4.58	4.4	207.10		
8/5/2009	0.16	0.32	4.58	4.2	204.80		
8/6/2009	0.16	0.32	4.58	4.1	203.30		
8/7/2009	0.16	0.32	4.58	4.0	203.00		
8/8/2009	0.16	0.32	4.58	3.6	196.50		
8/9/2009	0.16	0.32	4.58	3.6	195.50		
8/10/2009	0.16	0.32	4.58	4.2	204.90		
8/11/2009	0.16	0.32	4.58	4.8	218.50		
8/12/2009	0.16	0.32	4.58	3.8	205.50		
8/13/2009	0.16	0.32	4.58	4.6	211.00		
8/14/2009	0.16	0.32	4.58	3.7	205.60		
8/15/2009	0.16	0.32	4.58	3.9	206.00		
8/16/2009	0.16	0.32	4.58	4.3	213.60		
8/17/2009	0.16	0.32	4.58	4.2	215.40		
8/18/2009	0.16	0.32	4.58	4.3	206.80		
8/19/2009	0.16	0.32	4.58		204.90		
8/20/2009	0.16	0.32	4.58		205.50		
8/21/2009	0.16	0.32	4.58	3.7	205.10		
8/22/2009	0.16	0.32	4.58	3.5	204.00		
8/23/2009	0.16	0.32	4.58	3.0	194.20		
8/24/2009	0.16	0.32	4.58	4.1	209.00		
8/25/2009	0.16	0.32	4.58	3.6	206.20		
8/26/2009	0.16	0.32	4.58	3.5	205.50		
8/27/2009	0.16	0.32	4.58	3.1	200.90		
8/28/2009	0.16	0.32	4.58	3.7	169.10		
8/29/2009	0.16	0.32	4.58	5.3	58.10		
8/30/2009	0.16	0.32	4.58	3.2	78.60		
8/31/2009	0.16	0.32	4.58	1.0	321.00		
9/1/2009	0.00	0.56	4.60	3.1	221.30		
9/2/2009	0.00	0.56	4.60	5.7	216.50		
9/3/2009	0.00	0.56	4.60	4.0	214.40		
9/4/2009	0.00	0.56	4.60	3.7	210.60		
9/5/2009	0.00	0.56	4.60	3.4	206.20		
9/6/2009	0.00	0.56	4.60	3.3	204.60		
9/7/2009	0.00	0.56	4.60	3.6	207.90		
9/8/2009	0.00	0.56	4.60	3.3	205.50		
9/9/2009	0.00	0.56	4.60	3.4	206.70		
9/10/2009	0.00	0.56	4.60	3.5	212.70		
9/11/2009	0.00	0.56	4.60	3.5	207.50		
9/12/2009	0.00	0.56	4.60	2.9	202.90		
9/13/2009	0.00	0.56	4.60	3.2	204.00		
9/14/2009	0.00	0.56	4.60	3.0	202.00		
9/15/2009	0.00	0.56	4.60	3.9	216.50		
9/16/2009	0.00	0.56	4.60	1.6	187.00		
9/17/2009	0.00	0.56	4.60	4.0	212.00		
9/18/2009	0.00	0.56	4.60	3.4	170.90		
9/19/2009	0.00	0.56	4.60	3.5	146.90		
9/20/2009	0.00	0.56	4.60	3.7	110.50		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
9/21/2009	0.00	0.56	4.60	3.6	86.40		
9/22/2009	0.00	0.56	4.60	3.5	52.20		
9/23/2009	0.00	0.56	4.60	3.4	54.70		
9/24/2009	0.00	0.56	4.60	4.3	59.60		
9/25/2009	0.00	0.56	4.60	2.5	42.30		
9/26/2009	0.00	0.56	4.60	3.2	37.30		
9/27/2009	0.00	0.56	4.60	3.2	36.60		
9/28/2009	0.00	0.56	4.60	3.1	34.90		
9/29/2009	0.00	0.56	4.60	3.1	23.10		
9/30/2009	0.00	0.56	4.60	3.4	23.00		
10/1/2009	0.00	0.00	4.45	3.0	20.00		
10/2/2009	0.00	0.00	4.45	1.8	224.10		
10/3/2009	0.00	0.00	4.45	2.8	261.90		
10/4/2009	0.00	0.00	4.45	2.8	232.80		
10/5/2009	0.00	0.00	4.45	2.4	246.80		
10/6/2009	0.00	0.00	4.45	2.3	201.90		
10/7/2009	0.00	0.00	4.45	2.8	207.20		
10/8/2009	0.00	0.00	4.45	2.7	203.20		
10/9/2009	0.00	0.00	4.45	2.7	201.90		
10/10/2009	0.00	0.00	4.45	3.0	202.60		
10/11/2009	0.00	0.00	4.45	3.0	202.40		
10/12/2009	0.00	0.00	4.45	3.2	203.70		
10/13/2009	0.00	0.00	4.45	3.1	200.30		
10/14/2009	0.00	0.00	4.45	3.1	198.90		
10/15/2009	0.00	0.00	4.45	3.2	201.30		
10/16/2009	0.00	0.00	4.45	3.1	199.70		
10/17/2009	0.00	0.00	4.45	3.2	197.70		
10/18/2009	0.00	0.00	4.45	3.2	198.20		
10/19/2009	0.00	0.00	4.45	3.3	202.90		
10/20/2009	0.00	0.00	4.45	3.1	198.40		
10/21/2009	0.00	0.00	4.45	3.2	201.30		
10/22/2009	0.00	0.00	4.45	3.2	205.50		
10/23/2009	0.00	0.00	4.45	3.1	205.60		
10/24/2009	0.00	0.00	4.45	3.0	203.00		
10/25/2009	0.00	0.00	4.45	2.9	201.20		
10/26/2009	0.00	0.00	4.45	3.0	201.10		
10/27/2009	0.00	0.00	4.45	3.1	204.90		
10/28/2009	0.00	0.00	4.45	3.0	202.00		
10/29/2009	0.00	0.00	4.45	2.9	201.09		
10/30/2009	0.00	0.00	4.45	3.1	206.00		
10/31/2009	0.00	0.00	4.45	3.0	202.50		
11/1/2009	0.00	0.00	4.00	2.9	200.40		
11/2/2009	0.00	0.00	4.55	3.0	201.50		
11/3/2009	0.00	0.00	4.55	2.9	199.80		
11/4/2009	0.00	0.00	4.55	3.0	200.10		
11/5/2009	0.00	0.00	4.55	2.8	198.70		
11/6/2009	0.00	0.00	4.55	3.3	197.50		
11/7/2009	0.00	0.00	4.55	3.5	196.60		
11/8/2009	0.00	0.00	4.55	3.6	198.10		
11/9/2009	0.00	0.00	4.55	3.7	197.60		
11/10/2009	0.00	0.00	4.55	3.8	201.70		
11/11/2009	0.00	0.00	4.55	3.8	197.10		
11/12/2009	0.00	0.00	4.55	3.9	198.90		
11/13/2009	0.00	0.00	4.55	3.9	197.40		
11/14/2009	0.00	0.00	4.55	3.9	197.40		
11/15/2009	0.00	0.00	4.55	4.0	198.60		
11/16/2009	0.00	0.00	4.55	4.4	212.20		
11/17/2009	0.00	0.00	4.55	4.0	203.80		
11/18/2009	0.00	0.00	4.55	3.9	196.60		
11/19/2009	0.00	0.00	4.55	4.1	199.50		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
11/20/2009	0.00	0.00	4.55	4.1	200.90		
11/21/2009	0.00	0.00	4.55	4.1	200.80		
11/22/2009	0.00	0.00	4.55	4.0	199.30		
11/23/2009	0.00	0.00	4.55	4.0	200.40		
11/24/2009	0.00	0.00	4.55	4.1	202.40		
11/25/2009	0.00	0.00	4.55	3.7	188.20		
11/26/2009	0.00	0.00	4.55	4.1	199.50		
11/27/2009	0.00	0.00	4.55	3.7	179.00		
11/28/2009	0.00	0.00	4.55	3.6	203.60		
11/29/2009	0.00	0.00	4.55	4.1	203.40		
11/30/2009	0.00	0.00	4.55	4.2	198.50		
12/1/2009	0.77	0.00	4.97	4.1	197.40		
12/2/2009	0.77	0.00	4.97	4.1	198.80		
12/3/2009	0.77	0.00	4.97	4.1	195.00		
12/4/2009	0.77	0.00	4.97	4.1	192.30		
12/5/2009	0.77	0.00	4.97	4.1	192.30		
12/6/2009	0.77	0.00	4.97	4.0	191.20		
12/7/2009	0.77	0.00	4.97	4.0	189.20		
12/8/2009	0.77	0.00	4.97	4.0	191.00		
12/9/2009	0.77	0.00	4.97	4.7	58.10		
12/10/2009	0.77	0.00	4.97	1.7	0.00		
12/11/2009	0.77	0.00	4.97	4.1	344.60		
12/12/2009	0.77	0.00	4.97	4.5	235.40		
12/13/2009	0.77	0.00	4.97	4.2	216.40		
12/14/2009	0.77	0.00	4.97	4.2	209.40		
12/15/2009	0.77	0.00	4.97	4.1	202.70		
12/16/2009	0.77	0.00	4.97	2.9	56.40		
12/17/2009	0.77	0.00	4.97	4.5	293.10		
12/18/2009	0.77	0.00	4.97	3.4	186.40		
12/19/2009	0.77	0.00	4.97	4.1	207.10		
12/20/2009	0.77	0.00	4.97	4.3	211.40		
12/21/2009	0.77	0.00	4.97	4.0	200.50		
12/22/2009	0.77	0.00	4.97	4.0	198.00		
12/23/2009	0.77	0.00	4.97	3.7	197.20		
12/24/2009	0.77	0.00	4.97	4.3	198.50		
12/25/2009	0.77	0.00	4.97	3.9	194.10		
12/26/2009	0.77	0.00	4.97	3.9	192.30		
12/27/2009	0.77	0.00	4.97	3.9	191.60		
12/28/2009	0.77	0.00	4.97	3.8	190.50		
12/29/2009	0.77	0.00	4.97	3.5	181.10		
12/30/2009	0.77	0.00	4.97	4.3	183.90		
12/31/2009	0.77	0.00	4.97	3.2	154.90		
1/1/2010	2.03	0.35	5.42	3.5	191.30		
1/2/2010	2.03	0.35	5.42	3.5	202.20		
1/3/2010	2.03	0.35	5.42	3.5	205.70		
1/4/2010	2.03	0.35	5.42	5.0	346.30		
1/5/2010	2.03	0.35	5.42	3.9	568.20		
1/6/2010	2.03	0.35	5.42	3.3	178.80		
1/7/2010	2.03	0.35	5.42	3.2	154.90		
1/8/2010	2.03	0.35	5.42	3.8	184.50		
1/9/2010	2.03	0.35	5.42	3.3	168.40		
1/10/2010	2.03	0.35	5.42	3.6	177.40		
1/11/2010	2.03	0.35	5.42	4.0	181.60		
1/12/2010	2.03	0.35	5.42	2.1	150.00		
1/13/2010	2.03	0.35	5.42	1.7	144.20		
1/14/2010	2.03	0.35	5.42	0.8	51.30		
1/15/2010	2.03	0.35	5.42	1.0	94.60		
1/16/2010	2.03	0.35	5.42	0.3	84.00		
1/17/2010	2.03	0.35	5.42	0.3	72.10		
1/18/2010	2.03	0.35	5.42	4.7			

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
1/19/2010	2.03	0.35	5.42	4.7	257.60		
1/20/2010	2.03	0.35	5.42	4.2	224.40		
1/21/2010	2.03	0.35	5.42	3.9	216.30		
1/22/2010	2.03	0.35	5.42	3.8	213.30		
1/23/2010	2.03	0.35	5.42	3.8	211.90		
1/24/2010	2.03	0.35	5.42	3.8	211.30		
1/25/2010	2.03	0.35	5.42	3.8	208.00		
1/26/2010	2.03	0.35	5.42	3.7	203.90		
1/27/2010	2.03	0.35	5.42	3.7	197.90		
1/28/2010	2.03	0.35	5.42	3.3	200.00		
1/29/2010	2.03	0.35	5.42	3.6	192.50		
1/30/2010	2.03	0.35	5.42	3.2	378.40		
1/31/2010	2.03	0.35	5.42	3.8	250.40		
2/1/2010	1.82	0.43	3.89	4.0	189.00		
2/2/2010	1.82	0.43	3.89	4.9	213.20		
2/3/2010	1.82	0.43	3.89	4.4	203.50		
2/4/2010	1.82	0.43	3.89	4.2	198.65		
2/5/2010	1.82	0.43	3.89	4.0	196.23		
2/6/2010	1.82	0.43	3.89	4.0	195.01		
2/7/2010	1.82	0.43	3.89	3.9	194.41		
2/8/2010	1.82	0.43	3.89	3.9	194.10		
2/9/2010	1.82	0.43	3.89	3.9	193.95		
2/10/2010	1.82	0.43	3.89	3.9	193.88		
2/11/2010	1.82	0.43	3.89	3.9	193.84		
2/12/2010	1.82	0.43	3.89	3.9	193.82		
2/13/2010	1.82	0.43	3.89	3.9	193.81		
2/14/2010	1.82	0.43	3.89	3.9	193.80		
2/15/2010	1.82	0.43	3.89	3.9	193.80		
2/16/2010	1.82	0.43	3.89	3.9	193.80		
2/17/2010	1.82	0.43	3.89	3.9	193.80		
2/18/2010	1.82	0.43	3.89	3.9	193.80		
2/19/2010	1.82	0.43	3.89	3.9	193.80		
2/20/2010	1.82	0.43	3.89	3.9	193.80		
2/21/2010	1.82	0.43	3.89	3.9	193.80		
2/22/2010	1.82	0.43	3.89	3.9	196.70		
2/23/2010	1.82	0.43	3.89	3.9	191.00		
2/24/2010	1.82	0.43	3.89	3.9	191.50		
2/25/2010	1.82	0.43	3.89	3.8	191.40		
2/26/2010	1.82	0.43	3.89	3.9	195.00		
2/27/2010	1.82	0.43	3.89	3.9	192.00		
2/28/2010	1.82	0.43	3.89	3.9	192.70		
3/1/2010	3.03	0.77	5.39	3.9	192.90		
3/2/2010	3.03	0.77	5.39	3.9	191.20		
3/3/2010	3.03	0.77	5.39	3.8	190.90		
3/4/2010	3.03	0.77	5.39	3.3	213.80		
3/5/2010	3.03	0.77	5.39	3.8	190.90		
3/6/2010	3.03	0.77	5.39	3.4	203.60		
3/7/2010	3.03	0.77	5.39	3.4	203.20		
3/8/2010	3.03	0.77	5.39	3.4	193.10		
3/9/2010	3.03	0.77	5.39	3.5	193.50		
3/10/2010	3.03	0.77	5.39	3.4	192.80		
3/11/2010	3.03	0.77	5.39	3.4	203.50		
3/12/2010	3.03	0.77	5.39	3.3	168.80		
3/13/2010	3.03	0.77	5.39	3.4	243.50		
3/14/2010	3.03	0.77	5.39	3.4	216.30		
3/15/2010	3.03	0.77	5.39	3.4	212.30		
3/16/2010	3.03	0.77	5.39	3.4	210.70		
3/17/2010	3.03	0.77	5.39	3.4	214.40		
3/18/2010	3.03	0.77	5.39	3.4	213.00		
3/19/2010	3.03	0.77	5.39	3.4	212.90		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
3/20/2010	3.03	0.77	5.39	3.4	211.70		
3/21/2010	3.03	0.77	5.39	3.4	215.20		
3/22/2010	3.03	0.77	5.39	3.4	214.30		
3/23/2010	3.03	0.77	5.39	3.4	211.50		
3/24/2010	3.03	0.77	5.39	3.4	213.60		
3/25/2010	3.03	0.77	5.39	3.4	212.80		
3/26/2010	3.03	0.77	5.39	3.4	214.20		
3/27/2010	3.03	0.77	5.39	3.3	214.60		
3/28/2010	3.03	0.77	5.39	3.4	213.20		
3/29/2010	3.03	0.77	5.39	3.4	210.60		
3/30/2010	3.03	0.77	5.39	3.4	209.60		
3/31/2010	3.03	0.77	5.39	3.4	210.80		
4/1/2010	0.51	0.50	5.43	3.4	212.90		
4/2/2010	0.51	0.50	5.43	3.4	213.30		
4/3/2010	0.51	0.50	5.43	3.4	212.20		
4/4/2010	0.51	0.50	5.43	3.4	211.70		
4/5/2010	0.51	0.50	5.43	3.4	213.80		
4/6/2010	0.51	0.50	5.43	3.4	214.30		
4/7/2010	0.51	0.50	5.43	3.4	213.70		
4/8/2010	0.51	0.50	5.43	3.4	210.00		
4/9/2010	0.51	0.50	5.43	3.3	217.20		
4/10/2010	0.51	0.50	5.43	3.3	209.90		
4/11/2010	0.51	0.50	5.43	3.3	211.90		
4/12/2010	0.51	0.50	5.43	3.3	209.30		
4/13/2010	0.51	0.50	5.43	3.3	209.30		
4/14/2010	0.51	0.50	5.43	3.3	211.00		
4/15/2010	0.51	0.50	5.43	3.3	213.30		
4/16/2010	0.51	0.50	5.43	3.3	213.80		
4/17/2010	0.51	0.50	5.43	3.3	208.50		
4/18/2010	0.51	0.00	5.43	3.3	205.30		
4/19/2010	0.51	0.00	5.43	3.3	206.40		
4/20/2010	0.51	0.00	5.43	3.3	206.40		
4/21/2010	0.51	0.00	5.43	3.3	205.90		
4/22/2010	0.51	0.00	5.43	3.3	205.70		
4/23/2010	0.51	0.00	5.43	3.2	195.90		
4/24/2010	0.51	0.00	5.43	3.3	215.00		
4/25/2010	0.51	0.00	5.43	3.3	212.80		
4/26/2010	0.51	0.00	5.43	11.3	205.10		
4/27/2010	0.51	0.00	5.43	16.6	205.90		
4/28/2010	0.00	0.00	5.43	11.2	195.90		
4/29/2010	0.00	0.00	5.43	10.1	241.00		
4/30/2010	0.00	0.00	5.43	9.3	216.70		
5/1/2010	0.00	0.00	6.10	8.3	221.90		
5/2/2010	0.00	0.00	6.10	7.7	217.70		
5/3/2010	0.00	0.00	6.10	7.1	215.10		
5/4/2010	0.00	0.00	6.10	6.8	213.50		
5/5/2010	0.00	0.00	6.10	7.5	83.90		
5/6/2010	0.00	0.00	6.10	5.1	305.50		
5/7/2010	0.00	0.00	6.10	6.0	230.40		
5/8/2010	0.00	0.00	6.10	5.7	215.00		
5/9/2010	0.00	0.00	6.10	4.9	191.60		
5/10/2010	17.86	11.50	6.10	4.8	233.20		
5/11/2010	17.86	11.50	6.10	5.3	219.00		
5/12/2010	17.86	11.50	6.10	5.1	211.00		
5/13/2010	17.86	11.50	6.10	4.9	203.40		
5/14/2010	17.86	11.50	6.10	4.7	210.50		
5/15/2010	17.86	11.50	6.10	4.6	206.80		
5/16/2010	17.86	11.50	6.10	4.5	205.20		
5/17/2010	17.86	11.50	6.10	4.4	205.90		
5/18/2010	17.86	11.50	6.10	4.3	206.30		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
5/19/2010	17.86	11.50	6.10	4.3	208.00		
5/20/2010	17.86	11.50	6.10	4.1	206.00		
5/21/2010	17.86	11.50	6.10	4.0	204.70		
5/22/2010	17.86	11.50	6.10	4.0	205.10		
5/23/2010	17.86	11.50	6.10	3.8	203.90		
5/24/2010	17.86	11.50	6.10	3.8	202.60		
5/25/2010	17.86	11.50	6.10	3.7	202.60		
5/26/2010	17.86	11.50	6.10	3.7	204.90		
5/27/2010	17.86	11.50	6.10	3.4	202.20		
5/28/2010	17.86	11.50	6.10	3.1	197.70		
5/29/2010	17.86	11.50	6.10	3.2	199.30		
5/30/2010	17.86	11.50	6.10	4.9	236.50		
5/31/2010	17.86	11.50	6.10	3.6	215.90		
6/1/2010	17.30	0.00	5.50	3.8	217.70		
6/2/2010	17.30	0.00	5.50	3.7	217.70		
6/3/2010	17.30	0.00	5.50	13.3	214.10		
6/4/2010	17.30	0.00	5.50	18.0	222.00		
6/5/2010	17.30	0.00	5.50	20.4	209.20		
6/6/2010	17.30	0.00	5.50	22.8	205.60		
6/7/2010	17.30	0.00	5.50	19.5	212.30		
6/8/2010	17.30	0.00	5.50	17.6	215.90		
6/9/2010	17.30	0.00	5.50	16.2	214.50		
6/10/2010	17.30	0.00	5.50	15.2	215.70		
6/11/2010	17.30	0.00	5.50	15.0	221.10		
6/12/2010	17.30	0.00	5.50	14.1	225.00		
6/13/2010	17.30	0.00	5.50	17.1	219.10		
6/14/2010	17.30	0.00	5.50	22.8	226.60		
6/15/2010	17.30	0.00	5.50	18.2	231.90		
6/16/2010	17.30	0.00	5.50	15.7	221.20		
6/17/2010	17.30	0.00	5.50	15.0	224.90		
6/18/2010	17.30	0.00	5.50	14.6	224.90		
6/19/2010	17.30	0.00	5.50	14.2	224.10		
6/20/2010	17.30	0.00	5.50	13.6	222.70		
6/21/2010	17.30	0.00	5.50	13.3	222.80		
6/22/2010	17.30	0.00	5.50	12.8	219.70		
6/23/2010	17.30	0.00	5.50	12.6	219.60		
6/24/2010	17.30	0.00	5.50	12.5	223.60		
6/25/2010	17.30	0.00	5.50	12.2	223.80		
6/26/2010	17.30	0.00	5.50	10.9	209.50		
6/27/2010	17.30	0.00	5.50	12.3	227.90		
6/28/2010	17.30	0.00	5.50	11.4	223.50		
6/29/2010	17.30	0.00	5.50	10.9	217.60		
6/30/2010	17.30	0.00	5.50	10.6	213.40		
7/1/2010	17.26	0.00	5.58	10.7	217.20		
7/2/2010	17.26	0.00	5.58	9.3	194.90		
7/3/2010	17.26	0.00	5.58	10.1	218.40		
7/4/2010	17.26	0.00	5.58	11.1	221.80		
7/5/2010	17.26	0.00	5.58	10.3	209.30		
7/6/2010	17.26	0.00	5.58	9.8	203.20		
7/7/2010	17.26	0.00	5.58	9.6	202.80		
7/8/2010	17.26	0.00	5.58	9.2	202.40		
7/9/2010	17.26	0.00	5.58	9.4	204.40		
7/10/2010	17.26	0.00	5.58	8.1	198.50		
7/11/2010	17.26	0.00	5.58	8.5	198.10		
7/12/2010	17.26	0.00	5.58	8.6	200.40		
7/13/2010	17.26	0.00	5.58	9.9	228.90		
7/14/2010	17.26	0.00	5.58	9.1	220.80		
7/15/2010	17.26	0.00	5.58	9.1	219.30		
7/16/2010	17.26	0.00	5.58	8.4	215.30		
7/17/2010	17.26	0.00	5.58	8.2	214.00		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
7/18/2010	17.26	0.00	5.58	8.1	206.90		
7/19/2010	17.26	0.00	5.58	7.1	213.70		
7/20/2010	17.26	0.00	5.58	7.2	205.00		
7/21/2010	17.26	0.00	5.58	9.3	231.70		
7/22/2010	17.26	0.00	5.58	8.9	227.20		
7/23/2010	17.26	0.00	5.58	8.9	229.10		
7/24/2010	17.26	0.00	5.58	8.6	234.80		
7/25/2010	17.26	0.00	5.58	7.7	231.70		
7/26/2010	17.26	0.00	5.58	5.0	211.80		
7/27/2010	17.26	0.00	5.58	7.7	223.60		
7/28/2010	17.26	0.00	5.58	6.0	213.20		
7/29/2010	17.26	0.00	5.58	5.5	213.40		
7/30/2010	17.26	0.00	5.58	5.3	212.30		
7/31/2010	17.26	0.00	5.58	5.0	211.50		
8/1/2010	17.64	0.00	5.81	4.7	210.60		
8/2/2010	17.64	0.00	5.81	4.7	212.30		
8/3/2010	17.64	0.00	5.81	4.2	212.30		
8/4/2010	17.64	0.00	5.81	7.1	113.20		
8/5/2010	17.64	0.00	5.81	6.8	37.00		
8/6/2010	17.64	0.00	5.81	0.6	353.30		
8/7/2010	17.64	0.00	5.81	3.3	251.80		
8/8/2010	17.64	0.00	5.81	2.6	224.60		
8/9/2010	17.64	0.00	5.81	4.4	220.90		
8/10/2010	17.64	0.00	5.81	34.7	224.90		
8/11/2010	17.64	0.00	5.81	21.3	224.80		
8/12/2010	17.64	0.00	5.81	17.3	222.30		
8/13/2010	17.64	0.00	5.81	15.3	221.40		
8/14/2010	17.64	0.00	5.81	14.0	219.20		
8/15/2010	17.64	0.00	5.81	13.0	220.00		
8/16/2010	17.64	0.00	5.81	12.2	220.80		
8/17/2010	17.64	0.00	5.81	13.8	215.20		
8/18/2010	17.64	0.00	5.81	17.6	219.80		
8/19/2010	17.64	0.00	5.81	13.6	217.00		
8/20/2010	17.64	0.00	5.81	12.4	217.70		
8/21/2010	17.64	0.00	5.81	11.4	220.00		
8/22/2010	17.64	0.00	5.81	10.3	204.00		
8/23/2010	17.64	0.00	5.81	10.3	199.30		
8/24/2010	17.64	0.00	5.81	10.9	219.80		
8/25/2010	17.64	0.00	5.81	10.5	222.10		
8/26/2010	17.64	0.00	5.81	10.3	226.40		
8/27/2010	17.64	0.00	5.81	9.4	218.40		
8/28/2010	17.64	0.00	5.81	8.9	203.90		
8/29/2010	17.64	0.00	5.81	9.7	204.70		
8/30/2010	17.64	0.00	5.81	9.9	225.30		
8/31/2010	17.64	0.00	5.81	9.5	223.30		
9/1/2010	17.80	0.00	5.80	9.6	222.5		
9/2/2010	17.80	0.00	5.80	9.0	220.4		
9/3/2010	17.80	0.00	5.80	8.5	222.1		
9/4/2010	17.80	0.00	5.80	9.4	217.6		
9/5/2010	17.80	0.00	5.80	9.3	224.9		
9/6/2010	17.80	0.00	5.80	9.1	222.9		
9/7/2010	17.80	0.00	5.80	9.2	219.2		
9/8/2010	17.80	0.00	5.80	9.2	226.4		
9/9/2010	17.80	0.00	5.80	8.3	228.0		
9/10/2010	17.80	0.00	5.80	8.5	228.2		
9/11/2010	17.80	0.00	5.80	8.8	229.4		
9/12/2010	17.80	0.00	5.80	7.6	216.9		
9/13/2010	17.80	0.00	5.80	10.6	207.2		
9/14/2010	17.80	0.00	5.80	45.0	211.8		
9/15/2010	17.80	0.00	5.80	28.4	215.3		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
9/16/2010	17.80	0.00	5.80	24.5	213.0		
9/17/2010	17.80	0.00	5.80	22.4	214.0		
9/18/2010	17.80	0.00	5.80	21.3	213.8		
9/19/2010	17.80	0.00	5.80	20.3	209.4		
9/20/2010	17.80	0.00	5.80	19.7	220.0		
9/21/2010	17.80	0.00	5.80	19.0	214.2		
9/22/2010	17.80	0.00	5.80	18.7	216.6		
9/23/2010	17.80	0.00	5.80	17.9	214.9		
9/24/2010	17.80	0.00	5.80	17.9	212.2		
9/25/2010	17.80	0.00	5.80	16.9	220.0		
9/26/2010	17.80	8.00	5.80	16.4	216.0		
9/27/2010	17.80	8.00	5.80	12.4	166.4		
9/28/2010	17.80	8.00	5.80	17.6	217.4		
9/29/2010	17.80	8.00	5.80	15.7	183.5		
9/30/2010	17.80	8.00	5.80	15.5	83.2		
10/1/2010	18.40	0.00	4.2	14.5	296		
10/2/2010	18.40	0.00	4.2	14.8	225		
10/3/2010	18.40	0.00	4.2	14.4	212		
10/4/2010	18.40	0.00	4.2	14.1	212		
10/5/2010	18.40	0.00	4.2	13.8	215		
10/6/2010	0.00	0.00	4.2	14.0	228		
10/7/2010	0.00	0.00	0.00	13.1	224		
10/8/2010	0.00	0.00	0.00	13.0	231		
10/9/2010	0.00	0.00	0.00	13.1	238		
10/10/2010	0.00	0.00	0.00	12.3	225		
10/11/2010	0.00	0.00	0.00	12.1	225		
10/12/2010	0.00	0.00	0.00	12.1	233		
10/13/2010	0.00	0.00	0.00	11.9	232		
10/1 '2010	0.00	0.00	0.00	11.7	231		
10/15/2010	0.00	0.00	0.00	11.4	229		
10/16/2010	0.00	0.00	0.00	11.3	229		
10/17/2010	0.00	0.00	0.00	11.3	230		
10/18/2010	0.00	0.00	0.00	11.2	232		
10/19/2010	0.00	0.00	0.00	11.2	234		
10/20/2010	0.00	0.00	0.00	10.9	227		
10/21/2010	0.00	0.00	0.00	10.7	223		
10/22/2010	0.00	0.00	0.00	10.6	223		
10/23/2010	0.00	0.00	0.00	10.7	227		
10/24/2010	0.00	0.00	0.00	10.9	236		
10/25/2010	0.00	0.00	0.00	10.2	225		
10/26/2010	0.00	0.00	0.00	10.5	232		
10/27/2010	0.00	0.00	0.00	10.3	228		
10/28/2010	0.00	0.00	0.00	10.3	229		
10/29/2010	0.00	0.00	0.00	9.0	210		
10/30/2010	0.00	0.00	0.00	9.3	207		
10/31/2010	0.00	0.00	0.00	9.5	207		
11/1/2010	0.00	0.00	0.00	9.4	196		
11/2/2010	0.00	0.00	0.00	9.5	189		
11/3/2010	0.00	0.00	0.00	9.5	232		
11/4/2010	0.00	0.00	0.00	9.3	184		
11/5/2010	0.00	0.00	0.00	9.5	238		
11/6/2010	0.00	0.00	0.00	9.6	137		
11/7/2010	0.00	0.00	0.00	9.8	14		
11/8/2010	0.00	0.00	0.00	9.6	26		
11/9/2010	0.00	0.00	0.00	8.0	328		
11/10/2010	0.00	0.00	0.00	9.8	281		
11/11/2010	0.00	0.00	0.00	10.2	235		
11/12/2010	0.00	0.00	0.00	10.6	224		
11/13/2010	0.00	0.00	0.00	11.2	225		
11/14/2010	0.00	0.00	0.00	10.2	206		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
11/15/2010	0.00	0.00	0.00	11.9	225		
11/16/2010	0.00	0.00	0.00	10.0	183		
11/17/2010	0.00	0.00	0.00	14.9	253		
11/18/2010	0.00	0.00	0.00	14.4	228		
11/19/2010	0.00	0.00	0.00	14.0	216		
11/20/2010	0.00	0.00	0.00	14.5	215		
11/21/2010	0.00	0.00	0.00	14.9	219		
11/22/2010	0.00	0.00	0.00	15.1	218		
11/23/2010	0.00	0.00	0.00	15.4	220		
11/24/2010	0.00	0.00	0.00	15.3	216		
11/25/2010	0.00	0.00	0.00	15.6	217		
11/26/2010	0.00	0.00	0.00	15.7	216		
11/27/2010	0.00	0.00	0.00	15.5	217		
11/28/2010	0.00	0.00	0.00	15.1	212		
11/29/2010	0.00	0.00	0.00	15.6	209		
11/30/2010	0.00	0.00	0.00	15.9	212		
12/1/2010	0.00	0.00	0.00	15.7	207		
12/2/2010	0.00	0.00	0.00	15.6	200		
12/3/2010	0.00	0.00	0.00	15.2	199		
12/4/2010	0.00	0.00	0.00	15.7	202		
12/5/2010	0.00	0.00	0.00	15.5	206		
12/6/2010	0.00	0.00	0.00	15.1	195		
12/7/2010	0.00	0.00	0.00	15.1	109		
12/8/2010	0.00	0.00	0.00	14.4	188		
12/9/2010	0.00	0.00	0.00	14.6	187		
12/10/2010	0.00	0.00	0.00	15.7	207		
12/11/2010	0.00	0.00	0.00	15.3	206		
12/12/2010	0.00	0.00	0.00	15.1	203		
12/13/2010	0.00	0.00	0.00	10.9	188		
12/14/2010	0.00	0.00	0.00	15.1	183		
12/15/2010	0.00	0.00	0.00	15.1	177		
12/16/2010	0.00	0.00	0.00	15.1	192		
12/17/2010	0.00	0.00	0.00	15.1	223		
12/18/2010	0.00	0.00	0.00	15.1	221		
12/19/2010	0.00	0.00	0.00	15.1	210		
12/20/2010	0.00	0.00	0.00	15.1	211		
12/21/2010	0.00	0.00	0.00	15.1	208		
12/22/2010	0.00	0.00	0.00	15.0	209		
12/23/2010	0.00	0.00	0.00	15.0	212		
12/24/2010	0.00	0.00	0.00	15.0	210		
12/25/2010	0.00	0.00	0.00	14.9	221		
12/26/2010	0.00	0.00	0.00	14.9	199		
12/27/2010	0.00	0.00	0.00	14.9	202		
12/28/2010	0.00	0.00	0.00	14.9	203		
12/29/2010	0.00	0.00	0.00	14.8	198		
12/30/2010	0.00	0.00	0.00	14.8	201		
12/31/2010	0.00	0.00	0.00	14.8	198		
1/1/2011	0.00	0.00	0.00	15.0	195		
1/2/2011	0.00	0.00	0.00	15.0	188		
1/3/2011	0.00	0.00	0.00	14.9	187		
1/4/2011	0.00	0.00	0.00	14.9	111		
1/5/2011	0.00	0.00	0.00	14.9	282		
1/6/2011	0.00	0.00	0.00	14.9	227		
1/7/2011	0.00	0.00	0.00	14.9	215		
1/8/2011	0.00	0.00	0.00	14.9	205		
1/9/2011	0.00	0.00	0.00	14.8	206		
1/10/2011	0.00	0.00	0.00	14.9	195		
1/11/2011	0.00	0.00	0.00	14.9	193		
1/12/2011	0.00	0.00	0.00	14.8	186		
1/13/2011	0.00	0.00	0.00	14.8	187		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
1/14/2011	0.00	0.00	0.00	14.8	192		
1/15/2011	0.00	0.00	0.00	14.9	201		
1/16/2011	0.00	0.00	0.00	14.9	195		
1/17/2011	0.00	0.00	0.00	14.9	195		
1/18/2011	0.00	0.00	0.00	14.9	193		
1/19/2011	0.00	0.00	0.00	14.9	231		
1/20/2011	0.00	0.00	0.00	14.9	214		
1/21/2011	0.00	0.00	0.00	14.9	214		
1/22/2011	0.00	0.00	0.00	14.9	210		
1/23/2011	0.00	0.00	0.00	14.9	193		
1/24/2011	0.00	0.00	0.00	14.9	203		
1/25/2011	0.00	0.00	0.00	14.9	203		
1/26/2011	0.00	0.00	0.00	14.9	203		
1/27/2011	0.00	0.00	0.00	14.9	212		
1/28/2011	0.00	0.00	0.00	14.9	204		
1/29/2011	0.00	0.00	0.00	14.9	204		
1/30/2011	0.00	0.00	0.00	14.9	203		
1/31/2011	0.00	0.00	0.00	14.9	208		
2/1/2011	0.00	0.00	0.00	15.0	210		
2/2/2011	0.00	0.00	0.00	15.0	210		
2/3/2011	0.00	0.00	0.00	15.0	207		
2/4/2011	0.00	0.00	0.00	15.0	217		
2/5/2011	0.00	0.00	0.00	15.0	205		
2/6/2011	0.00	0.00	0.00	15.0	202		
2/7/2011	0.00	0.00	0.00	15.0	198		
2/8/2011	0.00	0.00	0.00	14.9	221		
2/9/2011	0.00	0.00	0.00	14.9	218		
2/10/2011	0.00	0.00	0.00	14.9	208		
2/11/2011	0.00	0.00	0.00	14.9	214		
2/12/2011	0.00	0.00	0.00	14.9	206		
2/13/2011	0.00	0.00	0.00	14.9	208		
2/14/2011	0.00	0.00	0.00	14.9	211		
2/15/2011	0.00	0.00	0.00	14.9	211		
2/16/2011	0.00	0.00	0.00	14.9	196		
2/17/2011	0.00	0.00	0.00	14.9	210		
2/18/2011	0.00	0.00	0.00	14.9	204		
2/19/2011	0.00	0.00	0.00	14.9	200		
2/20/2011	0.00	0.00	0.00	14.9	208		
2/21/2011	0.00	0.00	0.00	14.9	208		
2/22/2011	0.00	0.00	0.00	14.9	205		
2/23/2011	0.00	0.00	0.00	14.9	200		
2/24/2011	0.00	0.00	0.00	14.9	203		
2/25/2011	0.00	0.00	0.00	14.9	218		
2/26/2011	0.00	0.00	0.00	14.9	204		
2/27/2011	0.00	0.00	0.00	14.9	210		
2/28/2011	0.00	0.00	0.00	14.9	210		
3/1/2011	0.00	0.00	0.00	14.9	210		
3/2/2011	19.37	8.30	11.10	14.9	204		
3/3/2011	19.37	8.30	11.10	14.9	208		
3/4/2011	19.37	8.30	11.10	14.9	199		
3/5/2011	19.37	8.30	11.10	14.9	202		
3/6/2011	19.37	8.30	11.10	14.9	207		
3/7/2011	19.37	8.30	11.10	5.6	208		
3/8/2011	19.37	8.30	11.10	7.0	209		
3/9/2011	19.37	8.30	11.10	7.0	204		
3/10/2011	19.37	8.30	11.10	7.4	207		
3/11/2011	19.37	8.30	11.10	6.6	215		
3/12/2011	19.37	0.00	11.10	6.7	204		
3/13/2011	19.37	0.00	11.10	7.0	208		
3/14/2011	19.37	0.00	11.10	5.3	212		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
3/15/2011	19.37	0.00	11.10	6.2	208		
3/16/2011	19.37	0.00	11.10	6.7	208		
3/17/2011	19.37	0.00	11.10	6.9	204		
3/18/2011	19.37	0.00	11.10	6.6	202		
3/19/2011	19.37	0.00	11.10	6.8	202		
3/20/2011	19.37	0.00	11.10	7.1	202		
3/21/2011	19.37	0.00	11.10	7.2	205		
3/22/2011	19.37	0.00	11.10	17.7	209		
3/23/2011	19.37	0.00	11.10	26.0	110		
3/24/2011	19.37	0.00	11.10	15.9	263		
3/25/2011	19.37	0.00	11.10	27.6	228		
3/26/2011	19.37	0.00	11.10	18.2	216		
3/27/2011	19.37	0.00	11.10	15.9	206		
3/28/2011	19.37	0.00	11.10	18.2	208		
3/29/2011	19.37	0.00	11.10	20.3	208		
3/30/2011	19.37	0.00	11.10	17.0	209		
3/31/2011	19.37	0.00	11.10	15.9	204		
4/1/2011	20.10	0.00	7.67	15.3	204		
4/2/2011	20.10	0.00	7.67	14.7	208		
4/3/2011	20.10	0.00	7.67	14.3	206		
4/4/2011	20.10	0.00	7.67	24.6	201		
4/5/2011	20.10	0.00	7.67	17.6	209		
4/6/2011	20.10	0.00	7.67	16.9	206		
4/7/2011	20.10	0.00	7.67	16.4	206		
4/8/2011	20.10	0.00	7.67	15.8	207		
4/9/2011	20.10	0.00	7.67	15.7	213		
4/10/2011	20.10	0.00	7.67	15.4	209		
4/11/2011	20.10	0.00	7.67	15.3	213		
4/12/2011	20.10	0.00	7.67	14.9	204		
4/13/2011	20.10	0.00	7.67	15.0	219		
4/14/2011	20.10	0.00	7.67	14.6	202		
4/15/2011	20.10	0.00	7.67	14.7	201		
4/16/2011	20.10	0.00	7.67	14.7	201		
4/17/2011	20.10	0.00	7.67	14.4	204		
4/18/2011	20.10	0.00	7.67	13.6	209		
4/19/2011	20.10	0.00	7.67	14.0	208		
4/20/2011	20.10	0.00	7.67	14.0	210		
4/21/2011	20.10	0.00	7.67	13.9	209		
4/22/2011	20.10	0.00	7.67	13.7	208		
4/23/2011	20.10	0.00	7.67	13.9	209		
4/24/2011	20.10	0.00	7.67	13.8	207		
4/25/2011	20.10	0.00	7.67	13.7	207		
4/26/2011	20.10	0.00	7.67	13.8	213		
4/27/2011	20.10	0.00	7.67	13.5	204		
4/28/2011	20.10	0.00	7.67	13.7	209		
4/29/2011	20.10	0.00	7.67	13.6	209		
4/30/2011	20.10	0.00	7.67	13.5	204		
5/1/2011	18.64	0.00	6.90	13.4	200		
5/2/2011	18.64	0.00	6.90	13.7	208		
5/3/2011	18.64	0.00	6.90	13.7	211		
5/4/2011	18.64	0.00	6.90	13.7	206		
5/5/2011	18.64	0.00	6.90	13.6	206		
5/6/2011	18.64	0.00	6.90	13.6	204		
5/7/2011	18.64	0.00	6.90	13.5	200		
5/8/2011	18.64	0.00	6.90	13.6	200		
5/9/2011	18.64	0.00	6.90	13.6	204		
5/10/2011	18.64	0.00	6.90	13.5	202		
5/11/2011	18.64	0.00	6.90	13.4	203		
5/12/2011	18.64	0.00	6.90	13.3	199		
5/13/2011	18.64	0.00	6.90	13.3	199		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
5/14/2011	18.64	0.00	6.90	13.3	200		
5/15/2011	18.64	0.00	6.90	13.3	201		
5/16/2011	18.64	0.00	6.90	13.3	203		
5/17/2011	18.64	0.00	6.90	13.3	200		
5/18/2011	18.64	0.00	6.90	13.2	199		
5/19/2011	18.64	0.00	6.90	13.2	200		
5/20/2011	18.64	0.00	6.90	13.1	198		
5/21/2011	18.64	0.00	6.90	13.2	204		
5/22/2011	18.64	0.00	6.90	13.1	204		
5/23/2011	18.64	0.00	6.90	13.0	204		
5/24/2011	18.64	0.00	6.90	13.0	204		
5/25/2011	18.64	0.00	6.90	12.9	205		
5/26/2011	18.64	0.00	6.90	12.9	206		
5/27/2011	18.64	0.00	6.90	12.9	205		
5/28/2011	18.64	0.00	6.90	12.7	204		
5/29/2011	18.64	0.00	6.90	12.6	203		
5/30/2011	18.64	0.00	6.90	12.7	206		
5/31/2011	18.64	0.00	6.90	12.8	209		
6/1/2011	13.37	0.00	6.60	12.9	212		
6/2/2011	13.37	0.00	6.60	12.9	208		
6/3/2011	13.37	0.00	6.60	12.7	209		
6/4/2011	13.37	0.00	6.60	12.1	210		
6/5/2011	13.37	0.00	6.60	11.8	212		
6/6/2011	13.37	0.00	6.60	11.7	211		
6/7/2011	13.37	0.00	6.60	11.7	209		
6/8/2011	13.37	0.00	6.60	11.5	207		
6/9/2011	13.37	0.00	6.60	10.9	205		
6/10/2011	13.37	0.00	6.60	11.0	213		
6/11/2011	13.37	0.00	6.60	10.6	204		
6/12/2011	13.37	0.00	6.60	11.1	208		
6/13/2011	13.37	0.00	6.60	10.5	199		
6/14/2011	13.37	0.00	6.60	10.9	203		
6/15/2011	13.37	0.00	6.60	11.0	203		
6/16/2011	13.37	0.00	6.60	11.0	209		
6/17/2011	13.37	0.00	6.60	10.9	207		
6/18/2011	13.37	0.00	6.60	10.9	205		
6/19/2011	13.37	0.00	6.60	10.9	205		
6/20/2011	13.37	0.00	6.60	10.9	207		
6/21/2011	13.37	0.00	6.60	10.9	208		
6/22/2011	13.37	0.00	6.60	10.9	210		
6/23/2011	13.37	0.00	6.60	10.5	196		
6/24/2011	13.37	0.00	6.60	10.8	200		
6/25/2011	13.37	0.00	6.60	10.7	198		
6/26/2011	13.37	0.00	6.60	10.8	200		
6/27/2011	13.37	0.00	6.60	10.9	202		
6/28/2011	13.37	0.00	6.60	10.8	206		
6/29/2011	13.37	0.00	6.60	10.8	206		
6/30/2011	13.37	0.00	6.60	10.8	207		
7/1/2011	19.30	0.00	6.50	9.3	182		
7/2/2011	19.30	0.00	6.50	10.9	213		
7/3/2011	19.30	0.00	6.50	11.3	208		
7/4/2011	19.30	0.00	6.50	11.0	210		
7/5/2011	19.30	0.00	6.50	10.9	210		
7/6/2011	19.30	0.00	6.50	10.9	212		
7/7/2011	19.30	0.00	6.50	10.8	212		
7/8/2011	19.30	0.00	6.50	10.4	198		
7/9/2011	19.30	0.00	6.50	10.6	176		
7/10/2011	19.30	0.00	6.50	10.8	218		
7/11/2011	19.30	0.00	6.50	10.8	208		
7/12/2011	19.30	0.00	6.50	10.7	205		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
7/13/2011	19.30	0.00	6.50	10.8	213		
7/14/2011	19.30	0.00	6.50	10.6	207		
7/15/2011	19.30	0.00	6.50	10.6	203		
7/16/2011	19.30	0.00	6.50	10.7	205		
7/17/2011	19.30	0.00	6.50	10.6	206		
7/18/2011	19.30	0.00	6.50	10.6	204		
7/19/2011	19.30	0.00	6.50	10.6	204		
7/20/2011	19.30	0.00	6.50	10.6	205		
7/21/2011	19.30	0.00	6.50	10.7	208		
7/22/2011	19.30	0.00	6.50	9.8	194		
7/23/2011	19.30	0.00	6.50	11.0	210		
7/24/2011	19.30	0.00	6.50	10.6	201		
7/25/2011	19.30	0.00	6.50	10.7	206		
7/26/2011	19.30	0.00	6.50	10.7	208		
7/27/2011	19.30	0.00	6.50	10.5	203		
7/28/2011	19.30	0.00	6.50	10.6	205		
7/29/2011	19.30	0.00	6.50	10.6	205		
7/30/2011	19.30	0.00	6.50	10.5	203		
7/31/2011	19.30	0.00	6.50	10.6	202		
8/1/2011	19.06	0.00	6.48	10.6	206		
8/2/2011	19.06	0.00	6.48	10.6	206		
8/3/2011	19.06	0.00	6.48	10.5	207		
8/4/2011	19.06	0.00	6.48	10.8	219		
8/5/2011	19.06	0.00	6.48	10.3	206		
8/6/2011	19.06	0.00	6.48	10.5	186		
8/7/2011	19.06	0.00	6.48	10.5	227		
8/8/2011	19.06	0.00	6.48	10.5	214		
8/9/2011	19.06	0.00	6.48	10.5	216		
8/10/2011	19.06	0.00	6.48	10.4	218		
8/11/2011	19.06	0.00	6.48	10.4	218		
8/12/2011	19.06	0.00	6.48	10.4	218		
8/13/2011	19.06	0.00	6.48	10.4	214		
8/14/2011	19.06	0.00	6.48	10.6	220		
8/15/2011	19.06	0.00	6.48	10.4	217		
8/16/2011	19.06	0.00	6.48	10.4	214		
8/17/2011	19.06	0.00	6.48	10.4	214		
8/18/2011	19.06	0.00	6.48	10.4	214		
8/19/2011	19.06	0.00	6.48	10.4	213		
8/20/2011	19.06	0.00	6.48	10.4	212		
8/21/2011	19.06	0.00	6.48	10.4	212		
8/22/2011	19.06	0.00	6.48	10.4	213		
8/23/2011	19.06	0.00	6.48	10.4	213		
8/24/2011	19.06	0.00	6.48	10.4	214		
8/25/2011	19.06	0.00	6.48	10.4	217		
8/26/2011	19.06	0.00	6.48	10.4	217		
8/27/2011	19.06	0.00	6.48	10.4	217		
8/28/2011	19.06	0.00	6.48	10.3	217		
8/29/2011	19.06	0.00	6.48	10.3	216		
8/30/2011	19.06	0.00	6.48	10.3	214		
8/31/2011	19.06	0.00	6.70	10.4	212		
9/1/2011	18.77	0.00	6.70	10.3	210		
9/2/2011	18.77	0.00	6.70	13.2	214		
9/3/2011	18.77	0.00	6.70	13.5	216		
9/4/2011	18.77	0.00	6.70	13.5	215		
9/5/2011	18.77	0.00	6.70	13.5	212		
9/6/2011	18.77	0.00	6.70	14.0	160		
9/7/2011	18.77	0.00	6.70	12.9	256		
9/8/2011	18.77	0.00	6.70	13.5	222		
9/9/2011	18.77	0.00	6.70	13.5	220		
9/10/2011	18.77	0.00	6.70	13.5	219		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
9/11/2011	18.77	0.00	6.70	13.4	218		
9/12/2011	18.77	0.00	6.70	13.9	227		
9/13/2011	18.77	0.00	6.70	13.1	216		
9/14/2011	18.77	0.00	6.70	13.4	220		
9/15/2011	18.77	0.00	6.70	13.7	231		
9/16/2011	18.77	0.00	6.70	13.0	220		
9/17/2011	18.77	0.00	6.70	13.4	225		
9/18/2011	18.77	0.00	6.70	13.3	225		
9/19/2011	18.77	0.00	6.70	13.5	230		
9/20/2011	18.77	0.00	6.70	14.2	91		
9/21/2011	18.77	0.00	6.70	12.5	297		
9/22/2011	18.77	0.00	6.70	13.5	253		
9/23/2011	18.77	0.00	6.70	13.3	233		
9/24/2011	18.77	0.00	6.70	13.3	223		
9/25/2011	18.77	0.00	6.70	13.6	227		
9/26/2011	18.77	0.00	6.70	13.4	226		
9/27/2011	18.77	0.00	6.70	13.4	235		
9/28/2011	18.77	0.00	6.70	13.4	242		
9/29/2011	18.77	0.00	6.70	13.4	231		
9/30/2011	18.77	0.00	6.70	13.3	227		
10/1/2011	26.16	0.00	6.00	13.3	225		
10/2/2011	26.16	0.00	6.00	13.2	222		
10/3/2011	26.16	0.00	6.00	13.4	199		
10/4/2011	26.16	0.00	6.00	13.3	236		
10/5/2011	26.16	0.00	6.00	12.8	226		
10/6/2011	26.16	0.00	6.00	12.5	223		
10/7/2011	26.16	0.00	6.00	12.6	232		
10/8/2011	26.16	0.00	6.00	11.9	217		
10/9/2011	26.16	0.00	6.00	12.0	220		
10/10/2011	26.16	0.00	6.00	11.9	220		
10/11/2011	26.16	0.00	6.00	11.8	220		
10/12/2011	26.16	0.00	6.00	11.8	221		
10/13/2011	26.16	0.00	6.00	11.6	219		
10/14/2011	26.16	0.00	6.00	11.6	222		
10/15/2011	26.16	0.00	6.00	11.4	221		
10/16/2011	26.16	0.00	6.00	11.4	221		
10/17/2011	26.16	0.00	6.00	13.5	220		
10/18/2011	26.16	0.00	6.00	17.7	213		
10/19/2011	26.16	0.00	6.00	15.1	225		
10/20/2011	26.16	0.00	6.00	14.2	221		
10/21/2011	26.16	0.00	6.00	13.5	222		
10/22/2011	26.16	0.00	6.00	13.0	221		
10/23/2011	26.16	0.00	6.00	12.7	220		
10/24/2011	26.16	0.00	6.00	12.4	221		
10/25/2011	26.16	0.00	6.00	12.2	221		
10/26/2011	26.16	0.00	6.00	12.1	221		
10/27/2011	26.16	0.00	6.00	11.8	222		
10/28/2011	26.16	0.00	6.00	11.8	221		
10/29/2011	26.16	0.00	6.00	12.0	221		
10/30/2011	26.16	0.00	6.00	12.0	221		
10/31/2011	28.77	0.00	6.00	10.1	190		
11/1/2011	28.77	0.00	6.40	0.0	22		
11/2/2011	28.77	0.00	6.40	0.1	0		
11/3/2011	28.77	0.00	6.40	22.2	302		
11/4/2011	28.77	0.00	6.40	18.2	310		
11/5/2011	28.77	0.00	6.40	15.7	261		
11/6/2011	28.77	0.00	6.40	14.8	240		
11/7/2011	28.77	0.00	6.40	16.4	261		
11/8/2011	28.77	0.00	6.40	15.2	242		
11/9/2011	28.77	0.00	6.40	15.5	239		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
11/10/2011	28.77	0.00	6.40	15.1	224		
11/11/2011	28.77	0.00	6.40	14.8	225		
11/12/2011	28.77	0.00	6.40	14.4	224		
11/13/2011	28.77	0.00	6.40	15.0	223		
11/14/2011	28.77	0.00	6.40	15.8	222		
11/15/2011	28.77	0.00	6.40	16.1	224		
11/16/2011	28.77	0.00	6.40	16.1	227		
11/17/2011	28.77	0.00	6.40	15.7	218		
11/18/2011	28.77	0.00	6.40	16.0	222		
11/19/2011	28.77	0.00	6.40	16.1	224		
11/20/2011	28.77	0.00	6.40	16.0	225		
11/21/2011	28.77	0.00	6.40	16.0	229		
11/22/2011	28.77	0.00	6.40	15.7	220		
11/23/2011	28.77	0.00	6.40	16.0	224		
11/24/2011	28.77	0.00	6.40	15.9	220		
11/25/2011	28.77	0.00	6.40	14.4	202		
11/26/2011	28.77	0.00	6.40	13.6	208		
11/27/2011	28.77	0.00	6.40	17.1	231		
11/28/2011	28.77	0.00	6.40	16.6	217		
11/29/2011	28.77	0.00	6.40	16.5	215		
11/30/2011	28.77	0.00	6.40	16.5	213		
12/1/2011	37.80	0.00	6.30	16.2	214		
12/2/2011	37.80	0.00	6.30	16.0	211		
12/3/2011	37.80	0.00	6.30	16.3	212		
12/4/2011	37.80	0.00	6.30	16.1	209		
12/5/2011	37.80	0.00	6.30	16.1	208		
12/6/2011	37.80	0.00	6.30	16.1	207		
12/7/2011	37.80	0.00	6.30	15.5	229		
12/8/2011	37.80	0.00	6.30	15.5	221		
12/9/2011	37.80	0.00	6.30	15.6	219		
12/10/2011	37.80	0.00	6.30	16.0	219		
12/11/2011	37.80	0.00	6.30	15.8	217		
12/12/2011	37.80	0.00	6.30	15.8	217		
12/13/2011	37.80	0.00	6.30	15.7	215		
12/14/2011	37.80	0.00	6.30	13.9	220		
12/15/2011	37.80	0.00	6.30	15.0	216		
12/16/2011	37.80	0.00	6.30	15.4	215		
12/17/2011	37.80	0.00	6.30	15.6	193		
12/18/2011	37.80	0.00	6.30	13.7	230		
12/19/2011	37.80	0.00	6.30	14.5	219		
12/20/2011	37.80	0.00	6.30	15.2	217		
12/21/2011	37.80	0.00	6.30	15.4	215		
12/22/2011	37.80	0.00	6.30	15.5	214		
12/23/2011	37.80	0.00	6.30	15.6	213		
12/24/2011	37.80	0.00	6.30	15.5	212		
12/25/2011	37.80	0.00	6.30	15.8	213		
12/26/2011	37.80	0.00	6.30	15.8	212		
12/27/2011	37.80	0.00	6.30	15.8	212		
12/28/2011	37.80	0.00	6.30	15.1	217		
12/29/2011	37.80	0.00	6.30	15.5	147		
12/30/2011	37.80	0.00	6.30	14.0	13		
12/31/2011	37.80	0.00	6.30	13.8	2		
1/1/2012	39.15	1.65	6.99	14.0	21		
1/2/2012	39.15	1.65	6.99	14.8	30		
1/3/2012	39.15	1.65	6.99	7.7	380		
1/4/2012	39.15	1.65	6.99	20.2	324		
1/5/2012	39.15	1.65	6.99	15.3	263		
1/6/2012	39.15	1.65	6.99	15.6	241		
1/7/2012	39.15	1.65	6.99	15.5	226		
1/8/2012	39.15	1.65	6.99	14.3	223		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
1/9/2012	39.15	1.65	6.99	15.2	220		
1/10/2012	39.15	1.65	6.99	15.5	218		
1/11/2012	39.15	1.65	6.99	15.6	214		
1/12/2012	39.15	1.65	6.99	15.7	217		
1/13/2012	39.15	1.65	6.99	17.1	212		
1/14/2012	39.15	1.65	6.99	18.9	229		
1/15/2012	39.15	1.65	6.99	16.6	223		
1/16/2012	39.15	1.65	6.99	15.4	229		
1/17/2012	39.15	1.65	6.99	15.5	222		
1/18/2012	39.15	1.65	6.99	14.6	201		
1/19/2012	39.15	1.65	6.99	15.3	205		
1/20/2012	39.15	1.65	6.99	15.6	206		
1/21/2012	39.15	1.65	6.99	17.1	207		
1/22/2012	39.15	1.65	6.99	15.8	207		
1/23/2012	39.15	1.65	6.99	14.5	212		
1/24/2012	39.15	1.65	6.99	15.1	209		
1/25/2012	39.15	1.65	6.99	15.4	208		
1/26/2012	39.15	1.65	6.99	15.6	211		
1/27/2012	39.15	1.65	6.99	14.5	212		
1/28/2012	39.15	1.65	6.99	15.0	213		
1/29/2012	39.15	1.65	6.99	15.2	210		
1/30/2012	39.15	1.65	6.99	15.5	208		
1/31/2012	39.15	1.65	6.99	15.5	211		
2/1/2012	32.90	1.50	6.60	15.5	208		
2/2/2012	32.90	1.50	6.60	15.3	210		
2/3/2012	32.90	1.50	6.60	15.5	208		
2/4/2012	32.90	1.50	6.60	15.7	206		
2/5/2012	32.90	1.50	6.60	15.3	207		
2/6/2012	32.90	1.50	6.60	15.4	212		
2/7/2012	32.90	1.50	6.60	15.3	210		
2/8/2012	32.90	1.50	6.60	14.3	210		
2/9/2012	32.90	1.50	6.60	15.1	210		
2/10/2012	32.90	1.50	6.60	15.2	209		
2/11/2012	32.90	1.50	6.60	16.7	211		
2/12/2012	32.90	1.50	6.60	16.7	214		
2/13/2012	32.90	1.50	6.60	15.2	210		
2/14/2012	32.90	1.50	6.60	15.3	208		
2/15/2012	32.90	1.50	6.60	15.4	207		
2/16/2012	32.90	1.50	6.60	15.4	206		
2/17/2012	32.90	1.50	6.60	15.2	210		
2/18/2012	32.90	1.50	6.60	15.3	210		
2/19/2012	32.90	1.50	6.60	15.1	206		
2/20/2012	32.90	1.50	6.60	15.3	209		
2/21/2012	32.90	1.50	6.60	15.5	216		
2/22/2012	32.90	1.50	6.60	15.0	202		
2/23/2012	32.90	1.50	6.60	14.8	208		
2/24/2012	32.90	1.50	6.60	15.2	207		
2/25/2012	32.90	1.50	6.60	15.2	207		
2/26/2012	32.90	1.50	6.60	15.2	207		
2/27/2012	32.90	1.50	6.60	15.2	209		
2/28/2012	32.90	1.50	6.60	15.3	208		
2/29/2012	32.90	1.50	6.60	15.5	174		
3/1/2012	33.48	1.61	6.32	14.6	223		
3/2/2012	33.48	1.61	6.32	15.4	215		
3/3/2012	33.48	1.61	6.32	15.3	212		
3/4/2012	33.48	1.61	6.32	15.2	209		
3/5/2012	33.48	1.61	6.32	15.4	217		
3/6/2012	33.48	1.61	6.32	15.1	207		
3/7/2012	33.48	1.61	6.32	15.5	211		
3/8/2012	33.48	1.61	6.32	15.6	211		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
3/9/2012	33.48	1.61	6.32	15.1	202		
3/10/2012	33.48	1.61	6.32	15.5	205		
3/11/2012	33.48	1.61	6.32	15.0	196		
3/12/2012	33.48	1.61	6.32	15.5	209		
3/13/2012	33.48	1.61	6.32	15.5	209		
3/14/2012	33.48	1.61	6.32	15.4	205		
3/15/2012	33.48	1.61	6.32	15.5	204		
3/16/2012	33.48	1.61	6.32	15.6	203		
3/17/2012	33.48	1.61	6.32	15.6	202		
3/18/2012	33.48	1.61	6.32	15.6	202		
3/19/2012	33.48	1.61	6.32	15.5	207		
3/20/2012	33.48	1.61	6.32	15.4	205		
3/21/2012	33.48	1.61	6.32	15.4	203		
3/22/2012	33.48	1.61	6.32	15.5	203		
3/23/2012	33.48	1.61	6.32	15.5	203		
3/24/2012	33.48	1.61	6.32	15.6	203		
3/25/2012	33.48	1.61	6.32	15.7	203		
3/26/2012	33.48	1.61	6.32	15.7	205		
3/27/2012	33.48	1.61	6.32	15.5	207		
3/28/2012	33.48	1.61	6.32	15.3	205		
3/29/2012	33.48	1.61	6.32	15.4	205		
3/30/2012	33.48	1.61	6.32	14.9	200		
3/31/2012	33.48	1.61	6.32	13.2	176		
4/1/2012	33.00	1.53	6.20	15.6	219		
4/2/2012	33.00	1.53	6.20	16.2	213		
4/3/2012	33.00	1.53	6.20	15.9	209		
4/4/2012	33.00	1.53	6.20	15.8	209		
4/5/2012	33.00	1.53	6.20	15.8	207		
4/6/2012	33.00	1.53	6.20	15.5	198		
4/7/2012	33.00	1.53	6.20	15.8	198		
4/8/2012	33.00	1.53	6.20	15.9	198		
4/9/2012	33.00	1.53	6.20	14.3	208		
4/10/2012	33.00	1.53	6.20	14.6	207		
4/11/2012	33.00	1.53	6.20	15.1	205		
4/12/2012	33.00	1.53	6.20	15.3	205		
4/13/2012	33.00	1.53	6.20	15.3	203		
4/14/2012	33.00	1.53	6.20	15.3	202		
4/15/2012	33.00	1.53	6.20	15.4	202		
4/16/2012	33.00	1.53	6.20	15.5	204		
4/17/2012	33.00	1.53	6.20	15.4	200		
4/18/2012	33.00	1.53	6.20	15.5	200		
4/19/2012	33.00	1.53	6.20	15.5	200		
4/20/2012	33.00	1.53	6.20	15.5	199		
4/21/2012	33.00	1.53	6.20	15.6	199		
4/22/2012	33.00	1.53	6.20	15.6	199		
4/23/2012	33.00	1.53	6.20	15.7	199		
4/24/2012	33.00	1.53	6.20	15.8	197		
4/25/2012	33.00	1.53	6.20	14.8	206		
4/26/2012	33.00	1.53	6.20	14.9	204		
4/27/2012	33.00	1.53	6.20	15.2	203		
4/28/2012	33.00	1.53	6.20	15.4	202		
4/29/2012	33.00	1.53	6.20	15.4	201		
4/30/2012	33.00	1.53	6.20	15.4	200		
5/1/2012	34.71	0.00	6.45	15.1	196		
5/2/2012	34.71	0.00	6.45	15.7	204		
5/3/2012	34.71	0.00	6.45	15.5	201		
5/4/2012	34.71	0.00	6.45	15.5	201		
5/5/2012	34.71	0.00	6.45	15.5	200		
5/6/2012	34.71	0.00	6.45	15.5	200		
5/7/2012	34.71	0.00	6.45	15.5	200		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
5/8/2012	34.71	0.00	6.45	15.6	201		
5/9/2012	34.71	0.00	6.45	15.4	198		
5/10/2012	34.71	0.00	6.45	15.4	198		
5/11/2012	34.71	0.00	6.45	15.4	198		
5/12/2012	34.71	0.00	6.45	15.4	196		
5/13/2012	34.71	0.00	6.45	15.4	197		
5/14/2012	34.71	0.00	6.45	14.1	180		
5/15/2012	34.71	0.00	6.45	15.4	195		
5/16/2012	34.71	0.00	6.45	15.9	201		
5/17/2012	34.71	0.00	6.45	14.3	205		
5/18/2012	34.71	0.00	6.45	13.6	202		
5/19/2012	34.71	0.00	6.45	13.6	201		
5/20/2012	34.71	0.00	6.45	13.6	200		
5/21/2012	34.71	0.00	6.45	13.5	199		
5/22/2012	34.71	0.00	6.45	13.5	198		
5/23/2012	34.71	0.00	6.45	13.4	196		
5/24/2012	34.71	0.00	6.45	13.7	202		
5/25/2012	34.71	0.00	6.45	13.7	203		
5/26/2012	34.71	0.00	6.45	13.6	199		
5/27/2012	34.71	0.00	6.45	13.6	200		
5/28/2012	34.71	0.00	6.45	13.6	199		
5/29/2012	34.71	0.00	6.45	13.7	202		
5/30/2012	34.71	0.00	6.45	13.5	198		
5/31/2012	34.71	0.00	6.45	13.6	198		
6/1/2012	36.87	0.00	6.86	13.6	198		
6/2/2012	36.87	0.00	6.86	13.6	198		
6/3/2012	36.87	0.00	6.86	13.4	196		
6/4/2012	36.87	0.00	6.86	13.7	200		
6/5/2012	36.87	0.00	6.86	13.6	198		
6/6/2012	36.87	0.00	6.86	13.5	197		
6/7/2012	36.87	0.00	6.86	13.8	201		
6/8/2012	36.87	0.00	6.86	13.5	197		
6/9/2012	36.87	0.00	6.86	13.6	197		
6/10/2012	36.87	0.00	6.86	13.7	197		
6/11/2012	36.87	0.00	6.86	14.2	209		
6/12/2012	36.87	0.00	6.86	13.4	194		
6/13/2012	36.87	0.00	6.86	13.6	197		
6/14/2012	36.87	0.00	6.86	13.6	196		
6/15/2012	36.87	0.00	6.86	13.7	198		
6/16/2012	36.87	0.00	6.86	13.7	197		
6/17/2012	36.87	0.00	6.86	13.7	197		
6/18/2012	36.87	0.00	6.86	13.7	196		
6/19/2012	36.87	0.00	6.86	13.7	196		
6/20/2012	36.87	0.00	6.86	13.6	194		
6/21/2012	36.87	0.00	6.86	13.5	191		
6/22/2012	36.87	0.00	6.86	13.5	191		
6/23/2012	36.87	0.00	6.86	13.5	190		
6/24/2012	36.87	0.00	6.86	13.5	189		
6/25/2012	36.87	0.00	6.86	14.0	201		
6/26/2012	36.87	0.00	6.86	13.7	198		
6/27/2012	36.87	0.00	6.86	13.7	195		
6/28/2012	36.87	0.00	6.86	13.6	193		
6/29/2012	36.87	0.00	6.86	14.3	123		
6/30/2012	36.87	0.00	6.86	15.1	38		
7/1/2012	35.71	1.61	6.52	12.8	284		
7/2/2012	35.71	1.61	6.52	14.0	253		
7/3/2012	35.71	1.61	6.52	14.0	218		
7/4/2012	35.71	1.61	6.52	14.0	208		
7/5/2012	35.71	1.61	6.52	12.9	191		
7/6/2012	35.71	1.61	6.52	13.4	189		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
7/7/2012	35.71	1.61	6.52	13.2	187		
7/8/2012	35.71	1.61	6.52	13.7	191		
7/9/2012	35.71	1.61	6.52	13.7	192		
7/10/2012	35.71	1.61	6.52	13.5	189		
7/11/2012	35.71	1.61	6.52	13.5	188		
7/12/2012	35.71	1.61	6.52	13.5	188		
7/13/2012	35.71	1.61	6.52	13.6	188		
7/14/2012	35.71	1.61	6.52	13.6	187		
7/15/2012	35.71	1.61	6.52	13.6	187		
7/16/2012	35.71	1.61	6.52	13.6	187		
7/17/2012	35.71	1.61	6.52	13.6	187		
7/18/2012	35.71	1.61	6.52	3.7	104		
7/19/2012	35.71	1.61	6.52	12.8	211		
7/20/2012	35.71	1.61	6.52	13.7	217		
7/21/2012	35.71	1.61	6.52	13.8	193		
7/22/2012	35.71	1.61	6.52	13.7	188		
7/23/2012	35.71	1.61	6.52	13.8	186		
7/24/2012	35.71	1.61	6.52	13.7	182		
7/25/2012	35.71	1.61	6.52	13.7	188		
7/26/2012	35.71	1.61	6.52	14.4	116		
7/27/2012	35.71	1.61	6.52	11.6	207		
7/28/2012	35.71	1.61	6.52	13.6	202		
7/29/2012	35.71	1.61	6.52	14.0	190		
7/30/2012	35.71	1.61	6.52	13.8	188		
7/31/2012	35.71	1.61	6.52	14.2	194		
8/1/2012	43.41	0.00	6.16	13.6	187		
8/2/2012	43.41	0.00	6.16	14.6	200		
8/3/2012	43.41	0.00	6.16	14.3	199		
8/4/2012	43.4	0.00	6.16	14.2	198		
8/5/2012	43.41	0.00	6.16	14.1	197		
8/6/2012	0.00	0.00	6.16	14.2	199		
8/7/2012	0.00	0.00	6.16	14.0	197		
8/8/2012	0.00	0.00	6.16	14.0	197		
8/9/2012	0.00	0.00	6.16	13.8	193		
8/10/2012	43.41	0.00	6.16	14.1	196		
8/11/2012	43.41	0.00	6.16	14.0	196		
8/12/2012	43.41	0.00	6.16	14.0	195		
8/13/2012	43.41	0.00	6.16	13.9	194		
8/14/2012	43.41	0.00	6.16	10.1	149		
8/15/2012	43.41	0.00	6.16	14.9	217		
8/16/2012	43.41	0.00	6.16	14.4	196		
8/17/2012	43.41	0.00	6.16	14.0	195		
8/18/2012	43.41	0.00	6.16	13.9	194		
8/19/2012	43.41	0.00	6.16	13.9	193		
8/20/2012	43.41	0.00	6.16	14.5	206		
8/21/2012	43.41	0.00	6.16	13.9	195		
8/22/2012	43.41	0.00	6.16	14.0	193		
8/23/2012	43.41	0.00	6.16	13.9	192		
8/24/2012	43.41	0.00	6.16	13.7	187		
8/25/2012	43.41	0.00	6.16	14.3	197		
8/26/2012	43.41	0.00	6.16	14.1	194		
8/27/2012	43.41	0.00	6.16	14.0	193		
8/28/2012	43.41	0.00	6.16	14.0	193		
8/29/2012	43.41	0.00	6.16	14.0	192		
8/30/2012	43.41	0.00	6.16	13.9	192		
8/31/2012	43.41	0.00	6.16	13.9	190		
9/1/2012	39.77	0.00	6.87	13.9	189		
9/2/2012	39.77	0.00	6.87	13.8	187		
9/3/2012	39.77	0.00	6.87	13.8	186		
9/4/2012	39.77	0.00	6.87	13.8	185		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
9/5/2012	39.77	0.00	6.87	14.2	180		
9/6/2012	39.77	0.00	6.87	14.3	192		
9/7/2012	39.77	0.00	6.87	14.2	201		
9/8/2012	39.77	0.00	6.87	14.3	200		
9/9/2012	39.77	0.00	6.87	14.0	196		
9/10/2012	39.77	0.00	6.87	13.9	193		
9/11/2012	39.77	0.00	6.87	13.9	191		
9/12/2012	39.77	0.00	6.87	13.0	176		
9/13/2012	39.77	0.00	6.87	12.6	189		
9/14/2012	39.77	0.00	6.87	14.7	196		
9/15/2012	39.77	0.00	6.87	14.2	194		
9/16/2012	39.77	0.00	6.87	14.1	194		
9/17/2012	39.77	0.00	6.87	14.1	193		
9/18/2012	39.77	0.00	6.87	14.1	196		
9/19/2012	39.77	0.00	6.87	13.7	187		
9/20/2012	39.77	0.00	6.87	14.0	190		
9/21/2012	39.77	0.00	6.87	13.8	188		
9/22/2012	39.77	0.00	6.87	14.2	194		
9/23/2012	39.77	0.00	6.87	13.1	182		
9/24/2012	39.77	0.00	6.87	14.2	195		
9/25/2012	39.77	0.00	6.87	14.0	193		
9/26/2012	39.77	0.00	6.87	14.1	194		
9/27/2012	39.77	0.00	6.87	14.0	193		
9/28/2012	39.77	0.00	6.87	13.9	195		
9/29/2012	39.77	0.00	6.87	13.9	192		
9/30/2012	39.77	0.00	6.87	13.9	192		
10/1/2012	38.59	0.00	6.76	14.0	192		
10/2/2012	38.59	0.00	6.76	14.1	194		
10/3/2012	38.59	0.00	6.76	13.9	191		
10/4/2012	38.59	0.00	6.76	14.0	192		
10/5/2012	38.59	0.00	6.76	14.0	192		
10/6/2012	38.59	0.00	6.76	13.9	192		
10/7/2012	38.59	0.00	6.76	13.9	191		
10/8/2012	38.59	0.00	6.76	14.0	195		
10/9/2012	38.59	0.00	6.76	14.0	192		
10/10/2012	38.59	0.00	6.76	14.0	192		
10/11/2012	38.59	0.00	6.76	14.0	192		
10/12/2012	38.59	0.00	6.76	14.1	192		
10/13/2012	38.59	0.00	6.76	14.0	191		
10/14/2012	38.59	0.00	6.76	13.9	191		
10/15/2012	38.59	0.00	6.76	13.9	193		
10/16/2012	38.59	0.00	6.76	13.9	192		
10/17/2012	38.59	0.00	6.76	13.9	192		
10/18/2012	38.59	0.00	6.76	13.9	192		
10/19/2012	38.59	0.00	6.76	13.9	192		
10/20/2012	38.59	0.00	6.76	13.9	195		
10/21/2012	38.59	0.00	6.76	14.0	195		
10/22/2012	38.59	0.00	6.76	14.0	195		
10/23/2012	38.59	0.00	6.76	13.8	191		
10/24/2012	38.59	0.00	6.76	13.9	191		
10/25/2012	38.59	0.00	6.76	13.9	191		
10/26/2012	38.59	0.00	6.76	14.0	191		
10/27/2012	38.59	0.00	6.76	13.9	192		
10/28/2012	38.59	0.00	6.76	13.8	192		
10/29/2012	38.59	0.00	6.76	14.0	194		
10/30/2012	38.59	0.00	6.76	14.1	192		
10/31/2012	38.59	0.00	6.76	13.0	174		
11/1/2012	38.59	0.00	6.76	13.4	195		
11/2/2012	40.51	0.00	6.68	14.7	195		
11/3/2012	40.51	0.00	6.68	15.3	200		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
11/4/2012	40.51	0.00	6.68	14.7	193		
11/5/2012	40.51	0.00	6.68	14.9	193		
11/6/2012	40.51	0.00	6.68	14.7	193		
11/7/2012	40.51	0.00	6.68	14.9	193		
11/8/2012	40.51	0.00	6.68	14.0	193		
11/9/2012	40.51	0.00	6.68	14.0	193		
11/10/2012	40.51	0.00	6.68	15.2	192		
11/11/2012	40.51	0.00	6.68	15.7	191		
11/12/2012	40.51	0.00	6.68	15.8	191		
11/13/2012	40.51	0.00	6.68	15.8	191		
11/14/2012	40.51	0.00	6.68	15.9	190		
11/15/2012	40.51	0.00	6.68	16.0	191		
11/16/2012	40.51	0.00	6.68	16.1	190		
11/17/2012	40.51	0.00	6.68	16.0	190		
11/18/2012	40.51	1.92	6.68	16.1	189		
11/19/2012	40.51	1.92	6.68	16.3	190		
11/20/2012	40.51	1.92	6.68	15.3	188		
11/21/2012	40.51	1.92	6.68	15.8	187		
11/22/2012	40.51	1.92	6.68	15.7	172		
11/23/2012	40.51	1.92	6.68	14.3	181		
11/24/2012	40.51	1.92	6.68	13.7	189		
11/25/2012	40.51	1.92	6.68	17.1	187		
11/26/2012	40.51	1.92	6.68	16.1	147		
11/27/2012	40.51	1.92	6.68	16.0	172		
11/28/2012	40.51	1.92	6.68	16.3	189		
11/29/2012	40.51	1.92	6.68	17.0	162		
11/30/2012	40.51	1.92	6.68	15.8	93		
12/1/2012	40.53	0.00	6.50	15.3	74		
12/2/2012	40.53	0.00	6.50	15.5	216		
12/3/2012	40.53	0.00	6.50	15.6	28		
12/4/2012	40.53	0.00	6.50	13.9	325		
12/5/2012	40.53	0.00	6.50	15.4	227		
12/6/2012	40.53	0.00	6.50	15.6	199		
12/7/2012	40.53	0.00	6.50	16.0	197		
12/8/2012	40.53	0.00	6.50	16.1	195		
12/9/2012	40.53	0.00	6.50	16.1	193		
12/10/2012	40.53	0.00	6.50	16.2	192		
12/11/2012	40.53	0.00	6.50	16.4	202		
12/12/2012	40.53	0.00	6.50	16.7	202		
12/13/2012	40.53	0.00	6.50	15.9	187		
12/14/2012	40.53	0.00	6.50	15.6	191		
12/15/2012	40.53	0.00	6.50	15.9	191		
12/16/2012	40.53	0.00	6.50	16.1	190		
12/17/2012	40.53	0.00	6.50	16.3	191		
12/18/2012	40.53	0.00	6.50	16.1	200		
12/19/2012	40.53	0.00	6.50	16.2	198		
12/20/2012	40.53	0.00	6.50	15.6	185		
12/21/2012	40.53	0.00	6.50	16.1	188		
12/22/2012	40.53	0.00	6.50	16.2	188		
12/23/2012	40.53	0.00	6.50	16.4	189		
12/24/2012	40.53	0.00	6.50	16.4	188		
12/25/2012	40.53	0.00	6.50	16.5	187		
12/26/2012	40.53	0.00	6.50	16.5	187		
12/27/2012	40.53	0.00	6.50	16.4	193		
12/28/2012	40.53	0.00	6.50	16.2	192		
12/29/2012	40.53	0.00	6.50	16.2	190		
12/30/2012	40.53	0.00	6.50	18.0	189		
12/31/2012	40.53	0.00	6.50	16.3	197		
1/1/2013	42.07	0.00	7.30	16.1	193		
1/2/2013	42.07	0.00	7.30	16.8	195		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
1/3/2013	42.07	0.00	7.30	16.3	192		
1/4/2013	42.07	0.00	7.30	16.5	196		
1/5/2013	42.07	0.00	7.30	16.2	195		
1/6/2013	42.07	0.00	7.30	16.2	193		
1/7/2013	42.07	0.00	7.30	16.2	191		
1/8/2013	42.07	2.21	7.30	15.2	195		
1/9/2013	42.07	2.21	7.30	15.5	191		
1/10/2013	42.07	2.21	7.30	16.1	190		
1/11/2013	42.07	2.21	7.30	15.7	192		
1/12/2013	42.07	2.21	7.30	16.0	189		
1/13/2013	42.07	2.21	7.30	16.2	188		
1/14/2013	42.07	2.21	7.30	16.3	188		
1/15/2013	42.07	2.21	7.30	15.9	192		
1/16/2013	42.07	2.21	7.30	16.1	190		
1/17/2013	42.07	2.21	7.30	16.0	190		
1/18/2013	42.07	2.21	7.30	15.4	192		
1/19/2013	42.07	2.21	7.30	15.6	190		
1/20/2013	42.07	2.21	7.30	16.2	190		
1/21/2013	42.07	2.21	7.30	17.9	197		
1/22/2013	42.07	2.21	7.30	30.5	204		
1/23/2013	42.07	2.21	7.30	28.4	201		
1/24/2013	42.07	2.21	7.30	17.4	192		
1/25/2013	42.07	2.21	7.30	27.0	190		
1/26/2013	42.07	2.21	7.30	18.3	191		
1/27/2013	42.07	2.21	7.30	16.5	185		
1/28/2013	42.07	2.21	7.30	16.4	188		
1/29/2013	42.07	2.21	7.30	16.4	186		
1/30/2013	42.07	2.21	7.30	16.6	187		
1/31/2013	42.07	2.21	7.30	16.6	34		
2/1/2013	50.46	1.21	6.25	26.8	189		
2/2/2013	50.46	1.21	6.25	30.6	192		
2/3/2013	50.46	1.21	6.25	17.2	184		
2/4/2013	50.46	1.21	6.25	16.7	182		
2/5/2013	50.46	1.21	6.25	15.5	190		
2/6/2013	50.46	1.21	6.25	16.7	190		
2/7/2013	50.46	1.21	6.25	16.5	188		
2/8/2013	50.46	1.21	6.25	16.5	187		
2/9/2013	50.46	1.21	6.25	16.7	186		
2/10/2013	50.46	1.21	6.25	17.0	184		
2/11/2013	50.46	1.21	6.25	17.0	182		
2/12/2013	50.46	1.21	6.25	17.0	181		
2/13/2013	50.46	1.21	6.25	17.0	186		
2/14/2013	50.46	1.21	6.25	17.0	184		
2/15/2013	50.46	1.21	6.25	16.9	183		
2/16/2013	50.46	1.21	6.25	17.5	185		
2/17/2013	50.46	1.21	6.25	18.0	185		
2/18/2013	50.46	1.21	6.25	16.3	190		
2/19/2013	50.46	1.21	6.25	16.9	188		
2/20/2013	50.46	1.21	6.25	19.9	185		
2/21/2013	50.46	1.21	6.25	17.8	192		
2/22/2013	50.46	1.21	6.25	16.6	186		
2/23/2013	50.46	1.21	6.25	16.5	179		
2/24/2013	50.46	1.21	6.25	17.2	186		
2/25/2013	50.46	1.21	6.25	16.6	191		
2/26/2013	50.46	1.21	6.25	16.8	189		
2/27/2013	50.46	1.21	6.25	16.9	184		
2/28/2013	50.46	1.21	6.25	17.0	183		
3/1/2013	47.16	1.58	7.00	16.4	188		
3/2/2013	47.16	1.58	7.00	17.0	186		
3/3/2013	47.16	1.58	7.00	17.0	186		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
3/4/2013	47.16	1.58	7.00	15.5	188		
3/5/2013	47.16	1.58	7.00	16.2	184		
3/6/2013	47.16	1.58	7.00	17.0	187		
3/7/2013	47.16	1.58	7.00	15.2	179		
3/8/2013	47.16	1.58	7.00	16.3	192		
3/9/2013	47.16	1.58	7.00	16.8	192		
3/10/2013	47.16	1.58	7.00	16.5	185		
3/11/2013	47.16	1.58	7.00	17.0	193		
3/12/2013	47.16	1.58	7.00	16.8	190		
3/13/2013	47.16	1.58	7.00	15.7	172		
3/14/2013	47.16	1.58	7.00	16.6	177		
3/15/2013	47.16	1.58	7.00	15.5	181		
3/16/2013	47.16	1.58	7.00	16.4	180		
3/17/2013	47.16	1.58	7.00	16.6	180		
3/18/2013	47.16	1.58	7.00	16.7	179		
3/19/2013	47.16	1.58	7.00	16.1	182		
3/20/2013	47.16	1.58	7.00	16.4	181		
3/21/2013	47.16	1.58	7.00	16.5	182		
3/22/2013	47.16	1.58	7.00	4.2	47		
3/23/2013	47.16	1.58	7.00	0.0	6		
3/24/2013	47.16	1.58	7.00	0.1	7		
3/25/2013	47.16	1.58	7.00	0.9	2		
3/26/2013	47.16	1.58	7.00	5.1	0		
3/27/2013	47.16	1.58	7.00	6.7	0		
3/28/2013	47.16	1.58	7.00	7.2	0		
3/29/2013	47.16	1.58	7.00	7.5	0		
3/30/2013	47.16	1.58	7.00	7.7	0		
3/31/2013	47.16	1.58	7.00	8.0	0		
4/1/2013	73.27	0.00	6.31	8.3	0		
4/2/2013	73.27	0.00	6.31	8.7	0		
4/3/2013	73.27	0.00	6.31	9.0	0		
4/4/2013	73.27	0.00	6.31	9.1	0		
4/5/2013	73.27	0.00	6.31	9.1	0		
4/6/2013	73.27	0.00	6.31	9.1	0		
4/7/2013	73.27	0.00	6.31	9.3	0		
4/8/2013	73.27	0.00	6.31	9.3	0		
4/9/2013	73.27	0.00	6.31	9.5	0		
4/10/2013	73.27	0.00	6.31	9.5	0		
4/11/2013	73.27	0.00	6.31	9.5	0		
4/12/2013	73.27	0.00	6.31	9.7	0		
4/13/2013	73.27	0.00	6.31	9.7	0		
4/14/2013	73.27	0.00	6.31	9.7	0		
4/15/2013	73.27	0.00	6.31	9.5	0		
4/16/2013	73.27	0.00	6.31	9.5	0		
4/17/2013	73.27	0.00	6.31	9.5	0		
4/18/2013	73.27	0.00	6.31	8.2	0		
4/19/2013	73.27	0.00	6.31	0.0	0		
4/20/2013	73.27	0.00	6.31	0.0	0		
4/21/2013	73.27	0.00	6.31	0.0	0		
4/22/2013	73.27	0.00	6.31	0.0	0		
4/23/2013	73.27	0.00	6.31	14.4	40		
4/24/2013	73.27	0.00	6.31	41.0	411		
4/25/2013	73.27	0.00	6.31	28.8	342		
4/26/2013	73.27	1.50	6.31	25.9	308		
4/27/2013	73.27	2.00	6.31	24.6	291		
4/28/2013	73.27	2.00	6.31	21.6	266		
4/29/2013	73.27	2.00	6.31	20.8	252		
4/30/2013	73.27	2.00	6.31	20.7	238		
5/1/2013	41.91	1.43	7.18	20.6	229		
5/2/2013	41.91	1.43	7.18	20.4	222		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
5/3/2013	41.91	1.43	7.18	20.6	199		
5/4/2013	41.91	1.43	7.18	19.9	193		
5/5/2013	41.91	1.43	7.18	19.6	184		
5/6/2013	41.91	1.43	7.18	18.8	143		
5/7/2013	41.91	1.43	7.18	18.4	226		
5/8/2013	41.91	1.43	7.18	18.6	212		
5/9/2013	41.91	1.43	7.18	18.6	207		
5/10/2013	41.91	1.43	7.18	18.7	111		
5/11/2013	41.91	1.43	7.18	17.8	61		
5/12/2013	41.91	1.43	7.18	16.9	289		
5/13/2013	41.91	1.43	7.18	18.5	225		
5/14/2013	41.91	1.43	7.18	18.3	203		
5/15/2013	41.91	1.43	7.18	18.3	163		
5/16/2013	41.91	1.43	7.18	17.6	216		
5/17/2013	41.91	1.43	7.18	18.0	194		
5/18/2013	41.91	1.43	7.18	17.9	190		
5/19/2013	41.91	1.43	7.18	17.7	189		
5/20/2013	41.91	1.43	7.18	17.6	187		
5/21/2013	41.91	1.43	7.18	17.3	166		
5/22/2013	41.91	1.43	7.18	17.3	204		
5/23/2013	41.91	1.43	7.18	17.5	148		
5/24/2013	41.91	1.43	7.18	16.6	189		
5/25/2013	41.91	1.43	7.18	16.6	142		
5/26/2013	41.91	1.43	7.18	16.4	223		
5/27/2013	41.91	1.43	7.18	16.3	148		
5/28/2013	41.91	1.43	7.18	16.5	213		
5/29/2013	41.91	1.43	7.18	16.2	143		
5/30/2013	41.91	1.43	7.18	16.2	214		
5/31/2013	41.91	1.43	7.18	16.2	194		
6/1/2013	41.42	1.46	7.21	15.4	113		
6/2/2013	41.42	1.46	7.21	15.6	127		
6/3/2013	41.42	1.46	7.21	15.6	256		
6/4/2013	41.42	1.46	7.21	15.1	187		
6/5/2013	41.42	1.46	7.21	15.4	183		
6/6/2013	41.42	1.46	7.21	15.7	188		
6/7/2013	41.42	1.46	7.21	15.1	180		
6/8/2013	41.42	1.46	7.21	15.3	181		
6/9/2013	41.42	1.46	7.21	15.3	179		
6/10/2013	41.42	1.46	7.21	15.3	179		
6/11/2013	41.42	1.46	7.21	15.3	178		
6/12/2013	41.42	1.46	7.21	15.3	178		
6/13/2013	41.42	1.46	7.21	15.3	178		
6/14/2013	41.42	0.00	7.21	15.3	178		
6/15/2013	41.42	0.00	7.21	15.2	178		
6/16/2013	41.42	0.00	7.21	15.3	178		
6/17/2013	41.42	0.00	7.21	15.2	178		
6/18/2013	41.42	0.00	7.21	15.2	177		
6/19/2013	41.42	0.00	7.21	15.2	177		
6/20/2013	41.42	0.00	7.21	15.2	178		
6/21/2013	41.42	0.00	7.21	15.1	176		
6/22/2013	41.42	0.00	7.21	15.2	172		
6/23/2013	41.42	0.00	7.21	15.2	179		
6/24/2013	41.42	0.00	7.21	15.2	177		
6/25/2013	41.42	0.00	7.21	15.1	175		
6/26/2013	41.42	0.00	7.21	15.1	175		
6/27/2013	41.42	0.00	7.21	15.2	176		
6/28/2013	41.42	0.00	7.21	15.0	172		
6/29/2013	41.42	0.00	7.21	15.7	125		
6/30/2013	41.42	0.00	7.21	14.5	210		
7/1/2013	39.94	0.00	7.26	15.4	179		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
7/2/2013	39.94	0.00	7.26	14.9	173		
7/3/2013	39.94	0.00	7.26	15.0	172		
7/4/2013	39.94	0.00	7.26	15.1	171		
7/5/2013	39.94	0.00	7.26	16.0	188		
7/6/2013	39.94	0.00	7.26	15.6	181		
7/7/2013	39.94	0.00	7.26	15.5	180		
7/8/2013	39.94	0.00	7.26	15.5	179		
7/9/2013	39.94	0.00	7.26	15.5	178		
7/10/2013	39.94	0.00	7.26	15.5	177		
7/11/2013	39.94	0.00	7.26	15.4	175		
7/12/2013	39.94	0.00	7.26	15.9	181		
7/13/2013	39.94	0.00	7.26	16.2	137		
7/14/2013	39.94	0.00	7.26	15.0	204		
7/15/2013	39.94	0.00	7.26	15.4	161		
7/16/2013	39.94	0.00	7.26	15.5	180		
7/17/2013	39.94	0.00	7.26	15.3	170		
7/18/2013	39.94	0.00	7.26	15.3	169		
7/19/2013	39.94	0.00	7.26	15.4	168		
7/20/2013	39.94	0.00	7.26	15.5	167		
7/21/2013	39.94	0.00	7.26	15.5	167		
7/22/2013	39.94	0.00	7.26	15.6	167		
7/23/2013	39.94	0.00	7.26	15.5	166		
7/24/2013	39.94	0.00	7.26	15.5	165		
7/25/2013	39.94	0.00	7.26	15.5	165		
7/26/2013	39.94	0.00	7.26	15.5	164		
7/27/2013	39.94	0.00	7.26	15.7	167		
7/28/2013	39.94	0.00	7.26	15.5	164		
7/29/2013	39.94	0.00	7.26	15.5	163		
7/30/2013	39.94	0.00	7.26	15.5	162		
7/31/2013	39.94	0.00	7.26	15.5	161		
8/1/2013	39.23	0.00	7.26	15.7	163		
8/2/2013	39.23	0.00	7.26	15.7	87		
8/3/2013	39.23	0.00	7.26	15.3	211		
8/4/2013	39.23	0.00	7.26	15.8	108		
8/5/2013	39.23	0.00	7.26	15.5	202		
8/6/2013	39.23	0.00	7.26	15.8	169		
8/7/2013	39.23	0.00	7.26	15.7	162		
8/8/2013	39.23	0.00	7.26	15.7	159		
8/9/2013	39.23	0.00	7.26	16.1	162		
8/10/2013	39.23	0.00	7.26	15.7	158		
8/11/2013	39.23	0.00	7.26	16.0	158		
8/12/2013	39.23	0.00	7.26	16.1	158		
8/13/2013	39.23	0.00	7.26	16.1	158		
8/14/2013	39.23	0.00	7.26	16.2	157		
8/15/2013	39.23	0.00	7.26	16.3	157		
8/16/2013	39.23	0.00	7.26	16.4	157		
8/17/2013	39.23	0.00	7.26	16.6	157		
8/18/2013	39.23	0.00	7.26	16.7	157		
8/19/2013	39.23	0.00	7.26	16.9	156		
8/20/2013	39.23	0.00	7.26	16.9	156		
8/21/2013	39.23	0.00	7.26	18.3	175		
8/22/2013	39.23	0.00	7.26	17.7	165		
8/23/2013	39.23	0.00	7.26	17.7	162		
8/24/2013	39.23	0.00	7.26	19.3	161		
8/25/2013	39.23	0.00	7.26	20.7	159		
8/26/2013	39.23	0.00	7.26	20.7	158		
8/27/2013	39.23	0.00	7.26	20.0	158		
8/28/2013	39.23	0.00	7.26	20.2	158		
8/29/2013	39.23	0.00	7.26	21.2	175		
8/30/2013	39.23	0.00	7.26	20.8	166		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
8/31/2013	39.23	0.00	7.26	22.8	164		
9/1/2013	39.00	0.00	7.67	25.4	163		
9/2/2013	39.00	0.00	7.67	23.8	162		
9/3/2013	39.00	0.00	7.67	24.5	159		
9/4/2013	39.00	0.00	7.67	25.4	161		
9/5/2013	39.00	0.00	7.67	26.5	146		
9/6/2013	39.00	0.00	7.67	24.4	160		
9/7/2013	39.00	0.00	7.67	23.8	158		
9/8/2013	39.00	0.00	7.67	23.4	157		
9/9/2013	39.00	0.00	7.67	23.7	171		
9/10/2013	39.00	0.00	7.67	22.3	166		
9/11/2013	39.00	0.00	7.67	21.7	164		
9/12/2013	39.00	0.00	7.67	21.2	163		
9/13/2013	39.00	0.00	7.67	20.8	162		
9/14/2013	39.00	0.00	7.67	20.5	158		
9/15/2013	39.00	0.00	7.67	20.2	157		
9/16/2013	39.00	0.00	7.67	19.7	155		
9/17/2013	39.00	0.00	7.67	20.3	95		
9/18/2013	39.00	0.00	7.67	19.2	205		
9/19/2013	39.00	0.00	7.67	19.2	166		
9/20/2013	39.00	0.00	7.67	19.0	158		
9/21/2013	39.00	0.00	7.67	18.4	162		
9/22/2013	39.00	0.00	7.67	18.5	162		
9/23/2013	39.00	0.00	7.67	19.0	173		
9/24/2013	39.00	0.00	7.67	18.7	171		
9/25/2013	39.00	0.00	7.67	18.5	169		
9/26/2013	39.00	0.00	7.67	18.3	168		
9/27/2013	39.00	0.00	7.67	18.1	166		
9/28/2013	39.00	0.00	7.67	18.0	165		
9/29/2013	39.00	0.00	7.67	17.9	164		
9/30/2013	39.00	0.00	7.67	17.7	162		
10/1/2013	38.40	0.00	8.10	17.6	160		
10/2/2013	38.40	0.00	8.10	17.6	159		
10/3/2013	38.40	0.00	8.10	18.3	170		
10/4/2013	38.40	0.00	8.10	17.9	167		
10/5/2013	38.40	0.00	8.10	17.6	165		
10/6/2013	38.40	0.00	8.10	17.5	164		
10/7/2013	38.40	0.00	8.10	17.4	164		
10/8/2013	38.40	0.00	8.10	17.0	160		
10/9/2013	38.40	0.00	8.10	17.2	161		
10/10/2013	38.40	0.00	8.10	17.7	170		
10/11/2013	38.40	0.00	8.10	17.5	168		
10/12/2013	38.40	0.00	8.10	17.3	166		
10/13/2013	38.40	0.00	8.10	17.1	163		
10/14/2013	38.40	0.00	8.10	17.1	162		
10/15/2013	38.40	0.00	8.10	17.0	161		
10/16/2013	38.40	0.00	8.10	16.8	159		
10/17/2013	38.40	0.00	8.10	17.8	172		
10/18/2013	38.40	0.00	8.10	17.1	168		
10/19/2013	38.40	0.00	8.10	17.0	168		
10/20/2013	38.40	0.00	8.10	17.0	168		
10/21/2013	38.40	0.00	8.10	16.9	167		
10/22/2013	38.40	0.00	8.10	16.8	167		
10/23/2013	38.40	0.00	8.10	16.9	166		
10/24/2013	38.40	0.00	8.10	17.3	165		
10/25/2013	38.40	0.00	8.10	17.3	164		
10/26/2013	38.40	0.00	8.10	17.2	163		
10/27/2013	38.40	0.00	8.10	17.2	162		
10/28/2013	38.40	0.00	8.10	17.2	162		
10/29/2013	38.40	0.00	8.10	17.6	168		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/30/2013	38.40	0.00	8.10	17.6	171		
10/31/2013	38.40	0.00	8.10	17.5	152		
11/1/2013	35.60	2.25	7.55	16.4	162		
11/2/2013	35.60	2.25	7.55	17.5	183		
11/3/2013	35.60	2.25	7.55	16.3	164		
11/4/2013	35.60	1.08	7.55	17.1	170		
11/5/2013	35.60	0.00	7.55	16.1	159		
11/6/2013	35.60	0.00	7.55	14.1	151		
11/7/2013	35.60	0.00	7.55	17.3	169		
11/8/2013	35.60	0.00	7.55	16.4	157		
11/9/2013	35.60	0.00	7.55	16.7	156		
11/10/2013	35.60	0.00	7.55	16.6	157		
11/11/2013	35.60	0.00	7.55	17.0	156		
11/12/2013	35.60	0.00	7.55	17.6	157		
11/13/2013	35.60	0.00	7.55	18.0	156		
11/14/2013	35.60	0.00	7.55	18.5	169		
11/15/2013	35.60	0.00	7.55	18.1	165		
11/16/2013	35.60	0.00	7.55	18.1	165		
11/17/2013	35.60	0.00	7.55	17.8	160		
11/18/2013	35.60	0.00	7.55	17.8	160		
11/19/2013	35.60	0.00	7.55	18.0	162		
11/20/2013	35.60	0.00	7.55	17.9	160		
11/21/2013	35.60	0.00	7.55	17.9	160		
11/22/2013	35.60	0.00	7.55	17.9	160		
11/23/2013	35.60	0.00	7.55	18.4	160		
11/24/2013	35.60	0.00	7.55	20.5	159		
11/25/2013	35.60	0.00	7.55	17.2	166		
11/26/2013	35.60	0.00	7.55	17.0	164		
11/27/2013	35.60	0.00	7.55	21.5	170		
11/28/2013	35.60	0.00	7.55	18.5	173		
11/29/2013	35.60	0.00	7.55	16.4	155		
11/30/2013	35.60	0.00	7.55	16.7	176		
12/1/2013	34.98	0.00	7.38	18.5	173		
12/2/2013	34.98	0.00	7.38	18.2	168		
12/3/2013	34.98	0.00	7.38	17.1	169		
12/4/2013	34.98	0.00	7.38	18.1	170		
12/5/2013	34.98	0.00	7.38	18.0	168		
12/6/2013	34.98	0.00	7.38	18.1	167		
12/7/2013	34.98	0.00	7.38	18.3	165		
12/8/2013	34.98	0.00	7.38	18.4	167		
12/9/2013	34.98	0.00	7.38	17.6	169		
12/10/2013	34.98	0.00	7.38	18.7	169		
12/11/2013	34.98	0.00	7.38	18.2	167		
12/12/2013	34.98	0.00	7.38	19.1	164		
12/13/2013	34.98	0.00	7.38	17.2	172		
12/14/2013	34.98	0.00	7.38	17.1	170		
12/15/2013	34.98	1.93	7.38	18.0	170		
12/16/2013	34.98	1.93	7.38	16.8	170		
12/17/2013	34.98	1.93	7.38	17.6	167		
12/18/2013	34.98	1.93	7.38	18.2	165		
12/19/2013	34.98	1.93	7.38	18.0	168		
12/20/2013	34.98	1.93	7.38	16.9	169		
12/21/2013	34.98	1.93	7.38	17.7	167		
12/22/2013	34.98	1.93	7.38	6.9	64		
12/23/2013	34.98	1.93	7.38	0.0	0		
12/24/2013	34.98	1.93	7.38	0.0	0		
12/25/2013	34.98	1.93	7.38	0.0	0		
12/26/2013	34.98	1.93	7.38	6.3	8		
12/27/2013	34.98	1.93	7.38	6.4	26		
12/28/2013	34.98	1.93	7.38	20.8	190		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/29/2013	34.98	1.93	7.38	24.8	285		
12/30/2013	34.98	1.93	7.38	21.7	231		
12/31/2013	34.98	1.93	7.38	21.8	212		
1/1/2014	41.42	1.72	8.00	20.2	192.98		
1/2/2014	41.42	1.72	8.00	21.3	188.19		
1/3/2014	41.42	1.72	8.00	26.6	183.14		
1/4/2014	41.42	1.72	8.00	22.2	169.84		
1/5/2014	41.42	1.72	8.00	18.7	161.82		
1/6/2014	41.42	1.72	8.00	31.1	171.03		
1/7/2014	41.42	1.72	8.00	40.3	176.60		
1/8/2014	41.42	1.72	8.00	21.9	181.50		
1/9/2014	41.42	1.72	8.00	15.8	137.39		
1/10/2014	41.42	1.72	8.00	13.5	128.68		
1/11/2014	41.42	1.72	8.00	19.0	167.66		
1/12/2014	41.42	1.72	8.00	19.3	157.49		
1/13/2014	41.42	1.72	8.00	7.4	63.31		
1/14/2014	41.42	1.72	8.00	0.0	0.00		
1/15/2014	41.42	1.72	8.00	0.0	0.00		
1/16/2014	41.42	1.72	8.00	21.8	200.65		
1/17/2014	41.42	1.72	8.00	26.9	262.02		
1/18/2014	41.42	0.00	8.00	28.3	213.79		
1/19/2014	41.42	0.00	8.00	21.8	184.09		
1/20/2014	41.42	0.00	8.00	20.1	172.10		
1/21/2014	41.42	0.00	8.00	30.5	169.85		
1/22/2014	41.42	0.00	8.00	6.3	176.43		
1/23/2014	41.42	0.00	8.00	0.0	183.93		
1/24/2014	41.42	0.00	8.00	0.0	211.12		
1/25/2014	41.42	0.00	8.00	0.0	216.16		
1/26/2014	41.42	0.00	8.00	6.6	218.54		
1/27/2014	41.42	0.00	8.00	22.1	184.69		
1/28/2014	41.42	0.00	8.00	28.6	206.33		
1/29/2014	41.42	0.00	8.00	24.5	204.59		
1/30/2014	41.42	0.00	8.00	19.4	185.21		
1/31/2014	41.42	0.00	8.00	16.3	147.98		
2/1/2014	41.42	0.00	8.00	17.5	150.66		
2/2/2014	41.42	0.00	8.00	17.8	153.59		
2/3/2014	41.42	0.00	8.00	19.9	155.10		
2/4/2014	41.42	0.00	8.00	18.5	158.14		
2/5/2014	40.83	0.00	8.01	18.6	162.07		
2/6/2014	40.83	0.00	8.01	19.4	169.28		
2/7/2014	40.83	0.00	8.01	21.7	181.44		
2/8/2014	40.83	0.00	8.01	20.1	174.44		
2/9/2014	40.83	0.00	8.01	18.9	170.15		
2/10/2014	40.83	0.00	8.01	21.5	167.54		
2/11/2014	40.83	0.00	8.01	21.7	163.18		
2/12/2014	40.83	0.00	8.01	19.2	178.65		
2/13/2014	40.83	0.00	8.01	21.8	177.53		
2/14/2014	40.83	0.00	8.01	16.8	155.95		
2/15/2014	40.83	0.00	8.01	19.1	157.66		
2/16/2014	40.83	0.00	8.01	19.6	163.40		
2/17/2014	40.83	0.00	8.01	18.0	160.55		
2/18/2014	40.83	0.00	8.01	17.9	161.50		
2/19/2014	40.83	0.00	8.01	17.7	161.38		
2/20/2014	40.83	0.00	8.01	18.0	164.48		
2/21/2014	40.83	0.00	8.01	17.8	163.15		
2/22/2014	40.83	0.00	8.01	18.0	162.58		
2/23/2014	40.83	0.00	8.01	17.9	162.74		
2/24/2014	40.83	0.00	8.01	18.3	163.82		
2/25/2014	40.83	1.67	8.01	18.2	161.89		
2/26/2014	40.83	1.67	8.01	19.2	167.10		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
2/27/2014	40.83	1.67	8.01	20.1	172.00		
2/28/2014	40.83	1.67	8.01	17.8	165.14		
3/1/2014	40.82	1.85	8.03	17.5	158.08		
3/2/2014	40.82	1.85	8.03	18.2	161.39		
3/3/2014	40.82	1.85	8.03	23.1	168.61		
3/4/2014	40.82	1.85	8.03	17.7	160.22		
3/5/2014	40.82	1.85	8.03	17.2	159.13		
3/6/2014	40.82	1.85	8.03	17.8	160.36		
3/7/2014	40.82	1.85	8.03	17.8	165.66		
3/8/2014	40.82	1.85	8.03	17.8	163.09		
3/9/2014	40.82	1.85	8.03	17.9	162.38		
3/10/2014	40.82	1.85	8.03	17.8	161.69		
3/11/2014	40.82	1.85	8.03	17.8	160.82		
3/12/2014	40.82	1.85	8.03	17.8	162.35		
3/13/2014	40.82	1.85	8.03	17.6	159.88		
3/14/2014	40.82	1.85	8.03	17.7	159.12		
3/15/2014	40.82	1.85	8.03	17.6	157.30		
3/16/2014	40.82	1.85	8.03	17.4	155.28		
3/17/2014	40.82	1.85	8.03	17.7	158.17		
3/18/2014	40.82	1.85	8.03	16.8	156.59		
3/19/2014	40.82	1.85	8.03	16.6	144.46		
3/20/2014	40.82	1.85	8.03	17.3	149.52		
3/21/2014	40.82	1.85	8.03	17.4	150.20		
3/22/2014	40.82	1.85	8.03	17.4	151.00		
3/23/2014	40.82	1.85	8.03	17.4	151.77		
3/24/2014	40.82	1.85	8.03	17.5	153.45		
3/25/2014	40.82	0.00	8.03	17.5	143.80		
3/26/2014	40.82	0.00	8.03	17.5	52.88		
3/27/2014	40.82	0.00	8.03	17.0	43.81		
3/28/2014	40.82	0.00	8.03	16.7	158.61		
3/29/2014	40.82	0.00	8.03	17.4	192.08		
3/30/2014	40.82	0.00	8.03	17.4	192.08		
3/31/2014	40.82	0.00	8.03	16.9	3.68		
4/1/2014	34.10	0.00	7.78	16.0	8.21		
4/2/2014	34.10	0.00	7.78	16.2	319.33		
4/3/2014	34.10	0.00	7.78	18.0	199.95		
4/4/2014	34.10	0.00	7.78	17.7	172.03		
4/5/2014	34.10	1.69	7.78	17.6	163.12		
4/6/2014	34.10	1.69	7.78	17.6	159.62		
4/7/2014	34.10	1.69	7.78	17.5	157.59		
4/8/2014	34.10	1.69	7.78	17.5	158.42		
4/9/2014	34.10	1.69	7.78	16.7	163.46		
4/10/2014	34.10	1.69	7.78	17.4	161.30		
4/11/2014	34.10	1.69	7.78	17.7	162.49		
4/12/2014	34.10	1.69	7.78	18.2	170.20		
4/13/2014	34.10	1.69	7.78	17.7	165.97		
4/14/2014	34.10	1.69	7.78	16.7	153.91		
4/15/2014	34.10	1.69	7.78	17.2	157.93		
4/16/2014	34.10	1.69	7.78	17.0	160.74		
4/17/2014	34.10	1.69	7.78	17.3	159.89		
4/18/2014	34.10	1.69	7.78	17.3	159.34		
4/19/2014	34.10	1.69	0.00	17.4	159.04		
4/20/2014	34.10	1.69	0.00	17.4	158.49		
4/21/2014	34.10	1.69	0.00	17.3	158.49		
4/22/2014	34.10	1.69	0.00	17.5	162.41		
4/23/2014	34.10	1.69	0.00	17.5	161.73		
4/24/2014	34.10	1.69	0.00	17.0	163.13		
4/25/2014	34.10	1.69	0.00	17.4	159.58		
4/26/2014	34.10	1.69	0.00	17.4	158.38		
4/27/2014	34.10	1.69	0.00	17.4	158.64		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
4/28/2014	34.10	1.69	0.00	17.4	159.28		
4/29/2014	34.10	1.69	0.00	17.3	160.87		
4/30/2014	34.10	1.69	0.00	17.4	159.78		
5/1/2014	30.35	1.42	8.08	17.4	130.32		
5/2/2014	30.35	1.42	8.08	16.3	134.25		
5/3/2014	30.35	1.42	8.08	17.4	192.81		
5/4/2014	30.35	1.42	8.08	17.4	167.93		
5/5/2014	30.35	1.42	8.08	17.3	161.58		
5/6/2014	30.35	1.42	8.08	17.4	160.01		
5/7/2014	30.35	1.42	8.08	17.3	160.04		
5/8/2014	30.35	1.42	8.08	17.2	158.84		
5/9/2014	30.35	1.42	8.08	17.2	158.25		
5/10/2014	30.35	1.42	8.08	17.4	158.81		
5/11/2014	30.35	1.42	8.08	17.9	166.28		
5/12/2014	30.35	1.42	8.08	16.7	153.69		
5/13/2014	30.35	1.42	8.08	17.6	161.73		
5/14/2014	30.35	1.42	8.08	17.4	156.78		
5/15/2014	30.35	1.42	8.08	17.7	167.03		
5/16/2014	30.35	1.42	8.08	17.4	161.24		
5/17/2014	30.35	1.42	8.08	17.4	160.67		
5/18/2014	30.35	1.42	8.08	17.3	159.35		
5/19/2014	30.35	1.42	8.08	17.3	158.02		
5/20/2014	30.35	1.42	8.08	17.2	157.03		
5/21/2014	30.35	0.00	8.08	17.2	155.76		
5/22/2014	0.00	0.00	8.08	17.3	157.66		
5/23/2014	0.00	0.00	8.08	17.2	157.29		
5/24/2014	0.00	0.00	8.08	17.2	157.09		
5/25/2014	0.00	0.00	8.08	17.2	156.63		
5/26/2014	0.00	0.00	8.08	17.3	155.87		
5/27/2014	0.00	0.00	8.08	17.6	160.65		
5/28/2014	0.00	0.00	8.08	17.8	161.81		
5/29/2014	0.00	0.00	8.08	17.9	165.48		
5/30/2014	0.00	0.00	8.08	17.4	156.84		
5/31/2014	0.00	0.00	8.08	17.5	157.65		
6/1/2014	0.00	0.00	8.17	17.6	158.79		
6/2/2014	0.00	0.00	8.17	17.3	155.58		
6/3/2014	0.00	0.00	8.17	17.4	159.69		
6/4/2014	0.00	0.00	8.17	17.4	162.64		
6/5/2014	0.00	0.00	8.17	16.3	150.64		
6/6/2014	0.00	0.00	8.17	16.6	150.16		
6/7/2014	0.00	0.00	8.17	16.6	150.91		
6/8/2014	0.00	0.00	8.17	16.5	151.21		
6/9/2014	0.00	0.00	8.17	16.4	151.71		
6/10/2014	0.00	0.00	8.17	16.9	150.85		
6/11/2014	0.00	0.00	8.17	17.1	152.20		
6/12/2014	0.00	0.00	8.17	18.2	172.14		
6/13/2014	0.00	0.00	8.17	16.9	158.76		
6/14/2014	0.00	0.00	8.17	16.2	160.40		
6/15/2014	0.00	0.00	8.17	15.9	159.15		
6/16/2014	0.00	0.00	8.17	15.8	157.80		
6/17/2014	0.00	0.00	8.17	15.7	156.10		
6/18/2014	0.00	0.00	8.17	15.6	153.82		
6/19/2014	0.00	0.00	8.17	15.5	152.30		
6/20/2014	0.00	0.00	8.17	15.4	150.40		
6/21/2014	0.00	0.00	8.17	16.5	163.82		
6/22/2014	0.00	0.00	8.17	16.1	161.39		
6/23/2014	0.00	0.00	8.17	16.0	160.86		
6/24/2014	0.00	0.00	8.17	15.9	159.68		
6/25/2014	0.00	0.00	8.17	15.9	158.58		
6/26/2014	0.00	0.00	8.17	15.8	157.40		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
6/27/2014	0.00	0.00	8.17	15.6	155.62		
6/28/2014	0.00	0.00	8.17	15.8	154.38		
6/29/2014	0.00	0.00	8.17	15.6	154.42		
6/30/2014	0.00	0.00	8.17	15.0	148.77		
7/1/2014	43.50	0.00	7.80	16.4	157.81		
7/2/2014	43.50	0.00	7.80	16.1	156.21		
7/3/2014	43.50	0.00	7.80	16.0	155.50		
7/4/2014	43.50	0.00	7.80	15.9	154.99		
7/5/2014	43.50	0.00	7.80	15.9	155.22		
7/6/2014	43.50	0.00	7.80	15.9	155.35		
7/7/2014	43.50	0.00	7.80	15.9	155.38		
7/8/2014	43.50	0.00	7.80	16.7	95.48		
7/9/2014	43.50	0.00	7.80	15.0	195.99		
7/10/2014	43.50	0.00	7.80	15.9	162.64		
7/11/2014	43.50	0.00	7.80	16.8	81.95		
7/12/2014	43.50	0.00	7.80	16.4	50.16		
7/13/2014	43.50	2.00	7.80	15.7	54.88		
7/14/2014	43.50	2.00	7.80	13.9	262.24		
7/15/2014	43.50	2.00	7.80	16.2	190.55		
7/16/2014	43.50	2.00	7.80	16.1	155.11		
7/17/2014	43.50	2.00	7.80	15.8	138.09		
7/18/2014	43.50	2.00	7.80	15.6	163.45		
7/19/2014	43.50	2.00	7.80	15.5	151.44		
7/20/2014	43.50	2.00	7.80	16.0	78.94		
7/21/2014	43.50	2.00	7.80	15.9	42.06		
7/22/2014	43.50	2.00	7.80	15.7	1.92		
7/23/2014	43.50	2.00	7.80	15.8	20.34		
7/24/2014	43.50	2.00	7.80	16.5	19.25		
7/25/2014	43.50	2.00	7.80	14.1	317.09		
7/26/2014	43.50	2.00	7.80	15.9	203.64		
7/27/2014	43.50	2.00	7.80	16.1	171.88		
7/28/2014	43.50	2.00	7.80	16.0	159.29		
7/29/2014	43.50	2.00	7.80	15.9	154.81		
7/30/2014	43.50	2.00	7.80	15.9	153.46		
7/31/2014	43.50	2.00	7.80	15.8	151.61		
8/1/2014	35.30	0.00	8.00	15.6	149.34		
8/2/2014	35.30	0.00	8.00	15.4	145.95		
8/3/2014	35.30	0.00	8.00	15.3	142.94		
8/4/2014	35.30	0.00	8.00	16.4	155.78		
8/5/2014	35.30	0.00	8.00	16.0	152.56		
8/6/2014	35.30	0.00	8.00	15.9	151.51		
8/7/2014	35.30	0.00	8.00	15.9	151.36		
8/8/2014	35.30	0.00	8.00	15.9	151.96		
8/9/2014	35.30	0.00	8.00	15.9	152.66		
8/10/2014	35.30	0.00	8.00	15.8	153.60		
8/11/2014	35.30	0.00	8.00	15.7	153.29		
8/12/2014	35.30	0.00	8.00	16.0	157.95		
8/13/2014	35.30	0.00	8.00	15.9	158.87		
8/14/2014	35.30	0.00	8.00	15.8	159.33		
8/15/2014	35.30	0.00	8.00	15.8	159.83		
8/16/2014	35.30	0.00	8.00	15.8	160.15		
8/17/2014	35.30	0.00	8.00	15.8	160.10		
8/18/2014	35.30	0.00	8.00	15.8	162.52		
8/19/2014	35.30	0.00	8.00	15.9	165.04		
8/20/2014	35.30	0.00	8.00	15.8	164.36		
8/21/2014	35.30	0.00	8.00	15.8	165.79		
8/22/2014	35.30	0.00	8.00	15.8	165.77		
8/23/2014	35.30	0.00	8.00	15.7	164.99		
8/24/2014	35.30	0.00	8.00	15.6	163.62		
8/25/2014	35.30	0.00	8.00	15.5	161.32		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
8/26/2014	35.30	0.00	8.00	15.1	155.95		
8/27/2014	35.30	0.00	8.00	15.6	96.38		
8/28/2014	35.30	0.00	8.00	15.7	189.23		
8/29/2014	35.30	0.00	8.00	16.0	178.89		
8/30/2014	35.30	0.00	8.00	15.9	173.37		
8/31/2014	35.30	0.00	8.00	15.8	171.31		
9/1/2014	29.70	0.00	7.26	15.8	169.91		
9/2/2014	29.70	0.00	7.26	15.8	168.65		
9/3/2014	29.70	0.00	7.26	15.7	167.63		
9/4/2014	29.70	0.00	7.26	15.9	170.02		
9/5/2014	29.70	0.00	7.26	15.6	167.21		
9/6/2014	29.70	0.00	7.26	15.9	170.12		
9/7/2014	29.70	0.00	7.26	15.8	169.39		
9/8/2014	29.70	0.00	7.26	15.6	168.36		
9/9/2014	29.70	0.00	7.26	15.9	171.16		
9/10/2014	29.70	0.00	7.26	15.6	165.78		
9/11/2014	29.70	0.00	7.26	15.8	170.80		
9/12/2014	29.70	0.00	7.26	15.7	170.26		
9/13/2014	29.70	0.00	7.26	15.7	169.91		
9/14/2014	29.70	0.00	7.26	15.7	169.95		
9/15/2014	29.70	0.00	7.26	15.2	165.21		
9/16/2014	29.70	0.00	7.26	16.7	173.01		
9/17/2014	29.70	0.00	7.26	16.2	170.35		
9/18/2014	29.70	0.00	7.26	15.8	170.34		
9/19/2014	29.70	0.00	7.26	15.7	170.58		
9/20/2014	29.70	0.00	7.26	15.7	170.80		
9/21/2014	29.70	0.00	7.26	15.7	170.99		
9/22/2014	29.70	0.00	7.26	15.7	171.10		
9/23/2014	29.70	0.00	7.26	15.7	171.39		
9/24/2014	29.70	0.00	7.26	15.7	171.56		
9/25/2014	29.70	0.00	7.26	15.6	171.44		
9/26/2014	29.70	0.00	7.26	15.4	168.75		
9/27/2014	29.70	0.00	7.26	15.4	167.25		
9/28/2014	29.70	0.00	7.26	15.5	169.67		
9/29/2014	29.70	0.00	7.26	15.5	168.73		
9/30/2014	29.70	0.00	7.26	15.6	161.75		
10/1/2014	30.71	0.00	7.58	15.7	158.87		
10/2/2014	30.71	0.00	7.58	15.9	162.16		
10/3/2014	30.71	0.00	7.58	15.8	164.53		
10/4/2014	30.71	0.00	7.58	15.7	165.62		
10/5/2014	30.71	0.00	7.58	15.7	166.51		
10/6/2014	30.71	0.00	7.58	15.7	164.44		
10/7/2014	30.71	0.00	7.58	13.9	149.16		
10/8/2014	30.71	0.00	7.58	13.5	159.13		
10/9/2014	30.71	0.00	7.58	16.7	112.26		
10/10/2014	30.71	0.00	7.58	15.9	191.06		
10/11/2014	30.71	0.00	7.58	15.8	157.41		
10/12/2014	30.71	0.00	7.58	15.8	154.80		
10/13/2014	30.71	0.00	7.58	16.0	156.34		
10/14/2014	30.71	0.00	7.58	16.0	157.04		
10/15/2014	30.71	0.00	7.58	16.0	157.33		
10/16/2014	30.71	0.00	7.58	16.0	157.18		
10/17/2014	30.71	0.00	7.58	16.0	157.80		
10/18/2014	30.71	0.00	7.58	15.9	157.19		
10/19/2014	30.71	0.00	7.58	15.9	157.28		
10/20/2014	30.71	0.00	7.58	16.0	156.84		
10/21/2014	30.71	0.00	7.58	16.1	156.87		
10/22/2014	30.71	0.00	7.58	16.3	156.93		
10/23/2014	30.71	0.00	7.58	15.1	144.51		
10/24/2014	30.71	0.00	7.58	15.7	147.94		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/25/2014	30.71	0.00	7.58	15.7	148.71		
10/26/2014	30.71	0.00	7.58	15.5	149.08		
10/27/2014	30.71	0.00	7.58	15.3	147.59		
10/28/2014	30.71	0.00	7.58	15.8	152.22		
10/29/2014	30.71	0.00	7.58	15.7	151.74		
10/30/2014	30.71	0.00	7.58	15.6	151.83		
10/31/2014	30.71	0.00	7.58	15.9	152.20		
11/1/2014	31.75	0.00	7.25	16.1	152.11		
11/2/2014	31.75	0.00	7.25	16.2	152.19		
11/3/2014	31.75	0.00	7.25	16.3	152.32		
11/4/2014	31.75	0.00	7.25	16.2	152.36		
11/5/2014	31.75	0.00	7.25	16.1	152.17		
11/6/2014	31.75	0.00	7.25	16.1	151.99		
11/7/2014	31.75	0.00	7.25	16.1	151.90		
11/8/2014	31.75	0.00	7.25	16.3	152.00		
11/9/2014	31.75	0.00	7.25	16.3	152.09		
11/10/2014	31.75	0.00	7.25	16.3	152.16		
11/11/2014	31.75	0.00	7.25	16.0	152.44		
11/12/2014	31.75	0.00	7.25	16.1	152.16		
11/13/2014	31.75	0.00	7.25	16.6	152.12		
11/14/2014	31.75	0.00	7.25	17.7	152.65		
11/15/2014	31.75	0.00	7.25	17.0	154.94		
11/16/2014	31.75	0.00	7.25	17.0	151.99		
11/17/2014	31.75	0.00	7.25	17.6	151.27		
11/18/2014	31.75	0.00	7.25	27.2	60.76		
11/19/2014	31.75	0.00	7.25	16.1	47.42		
11/20/2014	31.75	0.00	7.25	19.3	94.60		
11/21/2014	31.75	0.00	7.25	16.1	227.14		
11/22/2014	31.75	0.00	7.25	17.1	185.78		
11/23/2014	31.75	0.00	7.25	16.9	163.77		
11/24/2014	31.75	0.00	7.25	17.1	154.81		
11/25/2014	31.75	0.00	7.25	17.5	154.79		
11/26/2014	31.75	0.00	7.25	17.4	153.40		
11/27/2014	31.75	0.00	7.25	17.3	153.16		
11/28/2014	31.75	0.00	7.25	17.4	152.34		
11/29/2014	31.75	0.00	7.25	17.3	151.83		
11/30/2014	31.75	0.00	7.25	17.2	150.98		
12/1/2014	29.20	0.00	7.13	17.2	150.30		
12/2/2014	29.20	0.00	7.13	17.3	151.61		
12/3/2014	29.20	0.00	7.13	17.1	148.08		
12/4/2014	29.20	0.00	7.13	17.3	149.07		
12/5/2014	29.20	0.00	7.13	17.2	148.38		
12/6/2014	29.20	0.00	7.13	17.3	149.02		
12/7/2014	29.20	0.00	7.13	17.6	152.35		
12/8/2014	29.20	0.00	7.13	17.4	150.66		
12/9/2014	29.20	0.00	7.13	17.2	149.03		
12/10/2014	29.20	0.00	7.13	16.5	140.52		
12/11/2014	29.20	0.00	7.13	16.7	140.70		
12/12/2014	29.20	1.80	7.13	16.8	139.87		
12/13/2014	29.20	1.80	7.13	16.8	139.87		
12/14/2014	29.20	1.80	7.13	16.8	139.87		
12/15/2014	29.20	1.80	7.13	16.8	137.97		
12/16/2014	29.20	1.80	7.13	3.5	28.82		
12/17/2014	29.20	1.80	7.13	3.5	28.82		
12/18/2014	29.20	1.80	7.13	17.6	147.45		
12/19/2014	29.20	1.80	7.13	17.3	143.55		
12/20/2014	29.20	1.80	7.13	17.4	145.80		
12/21/2014	29.20	1.80	7.13	17.2	142.36		
12/22/2014	29.20	1.80	7.13	17.2	141.29		
12/23/2014	29.20	1.80	7.13	16.2	132.91		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/24/2014	29.20	1.80	7.13	17.2	138.75		
12/25/2014	29.20	1.80	7.13	17.1	138.61		
12/26/2014	29.20	1.80	7.13	17.1	137.89		
12/27/2014	29.20	1.80	7.13	17.6	134.97		
12/28/2014	29.20	1.80	7.13	16.9	146.37		
12/29/2014	29.20	1.80	7.13	17.5	142.54		
12/30/2014	29.20	1.80	7.13	16.8	133.99		
12/31/2014	29.20	1.80	7.13	8.1	66.42		
1/1/2015	30.00	1.80	7.12	19.7	167.76		
1/2/2015	30.00	1.80	7.12	17.6	145.09		
1/3/2015	30.00	1.80	7.12	17.4	141.16		
1/4/2015	30.00	1.80	7.12	17.2	139.26		
1/5/2015	30.00	1.80	7.12	19.0	142.14		
1/6/2015	30.00	1.80	7.12	25.5	175.31		
1/7/2015	30.00	1.80	7.12	41.9	172.79		
1/8/2015	30.00	1.80	7.12	9.1	172.97		
1/9/2015	30.00	1.80	7.12	20.8	171.30		
1/10/2015	30.00	1.80	7.12	22.4	174.19		
1/11/2015	30.00	1.80	7.12	16.9	152.41		
1/12/2015	30.00	1.80	7.12	17.8	163.20		
1/13/2015	30.00	1.80	7.12	18.2	162.68		
1/14/2015	30.00	1.80	7.12	17.9	158.83		
1/15/2015	30.00	1.80	7.12	17.6	158.26		
1/16/2015	30.00	0.00	7.12	17.7	157.07		
1/17/2015	30.00	0.00	7.12	17.5	154.81		
1/18/2015	30.00	0.00	7.12	17.5	154.87		
1/19/2015	30.00	0.00	7.12	17.5	154.74		
1/20/2015	30.00	0.00	7.12	16.4	144.15		
1/21/2015	30.00	0.00	7.12	17.1	145.03		
1/22/2015	30.00	0.00	7.12	17.2	147.02		
1/23/2015	30.00	0.00	7.12	17.2	147.80		
1/24/2015	30.00	0.00	7.12	17.3	148.40		
1/25/2015	30.00	0.00	7.12	17.3	149.25		
1/26/2015	30.00	0.00	7.12	17.7	153.87		
1/27/2015	30.00	0.00	7.12	18.6	153.13		
1/28/2015	30.00	0.00	7.12	18.5	152.49		
1/29/2015	30.00	0.00	7.12	17.3	151.97		
1/30/2015	30.00	0.00	7.12	20.6	153.41		
1/31/2015	30.00	0.00	7.12	17.7	150.97		
2/1/2015	31.50	0.00	7.56	17.4	151.50		
2/2/2015	31.50	0.00	7.56	20.1	161.62		
2/3/2015	31.50	0.00	7.56	18.2	161.25		
2/4/2015	31.50	0.00	7.56	16.6	148.41		
2/5/2015	31.50	0.00	7.56	19.5	150.83		
2/6/2015	31.50	0.00	7.56	17.7	149.92		
2/7/2015	31.50	0.00	7.56	17.2	148.98		
2/8/2015	31.50	0.00	7.56	17.2	149.38		
2/9/2015	31.50	0.00	7.56	17.0	153.91		
2/10/2015	31.50	0.00	7.56	17.8	153.67		
2/11/2015	31.50	0.00	7.56	17.3	151.35		
2/12/2015	31.50	0.00	7.56	19.5	155.08		
2/13/2015	31.50	0.00	7.56	17.5	151.53		
2/14/2015	31.50	0.00	7.56	20.8	160.89		
2/15/2015	31.50	0.00	7.56	47.7	169.00		
2/16/2015	31.50	0.00	7.56	47.4	166.97		
2/17/2015	31.50	0.00	7.56	20.9	159.45		
2/18/2015	31.50	0.00	7.56	25.4	164.49		
2/19/2015	31.50	0.00	7.56	36.4	173.96		
2/20/2015	31.50	0.00	7.56	23.1	190.78		
2/21/2015	31.50	0.00	7.56	21.5	204.07		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
2/22/2015	31.50	0.00	7.56	16.7	184.75		
2/23/2015	31.50	0.00	7.56	16.6	161.17		
2/24/2015	31.50	0.00	7.56	15.6	163.77		
2/25/2015	31.50	1.67	7.56	15.5	153.41		
2/26/2015	31.50	1.67	7.56	16.4	155.24		
2/27/2015	31.50	1.67	7.56	16.5	156.02		
2/28/2015	31.50	1.67	7.56	14.5	150.89		
3/1/2015	32.96	1.67	7.94	14.9	153.58		
3/2/2015	32.96	1.67	7.94	14.3	150.45		
3/3/2015	32.96	1.67	7.94	14.6	154.59		
3/4/2015	32.96	1.67	7.94	14.6	122.27		
3/5/2015	32.96	1.67	7.94	23.6	24.60		
3/6/2015	32.96	1.67	7.94	12.7	254.93		
3/7/2015	32.96	1.67	7.94	14.3	178.71		
3/8/2015	32.96	1.67	7.94	13.9	161.82		
3/9/2015	32.96	1.67	7.94	13.8	155.68		
3/10/2015	32.96	0.00	7.94	13.7	153.41		
3/11/2015	32.96	0.00	7.94	12.3	136.91		
3/12/2015	32.96	0.00	7.94	24.9	165.55		
3/13/2015	32.96	0.00	7.94	23.5	158.47		
3/14/2015	32.96	0.00	7.94	20.8	157.13		
3/15/2015	32.96	0.00	7.94	19.9	156.89		
3/16/2015	32.96	0.00	7.94	18.8	149.55		
3/17/2015	32.96	0.00	7.94	14.7	133.32		
3/18/2015	32.96	0.00	7.94	17.6	152.78		
3/19/2015	32.96	0.00	7.94	18.1	147.48		
3/20/2015	32.96	0.00	7.94	18.2	146.82		
3/21/2015	32.96	0.00	7.94	18.1	146.76		
3/22/2015	32.96	0.00	7.94	17.7	145.65		
3/23/2015	32.96	0.00	7.94	17.8	146.78		
3/24/2015	32.96	0.00	7.94	17.5	149.87		
3/25/2015	32.96	0.00	7.94	17.8	149.53		
3/26/2015	32.96	0.00	7.94	17.8	149.32		
3/27/2015	32.96	0.00	7.94	17.6	149.40		
3/28/2015	32.96	0.00	7.94	17.7	148.38		
3/29/2015	32.96	0.00	7.94	17.5	146.98		
3/30/2015	32.96	0.00	7.94	17.4	146.81		
3/31/2015	32.96	0.00	7.94	14.9	126.36		
4/1/2015	31.50	1.10	7.70	17.2	160.96		
4/2/2015	31.50	1.10	7.70	18.0	153.26		
4/3/2015	31.50	1.10	7.70	18.2	152.34		
4/4/2015	31.50	1.10	7.70	18.0	151.00		
4/5/2015	31.50	1.10	7.70	17.9	150.09		
4/6/2015	31.50	1.10	7.70	17.4	147.51		
4/7/2015	31.50	1.10	7.70	17.1	145.71		
4/8/2015	31.50	1.10	7.70	17.4	147.55		
4/9/2015	31.50	1.10	7.70	17.3	147.76		
4/10/2015	31.50	1.10	7.70	17.3	147.45		
4/11/2015	31.50	1.10	7.70	17.4	147.76		
4/12/2015	31.50	1.10	7.70	17.4	148.23		
4/13/2015	31.50	1.10	7.70	17.3	147.96		
4/14/2015	31.50	1.10	7.70	17.4	148.19		
4/15/2015	31.50	1.10	7.70	17.4	150.47		
4/16/2015	31.50	1.10	7.70	17.4	149.33		
4/17/2015	31.50	1.10	7.70	17.4	148.64		
4/18/2015	31.50	1.10	7.70	17.3	148.04		
4/19/2015	31.50	1.10	7.70	17.4	147.91		
4/20/2015	31.50	1.10	7.70	17.3	147.36		
4/21/2015	31.50	1.10	7.70	17.3	147.12		
4/22/2015	31.50	1.10	7.70	17.4	148.26		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
4/23/2015	31.50	1.10	7.70	17.3	149.52		
4/24/2015	31.50	1.10	7.70	17.4	148.39		
4/25/2015	31.50	1.10	7.70	17.3	147.75		
4/26/2015	31.50	1.10	7.70	17.3	146.95		
4/27/2015	31.50	1.10	7.70	17.3	146.71		
4/28/2015	31.50	1.10	7.70	17.3	146.54		
4/29/2015	31.50	1.10	7.70	17.3	146.08		
4/30/2015	31.50	1.10	7.70	17.3	145.55		
5/1/2015	31.50	1.70	7.90	17.3	145.31		
5/2/2015	31.50	1.70	7.90	17.3	144.82		
5/3/2015	31.50	1.70	7.90	17.2	144.28		
5/4/2015	31.50	1.70	7.90	17.3	144.40		
5/5/2015	31.50	1.70	7.90	17.6	149.85		
5/6/2015	31.50	1.70	7.90	17.4	148.12		
5/7/2015	31.50	1.70	7.90	17.4	148.17		
5/8/2015	31.50	1.70	7.90	17.5	149.48		
5/9/2015	31.50	1.70	7.90	17.6	153.04		
5/10/2015	31.50	1.70	7.90	17.0	143.39		
5/11/2015	31.50	1.70	7.90	17.2	145.14		
5/12/2015	31.50	1.70	7.90	17.5	149.77		
5/13/2015	31.50	1.70	7.90	17.1	143.22		
5/14/2015	31.50	1.70	7.90	17.2	144.90		
5/15/2015	31.50	1.70	7.90	17.2	144.69		
5/16/2015	31.50	1.70	7.90	17.2	144.61		
5/17/2015	31.50	1.70	7.90	17.2	144.49		
5/18/2015	31.50	1.70	7.90	16.4	137.87		
5/19/2015	31.50	1.70	7.90	15.7	150.19		
5/20/2015	31.50	1.70	7.90	16.2	147.49		
5/21/2015	31.50	1.70	7.90	16.0	144.81		
5/22/2015	31.50	1.70	7.90	16.1	145.59		
5/23/2015	31.50	1.70	7.90	16.1	146.16		
5/24/2015	31.50	1.70	7.90	16.1	145.98		
5/25/2015	31.50	1.70	7.90	16.1	146.12		
5/26/2015	31.50	1.70	7.90	16.5	151.39		
5/27/2015	31.50	1.70	7.90	15.5	141.05		
5/28/2015	31.50	1.70	7.90	15.9	143.52		
5/29/2015	31.50	1.70	7.90	16.0	143.18		
5/30/2015	31.50	1.70	7.90	16.2	143.91		
5/31/2015	31.50	1.70	7.90	16.2	144.50		
6/1/2015	30.90	1.50	7.90	15.9	143.41		
6/2/2015	30.90	1.50	7.90	15.9	143.30		
6/3/2015	30.90	1.50	7.90	16.2	147.52		
6/4/2015	30.90	1.50	7.90	15.8	142.16		
6/5/2015	30.90	1.50	7.90	15.9	142.46		
6/6/2015	30.90	1.50	7.90	15.9	142.58		
6/7/2015	30.90	1.50	7.90	16.0	142.66		
6/8/2015	30.90	1.50	7.90	15.9	142.05		
6/9/2015	30.90	1.50	7.90	15.9	141.24		
6/10/2015	30.90	1.50	7.90	15.8	139.86		
6/11/2015	30.90	1.50	7.90	15.8	138.74		
6/12/2015	30.90	1.50	7.90	16.4	89.72		
6/13/2015	30.90	1.50	7.90	15.1	178.56		
6/14/2015	30.90	1.50	7.90	16.4	103.79		
6/15/2015	30.90	1.50	7.90	16.4	50.12		
6/16/2015	30.90	1.50	7.90	16.4	42.39		
6/17/2015	30.90	1.50	7.90	16.1	38.02		
6/18/2015	30.90	1.50	7.90	16.7	30.17		
6/19/2015	30.90	1.50	7.90	15.4	22.82		
6/20/2015	30.90	1.50	7.90	16.0	20.11		
6/21/2015	30.90	1.50	7.90	16.3	20.30		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
6/22/2015	30.90	1.50	7.90	15.5	22.42		
6/23/2015	30.90	1.50	7.90	15.8	18.97		
6/24/2015	30.90	1.50	7.90	15.8	16.95		
6/25/2015	30.90	1.50	7.90	16.0	16.21		
6/26/2015	30.90	1.50	7.90	15.9	15.95		
6/27/2015	30.90	1.50	7.90	15.9	16.81		
6/28/2015	30.90	1.50	7.90	15.9	18.03		
6/29/2015	30.90	1.50	7.90	15.6	18.06		
6/30/2015	30.90	1.50	7.90	16.2	17.35		
7/1/2015	30.38	1.60	7.52	15.8	17.20		
7/2/2015	30.38	1.60	7.52	15.9	153.60		
7/3/2015	30.38	1.60	7.52	15.9	223.21		
7/4/2015	30.38	1.60	7.52	17.2	169.85		
7/5/2015	30.38	1.60	7.52	16.6	159.47		
7/6/2015	30.38	1.60	7.52	17.0	78.71		
7/7/2015	30.38	1.60	7.52	16.4	18.55		
7/8/2015	30.38	1.60	7.52	15.4	189.94		
7/9/2015	30.38	1.60	7.52	16.9	161.16		
7/10/2015	30.38	1.60	7.52	16.6	158.42		
7/11/2015	30.38	1.60	7.52	16.5	149.31		
7/12/2015	30.38	1.60	7.52	16.2	161.76		
7/13/2015	30.38	1.60	7.52	14.6	146.19		
7/14/2015	30.38	1.60	7.52	15.6	138.96		
7/15/2015	30.38	1.60	7.52	16.2	73.97		
7/16/2015	30.38	1.60	7.52	17.4	58.07		
7/17/2015	30.38	1.60	7.52	16.8	54.33		
7/18/2015	30.38	1.60	7.52	16.7	51.08		
7/19/2015	30.38	1.60	7.52	16.5	50.24		
7/20/2015	30.38	1.60	7.52	14.3	265.76		
7/21/2015	30.38	1.60	7.52	16.3	183.32		
7/22/2015	30.38	1.60	7.52	16.8	128.25		
7/23/2015	30.38	1.60	7.52	16.4	124.37		
7/24/2015	30.38	1.60	7.52	15.5	156.40		
7/25/2015	30.38	1.60	7.52	16.7	103.20		
7/26/2015	30.38	0.00	7.52	15.3	153.88		
7/27/2015	30.38	0.00	7.52	16.1	120.24		
7/28/2015	30.38	0.00	7.52	15.7	136.77		
7/29/2015	30.38	0.00	7.52	15.8	130.49		
7/30/2015	30.38	0.00	7.52	16.7	110.00		
7/31/2015	30.38	0.00	7.52	16.9	104.09		
8/1/2015	29.87	0.00	7.26	16.5	70.13		
8/2/2015	29.87	0.00	7.26	15.6	165.18		
8/3/2015	29.87	0.00	7.26	16.3	128.02		
8/4/2015	29.87	0.00	7.26	16.3	122.77		
8/5/2015	29.87	0.00	7.26	16.3	116.68		
8/6/2015	29.87	0.00	7.26	16.2	117.08		
8/7/2015	29.87	0.00	7.26	15.9	127.65		
8/8/2015	29.87	0.00	7.26	16.3	125.93		
8/9/2015	29.87	0.00	7.26	15.2	129.22		
8/10/2015	29.87	0.00	7.26	15.5	127.71		
8/11/2015	29.87	0.00	7.26	15.4	128.47		
8/12/2015	29.87	1.52	7.26	15.1	129.35		
8/13/2015	29.87	1.52	7.26	15.1	125.47		
8/14/2015	29.87	1.52	7.26	15.0	126.18		
8/15/2015	29.87	1.52	7.26	15.0	125.23		
8/16/2015	29.87	1.52	7.26	14.9	124.80		
8/17/2015	29.87	1.52	7.26	14.8	124.80		
8/18/2015	29.87	1.52	7.26	14.8	124.01		
8/19/2015	29.87	1.52	7.26	19.8	131.38		
8/20/2015	29.87	1.52	7.26	17.6	133.19		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
8/21/2015	29.87	1.52	7.26	15.5	132.62		
8/22/2015	29.87	1.52	7.26	5.4	48.01		
8/23/2015	29.87	1.52	7.26	16.1	123.50		
8/24/2015	29.87	1.52	7.26	16.1	125.25		
8/25/2015	29.87	1.52	7.26	12.0	77.86		
8/26/2015	29.87	1.52	7.26	13.3	51.29		
8/27/2015	29.87	1.52	7.26	14.5	121.97		
8/28/2015	29.87	1.52	7.26	13.7	31.94		
8/29/2015	29.87	1.52	7.26	13.8	29.63		
8/30/2015	29.87	1.52	7.26	13.9	35.33		
8/31/2015	29.87	1.52	7.26	16.9	246.66		
9/1/2015	28.40	1.75	8.00	18.2	70.99		
9/2/2015	28.40	1.75	8.00	15.0	171.17		
9/3/2015	28.40	1.75	8.00	14.7	142.18		
9/4/2015	28.40	1.75	8.00	14.3	131.42		
9/5/2015	28.40	0.00	8.00	15.3	59.74		
9/6/2015	28.40	0.00	8.00	13.8	168.18		
9/7/2015	28.40	0.00	8.00	14.6	124.28		
9/8/2015	28.40	0.00	8.00	18.4	157.00		
9/9/2015	28.40	0.00	8.00	18.4	146.29		
9/10/2015	28.40	0.00	8.00	16.5	124.15		
9/11/2015	28.40	0.00	8.00	15.5	68.70		
9/12/2015	28.40	0.00	8.00	15.3	172.64		
9/13/2015	28.40	0.00	8.00	15.0	126.27		
9/14/2015	28.40	0.00	8.00	14.6	129.28		
9/15/2015	28.40	0.00	8.00	17.5	143.05		
9/16/2015	28.40	0.00	8.00	16.9	125.22		
9/17/2015	28.40	0.00	8.00	13.7	52.49		
9/18/2015	28.40	0.00	8.00	17.8	61.41		
9/19/2015	28.40	0.00	8.00	16.0	44.81		
9/20/2015	28.40	0.00	8.00	15.1	39.45		
9/21/2015	28.40	0.00	8.00	13.5	179.78		
9/22/2015	28.40	0.00	8.00	18.1	145.54		
9/23/2015	28.40	0.00	8.00	16.8	137.18		
9/24/2015	28.40	0.00	8.00	15.7	149.34		
9/25/2015	28.40	0.00	8.00	15.8	125.91		
9/26/2015	28.40	0.00	8.00	15.1	137.64		
9/27/2015	28.40	0.00	8.00	14.6	111.45		
9/28/2015	28.40	0.00	8.00	14.8	93.19		
9/29/2015	28.40	0.00	8.00	19.6	135.13		
9/30/2015	28.40	0.00	8.00	17.1	172.15		
10/1/2015	28.47	0.00	8.17	17.3	116.28		
10/2/2015	28.47	0.00	8.17	15.8	116.96		
10/3/2015	28.47	0.00	8.17	13.7	86.36		
10/4/2015	28.47	0.00	8.17	16.0	141.36		
10/5/2015	28.47	0.00	8.17	15.3	152.10		
10/6/2015	28.47	0.00	8.17	16.3	144.53		
10/7/2015	28.47	0.00	8.17	14.5	107.91		
10/8/2015	28.47	0.00	8.17	17.2	156.08		
10/9/2015	28.47	0.00	8.17	17.7	61.19		
10/10/2015	28.47	0.00	8.17	17.2	149.39		
10/11/2015	28.47	0.00	8.17	16.3	165.86		
10/12/2015	28.47	0.00	8.17	16.6	48.56		
10/13/2015	28.47	0.00	8.17	15.5	181.38		
10/14/2015	28.47	0.00	8.17	16.0	150.26		
10/15/2015	28.47	0.00	8.17	12.9	128.00		
10/16/2015	28.47	0.00	8.17	15.3	52.37		
10/17/2015	28.47	0.00	8.17	15.1	171.51		
10/18/2015	28.47	0.00	8.17	15.5	132.56		
10/19/2015	28.47	0.00	8.17	14.9	103.24		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
10/20/2015	28.47	0.00	8.17	16.5	135.05		
10/21/2015	28.47	0.00	8.17	16.4	118.22		
10/22/2015	28.47	0.00	8.17	15.5	122.88		
10/23/2015	28.47	0.00	8.17	16.5	127.34		
10/24/2015	28.47	0.00	8.17	15.6	149.45		
10/25/2015	28.47	0.00	8.17	16.3	133.12		
10/26/2015	28.47	0.00	8.17	15.9	90.84		
10/27/2015	28.47	0.00	8.17	16.5	155.67		
10/28/2015	28.47	0.00	8.17	17.4	96.83		
10/29/2015	28.47	0.00	8.17	15.5	155.84		
10/30/2015	28.47	0.00	8.17	16.0	116.16		
10/31/2015	28.47	0.00	8.17	16.7	77.98		
11/1/2015	28.28	0.00	8.36	15.2	126.27		
11/2/2015	28.28	0.00	8.36	15.9	155.01		
11/3/2015	28.28	0.00	8.36	16.8	130.36		
11/4/2015	28.28	0.00	8.36	16.4	140.45		
11/5/2015	28.28	0.00	8.36	16.3	120.87		
11/6/2015	28.28	0.00	8.36	16.6	137.28		
11/7/2015	28.28	0.00	8.36	17.2	44.68		
11/8/2015	28.28	0.00	8.36	16.7	54.67		
11/9/2015	28.28	0.00	8.36	15.2	170.25		
11/10/2015	28.28	0.00	8.36	16.9	94.73		
11/11/2015	28.28	0.00	8.36	16.9	125.05		
11/12/2015	28.28	0.00	8.36	15.6	173.02		
11/13/2015	28.28	0.00	8.36	16.5	146.64		
11/14/2015	28.28	0.00	8.36	16.8	131.69		
11/15/2015	28.28	0.00	8.36	16.2	143.01		
11/16/2015	28.28	0.00	8.36	16.2	137.90		
11/17/2015	28.28	0.00	8.36	16.2	140.62		
11/18/2015	28.28	0.00	8.36	16.3	142.27		
11/19/2015	28.28	0.00	8.36	16.6	89.91		
11/20/2015	28.28	0.00	8.36	15.8	154.83		
11/21/2015	28.28	0.00	8.36	16.8	114.47		
11/22/2015	28.28	0.00	8.36	19.0	113.77		
11/23/2015	28.28	0.00	8.36	17.6	50.06		
11/24/2015	28.28	0.00	8.36	16.7	203.58		
11/25/2015	28.28	0.00	8.36	17.8	143.93		
11/26/2015	28.28	0.00	8.36	17.4	155.87		
11/27/2015	28.28	0.00	8.36	17.7	147.74		
11/28/2015	28.28	0.00	8.36	15.8	6.09		
11/29/2015	28.28	0.00	8.36	17.7	6.09		
11/30/2015	28.28	0.00	8.36	18.0	140.05		
12/1/2015	28.40	0.00	7.87	18.0	156.37		
12/2/2015	28.40	0.00	7.87	17.9	84.27		
12/3/2015	28.40	0.00	7.87	15.5	44.84		
12/4/2015	28.40	0.00	7.87	16.5	39.54		
12/5/2015	28.40	0.00	7.87	16.6	33.78		
12/6/2015	28.40	0.00	7.87	15.4	154.85		
12/7/2015	28.40	0.00	7.87	17.7	72.70		
12/8/2015	28.40	0.00	7.87	16.8	116.37		
12/9/2015	28.40	0.00	7.87	17.0	60.59		
12/10/2015	28.40	0.00	7.87	16.8	48.19		
12/11/2015	28.40	0.00	7.87	16.6	39.56		
12/12/2015	28.40	0.00	7.87	16.5	36.35		
12/13/2015	28.40	0.00	7.87	16.4	42.60		
12/14/2015	28.40	0.00	7.87	16.6	31.70		
12/15/2015	28.40	0.00	7.87	16.5	29.79		
12/16/2015	28.40	0.00	7.87	16.5	30.44		
12/17/2015	28.40	0.00	7.87	15.4	197.16		
12/18/2015	28.40	0.00	7.87	18.0	159.83		

	Well MCFD						
Date	MH-3	MH-4	MH-5	MH-11	MH-12	MH-18	MH-20
12/19/2015	28.40	0.00	7.87	18.0	193.46		
12/20/2015	28.40	0.00	7.87	17.4	96.88		
12/21/2015	28.40	0.00	7.87	17.7	175.47		
12/22/2015	28.40	0.00	7.87	17.1	128.46		
12/23/2015	28.40	0.00	7.87	17.5	144.68		
12/24/2015	28.40	0.00	7.87	17.5	129.26		
12/25/2015	28.40	0.00	7.87	18.2	135.34		
12/26/2015	28.40	0.00	7.87	16.8	130.52		
12/27/2015	28.40	0.00	7.87	17.2	132.07		
12/28/2015	28.40	0.00	7.87	17.5	103.71		
12/29/2015	28.40	0.00	7.87	17.4	41.38		
12/30/2015	28.40	0.00	7.87	15.7	102.27		
12/31/2015	28.40	0.00	7.87	18.4	95.22		

Appendix H

CBM Well Produced Water Sample Analytical Results

Georgetown CO_2 Sequestration

Water Analysis Report

Well MC 5 As of 7/16/2014

Field Parameters	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mv)	Conductivity (S/m)
Baseline Avg	13.5	6.6	1.3	-138	7.0
Post Injection Avg	13.7	6.1	1.8	-172	7.4

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Dissolved CO2 (mg/L)	Conductivity (uS/cm)
Baseline Avg	6.95	554	-426	446	40371	635	58797
Post Injection Avg	6.535	579	-481	696	52718	614	82586

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	25000	0.876	1370	180.8	718.3	1.555	326.3	15885	33.53
	Dissolved		0.402	1353	169.0	698.2	1.508	321.1	15893	37.99
Post Injection Avg	Total	31688	5.432	1635	251.1	805.2	2.676	381.8	18229	9.36
	Dissolved		0.036	1651	189.0	814.4	2.391	402.3	18465	8.31

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	TDS / Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	0.0	241	5518	833	717	43849	0.91	0.75	-10.40	7.43
Post Injection Avg	0.1	387.875	6589	2014	704	53433	0.62	0.65	-204.37	32.53

Georgetown CO_2 Sequestration

Water Analysis Report

Well MH 11 As of 7/16/2014

Field Parameters	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mv)	Conductivity (S/m)
Baseline Avg	13.3	6.0	2.2	-25	6.0
Post Injection Avg	14.0	6.8	2.0	-92	3.9

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Dissolved CO2 (mg/L)	Conductivity (uS/cm)
Baseline Avg	4.96	8	251	192	33085	45	61312
Post Injection Avg	5.45077	31	82	187	32898	42	46556

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	25000	0.679	1999	167.8	433.7	6.502	213.3	16167	40.57
	Dissolved		0.400	1993	142.4	515.2	6.310	212.7	15900	40.11
Post Injection Avg	Total	19513	0.118	1183	101.9	294.6	1.832	71.4	9599	4.83
	Dissolved		0.336	1057	53.6	261.1	1.33	65.2	8708	8.10

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	TDS / Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	0.0	1	6765	850	706	44033	0.76	0.72	-13.06	9.14
Post Injection Avg	22.5	186.6154	4616	524	478	28583	0.74	#DIV/0!	-6.59	17.11

Georgetown CO_2 Sequestration

Water Analysis Report

Well MH 12 As of 9/30/2014

Field Parameters	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mv)	Conductivity (S/m)
Baseline Avg	15.5	6.7	2.4	-118	3.0
Post Injection Avg	15.6	7.1	1.9	-140	1.7

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Dissolved CO2 (mg/L)	Conductivity (uS/cm)
Baseline Avg	6.9	531	-382	124	12356	613	20903
Post Injection Avg	7.0	465	-437	138	11543	475	19858
Most Recent Value	7.1	574	-573	176	17464	504	29150

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	7113	0.430	421	49.6	146.0	0.639	10.0	4267	13.39
	Dissolved		0.366	346	34.0	105.9	0.536	8.5	3538	17.68
Post Injection Avg	Total	6824	0.067	377	59.5	143.7	0.858	12.4	4015	1.54
	Dissolved		0.019	366	44.2	142.9	0.866	19.5	3910	1.47

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	TDS / Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	76.5	493	2049	221	211	12339	1.01	0.59	-3.64	2.16
Post Injection Avg	0.4	518	1525	208	202	11713	0.98	0.59	-5.15	5.73

Georgetown CO_2 Sequestration

Water Analysis Report

Well Gilmore Water Well As of 10/1/2014

Field Parameters	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mv)	Conductivity (mS/m)
Baseline Avg	13.9	7.0	3.8	87	36.1
Post Injection Avg	15.2	7.6	3.4	106	37.3

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Dissolved CO2 (mg/L)	Conductivity (uS/cm)
Baseline Avg	6.6	86.4	-75.8	7	199	120	289
Post Injection Avg	7.0	80.9	-72.5	19	161	125	289

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	9.78	0.100	35.66	1.466	5.932	0.019	2.745	6.229	39.11
	Dissolved		0.157	36.02	0.537	5.991	0.014	3.040	7.468	38.63
Post Injection Avg	Total	7.56	0.043	35.00	4.207	5.809	0.039	5.045	8.917	39.64
	Dissolved		0.020	34.73	0.424	5.879	0.040	10.439	14.163	39.22

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	TDS / Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	0.00	55.77	447	3	3	153	1.30	0.53	0.95	-2.61
Post Injection Avg	2.16	91.73	117	3	3	155	0.87	0.54	-1.55	4.19

Georgetown CO_2 Sequestration

Water Analysis Report

Well WVU #1 As of 10/3/2013

Field Parameters	Temperature (°C)	pH
Baseline Avg	12.7	7.8
Post Injection Avg	13.1	8.1

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Conductivity (uS/cm)
Baseline Avg	7.8	220.3	-215.2	950
Post Injection Avg	8.1	251.5	-239.7	1020

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	155.24	0.06	39.45	0.11	6.00	0.22	1.17	146.17	7.26
	Dissolved		0.043	40.342	0.614	6.095	0.310	1.177	136.124	15.684
Post Injection Avg	Total	151.97	2.16	37.45	0.17	6.68	0.21	1.12	158.33	5.42
	Dissolved		0.039	28.431	0.089	4.396	0.139	1.191	200.061	5.898

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	0.00	265.21	20	9	9	488	0.53	-0.75	0.94
Post Injection Avg	-2.75	276.82	57	10	9	515	0.62	-1.37	0.20

Georgetown CO_2 Sequestration

Water Analysis Report

Well WVU #2 As of 10/3/2013

Field Parameters	Temperature (°C)	pH
Baseline Avg	12.2	8.1
Post Injection Avg	12.6	8.2

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Conductivity (uS/cm)
Baseline Avg	8.1	151.1	-145.0	627
Post Injection Avg	8.2	153.0	-147.3	668

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	85.84	0.52	5.98	0.52	1.09	0.01	0.91	117.90	9.08
	Dissolved		0.267	6.133	0.325	1.068	0.010	0.888	120.332	10.098
Post Injection Avg	Total	96.40	0.16	8.60	0.29	1.45	0.02	0.95	129.47	7.59
	Dissolved		0.080	7.854	0.179	1.333	0.014	1.035	130.413	8.470

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	0.00	184.22	6	6	6	313	0.50	-0.02	-0.06
Post Injection Avg	-2.83	166.75	16	6	6	337	0.51	-1.57	2.55

Georgetown CO_2 Sequestration

Water Analysis Report

Well WVU #3 As of 10/3/2013

Field Parameters	Temperature (°C)	pH
Baseline Avg	11.5	9.1
Post Injection Avg	11.8	9.1

Lab Parameters	pH	Alkalinity (mg/L $CaCO_3$)	Acidity (mg/L $CaCO_3$)	Conductivity (uS/cm)
Baseline Avg	9.1	351.8	-349.4	855
Post Injection Avg	9.1	366.2	-355.8	873

Metals in mg/L		Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO_4
Baseline Avg	Total	28.14	1.68	0.74	1.35	0.36	0.01	0.84	196.04	5.89
	Dissolved		1.214	0.892	1.072	0.318	0.006	0.706	198.889	6.175
Post Injection Avg	Total	28.05	0.25	0.69	0.28	0.16	0.01	0.47	203.70	3.21
	Dissolved		0.246	0.914	0.287	0.199	0.007	0.706	200.919	4.819

Calculated Parameters	CO_3 (mg/l $CaCO_3$)	HCO_3 (mg/L $CaCO_3$)	Hardness (mg/L)	Cation Sum	Anion Sum	Total Ion Sum	Ion Sum / Conductivity	Ion Balance	Ion Imbalance
Baseline Avg	0.00	428.98	4	9	8	446	0.52	-4.07	5.54
Post Injection Avg	-2.53	389.59	2	9	8	455	0.52	-3.53	4.78

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d	Cl	Al
Total Values																			
10/10/2008	806406	MC5 (Total)	JLB02	12:30	16.1	6.8	1.2	-100	NA	6.36	455	-434	0	0	358	46352	481.3	25000	0.361
10/17/2008	806521	MC5 (Total)	JLB02	10:51	12.3	6.5	1.5	-109	NA	6.14	589	-413	0	0	591	8704	848.9	25000	0.692
10/24/2008	806767	MC5 (Total)	JLB02	10:52	12.2	6.9	1.6	-158	7.0	10.07	504	-432	0	615	444	46572	793.4	25000	0.910
10/31/2008	806830	MC5 (Total)	JLB02	10:16	12.0	6.8	1.9	-136	6.9	6.18	513	-452	0	0	420	47312	580.6	25000	0.990
11/14/2008	807304	MC5 (Total)	JLB02	10:40	14.7	6.6	0.6	-163	7.0	6.31	576	-419	0	0	511	47014		25000	1.410
12/8/2008	807886	MC5 (Total)	JLB02	no water at well															
12/15/2008	807929	MC5 (Total)	JLB02	10:20	13.4	6.1	1.1	-159	7.1	6.65	684	-406	0	834	354	46274	469.5	25000	0.890
8/25/2009	no sample, hadware removed from well																		
9/3/2009	no water at well																		
9/8/2009	Injection Begins																		
9/9/2009	no water at well																		
9/16/2009	no water at well																		
9/30/2009	no water at well																		
12/10/2009	no water at well																		
1/26/2010	no water at well																		
3/9/2010	1001595	MC5 (Total)	JLB02		12.1	6.2	1.1	-156	7.2	6.55	551	-541	0	672	516	52108	680.0	31400	0.021
3/19/2010	no water at well																		
4/22/2010	no water at well																		
6/22/2010	no water at well																		
7/12/2010	no water at well																		
11/19/2010	no water at well																		
2/15/2011	no water at well																		
3/24/2011	no water at well																		
4/29/2011	1104696	MC5 (Total)	JLB02	10:05	11.4	6.8	2.9	-140	7.4	6.36	572	-379	0	0	711	53082		32000	0.018
6/1/2011	no water at well																		
7/18/2011	no water at well																		
8/23/2011	no water at well																		
10/17/2011	1110372	MC5 (Total)	JLB02		14.00	7.02		-216	7.3	6.41	670.00	-548	0	0	527.00	51160.00	894	32000.00	0.18
11/17/2011	no water at well																		
2/9/2012	no water at well																		
3/28/2012	1202999	MC5 (Total)	JLB02		15.30	6.87				6.33	580.00	-327	0.00	0.00	670.00	51448.00	642.4	33000.00	0.13
5/17/2012	no water at well																		
6/15/2012	no sample																		
7/18/2012	no water at well																		
8/15/2012	no water at well																		
9/17/2012	no water at well																		
10/25/2012	no water at well																		
12/13/2012	no water at																		
1/15/2013	no water at																		
2/1/2013					6.50	3.20		-120	7.6	6.51	895.00	-750	0.145	895	1580.00	50976.00		26370	1.334
2/7/2013	no water at																		
2/13/2013	no water at																		
2/28/2013	no water at																		
3/8/2013	no water at																		
5/3/2013	no water at																		
5/20/2013	no water at																		
7/2/2013	no water at																		
7/12/2013	no water at																		
7/18/2013	no water at																		
8/2/2013	1305368	MC5 (Total)	JLB02		23.00	6.74	1.3	-228	7.8	6.65	555.00	-551	0.124	555	515.00	54476.00	568	27510	3.018
8/30/2013	no water at																		
3/27/2014	1400040	MC5 (Total)	JLB02							6.96	363.00	-361	0.166	534	500.00	57842.00	490	34730	35.05
7/16/2014	1400108	MC5 (Total)	JLB02							6.51	447.00	-393	0.072	447	552.00	50652.00	411	36490	3.708

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Total Values																				
10/10/2008	806406	MC5 (Total)	JLB02	12:30	1335	115.0	707.5	0.945	287.6	16790	13.26	6247	51700	866.66	714.40	44522.67	1.04	0.86	-13.62	9.63
10/17/2008	806521	MC5 (Total)	JLB02	10:51	968	218.4	700.1	1.604	314.0	13960	27.82	5301	66500	729.10	717.38	41544.42	0.21	0.62	-1.04	0.81
10/24/2008	806767	MC5 (Total)	JLB02	10:52	1460	147.3	718.7	0.770	337.8	16320	47.96	6605	60300	855.87	716.10	44335.84	1.05	0.74	-12.47	8.89
10/31/2008	806830	MC5 (Total)	JLB02	10:16	1434	141.3	699.7	1.170	335.7	16570	56.08	3605	52734	863.64	716.45	44546.74	1.06	0.84	-13.13	9.32
11/14/2008	807304	MC5 (Total)	JLB02	10:40	1526	229.9	749.8	2.200	322.3	15620	17.37	6898	59431	833.94	716.90	43814.58	1.07	0.74	-10.43	7.55
12/8/2008	807886	MC5 (Total)	JLB02	no water at																
12/15/2008	807929	MC5 (Total)	JLB02	10:20	1498	232.7	734.2	2.640	360.2	16050	38.70	4450	62115	850.99	719.51	44327.73	1.04	0.71	-11.68	8.37
8/25/2009	no sample, hadware removed from well																			
9/3/2009	no water at well																			
9/8/2009	Injection Begins																			
9/9/2009	no water at well																			
9/16/2009	no water at well																			
9/30/2009	no water at well																			
12/10/2009	no water at well																			
1/26/2010	no water at well																			
3/9/2010	1001595	MC5 (Total)	JLB02		1500	93.5	790.8	2.125	376.6	19520	12.99	88	77590	1002.00	896.80	54026.59	0.96	0.70	-7.51	5.54
3/19/2010	no water at well																			
4/22/2010	no water at well																			
6/22/2010	no water at well																			
7/12/2010	no water at well																			
11/19/2010	no water at well																			
2/15/2011	no water at well																			
3/24/2011	no water at well																			
4/29/2011	1104696	MC5 (Total)	JLB02	10:05	1576	291.5	751.6	2.811	291.9	16820	5.41	6272	89301	890.07	913.98	52082.44	1.02	0.58	1.67	-1.33
6/1/2011	no water at well																			
7/18/2011	no water at well																			
8/23/2011	no water at well																			
10/17/2011	1110372	MC5 (Total)	JLB02		1702.00	324.70	801.10	3.14	164.10	17840.00	1.50	7548.82	77500.00	942.75	915.86	53238.72	0.96	0.69	-1.88	1.45
11/17/2011	no water at well																			
2/9/2012	no water at well																			
3/28/2012	1202999	MC5 (Total)	JLB02		1676.00	308.70	847.60	3.16	233.70	18270.00	2.00	7675.39	79900.00	965.18	942.27	54689.29	0.94	0.68	-1.56	1.20
5/17/2012	no water at well																			
6/15/2012	no sample																			
7/18/2012	no water at well																			
8/15/2012	no water at well																			
9/17/2012	no water at well																			
10/25/2012	no water at well																			
12/13/2012	no water at																			
1/15/2013	no water at																			
2/1/2013					1716	494.8	847.2	5.398	321.9	17720	22.57	7006.84	83200.00	952.35	762.03	48036.20	1.06	0.58	-15.97	11.10
2/7/2013	no water at																			
2/13/2013	no water at																			
2/28/2013	no water at																			
3/8/2013	no water at																			
5/3/2013	no water at																			
5/20/2013	no water at																			
7/2/2013	no water at																			
7/12/2013	no water at																			
7/18/2013	no water at																			
8/2/2013	1305368	MC5 (Total)	JLB02		1554	177.5	754.6	2.054	351.6	16390	1.277	8956.70	85200.00	3172.10	357.61	47314.76	0.01	0.56	-498.19	79.74
8/30/2013	no water at																			
3/27/2014	1400040	MC5 (Total)	JLB02		1778	138.1	877.9	1.425	654	20910	28.11	8054.86	86200.00	3998.91	449.58	59618.65	0.01	0.69	-501.67	79.79
7/16/2014	1400108	MC5 (Total)	JLB02		1576	179.86	771	1.294	660.2	18360	1	7110.25	81800.00	4185.63	394.22	58456.97	0.01	0.71	-609.85	82.78

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d	Cl	Al
Dissolved Values																			
10/10/2008	806409	MC5 (Dissolved)	JLB05	12:30															0.230
10/17/2008	806524	MC5 (Dissolved)	JLB05	10:51															0.362
10/24/2008	806770	MC5 (Dissolved)	JLB05	10:52															0.361
10/31/2008	806833	MC5 (Dissolved)	JLB05	10:16															0.290
11/14/2008	807307	MC5 (Dissolved)	JLB05	10:40															0.430
12/8/2008	807889	MC5 (Dissolved)	JLB05	No water at well															
12/15/2008	807932	MC5 (Dissolved)	JLB05	10:20															0.740
8/25/2009	no sample, hadware removed from well																		
9/3/2009	no water at well																		
9/8/2009	Injection Begins																		
9/9/2009	no water at well																		
9/16/2009	no water at well																		
9/30/2009	no water at well																		
12/10/2009	no water at well																		
1/26/2010	no water at well																		
3/9/2010	1001598	MC5 (Dissolved)	JLB05																0.028
3/19/2010	no water at well																		
4/22/2010	no water at well																		
6/22/2010	no water at well																		
7/12/2010	no water at well																		
11/19/2010	no water at well																		
2/15/2011	no water at well																		
3/24/2011	no water at well																		
4/29/2011	1104699	MC5 (Dissolved)	JLB05	10:05															0.018
6/1/2011	no water at well																		
7/18/2011	no water at well																		
8/23/2011	no water at well																		
10/17/2011	1110374	MC5 FILTERED	JLB05																0.02
11/17/2011	no water at well																		
2/9/2012	no water at well																		
3/28/2012	1203002	MC5 FILTERED	JLB05																0.02
5/17/2012	no water at well																		
6/15/2012	no sample																		
7/18/2012	no water at well																		
8/15/2012	no water at well																		
9/17/2012	no water at well																		
10/25/2012	no water at well																		
12/13/2012	no water at well																		
1/15/2013	no water at well																		
2/1/2013																			0.148
2/7/2013	no water at well																		
2/13/2013	no water at well																		
2/28/2013	no water at well																		
3/8/2013	no water at well																		
5/3/2013	no water at well																		
5/20/2013	no water at well																		
7/2/2013	no water at well																		
7/12/2013	no water at well																		
7/18/2013	no water at well																		
8/2/2013	1305371	MC5 FILTERED	JLB05																0.02
8/30/2013	no water at well																		
3/27/2014	1400042	MC5 FILTERED	JLB05																0.02
7/16/2014	1400110	MC5 FILTERED	JLB05																0.02

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Dissolved Values																				
10/10/2008	806409	MC5 (Dissolved)	JLB05	12:30	1329	107.2	703.4	0.878	287.2	16860	15.08									
10/17/2008	806524	MC5 (Dissolved)	JLB05	10:51	954	211.5	694.6	1.508	307.7	13600	28.52									
10/24/2008	806770	MC5 (Dissolved)	JLB05	10:52	1474	138.4	721.6	0.700	340.0	16280	49.14									
10/31/2008	806833	MC5 (Dissolved)	JLB05	10:16	1412	128.4	689.9	1.100	330.2	16300	55.64									
11/14/2008	807307	MC5 (Dissolved)	JLB05	10:40	1483	212.1	661.7	2.300	309.6	16550	32.06									
12/8/2008	807889	MC5 (Dissolved)	JLB05	No water at																
12/15/2008	807932	MC5 (Dissolved)	JLB05	10:20	1467	216.2	718.2	2.560	352.0	15770	47.50									
8/25/2009	no sample, hadware removed from well																			
9/3/2009	no water at well																			
9/8/2009	Injection Begins																			
9/9/2009	no water at well																			
9/16/2009	no water at well																			
9/30/2009	no water at well																			
12/10/2009	no water at well																			
1/26/2010	no water at well																			
3/9/2010	1001598	MC5 (Dissolved)	JLB05		1639	0.0	800.3	2.743	395.7	19520	7.50									
3/19/2010	no water at well																			
4/22/2010	no water at well																			
6/22/2010	no water at well																			
7/12/2010	no water at well																			
11/19/2010	no water at well																			
2/15/2011	no water at well																			
3/24/2011	no water at well																			
4/29/2011	1104699	MC5 (Dissolved)	JLB05	10:05	1531	268.0	749.0	2.660	296.0	17510	17.27									
6/1/2011	no water at well																			
7/18/2011	no water at well																			
8/23/2011	no water at well																			
10/17/2011	1110374	MC5 FILTERED	JLB05		1577.00	274.90	738.80	2.81	148.70	16090.00	7.97									
11/17/2011	no water at well																			
2/9/2012	no water at well																			
3/28/2012	1203002	MC5 FILTERED	JLB05		1598.00	240.10	798.90	3.01	236.30	18020.00	2.00									
5/17/2012	no water at well																			
6/15/2012	no sample																			
7/18/2012	no water at well																			
8/15/2012	no water at well																			
9/17/2012	no water at well																			
10/25/2012	no water at well																			
12/13/2012	no water at well																			
1/15/2013	no water at well																			
2/1/2013					1693	374	847.1	4.098	320.4	17650	28.75									
2/7/2013	no water at well																			
2/13/2013	no water at well																			
2/28/2013	no water at well																			
3/8/2013	no water at well																			
5/3/2013	no water at well																			
5/20/2013	no water at well																			
7/2/2013	no water at well																			
7/12/2013	no water at well																			
7/18/2013	no water at well																			
8/2/2013	1305771	MC5 FILTERED	JLB05		1992	197.3	958.2	2.068	482	21900	1									
8/30/2013	no water at well																			
3/27/2014	1400042	MC5 FILTERED	JLB05		1666	77.77	850.1	0.79	631.9	19160	1									
7/16/2014	1400110	MC5 FILTERED	JLB05		1510	80.07	772.8	0.954	707.7	17870	1									

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d
Total Values																	
10/10/2008		Not Sampled															
10/17/2008	806526	MH11 (Total)	JLB07	2:20	13.6	5.9	3.3	9	NA	4.68	7	295	0	0	129	51391	53.6
10/24/2008	806772	MH11 (Total)	JLB07	11:52	12.8	6.5	2.5	-23	7.1	4.79	6	285	0	7	224	46888	77.9
10/31/2008	806835	MH11 (Total)	JLB07	11:27	14.0	5.9	2.2	-26	7.2	4.81	8	281	0	0	140	50458	39.9
11/14/2008	807309	MH11 (Total)	JLB07	12:32	16.4	5.7	1.5	-29	2.2	4.84	4	265	0	0	166	250	
12/8/2008	807891	MH11 (Total)	JLB07	11:37	9.5	6.3	2.4	-40	6.3	5.05	9	202	0	0	213	142	34.0
12/15/2008	807934	MH11 (Total)	JLB07	11:28	13.3	5.8	1.4	-42	7.2	5.57	16	175	0	0	277	49380	20.9
8/25/2009	no sample, pump jack not running																
9/3/2009	no sample, pump jack inopperable																
9/8/2009	Injection Begins																
9/9/2009	806325	MH11 (Total)	JLB07	[illegible]													
9/16/2009	no sample																
9/30/2009	not running																
12/10/2009	not running																
1/26/2010	not running																
3/9/2010	not running																
3/19/2010	not running																
4/22/2010	not running																
6/22/2010	engine not starting																
7/12/2010	engine not starting																
11/19/2010	engine not starting																
2/15/2011	engine not starting																
3/24/2011	engine not starting																
4/29/2011	1104701	MH11 (Total)	JLB07	12:15	11.3	6.4	3.9	-28	7.5	4.71	20	424	0	0	169	55878	
6/1/2011	1105968	MH11 (Total)	JLB07		20.1	6.4	1.1	-87	7.5	4.51	20	405	0	0	200	53978	
7/18/2011	1107455	MH11 (Total)	JLB07		19.3	6.5	4.82	-41	3.54	5.3	20	235.0	0	0	174	52016	38.9
8/23/2011	1108690	MH11 (Total)	JLB07		18.3	6.6	0	-92	6.77	5.16	26.00	124	0.00	0.00	343.00	48360.00	53
10/17/2011	engine not starting																
11/17/2011	no water at well																
2/8/2012	no water at well																
5/17/2012	not enough water for lab samples				17.20	6.68	1.1	-184	6.2								
6/15/2012	no sample																
7/18/2012	no water at well																
8/15/2012	no water at well																
9/17/2012	1208632	MH11 (Total)	JLB07		19.80	6.60		-121	6.7	5.35	20.00	-6	0.000224	20	194.00	45374.00	47
10/25/2012	1209949	MH11 (Total)	JLB07		16.20	6.54	2.7	-77	6.5	5.26	20.00	-9	0	20	202.00	44956.00	30.8
12/13/2012	1211650	MH11 (Total)	JLB07		9.00	6.34				5.86	20.00	3	0.001	20	198.00	42578.00	66.2
1/15/2013	no water at well																
2/1/2013	1300986	MH11 (Total)	JLB07														53.4
2/7/2013	1301018	MH11 (Total)	JLB07					-143	2.5	5.71	23.00	10	0.001	23	77.00	7612.00	23.7
2/13/2012	1301251	MH11 (Total)	JLB07		3.30	7.73		-79	0.0	5.47	20.00	8	0	0	54.00	82.00	28.2
2/28/2013	1301750	MH11 (Total)	JLB07		3.80	6.61	2.3	-104	0.0	5.69	20.00	1	0	20	44.00	17.00	42.1
3/8/2013	1302033	MH11 (Total)	JLB07		4.80	7.11	1.6	-43	0.0	6.02	20.00	0	0.001	20	32.00	0.00	37.9
5/3/2013	1303455	MH11 (Total)	JLB07		18.00	7.54	0.6	-106	0.0								29.2
5/20/2013	1303823	MH11 (Total)	JLB07		20.80	6.92	NA	NA	NA	5.50	21.00	8	0	21	496.00	43282.00	46.8
7/2/2013	no water at																
7/12/2013	no water at																
7/18/2013	no water at																
8/2/2013	no water at																
8/30/2013	no water at																
7/16/2014	1400112	MH11 (Total)	JLB07							6.37	149.00	-141	0.018	149	243.00	33536.00	25.4

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Total Values																						
10/10/2008		Not Sampled																				
10/17/2008	806526	MH11 (Total)	JLB07	2:20	25000	0.352	1890	169.5	495.5	4.679	151.8	13760	18.04	6760	68100	743.74	705.54	41494.07	1.24	0.61	-3.46	2.64
10/24/2008	806772	MH11 (Total)	JLB07	11:52	25000	0.695	1887	195.2	495.8	6.320	152.9	16130	47.96	6754	61300	847.75	706.14	43919.48	1.07	0.72	-12.81	9.11
10/31/2008	806835	MH11 (Total)	JLB07	11:27	25000	0.465	1943	177.1	0.5	6.660	168.7	17060	77.63	6951	53652	850.00	706.80	44438.82	1.14	0.83	-12.95	9.20
11/14/2008	807309	MH11 (Total)	JLB07	12:32	25000	0.661	2153	177.4	520.6	7.850	168.3	17910	15.81	7520	61903	940.29	705.43	45956.02	0.01	0.74	-21.27	14.27
12/8/2008	807891	MH11 (Total)	JLB07	11:37	25000	0.820	2019	137.4	536.4	6.730	298.5	15730	32.90	7250	61206	841.96	705.89	43767.15	0.00	0.72	-12.32	8.79
12/15/2008	807934	MH11 (Total)	JLB07	11:28	25000	1.080	2099	150.2	553.4	6.770	339.7	16410	51.10	5357	61711	878.47	706.40	44620.85	1.11	0.72	-15.56	10.86
8/25/2009	no sample, pump jack not running																					
9/3/2009	no sample, pump jack inopperable																					
9/8/2009	Injection Begins																					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]																		
9/16/2009	no sample																					
9/30/2009	not running																					
12/10/2009	not running																					
1/26/2010	not running																					
3/9/2010	not running																					
3/19/2010	not running																					
4/22/2010	not running																					
6/22/2010	engine not starting																					
7/12/2010	engine not starting																					
11/19/2010	engine not starting																					
2/10/2011	engine not starting																					
3/24/2011	engine not starting																					
4/27/2011	1104701	MH11 (Total)	JLB07	*12:15*	34100	0.018	2223.00	297.1	573.8	5.543	179.7	17970.00	0.72	6934.979	80546	955.19	962.06	55361.88	1.01	0.69	0.46	-0.36
6/1/2011	1105968	MH11 (Total)	JLB07		30500	0.103	2251.00	295.2	574.8	5.796	189.1	18190.00	8.85	7987.77	61913.00	966.43	860.71	52026.85	1.04	0.84	-7.86	5.79
7/19/2011	1107455	MH11 (Total)	JLB07		30000	0.060	2154.00	129.6	557.5	4.077	238.5	19570.00	5.85	7674.32	79200.00	1015.46	846.55	52671.58	0.99	0.67	-12.77	9.07
8/23/2011	1108690	MH11 (Total)	JLB07		35000.00	0.10	1878.00	130.70	505.30	2.95	205.30	17540.00	10.82	6770.19	76200.00	908.25	987.77	55288.77	0.87	0.73	5.16	-4.19
10/17/2011	engine not starting																					
11/8/2011	no water at well																					
2/8/2012	no water at well																					
5/17/2012	not enough water for lab samples																					
6/15/2012	no sample																					
7/18/2012	no water at well																					
8/15/2012	no water at well																					
9/17/2012	1208632	MH11 (Total)	JLB07		24220	0.03	1853	28.2	437.4	1.564	75.2	14390	22.61	6428.15	70300.00	757.35	683.89	41040.00	1.11	0.58	-6.86	5.10
10/25/2012	1209949	MH11 (Total)	JLB07		24600	0.095	1950	55.11	460.4	1.297	70.07	14920	3.943	6536.97	70500.00	787.97	694.22	42072.92	1.07	0.60	-8.63	6.32
12/13/2012	1211650	MH11 (Total)	JLB07		24700	0.232	1992	98.76	462.4	1.445	75.89	14420	13.04	6878.19	76100.00	770.21	697.23	41775.77	1.02	0.55	-6.69	4.97
1/15/2013	no water at well																					
2/1/2013	1300986	MH11 (Total)	JLB07			0.043	0.232	33.18	0.05	0.272	0.0307	0.891	0.717	0.79	0	1.26	0.01	35.42	0.00	#DIV/0!	-11.64	97.65
2/7/2013	1301018	MH11 (Total)	JLB07		4550	0.05	370.7	75.91	88.7	0.713	14.01	2977	2.509	2276.32	14190.00	158.39	128.83	8093.39	0.94	0.57	-14.06	10.29
2/13/2013	1301251	MH11 (Total)	JLB07		21	0.149	1.933	35.15	0.449	0.304	0.305	12.88	2.424	9.76	109.00	1.99	1.04	86.59	0.95	0.79	-7.70	31.16
2/28/2013	1301750	MH11 (Total)	JLB07		6	0.069	0.284	44.96	0.055	0.307	0.118	1.194	1.331	0.69	13.00	1.70	0.60	66.32	0.26	5.10	-9.54	48.05
3/8/2013	1302033	MH11 (Total)	JLB07		179	0.0172	0.531	22.09	0.053	0.137	0.146	1.133	0.717	1.42	8.00	0.88	5.46	215.82	0.00	26.98	23.97	-72.22
5/3/2013	1303455	MH11 (Total)	JLB07			0.0177	2.532	34.95	0.498	0.245	0.214	13.91	1.016			2.04	0.02	53.38	0.00	#DIV/0!	-18.89	97.95
5/20/2013	1303823	MH11 (Total)	JLB07		23600	0.835	2025	289.8	477.7	3.173	0.037	14720	1	7023.59	68400.00	791.19	665.98	41130.15	1.05	0.60	-12.01	8.59
7/2/2013	no water at																					
7/12/2013	no water at																					
7/18/2013	no water at																					
8/2/2013	no water at																					
8/30/2013	no water at																					
7/16/2014	1400112	MH11 (Total)	JLB07		22190	0.042	1770	27	408.6	0.944	84.06	14250	1	6102.30	54300.00	744.91	628.78	38821.05	0.86	0.71	-11.79	8.45

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d
Dissolved Values																	
10/10/2008	Not Sampled																
10/17/2008	806527	MH11 (Dissolved)	JLB08	2:20													
10/24/2008	806773	MH11 (Dissolved)	JLB08	11:52													
10/31/2008	806836	MH11 (Dissolved)	JLB08	11:27													
11/14/2008	807310	MH11 (Dissolved)	JLB08	12:32													
12/8/2008	807892	MH11 (Dissolved)	JLB08	11:37													
12/15/2008	807935	MH11 (Dissolved)	JLB08	11:28													
8/25/2009	no sample, pump jack not running																
9/3/2009	no sample, pump jack inopperable																
9/8/2009	Injection Begins																
9/9/2009	no sample, pump jack inopperable																
9/16/2009	no sample																
9/30/2009	not running																
12/10/2009	not running																
1/26/2010	not running																
3/9/2010	not running																
3/19/2010	1002111	MH11 (Dissolved)	JLB08														
4/22/2010	not running																
6/22/2010	engine not starting																
7/12/2010	engine not starting																
11/19/2010	engine not starting																
2/15/2011	engine not starting																
3/24/2011	engine not starting																
4/29/2011	1104702	MH11 (Dissolved)	JLB08	12:15													
6/7/2011	1105969	MH11 FILTERED	JLB08														
7/18/2011	1107456	MH11 FILTERED	JLB08														
8/23/2011	1108691	MH11 FILTERED	JLB08														
10/7/2011	engine not starting																
11/17/2011	no water at well																
2/9/2012	no water at well																
5/11/2012	no water at well																
6/15/2012	no sample																
7/18/2012	no water at well																
8/15/2012	no water at well																
9/17/2012	1208633	MH11 FILTERED	JLB08														
10/15/2012	1209950	MH11 FILTERED	JLB08														
12/13/2012	1211651	MH11 FILTERED	JLB08														
1/15/2013	no water at well																
2/1/2013	1300987	MH11 FILTERED	JLB08														
2/7/2013	1301019	MH11 FILTERED	JLB08														
2/13/2012	1301252	MH11 FILTERED	JLB08														
2/28/2013	1301751	MH11 FILTERED	JLB08														
3/8/2013	1302034	MH11 FILTERED	JLB08														
5/3/2013	1303456	MH11 FILTERED	JLB08														
5/20/2013	1303824	MH11 FILTERED	JLB08														
7/2/2013	no water at well																
7/12/2013	no water at well																
7/18/2013	no water at well																
8/2/2013	no water at well																
8/30/2013	no water at well																
9/19/2013	no water at well																
7/16/2014	1400113	MH11 FILTERED	JLB08														

above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Cl	Al	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Dissolved Values																						
10/16/2008	Not Sampled																					
10/17/2008	806527	MH11 (Dissolved)	JLB08	2:20		0.313	1910	165.3	499.2	4.682	152.5	13620	13.36									
10/24/2008	806773	MH11 (Dissolved)	JLB08	11:52		0.440	1897	162.4	494.2	6.080	158.1	15700	66.83									
10/31/2008	806836	MH11 (Dissolved)	JLB08	11:27		0.317	1965	161.6	511.7	6.570	169.6	17130	94.44									
11/14/2008	807310	MH11 (Dissolved)	JLB08	12:32		0.310	2110	151.4	511.1	7.490	163.1	17350	0.72									
12/8/2008	807892	MH11 (Dissolved)	JLB08	11:37		0.500	2041	114.8	538.9	6.670	301.2	15850	45.00									
12/15/2008	807935	MH11 (Dissolved)	JLB08	11:28		0.520	2037	99.0	535.8	6.370	331.5	15750	20.30									
8/25/2009	no sample, pump jack not running																					
9/3/2009	no sample, pump jack inopperable																					
9/8/2009	Injection Begins																					
9/9/2009	no sample, pump jack inopperable																					
9/16/2009	no sample																					
9/30/2009	not running																					
12/10/2009	not running																					
1/26/2010	not running																					
3/9/2010	not running																					
[redacted]																						
4/22/2010	not running																					
6/22/2010	engine not starting																					
7/12/2010	engine not starting																					
11/19/2010	engine not starting																					
2/15/2011	engine not starting																					
3/24/2011	engine not starting																					
4/29/2011	1104702	MH11 (Dissolved)	JLB08	12:15		0.018	2079	254.9	544.0	5.003	176.6	17900	13.20									
6/7/2011	1105969	MH11 FILTERED	JLB08			0.018	2100	226.4	573.3	5.263	239.4	19120	4.76									
7/18/2011	1107456	MH11 FILTERED	JLB08			5.104	77.58	8.5	26.2	0.633	3.7	49.77	80.10									
8/23/2011	1108691	MH11 FILTERED	JLB08			0.02	1924.00	71.73	484.10	2.51	136.60	15030.00	5.87									
10/17/2011	engine not starting																					
11/1/2011	no water at well																					
2/8/2012	no water at well																					
5/17/2012	no water at well																					
6/15/2012	no sample																					
7/18/2012	no water at well																					
8/16/2012	no water at well																					
9/12/2012	1208633	MH11 FILTERED	JLB08			0.0172	1802	6.031	425	0.91	76.01	13940	2.433									
10/23/2012	1209950	MH11 FILTERED	JLB08			0.0177	1920	6.156	460	0.901	74.85	15010	9.516									
12/13/2012	1211651	MH11 FILTERED	JLB08																			
1/15/2013	no water at well					0.0172	1860	16.46	464.4	0.93	96.97	16870	1.664									
2/1/2013	1300987	MH11 FILTERED	JLB08			0.0177	0.346	33.77	0.106	0.27	0.0307	3.62	0.717									
2/7/2013	1301019	MH11 FILTERED	JLB08			0.0172	631.3	23.45	148.3	0.514	30.53	5328	2									
2/13/2012	1301252	MH11 FILTERED	JLB08			0.0172	2.601	37.48	0.622	0.284	4.131	16.35	0.717									
2/28/2013	1301751	MH11 FILTERED	JLB08			0.0172	0.192	38.24	0.088	0.302	1.183	2.49	0.717									
3/8/2013	1302034	MH11 FILTERED	JLB08			0.0172	0.452	24.98	0.077	0.139	0.786	1.095	0.717									
5/3/2013	1303456	MH11 FILTERED	JLB08			0.0172	3.572	32.9	0.83	0.235	17.55	24.23	1									
5/20/2013	1303824	MH11 FILTERED	JLB08			0.032	1905	26.2	444.5	1.803	80.06	14280	3.742									
7/2/2013	no water at well																					
7/12/2013	no water at well																					
7/18/2013	no water at well																					
8/2/2013	no water at well																					
8/30/2013	no water at well																					
9/19/2013	no water at well																					
7/16/2014	1400113	MH11 FILTERED	JLB08			0.02	2131	7.856	424.7	0.856	94.89	17280	1									

above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d	Cl	Al
Total Values																			
10/[illegible]/2008	806407	MH12 (Total)	JLB03	1:29	17.1	7.1	3.0	-117	NA	6.92	518	-515	0	632	132	13404	507	8100	0.393
10/17/2008	806522	MH12 (Total)	JLB03	12:04	14.1	7.1	2.4	-117	NA	6.54	581	-567	0	708	119	7771	753	4550	0.323
10/24/2008	806768	MH12 (Total)	JLB03	11:50	15.0	7.0	2.6	-131	1.81	6.74	550	-543	0	671	129	11352	754	4400	0.420
10/31/2008	806831	MH12 (Total)	JLB03	11:16	16.0	6.6	2.3	-110	2.5	6.49	512	-502	0	0	145	14902	532	9750	0.346
11/14/2008	807305	MH12 (Total)	JLB03	12:29	17.7	6.5	2.7	-111	7.27	7.07	511	-510	0	623	118	13220	[illegible]	8150	0.377
12/8/2008	807887	MH12 (Total)	JLB03	11:22	11.3	6.5	2.0	-108	2.2	7.06	502	-497	612	0	129	13708	535	7500	0.670
12/15/2008	807930	MH12 (Total)	JLB03	11:27	15.5	6.4	2.4	-134	2.28	7.16	516	639	0	629	126	13894	600	8000	0.870
8/25/2009	no sample, pump jack not running																		
9/3/2009	906205	MH12 (Total)	JLB03		17.2	6.8	1.9	-119	1.78	7.25	560	-559	0	683	95	10598	613	6450	0.044
9/8/2009	Injection Begins																		
9/9/2009	906323	MH12 (Total)	JLB03		18.5	6.9	1.7	-129	2.17	6.78	535	-534	0	652	111	13208	582	8100	0.076
9/16/2009	906531	MH12 (Total)	JLB03		17.8	7.1	1.4	-139	2.27	7.28	532	-529	0	649	115	13884	[illegible]	8200	0.035
9/30/2009	no water																		
12/10/2009	no water																		
1/26/2010	1000542	MH12 (Total)	JLB03		9.7	6.9	2.8	-132	2.45	7.41	504	-495	0	615	107	14836	526	8700	0.018
3/9/2010	1001596	MH12 (Total)	JLB03		11.1	6.3	2.5	-128	1.9	7.5	530	-342	0	646	140	12092	496	6950	0.028
3/19/2010	1002108	MH12 (Total)	JLB03		15.2	5.9	1.8	-146	2.2	7.46	521	-352	0	635	122	14024	510	8600	0.016
4/22/2010	no sample, jack malfunctioning																		
6/22/2010	1005449	MH12 (Total)	JLB03		24.0	6.2	2.0	-147	2.22	7.24	536	-535	0	654	120	13704	848	8150	0.024
7/12/2010	1006197	MH12 (Total)	JLB03		18.7	7.4	4.5	-163	1.88	7.79	560	-495	0	683	105	11084	869	6450	0.028
11/19/2010	1011189	MH12 (Total)	JLB03	10:55	12.5	7.0	3.7	-110	2.41	7.22	513	-508	0	625	71	15110		9950	0.030
2/15/2011	1101648	MH12 (Total)	JLB03		13.1	7.3	3.8	-135	1.94	7.01	542	-528	0	542	152	12044	559	7350	0.030
3/24/2011	no water																		
4/29/2011	1104697	MH12 (Total)	JLB03	11:50	13.3	7.1	2.8	-161	2.00	6.73	525	-515	0	640	157	12842		7200	0.018
6/1/2011	1105965	MH12 (Total)	JLB03		20.0	7.0	1.3	-162	3.03	7.44	490	-473	0	597	139	19610		12000	0.018
7/18/2011	1107452	MH12 (Total)	JLB03		20.0	7.0	2.3	-172	2.04	6.97	516.00	-254	0	629.14	144.00	13126.00	557	7700	0.026
8/23/2011	1108686	MH12 (Total)	JLB03		17.0	7.3	0.0	-148	2.06	6.88	543.00	-523	0	662.00	138.00	12968.00	535.7	7300	0.018
10/17/2011	1110373	MH12 (Total)	JLB03		15.8	7.4		-187	1.99	7.08	530.00	-526	0	646.2115	141.00	12288.00	broken	7450.00	0.02
11/[illegible]/2011	1111302	MH12 (Total)	JLB03		12.50	7.26				7.73	494.00	-492	0	602.3179	149.00	12814.00	559.9	6950.00	0.02
2/[illegible]/2012	1201215	MH12 (Total)	JLB03	9:48	13.30	7.29		-151	2.04	7.42	542.00	-518	0.00	660.84	155.00	12496.00	555.4	7200.00	0.02
3/[illegible]/2012	[illegible]203000	MH12 (Total)	JLB03																
5/[illegible]/2012	[illegible]04401	MH12 (Total)	JLB03		15.60	7.16	4.3	-148	2.17	7.08	535.00	-534	0.00	652.31	147.00	13768.00	483.3	7550.00	0.03
6/[illegible]/2012	[illegible]mple																		
7/[illegible]/2012	[illegible]20	MH12 (Total)	JLB03		18.90	7.19	1.2	-166	1.81	7.30	565.00	-564	0	688.8859	139.00	11180.00	601.3	6250	0.018
8/[illegible]/2012	[illegible]33	MH12 (Total)	JLB03		18.30	7.27	0.1	-246	2.15	7.08	561.00	-557	0.338	560	443.00	12396.00	678.8	7899	0.102
9/[illegible]/2012	[illegible]29	MH12 (Total)	JLB03		15.60	7.32	0.2	-151	2.25	7.71	525.00	-524	1.349	523	128.00	13478.00	561.3	8088	0.0277
10/[illegible]/2012	120[illegible]46	MH12 (Total)	JLB03		15.80	7.24	2.6	-141	2.13	7.34	567.00	-566	0.622	566	127.00	13026.00	571.9	7952	0.0177
12/[illegible]/2012	1211647	MH12 (Total)	JLB03		11.30	6.82				7.81	522.00	-521	1.689	519	117.00	17140.00	536.2	11200	0.026
1/[illegible]/2013	1300568	MH12 (Total)	JLB03		8.40	7.53	1.9	-59	0.12	5.68	36.00	-1	0.001	36	132.00	502.00	205.2	295	0.18
2/[illegible]/2013	1300982	MH12 (Total)	JLB03		5.00	7.62		-94	0.11	5.90	53.00	-23	0	0	131.00	404.00	147.9	244	0.035
3/[illegible]/2013	1301015	MH12 (Total)	JLB03		10.40	7.50		-94	0.05	5.84	71.00	-12	0.002	71	102.00	306.00	125.7	139	0.751
2/[illegible]/2012	1301248	MH12 (Total)	JLB03		11.50	7.57		-87	0.09	5.55	29.00	-4	0.001	29	128.00	376.00	129.4	150	0.062
2/[illegible]/2013	1301747	MH12 (Total)	JLB03		10.70	6.82	1.9	-90	0.10	5.73	31.00	-10	0.001	31	107.00	304.00	152.7	6	0.139
3/[illegible]/2013	1302030	MH12 (Total)	JLB03		10.60	6.72	1.7	-92	0.09	5.93	41.00	-10	0.002	41	123.00	352.00	110.1	179	0.073
5/3/2013	1303452	MH12 (Total)	JLB03		16.10	7.35	0.6	-139	0.00	7.49	650.00	-646	1.007	648	47.00	8334.00	559.70	5044	0.0177
5/20/2013	1303820	MH12 (Total)	JLB03		18.10	7.38	NA	NA	NA	7.09	548.00	-542	0.338	547	128.00	15420.00	490.4	9432	0.019
7/2/2013	1304843	MH12 (Total)	JLB03		19.30	7.40	0.5	-154	2.72	8.45	468.00	-464	6.611	455	167.00	17570.00	481.2	6864	0.236
7/12/2013	1304925	MH12 (Total)	JLB03		25.00	6.36	0.6	-156	2.21	7.11	548.00	-537	0.354	547	120.00	14970.00	543.6	8402	0.035
7/18/2013	1305028	MH12 (Total)	JLB03		20.10	7.04		-152	2.62	6.53	533.00	-529	0.091	533	117.00	15920.00	143.6	9876	0.027
8/2/2013	1305369	MH12 (Total)	JLB03		18.10	7.27	1.2	-158	2.42	7.06	579.00	-575	0.333	578	134.00	14854.00	551.8	8948	0.036
8/30/2013	1305865	MH12 (Total)	JLB03		20.60	7.78	1.0	-153	2.25	6.93	572.00	-558	0.244	572	237.00	14044.00	Broken	8566	0.02
9/19/2013	1306418	MH12 (Total)	JLB03		18.00	6.74				7.91	652.00	-651	2.656	647	129.00	10548.00	534.8	6355	0.152
7/16/2014	1400109	MH12 (Total)	JLB03							7.24	602.00	-599	0.524	601	106.00	10164.00	494	6621	0.02
9/30/2014	1400173	MH12 (Total)	JLB03							7.06	574.00	-573	0.01	700	176.00	17464.00	504	11010	0.112

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	Ion imbalance
Total Values																				
10/14/2008	806407	MH12 (Total)	JLB03	1:29	458	53.7	152.6	0.735	12.19	4384	0.54	1772	21216	228.39	238.80	13472.86	0.99	0.64	2.73	-2.23
10/17/2008	806522	MH12 (Total)	JLB03	12:04	198	46.1	78.5	0.565	7.805	2296	7.30	818	13770	118.12	140.09	7533.44	1.03	0.55	9.64	-8.51
10/24/2008	806768	MH12 (Total)	JLB03	11:50	386	51.4	128.0	0.370	7.49	3819	1.72	1490	19482	197.97	135.12	9123.86	1.24	0.47	-28.56	18.87
10/31/2008	806831	MH12 (Total)	JLB03	11:16	485	51.0	173.3	0.760	10.74	5037	34.29	4091	25200	259.70	285.91	15849.27	0.94	0.63	5.78	-4.81
11/14/2008	807305	MH12 (Total)	JLB03	12:29	496	49.4	167.4	0.750	9.28	4897	8.52	1927	22725	253.58	240.23	14085.03	0.94	0.62	-3.48	2.70
12/8/2008	807887	MH12 (Total)	JLB03	11:22	492	52.7	176.0	0.640	12.2	5018	30.00	1954	23800	259.60	222.17	13583.61	1.01	0.57	-10.54	7.77
12/15/2008	807930	MH12 (Total)	JLB03	11:27	499	56.6	172.3	0.690	12.8	5024	22.30	3453	23028	260.09	236.39	14098.46	0.99	0.61	-6.28	4.77
9/25/2009	no sample, pump jack not running																			
9/3/2009	906205	MH12 (Total)	JLB03		354	35.5	119.7	0.598	7.71	3659	2.44	887	18000	188.17	193.15	10965.21	0.97	0.61	1.61	-1.31
9/8/2009	Injection Begins																			
9/9/2009	906323	MH12 (Total)	JLB03		446	40.1	159.4	0.584	9.33	4532	0.72	1769	23100	234.18	239.14	13608.93	0.97	0.59	1.30	-1.05
9/16/2009	906531	MH12 (Total)	JLB03		439	42.5	142.8	0.578	9.32	4465	2.51	1684	22400	229.64	241.94	13620.78	1.02	0.61	3.19	-2.61
9/30/2009	no water																			
12/10/2009	no water																			
1/26/2010	1000542	MH12 (Total)	JLB03		484	47.8	174.1	0.744	46.48	4923	2.30	1925	23634	255.52	255.47	14680.57	1.01	0.62	-0.01	0.01
3/9/2010	1001596	MH12 (Total)	JLB03		400	45.4	143.1	0.762	8.78	4053	3.72	1588	16171	209.89	206.67	11922.59	1.01	0.74	-0.97	0.77
3/19/2010	1002108	MH12 (Total)	JLB03		475	44.9	181.9	0.722	10.39	4499	2.40	1935	19100	236.26	253.00	14127.04	0.99	0.74	4.15	-3.42
4/22/2010	no sample, jack malfunctioning																			
6/22/2010	1005449	MH12 (Total)	JLB03		502	43.4	183.5	0.730	10.03	4648	0.72	2010	21816	244.17	240.57	13860.26	0.99	0.64	-0.94	0.74
7/12/2010	1006197	MH12 (Total)	JLB03		371	40.2	134.0	0.669	12.58	3963	1.02	1477	19584	203.67	193.12	11307.99	0.98	0.58	-3.41	2.66
11/19/2010	1011189	MH12 (Total)	JLB03	10:55	533	12.2	212.8	0.320	13.03	5808	3.05	2208	27400	297.43	290.92	16838.25	0.90	0.61	-1.41	1.11
2/15/2011	1101648	MH12 (Total)	JLB03		419	59.0	155.3	0.920	9.08	4072	1.20	1687	23484	213.19	218.14	12392.00	0.97	0.53	1.42	-1.15
3/24/2011	no water																			
4/29/2011	1104697	MH12 (Total)	JLB03	11:50	375	61.9	150.0	0.948	14.65	4338	2.06	1555	22969	222.37	213.59	12457.76	1.03	0.54	-2.57	2.02
6/1/2011	1105965	MH12 (Total)	JLB03		837	55.9	255.8	0.914	14.51	6733	1.75	2644	28482	348.10	348.25	19993.01	0.98	0.70	0.03	-0.02
7/18/2011	1107452	MH12 (Total)	JLB03		441	95.2	169.9	0.969	10.00	4270	1.90	1800	22210	225.39	227.51	12998.11	1.01	0.59	0.58	-0.47
8/23/2011	1108686	MH12 (Total)	JLB03		381	57.4	153.8	0.935	12.25	4322	4.66	1584	22860	222.04	216.82	12557.47	1.03	0.55	-1.50	1.19
10/17/2011	1110373	MH12 (Total)	JLB03		364.00	59.79	142.30	0.93	8.85	4083.00	1.02	1494.90	21440.00	209.87	220.72	12427.90	0.99	0.58	3.08	-2.52
11/17/2011	1111302	MH12 (Total)	JLB03		397.70	61.60	158.60	0.88	9.49	4358.00	2.00	1646.17	21960.00	224.93	205.92	12234.69	1.05	0.56	-5.76	4.41
2/9/2012	1201215	MH12 (Total)	JLB03	9:48	422.90	62.30	163.20	0.92	9.59	4463.00	2.00	1728.04	22450.00	231.16	213.93	12649.13	0.99	0.56	-5.04	3.87
3/28/2012	1203000	MH12 (Total)	JLB03																	
5/17/2012	1204401	MH12 (Total)	JLB03		451.00	55.18	174.30	0.84	10.78	4880.00	2.60	1843.91	23160.00	251.39	223.67	13445.72	1.02	0.58	-7.76	5.83
6/4/2012	no sample																			
7/16/2012	1206620	MH12 (Total)	JLB03		339.9	59.44	132	0.932	8.113	3804	2.406	1392.31	19890.00	195.65	187.61	10935.81	1.02	0.55	-2.67	2.10
8/27/2012	1207533	MH12 (Total)	JLB03		414.4	203.8	164.6	5.358	9.885	4604	2.071	1712.58	23570.00	242.23	234.02	13639.82	0.91	0.58	-2.20	1.72
9/17/2012	1208629	MH12 (Total)	JLB03		434.7	48.02	173.5	0.767	14.05	4770	1	1799.92	23520.00	245.55	238.61	13845.06	0.97	0.59	-1.82	1.43
10/25/2012	1209946	MH12 (Total)	JLB03		425.2	48.14	165.6	0.747	10.41	4759	1	1743.67	23500.00	243.86	235.61	13702.31	0.95	0.58	-2.19	1.72
12/11/2012	1211647	MH12 (Total)	JLB03		614.5	33.05	241.1	0.618	16.16	6372	1.242	2527.26	33500.00	329.54	326.31	18797.90	0.91	0.56	-0.62	0.49
1/28/2013	1300568	MH12 (Total)	JLB03		13.25	110	6.147	0.669	0.349	159.5	1	58.40	1006.00	12.09	9.06	607.70	0.83	0.60	-12.28	14.34
3/7/2013	1300982	MH12 (Total)	JLB03		15.96	85.15	4.668	0.526	0.211	123.6	0.717	59.07	889.00	9.63	7.96	506.67	0.80	0.57	-7.29	9.53
4/4/2013	1301015	MH12 (Total)	JLB03		12.52	107.6	3.566	0.677	0.265	90.15	1	44.52	612.00	8.80	5.36	398.13	0.77	0.65	-18.16	24.31
2/13/2012	1301248	MH12 (Total)	JLB03		10.94	105.1	3.687	0.644	0.299	88.83	0.717	42.50	710.00	8.51	4.83	377.68	1.00	0.53	-20.33	27.64
2/28/2013	1301747	MH12 (Total)	JLB03		10.95	92.66	3.591	0.682	0.278	94.87	0.717	40.73	613.00	8.33	0.80	228.49	1.33	0.37	-63.27	82.39
3/7/2013	1302030	MH12 (Total)	JLB03		10.67	103.1	3.809	0.704	0.457	102.4	0.717	39.17	698.00	9.03	5.88	425.53	0.83	0.61	-15.94	21.12
5/3/2013	1303452	MH12 (Total)	JLB03		271.1	22.46	94.15	0.433	6.119	2956	1.342	1064.65	14920.00	150.83	155.27	8785.62	0.95	0.59	1.77	-1.45
5/20/2013	1303820	MH12 (Total)	JLB03		534.7	30.14	199.3	0.533	10.73	5700	1	2155.86	27930.00	292.38	276.97	16237.22	0.95	0.58	-3.50	2.71
7/2/2013	1304843	MH12 (Total)	JLB03		567.4	34.54	223.2	0.618	14.5	6299	1	2335.94	29600.00	322.31	202.95	14285.29	1.23	0.48	-36.70	22.72
7/12/2013	1304925	MH12 (Total)	JLB03		465.8	41.5	175.6	0.695	10.84	4650	1	1886.22	25390.00	241.74	247.92	14076.27	1.06	0.55	1.57	-1.26
7/18/2013	1305028	MH12 (Total)	JLB03		512.2	35.51	200.5	0.578	12.45	5669	1	2104.62	28420.00	290.25	289.19	16627.07	0.96	0.59	-0.23	0.18
8/2/2013	1305369	MH12 (Total)	JLB03		502	49.04	192.2	0.921	11.11	5155	1	2044.97	26770.00	267.16	263.94	15206.71	0.98	0.57	-0.77	0.61
8/30/2013	1305865	MH12 (Total)	JLB03		463.5	30.2	176	0.629	56.83	5064	1	1882.13	24570.00	260.43	253.03	14701.38	0.96	0.60	-1.84	1.44
9/19/2013	1306418	MH12 (Total)	JLB03		315.9	44.64	114.2	1.035	8.749	3562	1	978.19	18580.00	182.02	192.28	10794.48	0.98	0.58	3.32	-2.74
7/16/2014	1400109	MH12 (Total)	JLB03		317.8	25.06	115.7	0.484	10.434	3606	1	1270.00	18540.00	183.41	198.78	11058.70	0.92	0.60	4.82	-4.02
9/30/2014	1400173	MH12 (Total)	JLB03		525.6	65.73	211.7	0.985	49.18	6522	1	2184.20	29150.00	330.98	321.99	18730.71	0.93	0.64	-1.76	1.38

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d	Cl	Al
Dissolved values																			
10/10/2008	806410	MH12 (Dissolved)	JLB06	1:29															0.021
10/17/2008	806525	MH12 (Dissolved)	JLB06	12:04															0.309
10/24/2008	806771	MH12 (Dissolved)	JLB06	11:50															0.380
10/31/2008	806834	MH12 (Dissolved)	JLB06	11:16															0.367
11/14/2008	807308	MH12 (Dissolved)	JLB06	12:29															0.333
12/8/2008	807890	MH12 (Dissolved)	JLB06	11:22															0.620
12/15/2008	807933	MH12 (Dissolved)	JLB06	11:27															0.880
8/25/2009	no sample, pump jack not running																		
9/3/2009	906208	MH12 (Dissolved)	JLB06																0.018
9/8/2009	Injection Begins																		
[illegible]																			
9/16/2009	906533	MH12 (Dissolved)	JLB06																0.019
9/30/2009	no water																		
12/10/2009	no water																		
1/26/2010	1000544	MH12 (Dissolved)	JLB06																0.016
3/9/2010	1001599	MH12 (Dissolved)	JLB06																0.028
[illegible]																			
4/22/2010	no sample, jack malfunctioning																		
6/22/2010	1005451	MH12 (Dissolved)	JLB06																0.017
7/12/2010	1006199	MH12 (Dissolved)	JLB06																0.028
11/19/2010	1011191	MH12 (Dissolved)	JLB06																0.020
2/15/2011	1101650	MH12 (Dissolved)	JLB06																0.030
3/24/2011	no water																		
4/29/2011	1104700	MH12 (Dissolved)	JLB06	11:50															0.017
6/1/2011	1105967	MH12 FILTERED	JLB06																0.018
7/18/2011	1107454	MH12 FILTERED	JLB06																0.018
8/23/2011	1108689	MH12 FILTERED	JLB06																0.018
10/17/2011	1110375	MH12 FILTERED	JLB06																0.02
11/17/2011	1111304	MH12 FILTERED	JLB06																0 02
2/9/2012	1201217	MH12 FILTERED	JLB06																0.02
3/28/2012																			
5/17/2012	1204403	MH12 FILTERED	JLB06																0.03
6/27/2012	no sample																		
7/[illegible]/2012	1206622	MH12 FILTERED	JLB06																0.0172
8/[illegible]/2012	1207536	MH12 FILTERED	JLB06																0.000354
9/[illegible]/2012	1208631	MH12 FILTERED	JLB06																0.0277
10/25/2012	1209948	MH12 FILTERED	JLB06																0.0177
12/[illegible]/2012	1211649	MH12 FILTERED	JLB06																0.0172
1/[illegible]/2013	1300570	MH12 FILTERED	JLB06																0.0172
2/[illegible]/2013	1300985	MH12 FILTERED	JLB06																0.0162
3/[illegible]/2013	1301017	MH12 FILTERED	JLB06																0.0172
4/[illegible]/2013	1301250	MH12 FILTERED	JLB06																0.0172
2/28/2013	1301749	MH12 FILTERED	JLB06																0.0172
3/[illegible]/2013	1302032	MH12 FILTERED	JLB06																0.0172
5/[illegible]/2013	1302454	MH12 FILTERED	JLB06																0 0172
5/20/2013	1303822	MH12 FILTERED	JLB06																0 0172
7/[illegible]/2013	1304845	MH12 FILTERED	JLB06																0.0172
7/12/2013	1304927	MH12 FILTERED	JLB06																0.02
7/18/2013	1305030	MH12 FILTERED	JLB06																0.02
8/2/2013	1305372	MH12 FILTERED	JLB06																0.02
8/30/2013	1305867	MH12 FILTERED	JLB06																0.02
9/19/2013	1306420	MH12 FILTERED	JLB06																0.02
7/16/2014	1400111	MH12 FILTERED	JLB06																0.02
9/30/2014	1400176	MH12 FILTERED	JLB06																0.02

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Dissolved values																				
10/10/2008	806410	MH12 (Dissolved)	JLB06	1:29	46	4.4	15.1	0.070	1.044	434	0.54									
10/17/2008	806525	MH12 (Dissolved)	JLB06	12:04	193	40.1	77.6	0.540	7.946	2265	4.78									
10/24/2008	806771	MH12 (Dissolved)	JLB06	11:50	371	45.8	0.7	0.670	8.17	3791	21.52									
10/31/2008	806834	MH12 (Dissolved)	JLB06	11:16	491	42.4	175.6	0.720	11.5	5077	27.41									
11/14/2008	807308	MH12 (Dissolved)	JLB06	12:29	491	33.2	166.1	0.711	10.54	4871	13.18									
12/8/2008	807890	MH12 (Dissolved)	JLB06	11:22	499	44.9	179.5	0.660	12.4	4980	52.80									
12/15/2008	807933	MH12 (Dissolved)	JLB06	11:27	489	46.5	169.3	0.650	12.3	4965	20.50									
8/25/2009	no sample, pump jack not running																			
9/3/2009	906208	MH12 (Dissolved)	JLB06		192	14.6	63.5	0.269	4.02	1917	0.72									
9/8/2009	Injection Begins																			
[illegible]																				
9/16/2009	906533	MH12 (Dissolved)	JLB06		445	38.1	163.2	0.563	9.61	4528	0.72									
9/30/2009	no water																			
12/10/2009	no water																			
1/26/2010	1000544	MH12 (Dissolved)	JLB06		553	0.0	200.9	0.758	11.31	5557	1.87									
3/9/2010	1001599	MH12 (Dissolved)	JLB06		395	35.4	146.4	0.745	10.76	4197	1.72									
[illegible]																				
4/22/2010	no sample, jack malfunctioning																			
6/22/2010	1005451	MH12 (Dissolved)	JLB06		479	36.6	176.3	0.686	9.94	4111	0.84									
7/12/2010	1006199	MH12 (Dissolved)	JLB06		359	33.4	130.5	0.626	17.96	3881	0.95									
11/19/2010	1011191	MH12 (Dissolved)	JLB06		525	11.5	206.3	0.330	12.14	5523	2.28									
2/15/2011	1101650	MH12 (Dissolved)	JLB06		394	48.6	149.2	0.840	8.80	4251	1.48									
3/24/2011	no water																			
4/29/2011	1104700	MH12 (Dissolved)	JLB06	11:50	369	52.3	147.3	0.877	10.19	4143	0.93									
6/1/2011	1105967	MH12 FILTERED	JLB06		621	49.0	250.6	0.844	14.19	6568	1.98									
7/18/2011	1107454	MH12 FILTERED	JLB06		406	55.8	224.7	0.911	9.309	4498	1.64									
8/23/2011	1108689	MH12 FILTERED	JLB06		397	46.3	154.8	0.846	9.017	4325	1.76									
10/17/2011	1110375	MH12 FILTERED	JLB06		367.30	50.06	144.50	0.89	33.29	3813.00	1.44									
11/17/2011	1111304	MH12 FILTERED	JLB06		394.30	50.58	160.20	0.85	10.09	4302.00	2.00									
2/9/2012	1201217	MH12 FILTERED	JLB06		396.70	55.99	156.50	0.86	31.37	4359.00	2.00									
3/28/2012																				
5/17/2012	1204403	MH12 FILTERED	JLB06		422.00	0.81	165.70	0.77	28.71	4128.00	2.68									
6/21/2012	no sample																			
7/16/2012	1206622	MH12 FILTERED	JLB06		336.4	33.09	130.8	0.876	12.36	3769	2.397									
8/15/2012	1207536	MH12 FILTERED	JLB06		399.2	0.03542	157.76	7.232	10.176	4470	0.8506									
9/17/2012	1208631	MH12 FILTERED	JLB06		423.1	36.52	169.9	0.71	22.44	4721	1									
10/25/2012	1209948	MH12 FILTERED	JLB06		410.1	31.53	158.4	0.713	10.41	4395	3.767									
12/13/2012	1211649	MH12 FILTERED	JLB06		611.4	26.5	242.4	0.576	16.47	6651	1									
1/18/2013	1300570	MH12 FILTERED	JLB06		13.06	103	5.934	0.636	6.127	154.4	1									
2/1/2013	1300985	MH12 FILTERED	JLB06		15.99	85.07	4.711	0.521	0.307	121.2	2									
2/?/2013	1301017	MH12 FILTERED	JLB06		11.71	87.79	3.252	0.571	5.524	85.37	2									
2/?/2012	1301250	MH12 FILTERED	JLB06		11.01	105	3.692	0.645	9.481	89.55	0.717									
2/28/2013	1301749	MH12 FILTERED	JLB06		10.4	106.8	3.727	0.695	27.62	95.69	0.717									
3/8/2013	1302032	MH12 FILTERED	JLB06		10.47	110.4	3.69	0.719	21.31	94.25	0.717									
5/3/2013	1303454	MH12 FILTERED	JLB06		265.4	14.34	91.25	0.392	26.88	2880	1									
5/20/2013	1303822	MH12 FILTERED	JLB06		524.5	27.72	200.3	0.512	33.14	5343	2.771									
7/2/2013	1304845	MH12 FILTERED	JLB06		546.9	29.43	216.5	0.581	51.01	6100	1									
7/12/2013	1304927	MH12 FILTERED	JLB06		450.7	37.09	172.9	0.677	11.56	4941	1									
7/18/2013	1305030	MH12 FILTERED	JLB06		502	30.81	192.9	0.583	52.47	5020	1									
8/2/2013	1305372	MH12 FILTERED	JLB06		472.9	41.4	186	0.816	43.17	5209	1									
8/30/2013	1305867	MH12 FILTERED	JLB06		439.5	36.29	167.4	0.615	12.04	4943	1									
9/19/2013	1306420	MH12 FILTERED	JLB06		328.5	23.07	123.6	0.436	43.71	3740	1.828									
7/16/2014	1400111	MH12 FILTERED	JLB06		319.3	17.82	116.5	0.472	11.39	3632	1									
9/30/2014	1400176	MH12 FILTERED	JLB06		536.4	45.31	216.4	0.802	47.15	6105	1									

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d	Cl	Al
Total Values																			
10/10/2008	806405	GWW (Total)	JLB01	9:48	12.8	6.9	2.7	137.0	NA	6.50	87	-78	0	0	6	226	108	6.0	0.026
10/17/2008	806520	GWW (Total)	JLB01	9:20	13.8	6.8	2.9	100.0	NA	6.25	96	-81	0	0	6	198	139	6.0	0.049
10/24/2008	806766	GWW (Total)	JLB01	9:39	12.1	6.9	4.3	75.0	29.7	6.29	94	-81	0	0	6	228	148	10.0	0.050
10/31/2008	806829	GWW (Total)	JLB01	9:15	10.0	6.6	4.7	114.0	47.9	6.36	90	-79	0	0	6	188	138	11.0	0.440
11/14/2008	807303	GWW (Total)	JLB01	9:41	12.5	6.6	4.8	87.0	41.5	6.64	89	-79	0	109	7	250		24.0	0.030
12/8/2008	807885	GWW (Total)	JLB01	9:40	4.6	6.9	4.9	37.0	45.7	6.82	83	-72	0	101	13	142	111	8.0	0.070
12/15/2008	807928	GWW (Total)	JLB01	9:26	11.0	6.7	4.3	37.0	28.8	7.04	89	-78	0	109	6	194	97	7.0	0.095
8/25/2009	906082	GWW (Total)	JLB01		29.0	7.8	3.0	35.9	29.3	6.84	74	-66	0	90	6	188	115	10.0	0.082
9/3/2009	906203	GWW (Total)	JLB01		19.4	7.4	2.5	158.0	29.8	6.55	76	-68	0	93	6	174	108	6.0	0.059
9/8/2009	Injection Begins																		
9/9/2009	906321	GWW (Total)	JLB01		20.5	7.7	2.2	239.0	71.2	6.39	79	-69	0	0	6	152	140	6.0	0.075
9/16/2009	906529	GWW (Total)	JLB01		20.6	7.7	2.2	330.0	33.5	7.18	80	-71	0	98	9	166		6.0	0.044
9/30/2009	906953	GWW (Total)	JLB01		13.0	7.9	3.2	214.0	40.9	7.24	81	-71	0	99	8	136	105	7.0	0.027
12/10/2009	908869	GWW (Total)	JLB01		4.7	8.6	3.6	118.0	29.1	6.87	71	-61	0	87	28	148	119	5.0	0.051
1/26/2010	1000541	GWW (Total)	JLB01		2.4	7.7	4.0	40.0	34.1	7.02	58	-48	0	71	26	142	114	9.0	0.018
3/9/2010	1001594	GWW (Total)	JLB01		9.1	7.7	4.7	117.0	25.4	7.47	74	-61	0	90	6	156	101	7.0	0.017
3/19/2010	1002107	GWW (Total)	JLB01		13.4	7.0	3.4	150.0	28.7	7.01	69	-53	0	84	17	140	106	7.0	0.017
4/22/2010	1003538	GWW (Total)	JLB01		15.8	7.9	3.6	334.0	30.0	7.19	74	-64	0	90	27	152	74	6.0	0.028
6/22/2010	1005447	GWW (Total)	JLB01		25.5	7.1	3.3	272.0	27.6	7.82	52	-40	0	63	6	140	402	6.0	0.171
7/12/2010	1006195	GWW (Total)	JLB01		25.6	7.6	6.5	173.0	31.6	7.79	60	-50	0	73	10	162	426	6.0	0.102
11/19/2010	1011187	GWW (Total)	JLB01	14:12	9.8	7.2	10.3	-15.0	22.9	7.06	75	-61	0	91	30	164		6.0	0.030
2/3/2011	1101646	GWW (Total)	JLB01		5.8	7.5	8.4	21.0	25.2	6.79	56	-37	0	56	57	162	83	7.0	0.030
3/24/2011	1102978	GWW (Total)	JLB01		4.0	7.7	3.6	334.0	30.0	7.44	71	-51	87	0	20	166		8.0	0.020
4/26/2011	1104695	GWW (Total)	JLB01	14:14	11.1	7.7	4.6	48.0	44.1	6.77	69	-64	0	84	19	168		10.0	0.018
6/2/2011	1105964	GWW (Total)	JLB01		25.40	7.47	4.8	196.0	39.2	6.63	54.00	-44	0.01	66.00	16.00	148.00		6.00	0.09
7/18/2011	1107450	GWW (Total)	JLB01		26.70	7.81	5.0	157.0	28.7	6.53	64.00	-54	0.00	78.03	7.00	172.00	81	22.00	0.06
8/23/2011	1108684	GWW (Total)	JLB01		21.00	7.78	0.0	52.0	33.6	6.24	75.00	-60	0.00	387.00	6.00	138.00	98	6.00	0.02
10/27/2011	no sample																		
11/17/2011	1111300	GWW (Total)	JLB01		7.60	7.74				7.66	73.00	-64	0	89.00649	30.00	162.00	127.3	6.00	0.03
2/9/2012	1201213	GWW (Total)	JLB01	13:40	5.20	8.21		16.0	36.8	6.88	63.00	-62	0.00	76.81	20.00	118.00	105.4	6.00	0.02
3/28/2012	1202998	GWW (Total)	JLB01		17.00	7.98				6.58	68.00	-63	0.00	83.00	21.00	178.00	55.6	6.00	0.02
5/17/2012	1204399	GWW (Total)	JLB01		17.50	7.71	6.7	-7.0	52.3	6.51	72.00	-71	0.00	87.79	49.00	144.00	74.3	6.00	0.03
6/15/2012	no sample																		
7/18/2012	1206618	GWW (Total)	JLB01		27.50	7.63		64.0	42.8	6.55	95.00	-80	0	115.8304	41.00	246.00	149.3	6	0.042
8/15/2012	1207531	GWW (Total)	JLB01		20.20	7.75		36.0	35.6	6.56	100.00	-99	0.018	100	25.00	182.00	203.1	6	0.018
9/17/2012	1208627	GWW (Total)	JLB01		18.00	7.66	2.5		43.4	6.88	101.00	-100	0.038	101	12.00	206.00	129.5	6	0.0277
10/25/2012	1209944	GWW (Total)	JLB01		21.30	7.59	2.6	146.0	33.5	6.71	101.00	-100	0.026	101	11.00	166.00	136.4	6	0.051
12/13/2012	1211645	GWW (Total)	JLB01		25.00	7.64				7.21	91.00	-85	0.074	91	36.00	126.00	200.2	6	0.018
1/15/2013	1300566	GWW (Total)	JLB01		3.70	7.21		-13.0	38.2	6.98	94.00	-89	0.045	94	19.00	124.00	91.4	6	0.0277
2/1/2013	1300980	GWW (Total)	JLB01		1.50	7.78		57.0	55.2	6.55	101.00	-93	0.018	101	23.00	166.00		6	0.022
2/7/2013	1301013	GWW (Total)	JLB01		7.90	7.77		74.0	43.1	6.41	108.00	-98	0.014	108	27.00	152.00	91.1	7	0.0177
2/13/2012	1301246	GWW (Total)	JLB01		5.70	7.07		70.0	39.0	6.51	107.00	-96	0.017	107	27.00	146.00	92.5	6	0.0172
2/28/2013	1301745	GWW (Total)	JLB01		3.60	6.54	2.4	83.0	36.7	7.37	99.00	-97	0.116	99	12.00	170.00	101.3	6	0.0172
3/8/2013	1302028	GWW (Total)	JLB01		4.50	6.54	1.7	59.0	39.0	7.12	94.00	-89	0.062	94	19.00	172.00	105.9	7	0.0177
5/3/2013	1303450	GWW (Total)	JLB01		16.90	8.06	0.5	68.0	39.9	7.76	111.00	-106	0.32	110	40.00	160.00	167.40	6	0.0177
5/20/2013	1303818	GWW (Total)	JLB01		19.30	8.13	NA	NA	NA	6.76	95.00	-84	0.027	95	15.00	164.00	79.7	25	0.024
7/2/2013	1304841	GWW (Total)	JLB01		22.90	8.12	0.7	61.0	38.7	7.62	92.00	-89	0.192	92	9.00	172.00	116.8	8	0.0172
7/12/2013	1304923	GWW (Total)	JLB01		20.10	7.47	0.7	-58.0	39.4	7.04	75.00	-55	0.041	75	16.00	166.00	85.9	6	0.026
7/18/2013	1305026	GWW (Total)	JLB01		25.60	7.93	0.3	174.0	38.0	7.00	90.00	-89	0.06	85	6.00	148.00	29	6	0.02
8/2/2013	1305367	GWW (Total)	JLB01		21.50	7.80	1.5	-47.0	36.4	7.54	86.00	-81	0.149	86	6.00	178.00	108.7	6	0.371
8/30/2013	1305863	GWW (Total)	JLB01		21.00	7.78	1.4	53.0	40.7	6.59	83.00	-75	0.016	83	6.00	148.00	96.3	6	0.033
9/19/2013	1306417	GWW (Total)	JLB01		19.20	7.69				7.64	87.00	-86	0.19	87	6.00	178.00	89.2	6	0.034
10/1/2014	1400171	GWW (Total)	JLB01							7.02	67.00	-62	0.01	82	6.00	206.00	75.4	19	0.039

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Total Values																				
10/10/2008	806405	GWW (Total)	JLB01	9:48	40.63	0.323	6.278	0.009	2.381	6.061	40.28	127	270	2.88	2.75	154.19	1.47	0.57	-0.90	2.39
10/17/2008	806520	GWW (Total)	JLB01	9:20	30.45	0.631	6.229	0.000	2.383	6.286	36.61	102	256	2.39	2.85	146.24	1.35	0.57	3.04	-8.73
10/24/2008	806766	GWW (Total)	JLB01	9:39	37.96	1.010	6.110	0.001	2.512	4.260	36.87	120	312	2.69	2.93	155.17	1.47	0.50	1.59	-4.31
10/31/2008	806829	GWW (Total)	JLB01	9:15	35.95	1.190	5.810	0.010	2.460	6.326	39.40	114	311	2.70	2.93	156.59	1.20	0.50	1.51	-4.07
11/14/2008	807303	GWW (Total)	JLB01	9:41	36.53	2.750	6.050	0.040	2.460	6.150	39.60	116	353	2.75	3.28	171.01	1.46	0.48	3.35	-8.74
12/8/2008	807885	GWW (Total)	JLB01	9:40	34.60	3.200	5.880	0.020	2.500	5.910	37.50	111	264	2.65	2.67	147.48	0.96	0.56	0.09	-0.24
12/15/2008	807928	GWW (Total)	JLB01	9:26	34.74	3.020	5.910	0.027	2.555	5.740	38.90	3110	265	2.65	2.79	151.39	1.28	0.57	0.89	-2.46
8/25/2009	906082	GWW (Total)	JLB01		34.06	0.543	5.384	0.010	2.406	6.002	40.33	107	307	2.49	2.60	143.22	1.31	0.47	0.74	-2.13
9/3/2009	906203	GWW (Total)	JLB01		36.05	0.529	5.739	0.052	5.051	9.324	42.48	114	267	2.83	2.57	150.88	1.15	0.57	-1.77	4.79
9/8/2009	Injection Begins																			
9/9/2009	906321	GWW (Total)	JLB01		36.19	0.423	5.732	0.012	2.410	6.701	39.59	114	293	2.65	2.57	144.53	1.05	0.49	-0.55	1.54
9/16/2009	906529	GWW (Total)	JLB01		36.85	0.475	5.833	0.015	2.340	7.013	40.29	116	280	2.71	2.61	146.86	1.13	0.52	-0.66	1.83
9/30/2009	906953	GWW (Total)	JLB01		36.90	0.826	5.937	0.022	2.355	7.189	38.08	117	293	2.74	2.61	146.94	0.93	0.50	-0.85	2.34
12/10/2009	908869	GWW (Total)	JLB01		31.55	6.636	5.237	0.029	2.445	7.856	40.66	100	235	2.65	2.41	142.06	1.04	0.60	-1.71	4.85
1/26/2010	1000541	GWW (Total)	JLB01		28.10	4.094	4.986	0.033	9.036	8.134	39.74	91	217	2.55	2.24	137.94	1.03	0.64	-2.16	6.37
3/9/2010	1001594	GWW (Total)	JLB01		34.11	0.108	5.853	0.017	2.537	12.020	46.35	354	274	2.78	2.64	152.41	1.02	0.56	-0.91	2.48
3/19/2010	1002107	GWW (Total)	JLB01		36.25	2.860	6.444	0.026	2.566	6.643	46.41	117	245	2.80	2.54	149.62	0.94	0.61	-1.74	4.76
4/22/2010	1003538	GWW (Total)	JLB01		39.50	5.327	6.584	0.031	2.734	7.552	46.09	120	261	3.11	2.61	158.25	0.96	0.61	-3.38	8.68
6/22/2010	1005447	GWW (Total)	JLB01		29.45	1.588	4.568	0.029	2.296	8.544	41.28	92	238	2.35	2.07	125.13	1.12	0.53	-2.04	6.41
7/12/2010	1006195	GWW (Total)	JLB01		31.09	0.691	5.150	0.025	11.800	14.720	41.78	99	264	2.95	2.24	147.36	1.10	0.56	-5.06	13.75
11/19/2010	1011187	GWW (Total)	JLB01	14:12	33.59	3.800	5.730	0.020	2.660	8.000	40.35	107	277	2.70	2.51	145.18	1.13	0.52	-1.33	3.71
2/15/2011	1101646	GWW (Total)	JLB01		27.01	8.430	4.790	0.040	2.510	7.570	36.76	87	245	2.44	2.08	127.74	1.27	0.52	-2.58	7.92
3/24/2011	1102978	GWW (Total)	JLB01		27.28	6.860	4.960	0.060	2.720	7.990	39.18	89	260	2.44	2.46	139.67	1.19	0.54	0.18	-0.53
4/29/2011	1104695	GWW (Total)	JLB01	14:14	27.73	6.883	4.857	0.055	50.580	8.415	39.17	89	251	3.69	2.48	189.11	0.89	0.75	-8.38	19.69
6/1/2011	1105964	GWW (Total)	JLB01		28.95	1.91	4.39	0.03	2.12	8.03	43.50	90	242	2.29	2.16	127.40	1.16	0.53	-0.94	2.97
7/18/2011	1107450	GWW (Total)	JLB01		32.42	0.45	5.12	0.02	2.61	8.91	41.64	102	294	2.52	2.77	151.62	1.13	0.52	1.69	-4.78
8/23/2011	1108684	GWW (Total)	JLB01		28.76	4.56	4.85	0.06	9.99	10.87	38.85	92	253	2.73	2.48	148.95	0.93	0.59	-1.73	4.82
10/17/2011	no sample																			
11/17/2011	1111300	GWW (Total)	JLB01		26.78	13.14	4.62	0.05	2.45	6.90	33.59	85.87	252.00	2.55	2.33	137.36	1.18	0.55	-1.58	4.61
2/9/2012	1201213	GWW (Total)	JLB01	13:40	25.83	9.29	4.65	0.05	2.50	13.98	38.81	83.65	237.00	2.68	2.24	138.93	0.85	0.59	-3.13	8.99
3/28/2012	1202998	GWW (Total)	JLB01		25.77	9.35	4.52	0.06	3.57	7.69	37.55	82.96	238.00	2.42	2.31	135.32	1.32	0.57	-0.78	2.34
5/17/2012	1204399	GWW (Total)	JLB01		32.67	5.56	5.64	0.03	2.77	16.68	42.69	104.79	236.00	3.09	2.50	155.27	0.93	0.66	-4.10	10.64
6/15/2012	no sample																			
7/18/2012	1206618	GWW (Total)	JLB01		36.38	7.704	6.089	0.076	4.565	8.247	39.62	115.92	310.00	3.07	2.89	165.72	1.48	0.53	-1.19	3.02
8/15/2012	1207531	GWW (Total)	JLB01		43.4	2.465	6.917	0.03	3.215	9.765	40.51	136.85	320.00	3.33	3.01	172.32	1.06	0.54	-2.09	5.04
9/17/2012	1208627	GWW (Total)	JLB01		41.19	1.725	6.497	0.019	2.949	7.244	40.34	129.61	336.00	3.05	3.03	166.59	1.24	0.50	-0.10	0.26
10/25/2012	1209944	GWW (Total)	JLB01		35.12	7.853	6.321	0.053	6.409	8.567	38.22	113.72	338.00	3.10	2.99	169.19	0.98	0.50	-0.73	1.84
12/13/2012	1211645	GWW (Total)	JLB01		37.35	6.601	6.262	0.037	3.594	8.62	36.97	119.05	331.00	3.09	2.76	160.05	0.79	0.48	-2.18	5.57
1/15/2013	1300566	GWW (Total)	JLB01		35.15	10.01	6.401	0.061	3.292	7.748	36.84	114.13	285.00	3.07	2.82	161.93	0.77	0.57	-1.65	4.22
2/1/2013	1300980	GWW (Total)	JLB01		35.88	7.847	6.422	0.056	2.801	8.32	34.45	116.04	334.00	3.04	2.91	162.40	1.02	0.49	-0.86	2.19
2/7/2013	1301013	GWW (Total)	JLB01		41.77	3.154	7.043	0.031	2.786	10.59	39.33	133.30	308.00	3.31	3.18	176.52	0.86	0.57	-0.86	2.07
2/13/2012	1301246	GWW (Total)	JLB01		41.25	4.525	7.421	0.056	3.016	7.461	38.64	133.56	358.00	3.24	3.11	172.59	0.85	0.48	-0.79	1.92
2/28/2013	1301745	GWW (Total)	JLB01		44.72	2.952	7.528	0.036	3.072	8.669	39.57	142.67	341.00	3.42	2.97	171.96	0.99	0.50	-2.89	6.91
3/8/2013	1302028	GWW (Total)	JLB01		45.15	2.337	7.467	0.033	2.806	7.931	37.82	143.49	363.00	3.37	2.87	166.96	1.03	0.46	-3.35	8.10
5/3/2013	1303450	GWW (Total)	JLB01		40.28	7.142	6.449	0.038	3.026	7.839	35.55	127.14	299.00	3.22	3.13	172.94	0.93	0.58	-0.57	1.38
5/20/2013	1303818	GWW (Total)	JLB01		39.51	1.204	6.078	0.021	2.647	10.89	43.11	123.69	362.00	3.06	3.50	185.48	0.88	0.51	2.76	-6.76
7/2/2013	1304841	GWW (Total)	JLB01		38.09	2.932	6.021	0.044	22.33	9.224	40.56	119.91	338.00	3.69	3.64	208.03	0.04	0.62	-0.29	0.65
7/12/2013	1304923	GWW (Total)	JLB01		38.79	2.571	5.903	0.05	2.402	8.127	39.51	121.17	293.00	2.59	2.73	153.99	0.10	0.53	0.97	-2.71
7/18/2013	1305026	GWW (Total)	JLB01		40.07	2.266	6.122	0.05	2.647	8.858	41.45	125.27	351.00	2.63	1.14	99.23	0.06	0.28	-11.96	39.39
8/2/2013	1305367	GWW (Total)	JLB01		38.81	3.869	6.049	0.066	2.566	9.015	37.84	121.82	269.00	2.73	3.40	179.97	0.03	0.67	4.26	-11.06
8/30/2013	1305863	GWW (Total)	JLB01		38.45	0.372	5.974	0.05	3.089	9.651	40.41	120.61	303.00	2.43	3.05	163.87	0.04	0.54	4.04	-11.33
9/19/2013	1306417	GWW (Total)	JLB01		34.09	0.475	5.244	0.05	2.298	9.362	34.93	106.72	305.00	2.22	2.86	151.34	0.04	0.50	4.27	-12.66
10/1/2014	1400171	GWW (Total)	JLB01		32.68	1.209	5.502	0.05	2.35	8.065	37.14	104.26	323.00	3.69	2.43	148.51	0.04	0.46	-8.68	20.46

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Temp	Field pH	Field DO	Field ORP	Field Cond	Lab pH	Alkalinity	Acidity	CO3	HCO3	TSS	TDS	CO2-d	Cl	Al
Dissolved Values																			
10/10/2008	806408	GWW (Dissolved)	JLB04	9:48															0.023
10/17/2008	806523	GWW (Dissolved)	JLB04	9:20															0.039
10/24/2008	806769	GWW (Dissolved)	JLB04	9:39															0.890
10/31/2008	806832	GWW (Dissolved)	JLB04	9:15															0.038
11/14/2008	807306	GWW (Dissolved)	JLB04	9:41															0.040
12/8/2008	807888	GWW (Dissolved)	JLB04	9:40															0.220
12/15/2008	807931	GWW (Dissolved)	JLB04	9:26															0.100
8/25/2009	906083	GWW (Dissolved)	JLB04																0.043
9/3/2009	906206	GWW (Dissolved)	JLB04																0.021
9/8/2009	Injection Begins																		
9/9/2009	906324	GWW (Dissolved)	JLB04																0.029
9/16/2009	906532	GWW (Dissolved)	JLB04																0.019
9/30/2009																			
12/10/2009	908872	GWW (Dissolved)	JLB04																0.052
1/26/2010	1000543	GWW (Dissolved)	JLB04																0.016
3/9/2010	1001597	GWW (Dissolved)	JLB04																0.028
3/19/2010	1002110	GWW (Dissolved)	JLB04																0.016
4/22/2010	1003541	GWW (Dissolved)	JLB04																0.016
6/22/2010	1005450	GWW (Dissolved)	JLB04																0.017
7/12/2010	1006198	GWW (Dissolved)	JLB04																0.028
11/19/2010	1011190	GWW (Dissolved)	JLB04	14:12															0.020
2/[illegible]/2011	1101649	GWW (Dissolved)	JLB04																0.030
3/[illegible]/2011	1102981	GWW (Dissolved)	JLB04																0.020
4/[illegible]/2011	1104698	GWW (Dissolved)	JLB04	14:14															0.017
6/[illegible]/2011	1105966	GWW FILTERED	JLB04																0.018
7/[illegible]/2011	1107453	GWW FILTERED	JLB04																0.018
8/23/2011	1108687	GWW FILTERED	JLB04																0.018
10/[illegible]/2011	no sample																		
11/[illegible]/2011	1111303	GWW FILTERED	JLB04																0.02
2/9/2012	1201216	GWW FILTERED	JLB04																0.02
3/28/2012	1203001	GWW FILTERED	JLB04																0.02
5/17/2012	1204402	GWW FILTERED	JLB04																0.02
6/15/2012	no sample																		
7/18/2012	1206621	GWW FILTERED	JLB04																0.0172
8/15/2012	1207534	GWW FILTERED	JLB04																0.0172
9/17/2012	1208630	GWW FILTERED	JLB04																0.0277
10/25/2012	1209947	GWW FILTERED	JLB04																0.0277
12/13/2012	1211648	GWW FILTERED	JLB04																0.0172
1/15/2013	1300569	GWW FILTERED	JLB04																0.0172
2/1/2013	1300983	GWW FILTERED	JLB04																0.0177
2/7/2013	1301016	GWW FILTERED	JLB04																0.0172
2/13/2012	1301249	GWW FILTERED	JLB04																0.0172
2/28/2013	1301748	GWW FILTERED	JLB04																0.0172
3/8/2013	1302031	GWW FILTERED	JLB04																0.0172
5/3/2013	1303453	GWW FILTERED	JLB04																0.0172
5/20/2013	1303821	GWW FILTERED	JLB04																0.0172
7/2/2013	1304844	GWW FILTERED	JLB05																0.0172
7/12/2013	1304926	GWW FILTERED	JLB06																0.02
7/18/2013	1305029	GWW FILTERED	JLB07																0.02
8/2/2013	1305370	GWW FILTERED	JLB08																0.02
8/30/2013	1305866	GWW FILTERED	JLB09																0.02
9/19/2013	1306419	GWW FILTERED	JLB10																0.02
10/1/2014	1400174	GWW FILTERED	JLB04																0.02

Insert Row on line above to add new sample data

Sample Date	Analytical Number	Sample Decription	R&D Lab ID Code	Sample Time	Ca	Fe	Mg	Mn	K	Na	SO4	Hardness	Cond	cat sum	anion sum	ion sum	TDS / ion sum	ion sum / cond	ion balance	ion imbalance
Dissolved Values																				
10/10/2008	806408	GWW (Dissolved)	JLB04	9:48	41.08	0.057	6.227	0.003	2.436	6.175	39.32									
10/17/2008	806523	GWW (Dissolved)	JLB04	9:20	29.28	0.146	6.153	0.000	4.558	7.169	35.68									
10/24/2008	806769	GWW (Dissolved)	JLB04	9:39	39.95	1.410	6.387	0.001	3.130	5.517	38.78									
10/31/2008	806832	GWW (Dissolved)	JLB04	9:15	36.39	0.364	5.890	0.010	2.463	6.575	39.14									
11/14/2008	807306	GWW (Dissolved)	JLB04	9:41	36.00	0.890	6.090	0.040	2.320	10.950	37.60									
12/8/2008	807888	GWW (Dissolved)	JLB04	9:40	34.30	1.090	5.880	0.020	2.850	6.280	38.20									
12/15/2008	807931	GWW (Dissolved)	JLB04	9:26	35.10	0.770	5.960	0.020	2.660	6.450	34.00									
8/25/2009	906083	GWW (Dissolved)	JLB04		34.56	0.017	5.332	0.010	1.857	8.698	39.58									
9/3/2009	906206	GWW (Dissolved)	JLB04		37.56	0.087	6.002	0.024	5.084	9.401	45.37									
9/8/2009	Injection Begins																			
9/9/2009	906324	GWW (Dissolved)	JLB04		38.24	0.119	6.014	0.012	2.449	8.206	42.69									
9/16/2009	906532	GWW (Dissolved)	JLB04		36.33	0.097	5.785	0.011	2.302	6.710	38.33									
9/30/2009																				
12/10/2009	908872	GWW (Dissolved)	JLB04		30.97	0.201	5.175	0.024	8.384	8.126	41.68									
1/26/2010	1000543	GWW (Dissolved)	JLB04		29.49	0.010	5.205	0.060	2.634	8.052	42.48									
3/9/2010	1001597	GWW (Dissolved)	JLB04		27.60	2.087	5.074	0.062	2.431	7.677	42.52									
3/19/2010	1002110	GWW (Dissolved)	JLB04		36.10	0.923	6.393	0.024	2.514	7.040	45.13									
4/22/2010	1003541	GWW (Dissolved)	JLB04		37.60	0.402	6.314	0.035	2.724	7.789	43.64									
6/22/2010	1005450	GWW (Dissolved)	JLB04		28.37	0.115	4.428	0.041	2.187	12.740	39.37									
7/12/2010	1006198	GWW (Dissolved)	JLB04		29.95	0.073	4.991	0.022	16.320	16.110	41.19									
11/19/2010	1011190	GWW (Dissolved)	JLB04	14:12	34.00	0.600	5.760	0.030	2.500	7.620	41.23									
2/[illegible]/2011	1101649	GWW (Dissolved)	JLB04		27.42	0.950	4.870	0.030	2.550	7.370	37.56									
3/[illegible]/2011	1102981	GWW (Dissolved)	JLB04		26.30	1.180	4.790	0.050	2.620	8.190	37.44									
4/[illegible]/2011	1104698	GWW (Dissolved)	JLB04	14:14	27.43	0.774	4.940	0.048	4.308	14.880	42.16									
6/[illegible]/2011	1105966	GWW FILTERED	JLB04		28.43	0.064	4.284	0.022	2.066	9.482	43.16									
7/[illegible]/2011	1107453	GWW FILTERED	JLB04		31.14	0.051	5.001	0.014	2.514	8.140	41.05									
8/23/2011	1108687	GWW FILTERED	JLB04		27.98	0.273	4.677	0.055	2.322	9.767	36.68									
10/[illegible]/2011	no sample																			
11/[illegible]/2011	1111303	GWW FILTERED	JLB04		27.12	0.88	4.78	0.05	23.02	9.24	36 47									
2/9/2012	1201216	GWW FILTERED	JLB04		24.88	0.93	4.50	0.04	19.86	12.75	36.19									
3/28/2012	1203001	GWW FILTERED	JLB04		30.62	0.15	6.26	0.08	15.68	56.78	37.23									
5/17/2012	1204402	GWW FILTERED	JLB04		30.65	0.01	5.30	0.03	16.17	16.58	40.37									
6/15/2012	no sample																			
7/18/2012	1206621	GWW FILTERED	JLB04		35.34	0.084	5.985	0.065	33.39	12.12	37.76									
8/15/2012	1207534	GWW FILTERED	JLB04		40.05	0.079	6.283	0.028	8.193	7.955	38.39									
9/17/2012	1208630	GWW FILTERED	JLB04		40.7	0.075	6.543	0.017	7.925	8.37	40.36									
10/25/2012	1209947	GWW FILTERED	JLB04		35.03	0.143	6.386	0.039	11.15	10.89	36.03									
12/13/2012	1211648	GWW FILTERED	JLB04		38.24	0.603	6.601	0.033	7.906	18.87	38.06									
1/15/2013	1300569	GWW FILTERED	JLB04		33.75	0.659	6.058	0.057	6.505	9.217	34.91									
2/1/2013	1300983	GWW FILTERED	JLB04		36.44	0.806	6.858	0.049	5.399	18.69	36.22									
2/7/2013	1301016	GWW FILTERED	JLB04		40.92	0.663	6.811	0.032	6.159	15.55	36.19									
2/13/2012	1301249	GWW FILTERED	JLB04		40.22	0.956	7.25	0.054	5.21	8.977	37.7									
2/28/2013	1301748	GWW FILTERED	JLB04		42.89	0.854	7.219	0.034	7.568	8.582	37.53									
3/8/2013	1302031	GWW FILTERED	JLB04		44.34	0.7	7.423	0.03	13.03	8.707	37.88									
5/3/2013	1303453	GWW FILTERED	JLB04		41.14	0.017	6.506	0.036	20.25	8.167	35.98									
5/20/2013	1303821	GWW FILTERED	JLB04		45.42	0.203	7.613	0.032	20.69	59.63	41.46									
7/2/2013	1304844	GWW FILTERED	JLB05		39.67	0.58	6.811	0.047	7.084	31.78	40.19									
7/12/2013	1304926	GWW FILTERED	JLB06		38.99	0.084	6.539	0.05	24.48	29.8	39.83									
7/18/2013	1305029	GWW FILTERED	JLB07		39.1	0.05	5.99	0.05	21.63	8.802	41.01									
8/2/2013	1305370	GWW FILTERED	JLB08		36.09	0.05	5.733	0.05	22.83	13.12	36									
8/30/2013	1305866	GWW FILTERED	JLB09		38.3	0.226	6.02	0.05	29.76	11.32	39.18									
9/19/2013	1306419	GWW FILTERED	JLB10		40.2	0.06	6.625	0.05	20.52	22.73	41.75									
10/1/2014	1400174	GWW FILTERED	JLB04		31.74	0.182	5.355	0.05	2.341	10	35.99									

Insert Row on line above to add new sample data

Appendix I

Gas Sampling Analytical Results

Georgetown CO_2 Sequestration

Gas Analysis Report

As of 12/2/2015

Values Reported in Percent

	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %
MC-5								
Baseline Average, %	2.82	93.50	0.70	0.00	0.00	0.68	3.23	
Baseline Std. Dev.	0.38	3.70	0.10	0.00	0.00	0.63	2.51	
Post injection average, %	3.65	92.26	0.67	0.06	0.00	0.14	1.54	
Post Injection Std. Dev.	0.93	2.56	0.16	0.18	0.00	0.39	1.47	
Most recent value, %	3.26	81.75	0.67	ND	ND	2.16	8.79	96.63
CO_2 Concentration Action Level, % =	**12.82**							
MH-3								
Baseline Average, %	0.65	97.65	0.51	0.53	0.00	0.12	2.33	
Baseline Std. Dev.	0.23	2.32	0.75	0.20	0.00	0.09	0.37	
Post injection average, %	1.91	94.00	0.47	0.11	0.00	0.10	2.19	
Post Injection Std. Dev.	0.86	0.95	0.64	0.17	0.00	0.18	0.43	
Most recent value, %	2.06	91.48	0.24	0.01	ND	0.30	2.81	96.90
CO_2 Concentration Action Level, % =	**10.65**							
MH-5								
Baseline Average, %	0.56	96.98	1.68	0.53	0.00	0.09	2.59	
Baseline Std. Dev.	1.20	2.00	0.54	0.22	0.00	0.05	0.88	
Post injection average, %	0.25	93.63	2.08	0.40	0.00	0.10	2.84	
Post Injection Std. Dev.	0.32	1.44	0.54	0.15	0.00	0.21	0.83	
Most recent value, %	0.13	92.04	2.19	0.41	ND	0.24	3.26	98.26
CO_2 Concentration Action Level, % =	**10.56**							
MH-11								
Baseline Average, %	0.11	95.81	1.77	0.53	0.00	28	3.93	
Baseline Std. Dev.	0.06	1.76	0.10	0.20	0.00	0.35	0.74	
Post injection average, %	2.23	91.57	1.87	0.39	0.00	0.11	3.18	
Post Injection Std. Dev.	5.30	5.49	0.30	0.11	0.00	0.18	1.03	
Most recent value, %	0.27	93.16	1.99	0.37	ND	0.25	3.27	99.31
CO_2 Concentration Action Level, % =	**10.11**							
MH-12								
Baseline Average, %	1.93	98.11	0.55	0.00	0.00	0.25	1.64	
Baseline Std. Dev.	0.24	1.03	0.02	0.00	0.00	0.11	0.87	
Post injection average, %	2.59	93.50	0.65	0.05	0.00	0.10	1.41	
Post Injection Std. Dev.	0.88	1.87	0.24	0.09	0.00	0.31	1.61	
Most recent value, %	2.37	91.40	0.60	0.03	ND	0.27	1.97	96.63
CO_2 Concentration Action Level, % =	**11.93**							
MH-26								
Baseline Average, %	0.17	95.99	1.58	0.48	0.00	0.17	3.93	
Baseline Std. Dev.	0.27	2.24	0.76	0.20	0.00	0.12	0.79	
Post injection average, %	0.05	92.29	1.69	0.38	0.00	0.08	5.51	
Post Injection Std. Dev.	0.06	1.07	0.35	0.07	0.00	0.06	0.57	
Most recent value, %	0.02	91.49	1.63	0.33	ND	0.24	6.31	100.02
CO_2 Concentration Action Level, % =	**10.17**							
MH-27								
Baseline Average, %	0.45	90.28	1.36	0.43	0.00	1.39	7.34	
Baseline Std. Dev.	0.72	7.53	0.42	0.16	0.00	1.66	4.88	
Post injection average, %	0.09	93.01	1.64	0.41	0.00	0.08	4.86	
Post Injection Std. Dev.	0.04	0.97	0.11	0.10	0.00	0.10	0.39	
Most recent value, %	0.06	92.38	1.58	0.37	ND	0.25	5.31	99.94
CO_2 Concentration Action Level, % =	**10.45**							

Note: The "CO_2 Concentration Action Level" is ten percentage points greater than the baseline average value.

Georgetown CO_2 Sequestration

Gas Analysis Report

As of 12/2/2015

Values reported in Percent

	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %
1588								
Baseline Average, %	0.31	78.88	0.99	0.29	0.00	4.42	15.36	
Baseline Std. Dev.	0.04	3.06	0.11	0.11	0.00	0.54	2.23	
Post injection average, %	0.37	75.17	1.31	0.41	0.00	4.09	17.51	
Post Injection Std. Dev.	0.14	18.09	0.45	0.21	0.00	2.59	9.79	
Most recent value, %	0.13	50.62	1.57	0.64	ND	9.27	36.92	
CO_2 Concentration Action Level, % =	**10.31**							
2974								
Baseline Average, %	0.70	86.03	0.92	0.56	0.00	2.58	10.24	
Baseline Std. Dev.	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Post injection average, %	1.33	83.30	0.98	0.14	0.00	2.36	10.75	
Post Injection Std. Dev.	0.53	8.33	0.15	0.07	0.00	1.84	6.65	
Most recent value, %	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
CO_2 Concentration Action Level, % =	**10.70**							
4407								
Baseline Average, %	0.79	75.61	0.69	0.48	0.00	4.80	16.65	
Baseline Std. Dev.	0.05	5.86	0.15	0.18	0.00	1.28	3.87	
Post injection average, %	0.50	49.77	0.56	0.11	0.00	9.09	39.05	
Post Injection Std. Dev.	0.25	13.21	0.21	0.05	0.00	2.80	10.86	
Most recent value, %	0.22	45.00	0.51	0.09	ND	10.10	42.91	98.82
CO_2 Concentration Action Level, % =	**10.79**							
WVU #1								
Baseline Average, %	0.05	0.17	0.01	0.00	0.00	20.77	77.44	
Baseline Std. Dev.	0.01	0.28	0.01	0.00	0.00	0.22	0.42	
Post injection average, %	0.10	0.32	0.01	0.01	NA	20.58	77.73	
Post Injection Std. Dev.	0.07	0.35	0.00	0.00	0.83	0.22	0.49	
Most recent value, %	0.03	ND	ND	ND	ND	20.83	77.87	98.73
CO_2 Concentration Action Level, % =	**10.05**							
WVU #2								
Baseline Average, %	0.06	0.29	0.01	0.00	0.00	20.70	77.69	
Baseline Std. Dev.	0.03	0.48	0.01	0.00	0.00	0.29	0.58	
Post injection average, %	0.07	0.30	0.00	0.01	0.63	20.66	77.74	
Post Injection Std. Dev.	0.04	0.65	0.00	0.00	0.75	0.25	0.57	
Most recent value, %	0.03	ND	ND	ND	ND	20.82	77.84	98.69
CO_2 Concentration Action Level, % =	**10.06**							
WVU #3								
Baseline Average, %	0.05	0.65	0.01	0.00	0.00	20.63	76.96	
Baseline Std. Dev.	0.01	1.26	0.01	0.00	0.00	0.19	1.33	
Post injection average, %	0.24	7.46	0.05	0.01	1.00	18.86	73.83	
Post Injection Std. Dev.	0.21	7.26	0.04	0.00	1.06	1.67	5.67	
Most recent value, %	0.08	2.09	<0.01	ND	ND	20.13	76.21	98.51
CO_2 Concentration Action Level, % =	**10.05**							

Note: The "CO_2 Concentration Action Level" is ten percentage points greater than the baseline average value.

Gas Analysis
Well No. MC-5

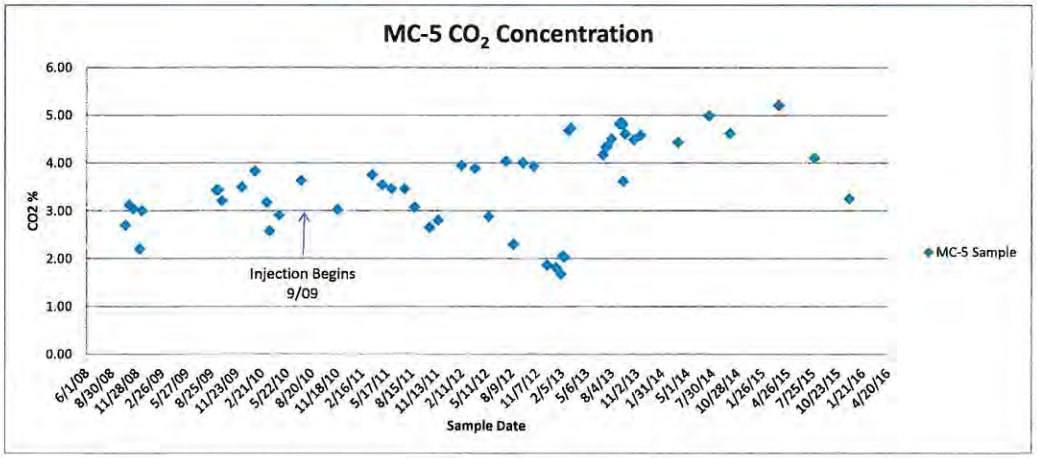
			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		10/20/2008									
10/17/2008		10/20/2008	2.70	91.78	0.75	NA	0.00	1.12	4.46	100.81	
10/24/2008		10/27/2008									cylinder leak, data invalid
10/31/2008	10:15 AM	11/3/2008	3.13	93.20	0.63	NA	0.00	0.66	2.62	100.24	
11/14/2008	10:43 AM	11/20/2008	3.05	97.73	0.63	NA	0.00	0.08	1.16	102.65	
12/8/2008	10:40 AM	12/10/2008	2.21	88.44	0.84	NA	0.00	1.49	6.95	99.93	
12/15/2008	10:40 AM	12/16/2008	3.01	96.35	0.63	0.00	0.00	0.07	0.95	101.01	
8/25/2009											no sample, sampling hardware removed since last visit
	Injection Begins 9/8/2009										
9/9/2009	1:47 PM	9/10/2009	3.44	92.11	0.70	0.01		0.06	1.29	97.61	
9/16/2009	2:03 PM	9/17/2009	3.44	92.81	0.72	0.02		0.01	1.16	98.16	
9/30/2009	10:18 AM	10/1/2009	3.21	92.43	0.70	0.02		0.02	1.27	97.65	
12/10/2009	12:35 PM	12/14/2009	3.50	92.95	0.74	0.02		0.05	1.29	98.55	
1/26/2010	12:22 PM	1/27/2010	3.84	91.36	0.78	0.01		0.05	1.10	97.14	
3/9/2010	12:00 AM	3/11/2010	3.18	92.23	0.72	0.02		0.07	1.56	97.78	
3/19/2010	11:29 AM	3/23/2010	2.58	91.52	0.77	0.05		0.29	2.43	97.64	
4/22/2010	12:26 PM	4/26/2010	2.91	92.05	0.76	0.04		0.06	1.49	97.31	
7/12/2010	12:15 PM	7/13/2010	3.64	91.45	0.85	0.02		0.03	1.15	97.14	
11/19/2010	11:46 AM	11/23/2010	3.03	93.19	0.69	0.02		0.03	1.52	98.48	
2/15/2011											not sampled
3/2/2011											not sampled
3/24/2011	12:13 PM	3/25/2011	3.76	92.07	0.86	0.02		0.08	1.25	98.04	
4/29/2011	10:03 AM	5/3/2011	3.55	91.57	0.83	0.54	0.00	0.06	1.17	97.72	
6/1/2011	10:05 AM	6/7/2011	3.47	92.33	0.84	0.02	0.00	0.03	1.18	97.87	
7/18/2011	9:55 AM	7/20/2011	3.46	92.14	0.78	0.02	0.00	0.03	1.17	97.60	
8/23/2011	9:45 AM	8/25/2011	3.08	92.82	0.78	0.03	0.00	0.13	1.94	98.78	
10/17/2011	9:46 AM	10/18/2011	2.66	95.51	0.63	0.02	0.00	0.01	1.42	100.25	
11/17/2011	1:00 PM	11/18/2011	2.81	92.42	0.62	0.02	0.00	0.09	1.54	97.50	
2/9/2012	11:17 AM	2/9/2012	3.95	92.68	0.63	0.01	0.00	0.04	1.26	98.57	
3/28/2012	9:37 AM	3/29/2012	3.89	93.15	0.63	<0.01	ND	0.04	1.22	98.93	
5/17/2012	10:07 AM	5/18/2012	2.89	93.06	0.73	<0.01	ND	0.04	1.17	97.89	
7/18/2012	11:35 AM	7/19/2012	4.05	93.33	0.62	<0.01	ND	0.02	0.99	99.01	
8/15/2012	12:02 PM	8/16/2012	2.31	94.78	0.57	0.02	ND	0.04	1.49	99.21	
9/17/2012	1:15 PM	9/18/2012	4.01	92.58	0.59	0.01	ND	0.08	1.24	98.51	
10/25/2012	11:37 AM	10/26/2012	3.94	92.68	0.59	0.01	ND	0.12	1.37	98.71	
12/13/2012	12:28 PM	12/14/2012	1.87	92.70	0.66	1.12	ND	0.02	1.12	97.49	
1/15/2013	10:40 AM	1/16/2013	1.82	95.15	0.67	0.02	ND	0.02	1.18	98.86	
2/1/2013	11:50 AM	2/6/2013	1.68	96.68	0.56	0.01	ND	0.04	1.11	100.08	
2/7/2013	11:10 AM	2/12/2013	2.06	92.77	0.01	0.01	ND	0.04	1.18	96.07	
2/13/2013	11:05 AM	2/15/2013	2.04	94.89	0.72	0.02	ND	0.03	1.09	98.79	
2/28/2013	11:00 AM	3/5/2013	4.69	94.94	0.72	0.02	ND	0.04	1.29	101.70	
3/8/2013	11:10 AM	3/11/2013	4.74	94.69	0.01	0.01	ND	0.04	1.09	100.58	
5/20/2013										0.00	no sample, cyl leak
7/2/2013	10:06 AM	7/3/2013	4.18	92.46	0.75	0.03	ND	0.08	0.98	98.48	
7/12/2013	11:15 AM	7/15/2013	4.34	92.27	0.53	0.01	ND	0.06	1.05	98.26	
7/18/2013	2:00 PM	7/23/2013	4.36	92.18	0.75	0.02	ND	0.06	1.18	98.55	
8/2/2013	11:04 AM	8/5/2013	4.51	91.55	0.68	<0.01	ND	0.05	1.04	97.83	
8/30/2013	12:25 PM	9/3/2013	4.83	91.55	0.65	0.01	ND	0.06	1.16	98.26	
9/5/2013	10:16 AM	9/6/2013	4.86	90.97	0.64	0.06	ND	0.01	0.72	97.26	
9/10/2013	10:12 AM	9/11/2013	4.81	92.44	0.69	0.02	ND	0.05	1.13	99.14	
9/12/2013	11:20 AM	9/12/2013	3.62	92.70	0.68	0.03	ND	ND	0.72	97.75	
9/19/2013	11:10 AM	9/20/2013	4.62	91.86	0.68	0.05	ND	ND	0.71	97.91	
10/21/2013	11:30 AM	10/22/2013	4.50	91.67	0.67	0.00	ND	0	0.87	97.71	
11/14/2013	10:55 AM	11/15/2013	4.59	91.46	0.69	0.02	ND	0.11	1.35	98.22	
3/27/2014	11:55 AM	4/1/2014	4.44	81.49	0.64	0.01	ND	1.82	7.94	96.35	
07/16/14	11:58 AM	07/17/14	5.00	93.81	0.71	0.01	ND	0.08	1.23	100.84	
09/30/14	10:55 AM	10/02/14	4.63	91.60	0.73	0.02	ND	0.13	1.56	98.67	
03/23/15	11:23 AM	03/24/15	5.22	91.41	0.73	0.01	ND	0.13	1.51	99.01	
07/29/15	10:56 AM	07/30/15	4.11	92.28	0.74	<0.01	ND	0.12	1.36	98.61	
12/02/15	10:55 AM	12/02/15	3.26	81.75	0.67	ND	ND	2.16	8.79	96.63	

Gas Analysis
Well No. MC-5

% Composition

Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		10/20/2008									
10/17/2008		10/20/2008	2.70	91.78	0.75	NA	0.00	1.12	4.46	100.81	
10/24/2008		10/27/2008									cylinder leak, data invalid
10/31/2008	10:15 AM	11/3/2008	3.13	93.20	0.63	NA	0.00	0.66	2.62	100.24	
11/14/2008	10:43 AM	11/20/2008	3.05	97.73	0.63	NA	0.00	0.08	1.16	102.65	
12/8/2008	10:40 AM	12/10/2008	2.21	88.44	0.84	NA	0.00	1.49	6.95	99.93	
12/15/2008	10:40 AM	12/16/2008	3.01	96.35	0.63	0.00	0.00	0.07	0.95	101.01	
9/25/2009											no sample, sampling hardware removed since last visit
	Injection Begins 9/8/2009										
9/9/2009	1:47 PM	9/10/2009	3.44	92.11	0.70	0.01		0.06	1.29	97.61	
9/16/2009	2:03 PM	9/17/2009	3.44	92.81	0.72	0.02		0.01	1.16	98.16	
9/30/2009	10:18 AM	10/1/2009	3.21	92.43	0.70	0.02		0.02	1.27	97.65	
12/10/2009	12:35 PM	12/14/2009	3.50	92.95	0.74	0.02		0.05	1.29	98.55	
1/26/2010	12:22 PM	1/27/2010	3.84	91.36	0.78	0.01		0.05	1.10	97.14	
3/9/2010	12:00 AM	3/11/2010	3.18	92.23	0.72	0.02		0.07	1.56	97.78	
3/19/2010	11:29 AM	3/23/2010	2.58	91.52	0.77	0.05		0.29	2.43	97.64	
4/22/2010	12:26 PM	4/26/2010	2.91	92.05	0.76	0.04		0.06	1.49	97.31	
7/12/2010	12:15 PM	7/13/2010	3.64	91.45	0.85	0.02		0.03	1.15	97.14	
11/19/2010	11:46 AM	11/23/2010	3.03	93.19	0.69	0.02		0.03	1.52	98.48	
2/15/2011											not sampled
3/2/2011											not sampled
3/24/2011	12:13 PM	3/25/2011	3.76	92.07	0.86	0.02		0.08	1.25	98.04	
4/29/2011	10:03 AM	5/3/2011	3.55	91.57	0.83	0.54	0.00	0.06	1.17	97.72	
6/1/2011	10:05 AM	6/7/2011	3.47	92.33	0.84	0.02	0.00	0.03	1.18	97.87	
7/18/2011	9:55 AM	7/20/2011	3.46	92.14	0.78	0.02	0.00	0.03	1.17	97.60	
8/23/2011	9:45 AM	8/25/2011	3.08	92.82	0.78	0.03	0.00	0.13	1.94	98.78	
10/17/2011	9:46 AM	10/18/2011	2.66	95.51	0.63	0.02	0.00	0.01	1.42	100.25	
11/17/2011	1:00 PM	11/18/2011	2.81	92.42	0.62	0.02	0.00	0.09	1.54	97.50	
2/9/2012	11:17 AM	2/9/2012	3.95	92.68	0.63	0.01	0.00	0.04	1.26	98.57	
3/28/2012	9:37 AM	3/29/2012	3.89	93.15	0.63	<0.01	ND	0.04	1.22	98.93	
5/17/2012	10:07 AM	5/18/2012	2.89	93.06	0.73	<0.01	ND	0.04	1.17	97.89	
7/18/2012	11:35 AM	7/19/2012	4.05	93.33	0.62	<0.01	ND	0.02	0.99	99.01	
8/15/2012	12:02 PM	8/16/2012	2.31	94.78	0.57	0.02	ND	0.04	1.49	99.21	
9/17/2012	1:15 PM	9/18/2012	4.01	92.58	0.59	0.01	ND	0.08	1.24	98.51	
10/25/2012	11:37 AM	10/26/2012	3.94	92.68	0.59	0.01	ND	0.12	1.37	98.71	
12/13/2012	12:28 PM	12/14/2012	1.87	92.70	0.66	1.12	ND	0.02	1.12	97.49	
1/15/2013	10:40 AM	1/16/2013	1.82	95.15	0.67	0.02	ND	0.02	1.18	98.86	
2/1/2013	11:50 AM	2/6/2013	1.68	96.68	0.56	0.01	ND	0.04	1.11	100.08	
2/7/2013	11:10 AM	2/12/2013	2.06	92.77	0.01	0.01	ND	0.04	1.18	96.07	
2/13/2013	11:05 AM	2/15/2013	2.04	94.89	0.72	0.02	ND	0.03	1.09	98.79	
2/28/2013	11:00 AM	3/5/2013	4.69	94.94	0.72	0.02	ND	0.04	1.29	101.70	
3/8/2013	11:10 AM	3/11/2013	4.74	94.69	0.01	0.01	ND	0.04	1.09	100.58	
5/20/2013										0.00	no sample, cyl leak
7/2/2013	10:06 AM	7/3/2013	4.18	92.46	0.75	0.03	ND	0.08	0.98	98.48	
7/12/2013	11:15 AM	7/15/2013	4.34	92.27	0.53	0.01	ND	0.06	1.05	98.26	
7/18/2013	2:00 PM	7/23/2013	4.36	92.18	0.75	0.02	ND	0.06	1.18	98.55	
8/2/2013	11:04 AM	8/5/2013	4.51	91.55	0.68	<0.01	ND	0.05	1.04	97.83	
8/30/2013	12:25 PM	9/3/2013	4.83	91.55	0.65	0.01	ND	0.06	1.16	98.26	
9/5/2013	10:16 AM	9/6/2013	4.86	90.97	0.64	0.06	ND	0.01	0.72	97.26	
9/10/2013	10:12 AM	9/11/2013	4.81	92.44	0.69	0.02	ND	0.05	1.13	99.14	
9/12/2013	11:20 AM	9/12/2013	3.62	92.70	0.68	0.03	ND	ND	0.72	97.75	
9/19/2013	11:10 AM	9/20/2013	4.62	91.86	0.68	0.05	ND	ND	0.71	97.91	
10/21/2013	11:30 AM	10/22/2013	4.50	91.67	0.67	0.00	ND	0	0.87	97.71	
11/14/2013	10:55 AM	11/15/2013	4.59	91.46	0.69	0.02	ND	0.11	1.35	98.22	
3/27/2014	11:55 AM	4/1/2014	4.44	81.49	0.64	0.01	ND	1.82	7.94	96.35	
07/16/14	11:58 AM	07/17/14	5.00	93.81	0.71	0.01	ND	0.08	1.23	100.84	
09/30/14	10:55 AM	10/02/14	4.63	91.60	0.73	0.02	ND	0.13	1.56	98.67	
03/23/15	11:23 AM	03/24/15	5.22	91.41	0.73	0.01	ND	0.13	1.51	99.01	
07/29/15	10:56 AM	07/30/15	4.11	92.28	0.74	<0.01	ND	0.12	1.36	98.61	
12/02/15	10:55 AM	12/02/15	3.26	81.75	0.67	ND	ND	2.16	8.79	96.63	
										0.00	

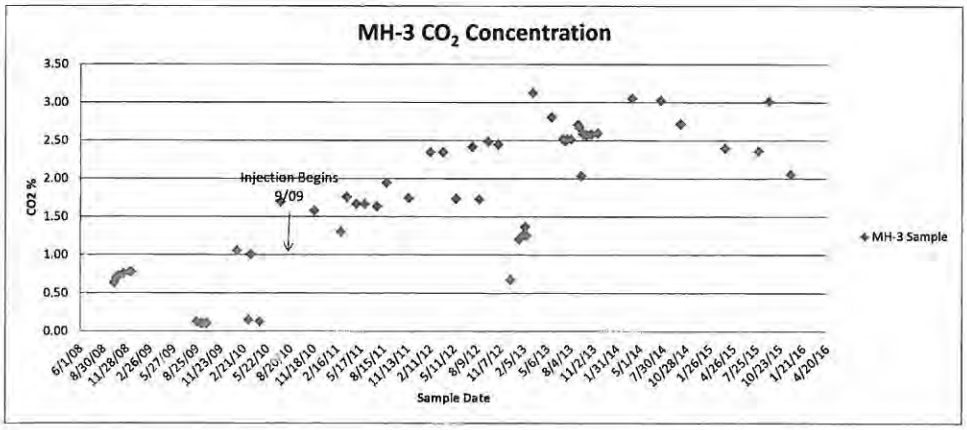
Insert Row on Line above to add new sample data



Gas Analysis
Well No. MH-3

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		10/20/2008	0.64	98.82	0.28	NA	0.00	0.28	2.67	102.69	
10/17/2008		10/20/2008	0.70	99.51	0.23	NA	0.00	0.10	2.03	102.57	
10/24/2008		10/27/2008	0.73	99.60	0.23	NA	0.00	0.10	2.11	102.77	
10/31/2008	8:33 AM	11/3/2008									sample invalid, analytical system error
11/14/2008	9:03 AM	11/20/2008	0.76	97.02	0.22	NA	0.00	0.17	2.80	100.97	
12/8/2008	8:54 AM	12/10/2008	0.78	96.67	0.19	NA	0.00	0.10	2.07	99.81	
12/15/2008	8:54 AM	12/16/2008	0.78	98.87	0.19	NA	0.00	0.05	1.97	101.86	
8/25/2009	10:30 AM	8/27/2009	0.13	93.08	2.20	0.53	0.00	0.02	2.69	98.65	
	Injection Begins 9/8/2009										
9/9/2009	11:00 AM	9/10/2009	0.11	93.95	2.24	0.53		0.00	2.81	99.64	
9/16/2009	12:28 PM	9/17/2009	0.11	94.68	2.25	0.53		0.05	3.00	100.62	
9/30/2009	10:45 AM	10/1/2009	0.11	93.99	2.22	0.53		0.03	2.69	99.57	
12/10/2009											no sample, access road impassable
1/26/2010	12:48 PM	1/27/2009	1.06	93.83	1.16	0.25		0.08	2.38	98.76	
3/9/2010	11:32 AM	3/11/2010	0.15	93.33	2.27	0.53		0.09	2.93	99.30	
3/19/2010	3:20 PM	3/23/2010	1.01	93.38	0.74	0.15		0.08	2.88	98.24	
4/22/2010	1:31 PM	4/26/2010	0.13	93.55	2.26	0.53		0.04	2.66	99.17	
7/12/2010	1:21 PM	7/13/2010	1.70	94.28	0.22	0.01		0.04	2.27	98.52	
11/19/2010	12:54 PM	7/23/2010	1.58	93.63	0.24	0.02		0.06	2.38	97.91	
2/15/2011											not sampled
3/2/2011	12:16 PM	3/3/2011	1.31	93.50	0.26	0.02		0.10	2.90	98.09	
3/24/2011	12:45 PM	3/25/2011	1.76	94.07	0.24	0.01		0.10	2.46	98.64	
4/29/2011	1:14 PM	5/3/2011	1.67	93.84	0.24	0.45	0.00	1.24	2.59	100.03	
6/1/2011	1:41 PM	6/7/2011	1.67	94.32	0.02	0.02	0.00	0.03	2.30	98.36	
7/18/2011	12:48 PM	7/20/2011	1.64	94.60	0.21	0.01	0.00	0.02	2.26	98.74	
8/23/2011	1:08 PM	8/26/2011	1.95	94.13	0.23	0.01	0.00	0.05	2.34	98.71	
10/17/2011	11:40 AM	10/18/2011								0.00	no sample
11/17/2011	10:05 AM	11/18/2011	1.75	93.81	0.18	0.02	0.00	0.37	2.39	98.52	
2/9/2012	12:31 PM	2/10/2012	2.35	93.91	0.20	<0.01	0.00	0.04	2.27	98.77	
3/28/2012	12:46 PM	3/29/2012	2.35	93.40	0.20	<0.01	ND	0.04	2.22	98.21	
5/17/2012	12:59 PM	5/18/2012	1.74	94.10	0.22	<0.01	ND	0.04	2.18	98.28	
7/18/2012	12:43 PM	7/19/2012	2.42	94.42	0.19	<0.01	ND	0.04	2.16	99.23	
8/15/2012	12:35 PM	8/16/2012	1.73	94.95	0.14	<0.01	ND	0.04	1.84	98.70	
9/17/2012	1:55 PM	9/18/2012	2.49	93.68	0.18	0.01	ND	0.09	2.20	98.65	
10/25/2012	12:18 PM	10/26/2012	2.45	93.93	0.18	0.01	ND	0.13	2.31	99.01	
12/13/2012	12:30 PM	12/14/2012	0.68	94.91	0.22	0.02	ND	0.03	2.39	98.25	
1/15/2013	11:11 AM	1/16/2013	1.21	94.26	0.29	0.02	ND	0.02	1.99	97.79	
2/1/2013	12:40 PM	2/6/2013	1.27	97.17	0.29	0.01	ND	0.04	1.82	100.60	
2/7/2013	11:40 AM	2/12/2013	1.37	94.84	0.26	0.01	ND	0.04	2.06	98.58	
2/13/2013	11:33 AM	2/15/2013	1.26	96.24	0.28	0.01	ND	0.04	1.83	99.66	
2/28/2013										0.00	no sample, access road impassable
3/8/2013	11:53 AM	3/11/2013	3.13	96.53	0.34	0.18	ND	0.04	1.81	102.03	
5/20/2013	12:21 PM	5/24/2013	2.81	94.30	0.42	0.15	ND	0.07	2.20	99.95	
7/2/2013	12:10 PM	7/3/2013	2.52	93.77	0.35	0.02	ND	0.06	1.50	98.22	
7/12/2013	12:25 PM	7/15/2013	2.50	93.63	0.12	0.12	ND	0.06	2.00	98.43	
7/18/2013	10:40 AM	7/23/2013	2.52	93.92	0.30	0.02	ND	0.06	2.06	98.88	
8/2/2013	12:30 PM	8/5/2013	2.52	93.11	0.22	<0.01	ND	0.07	2.06	97.98	
8/30/2013	11:23 AM	9/3/2013	2.71	93.11	0.19	0.05	ND	0.07	2.06	98.19	
9/5/2013	10:16 AM	9/6/2013	2.67	92.86	0.19	0.06	ND	0.01	1.40	97.19	
9/12/2013	10:00 AM	9/12/2013	2.04	94.19	0.20	0.04	ND	ND	1.31	97.78	
9/19/2013	12:07 PM	9/20/2013	2.59	92.73	0.20	0.05	ND	ND	1.37	96.94	
10/3/2013	12:30 PM	10/4/2013	2.58	94.26	0.21	0.00	ND	0	1.34	98.39	
10/21/2013	11:58 AM	10/22/2013	2.59	93.87	0.00	0.00	ND	0	1.56	98.02	
11/14/2013	10:25 AM	11/15/2013	2.60	93.13	0.20	0.01	ND	0.10	2.12	98.16	
3/27/2014	1:07 PM	4/1/2014	3.05	92.38	ND	0.01	ND	0.13	1.99	97.56	
07/16/14	1:13 PM	07/17/14	3.03	94.21	0.24	0.01	ND	0.08	1.85	99.42	
09/30/14	12:40 PM	10/02/14	2.72	94.49	0.22	0.01	ND	0.10	2.36	99.90	
03/23/15	11:50 AM	03/24/15	2.40	93.69	0.23	0.02	ND	0.08	2.06	98.48	
07/29/15	12:10 PM	07/30/15	2.37	94.21	0.24	0.01	ND	0.07	2.05	98.95	
09/09/15	11:32 AM	09/10/15	3.02	93.49	0.24	0.01	ND	0.22	2.55	99.53	
12/02/15	12:30 PM	12/02/15	2.06	91.48	0.24	0.01	ND	0.30	2.81	96.90	
										0.00	

Insert Row on Line above to add new sample data



Gas Analysis
Well No. MH-5

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		10/20/2008									sample invalid, ambiant air contamination
10/17/2008		10/20/2008	0.05	99.13	1.82	NA	0.00	0.08	2.75	103.83	
10/24/2008		10/27/2008	0.05	98.79	1.83	NA	0.00	0.18	3.11	103.96	
10/31/2008	8:36 AM	11/3/2008	0.07	96.84	1 84	NA	0.00	0.07	2.49	101.31	
11/14/2008	9:04 AM	11/18/2008									sample invalid, ambiant air contamination
12/8/2008	8:55 AM	12/10/2008	0.05	97.16	1.74	NA	0.00	0.11	3.52	102.58	
12/15/2008	8:55 AM	12/16/2008	3.01	96.35	0.63	NA	0.00	0.07	0.95	101.01	
8/25/2009	10:35 AM	8/27/2009	0.10	93.58	2.21	0.53	0 00	0.02	2.71	99.15	
	Injection Begins 9/8/2009										
9/9/2009	1:47 PM	9/10/2009	0.70	92.11	3.44	0.01		0.06	1.29	97.61	
9/16/2009	12:31 PM	9/17/2009	0.10	95.01	2.25	0.54		0.03	2.72	100.65	
9/30/2009	10:48 AM	10/1/2009	0.11	94.06	2.23	0.53		0.02	2.64	99.59	
12/10/2009											no sample, access road impassable
1/26/2010	12:54 PM	1/27/2010	0.12	93.77	2.30	0.54		0.07	2.68	99.48	
3/9/2010	11:35 AM	3/11/2010	0.13	95.97	2.28	0.54		0.07	2.29	101.28	
3/19/2010	3:13 PM	3/23/2010	0.20	93.14	2.11	0.50		0.21	3.40	99.56	
4/22/2010	1:35 PM	4/26/2010	0.60	86.76	1.93	0.42		1.44	7.27	98.42	
7/12/2010	1:20 PM	7/13/2010	1.70	94.36	0.22	0.01		0.03	2.25	98.57	
11/19/2010	12:56 PM	11/23/2010	1.57	94.36	0.25	0.02		0.04	2.31	98.55	
2/15/2011											not sampled
3/2/2011	12:58 PM	3/2/2011	0.02	92.32	1.93	0.50		0.11	4.94	99.82	
3/24/2011	12:42 PM	3/25/2011	0.12	94.02	2.29	0.54		0.06	3.08	100.11	
4/29/2011	1:12 PM	5/3/2011	0.13	93.87	2.33	0.01		0.10	2.88	99.32	
6/1/2011	1:40 PM	6/7/2011	0.14	93.76	2.33	0.55	0.00	0.05	2.87	99.70	
7/18/2011	12:46 PM	7/20/2011	0.14	94.04	2.20	0.52	0.00	0.03	2.80	99.73	
8/23/2011	1:05 PM	8/26/2011	0.15	93.70	2.35	0.52	0.00	0 04	2.78	99.54	
10/17/2011										0.00	not sampled
11/17/2011	1:08 PM	11/18/2011	0.16	93.95	2.16	0.47	0.00	0.05	2.74	99.53	
2/9/2012	12:28 PM	2/10/2012	0.21	94.33	2.19	0.40	0.00	0.05	2.71	99.89	
3/28/2012	12:45 PM	3/29/2012	0.21	93.79	2.19	0.40	ND	0.04	2.69	99.32	
5/17/2012	12:58 PM	5/18/2012	0.14	94.11	2.36	0.55	ND	0.04	2.72	99.92	
7/18/2012	12:40 PM	7/19/2012	0.21	94.28	2.19	0.40	ND	0.02	2.65	99.75	
8/15/2012	12:34 PM	8/16/2012	0.15	94.00	2.38	0.55	ND	0.07	2.83	99.98	
9/17/2012	1:52 PM	9/18/2012	0.15	93.26	2.17	0.40	ND	0.10	2.87	98.95	
10/25/2012	12:18 PM	10/26/2012	0.19	92.50	2.17	0.41	ND	0.12	2.92	98.31	
12/13/2012	12:28 PM	12/14/2012	0.09	92.36	2.09	0.01	ND	0.03	2.61	97.19	
1/15/2013	11:10 AM	1/16/2013	0.16	93.68	2.18	0.39	ND	0.03	2.67	99.11	
2/1/2013										0.00	not sampled
2/7/2013	11:40 AM	2/12/2013	0.14	93.62	2.00	0.40	ND	0.06	3.44	99.66	
2/13/2013	11:33 AM	2/15/2013	0.19	96.71	0.29	0.67	ND	0.04	2 64	100.54	
2/28/2013										0.00	no sample, access road impassable
3/8/2013	11:52 AM	3/11/2013	0.37	96.32	2.16	0.41	ND	0.05	3.26	102.57	
5/20/2013	12:20 PM	5/24/2013	0.44	94.55	2.67	0.34	ND	0.08	2.82	100.90	
7/2/2013	12:10 PM	7/3/2013	0.18	93.98	2.19	0.41	ND	0.06	2.22	99.04	
7/12/2013	12:25 PM	7/15/2013	0.18	93.42	1.44	0.29	ND	0.06	2.74	98.13	
7/18/2013	10:45 AM	7/23/2013	0.19	93.68	2.25	0.42	ND	0.07	2.81	99.42	
8/2/2013	12:28 PM	8/5/2013	0.19	92.95	2.18	0.44	ND	0.06	2.83	98.65	
8/30/2013	11:22 AM	9/3/2013	0.19	92.95	2.07	0.44	ND	0.07	2.84	98.56	
9/5/2013	10:19 AM	9/6/2013	0.19	93.46	2.05	0.45	ND	0.02	2.08	98.25	
9/12/2013	10:03 AM	9/12/2013	0.14	94.37	2.27	0.44	ND	ND	1.90	99.12	
9/19/2013	12:10 PM	9/20/2013	0.18	92.59	2.17	0.44	ND	0	2.17	97.56	
10/3/2013	12:33 PM	10/4/2013	0.17	94.13	2.11	0.43	ND	0	2.18	99.02	
10/21/2013	12:02 PM	10/22/2013	0.18	93.23	2.15	0.46	ND	0	2.43	98.54	
11/14/2013	10:24 AM	11/15/2013	0.17	92.80	2.13	0.41	ND	0.10	3.00	98.61	
3/27/2014	1:08 PM	4/1/2014	0.16	92.45	2.09	0.38	ND	0.13	3.07	98.27	
07/16/14	1:13 PM	07/17/14	0.17	94.15	2.13	0.40	ND	0.10	2.94	99.89	
09/30/14	12:40 PM	10/02/14	0.19	92.27	2.16	0.40	ND	0.11	2.94	98.07	
03/23/15	11:53 AM	03/24/15	0.14	93.93	2.22	0.41	ND	0.07	2.78	99.55	
07/29/15	12:15 PM	07/30/15	0.14	94.87	2.21	0.41	ND	0.07	2.79	100.49	
09/09/15	11:34 AM	09/10/15	0.18	94.55	2.21	0.41	ND	0.09	2.73	100.16	
12/02/15	12:35 PM	12/02/15	0.13	92.04	2.19	0.41	ND	0.24	3.26	98.26	
										0.00	

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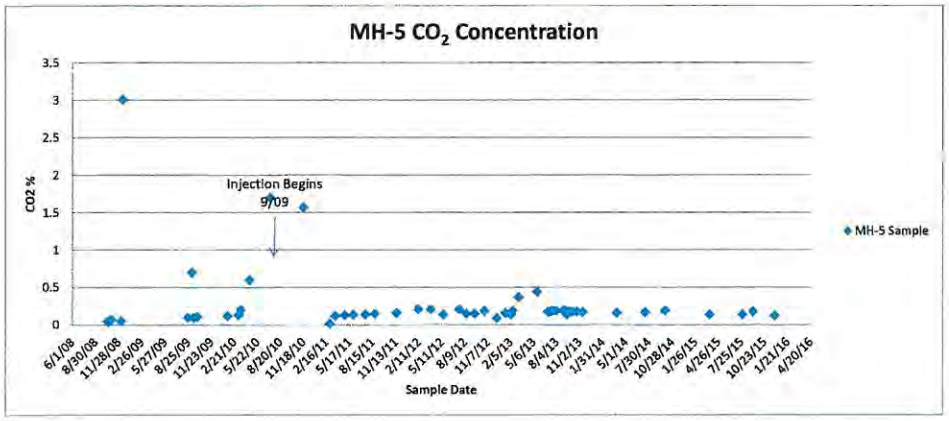

Gas Analysis
Well No. MH-11

Sample Date	Time	Analysis Date	% Composition CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											no sample, sampling hardware removed since last visit
10/17/2008		10/20/2008	0.05	95.81	1.57	NA	0.00	0.10	4.19	101.72	
10/24/2008		10/27/2008	0.10	95.97	1.79	NA	0.00	0.53	4.35	102.74	
10/31/2008	11:30 AM	11/3/2008	0.10	97.11	1.85	NA	0.00	0.01	3.03	102.10	
11/14/2008	12:34 PM	11/20/2008	0.22	94.89	1.74	NA	0.00	0.95	4.83	102.63	
12/8/2008	11:35 AM	12/10/2008	0.15	96.86	1.75	NA	0.00	0.32	3.83	102.91	
12/15/2008	11:35 AM	12/18/2010	0.12	97.64	1.86	NA	0.00	0.05	2.85	102.52	
8/25/2009	1:48 PM	8/27/2008	0.04	92.42	1.83	0.53		0.03	4.46	99.31	
	Injection Begins 9/8/2009										
9/9/2009	11:52 AM	9/10/2009	0.03	92.37	1.83	0.53		0.06	4.55	99.37	
9/16/2009	10:54 AM	9/17/2009	1.97	94.80	0.69	0.06		0.04	1.33	98.89	
9/30/2009	9:58 AM	10/1/2009	0.02	92.23	1.82	0.52		0.06	4.48	99.13	
12/10/2009	12:22 PM	12/14/2009	0.03	93.23	1.80	0.50		0.08	4.55	100.19	
1/26/2010	11:39 AM	1/27/2010	0.03	92.32	1.81	0.51		0.05	4.43	99.15	
3/9/2010	9:43 AM	3/11/2010	0.04	93.24	1.85	0.54		0.10	4.50	100.27	
3/19/2010	11:48 AM	3/23/2010	0.02	91.45	1.80	0.52		0.30	5.31	99.40	
4/22/2010	12:12 PM	4/26/2010	0.02	91.21	1.83	0.53		0.05	4.06	97.70	
7/12/2010	10:56 AM	7/13/2010	0.05	92.15	1.89	0.51		0.04	3.96	98.60	
11/19/2010											no gas flow at well head
2/15/2011											not sampled
3/2/2011											not sampled
3/24/2011	11:56 AM	3/25/2011	0.45	88.64	1.90	0.45		1.24	7.67	100.35	
4/29/2011	12:00 PM	5/3/2011	0.16	93.71	2.17	0.02	0.00	0.08	3.06	99.20	
6/1/2011	10:30 AM	6/7/2011	0.16	93.80	2.15	0.51	0.00	0.03	2.99	99.64	
7/18/2011	10:13 AM	7/20/2011	0.31	93.25	2.01	0.48	0.00	0.04	3.06	99.15	
8/23/2011	1:00 PM	8/26/2011	0.15	93.54	2.13	0.02	0.00	0.04	3.04	98.92	
10/17/2011	10:22 AM	10/18/2011	0.11	93.54	1.77	0.42	0.00	0.14	3.42	99.40	
11/17/2011	11:24 AM	11/18/2011	0.16	93.62	1.93	0.43	0.00	0.09	3.13	99.36	
2/9/2012	1:00 PM	2/10/2012	0.22	94.12	1.92	0.36	0.00	0.05	3.01	99.68	
3/28/2012	10:55 AM	3/29/2012	0.21	93.69	1.91	0.36	ND	0.04	2.97	99.18	
5/17/2012	11:05 AM	5/18/2012	0.13	93.63	2.12	0.50	ND	0.05	2.99	99.42	
7/18/2012	10:42 AM	7/19/2012	0.21	94.09	1.90	0.38	ND	0.02	2.94	99.52	
8/15/2012	11:05 AM	8/16/2012	0.74	93.98	1.79	0.39	ND	0.06	2.52	99.48	
9/17/2012	12:24 PM	9/18/2012	0.14	93.27	1.89	0.36	ND	0.10	3.14	98.90	408
10/25/2012	10:41 AM	10/26/2012	0.18	96.56	1.89	0.36	ND	0.13	3.18	102.30	
12/13/2012	11:00 AM	12/14/2012	0.09	93.31	1.85	0.39	ND	0.03	2.11	97.78	
1/15/2013	10:10 AM	1/16/2013	0.15	94.59	1.88	0.37	ND	0.03	3.01	100.03	
2/1/2013	11:15 AM	2/8/2013	0.16	95.44	1.90	0.37	ND	0.05	2.87	100.79	
2/7/2013	10:25 AM	2/12/2013	0.16	96.38	1.93	0.39	ND	0.05	3.03	101.94	
2/13/2013	10:26 AM	2/15/2013	0.17	96.75	1.93	0.38	ND	0.04	3.02	102.29	
2/28/2013	10:13 AM	3/5/2013	0.39	96.48	1.94	0.38	ND	0.08	3.06	102.33	
3/8/2013	10:30 AM	3/11/2013	0.37	94.68	1.88	0.37	ND	0.05	2.91	100.26	
5/20/2013	10:34 AM	5/23/2013	0.46	92.53	3.22	0.40	ND	0.07	2.84	99.52	
7/2/2013	10:30 AM	7/3/2013	0.18	95.22	1.82	0.37	ND	0.06	2.33	99.98	
7/12/2013	10:25 AM	7/15/2013	0.18	92.75	1.25	0.26	ND	0.07	2.91	97.42	
7/18/2013	1:25 PM	7/23/2013	0.18	92.91	1.93	0.38	ND	0.23	4.03	99.66	
8/2/2013	10:30 AM	8/5/2013	0.17	92.09	1.95	0.39	ND	0.22	3.47	98.29	
8/30/2013	12:48 PM	9/3/2013	8.86	82.96	1.73	0.39	ND	0.42	3.92	98.28	
9/4/2013	10:09 AM	9/4/2013	21.78	72.76	1.43	0.36	ND	0.06	2.23	98.62	
9/5/2013	11:20 AM	9/6/2013	27.08	66.81	1.36	0.34	ND	0.07	1.54	97.20	
9/10/2013	10:00 AM	9/11/2013	13.84	80.66	1.77	0.38	ND	0.13	2.60	99.38	
9/12/2013	11:10 AM	9/12/2013	8.51	83.73	1.80	0.39	ND	0.00	1.85	96.28	
9/19/2013	10:30 AM	9/20/2013	6.85	88.16	1.80	0.41	ND	0	1.96	99.24	
10/3/2013	11:57 AM	10/4/2013	4.76	89.24	1.71	0.41	ND	0	2.03	98.19	
10/21/2013	11:15 AM	10/22/2013	3.30	90.66	1.90	0.43	ND	0	2.31	98.65	
11/14/2013	11:05 AM	11/15/2013	3.11	90.11	1.86	0.41	ND	0.11	2.87	98.47	
3/27/2014	10:55 AM	4/1/2014	3.04	90.06	1.93	0.44	ND	0.21	3.17	98.85	
07/16/14	9:40 AM	07/17/14	1.66	91.06	1.96	0.37	ND	0.21	3.44	98.70	
09/30/14	9:41 AM	10/02/14	1.19	91.69	1.94	0.37	ND	0.09	2.89	98.17	
03/23/15	10:38 AM	03/24/15	0.56	93.57	1.98	0.38	ND	0.08	2.78	99.35	
07/29/15	10:15 AM	07/30/15	0.43	95.54	2.00	0.38	ND	0.07	2.74	101.15	
09/09/15	9:45 AM	09/10/15	0.47	94.46	2.00	0.38	ND	0.09	2.66	100.06	
12/02/15	3:35 PM	12/02/15	0.27	93.16	1.99	0.37	ND	0.25	3.27	99.31	
										0.00	

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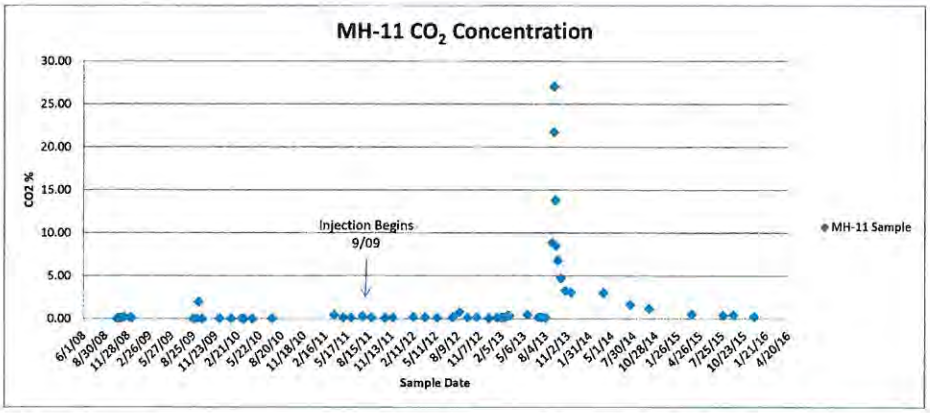
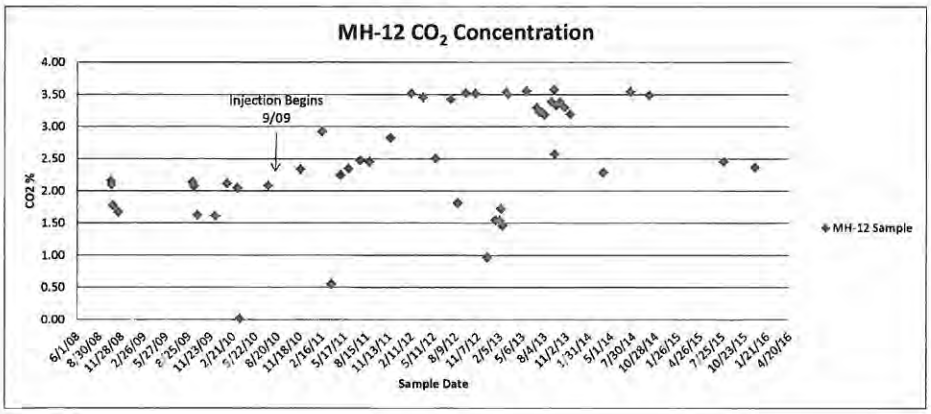


Gas Analysis
Well No. MH-12

Sample Date	Time	Analysis Date	% Composition CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											no sample, sampling hardware removed since last visit
10/17/2008		10/20/2008	2.10	96.60	0.58	NA	0.00	0.34	1.99	101.61	
10/17/2008		10/27/2008	2.16	98.48	0.56	NA	0.00	0.10	1.31	102.61	
10/24/2008		10/27/2008	1.78	98.91	0.53	NA	0.00	0.23	< 01	101.45	
10/31/2008	11:11 AM	11/3/2008									sample invalid, analytical system error
11/14/2008	12:27 PM	11/20/2008	1.68	98.45	0.54	0.00	0.00	0.32	1.63	102.62	
12/8/2008	11:33 AM	12/10/2008									sample invalid, ambiant air contamination
12/15/2008	11:33 AM	12/16/2008									no sample, cylinder leaked
8/25/2009	1:45 PM	8/27/2008									no sample, cylinder leaked
	Injection Begins 9/8/2009										
9/9/2009	10:19 AM	9/10/2009	2.14	94.02	0.62	0.03		0.03	1.58	98.42	
9/16/2009	10:50 AM	9/17/2009	2.08	94.77	0.60	0.03		0.08	1.23	98.79	
9/30/2009	10:01 AM	10/1/2009	1.63	94.61	0.53	0.03		0.03	1.05	97.88	
12/10/2009	12:17 PM	12/14/2009	1.62	95.61	0.53	0.03		0.05	1.17	99.01	
1/26/2010	11:35 AM	1/27/2010	2.12	92.52	0.60	0.03		0.05	1.07	96.39	
3/9/2010	9:38 AM	3/11/2010	2.05	93.81	0.60	0.03		0.07	1.19	97.75	
3/19/2010	11:45 AM	3/23/2010	0.02	83.07	1.67	0.47		2.16	12.13	99.52	
4/22/2010											no sample, cylider leaked
7/12/2010	10:52 AM	7/13/2010	2.09	94.55	0.60	0.03		0.04	1.03	98.34	
11/19/2010	11:05 AM	11/23/2010	2.34	94.56	0.63	0.03		0.03	0.98	98.57	
2/15/2011	11:25 AM	2/16/2010	2.93	92.71	0.66	0.02		0.04	1.55	97.91	
3/2/2011											not sampled
3/24/2011	11:50 AM	3/25/2011	0.56	95.57	1.68	0.03		0.08	1.28	99.20	
4/29/2011	11:56 AM	5/3/2011	2.25	93.62	0.65	0.03	0.00	0.08	1.05	97.68	
6/1/2011	10:26 AM	6/7/2011	2.35	94.12	0.64	0.03	0.00	0.03	1.00	98.17	
7/18/2011	10:20 AM	7/20/2011	2.48	93.67	0.61	0.03	0.00	0.08	1.19	98.06	
8/23/2011	10:05 AM	8/26/2011	2.46	93.74	0.66	0.45	0.00	0.03	1.03	98.37	
10/17/2011											no sample, sampling hardware needs replaced
11/17/2011	11:07 AM	11/18/2011	2.83	93.44	0.55	0.02	0.00	0.08	1.21	98.13	
2/9/2012	9:53 AM	2/10/2012	3.52	94.04	0.57	0.02	0.00	0.03	1.07	99.25	
3/28/2012	10:58 AM	3/29/2012	3.46	93.55	0.57	0.01	ND	0.03	1.07	98.69	
5/17/2012	11:09 AM	5/18/2012	2.51	93.52	0.68	0.03	ND	0.04	1.11	97.89	
7/18/2012	10:40 AM	7/19/2012	3.43	93.98	0.57	0.02	ND	0.02	1.13	99.15	
8/15/2012	11:10 AM	8/16/2012	1.82	94.85	0.62	0.04	ND	0.04	1.28	98.65	
9/17/2012	12:27 PM	9/18/2012	3.53	93.06	0.56	0.02	ND	0.10	1.35	98.62	409
10/25/2012	10:46 AM	10/26/2012	3.52	93.26	0.56	0.02	ND	0.11	1.38	98.85	
12/13/2012	10:45 AM	12/14/2012	0.97	95.07	0.63	0.04	ND	0.02	0.94	97.67	
1/15/2013	10:05 AM	1/16/2013	1.55	93.30	0.56	0.03	ND	0.02	1.18	96.64	
2/1/2013	11:20 AM	2/6/2013	1.55	96.57	0.56	0.03	ND	0.04	1.16	99.91	
2/7/2013	10:28 AM	2/12/2013	1.73	92.94	0.66	0.03	ND	0.04	1.17	96.57	
2/13/2013	10:30 AM	2/15/2013	1.47	95.63	0.56	0.04	ND	0.03	1.18	98.91	
2/28/2013	10:21 AM	3/5/2013	3.54	94.29	0.66	0.03	ND	0.04	1.17	99.73	
3/8/2013	10:30 AM	3/11/2013	3.51	95.15	0.58	0.03	ND	0.03	1.15	100.45	
5/20/2013	10:37 AM	5/23/2013	3.56	92.07	1.12	0.15	ND	0.06	1.19	98.15	
7/2/2013	10:30 AM	7/3/2013	3.30	92.83	0.55	0.03	ND	0.06	0.88	97.65	
7/12/2013	10:25 AM	7/15/2013	3.23	92.61	0.36	0.03	ND	0.06	1.20	97.49	
7/18/2013	1:30 PM	7/23/2013	3.24	93.44	0.67	0.03	ND	0.06	1.23	98.67	
8/2/2013	10:35 AM	8/5/2013	3.19	92.72	0.57	<0.01	ND	0.06	1.21	97.75	
8/30/2013	12:47 PM	9/3/2013	3.39	92.72	0.58	<0.01	ND	0.06	1.24	97.99	
9/10/2013	10:04 AM	9/11/2013	3.58	93.63	0.61	0.04	ND	0.05	1.18	99.09	
9/12/2013	11:12 AM	9/12/2013	2.58	93.65	0.61	0.05	ND	ND	0.80	97.69	
9/19/2013	10:30 AM	9/20/2013	3.34	92.25	0.57	ND	ND	ND	0.80	96.97	
10/3/2013	11:59 AM	10/4/2013	3.39	93.55	0.60	0.06	ND	0	0.83	98.43	
10/21/2013	11:18 AM	10/22/2013	3.31	93.61	0.57	0.00	ND	0	0.95	98.43	
11/14/2013	11:05 AM	11/15/2013	3.20	92.99	0.58	0.03	ND	0.10	1.41	98.31	
3/27/2014	11:00 AM	4/1/2014	2.29	92.82	0.48	0.02	ND	0.12	1.49	97.21	
07/16/14	9:44 AM	07/17/14	3.55	93.88	0.59	0.02	ND	0.07	1.27	99.38	
09/30/14	10:38 AM	10/02/14	3.49	92.69	0.59	0.03	ND	0.09	1.33	98.22	
07/29/15	10:15 AM	07/30/15	2.46	94.00	0.54	0.02	ND	0.08	1.36	98.46	
12/02/15	8:57 AM	12/02/15	2.37	91.40	0.60	0.03	ND	0.27	1.97	96.63	
										0.00	

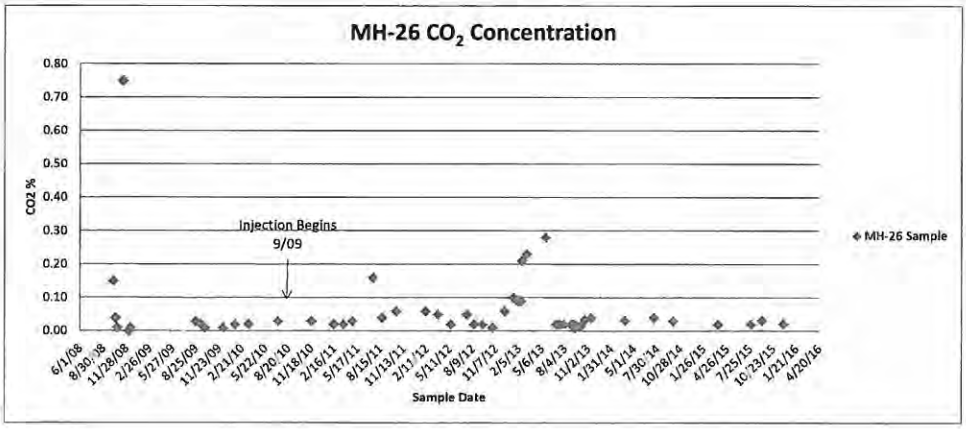
Insert Row on Line above to add new sample data



Gas Analysis
Well No. MH-26

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		10/20/2008	0.15	94.80	2.57	NA	0.00	0.34	2.89	100.75	
10/17/2008		10/20/2008	0.04	96.29	1.61	NA	0.00	0.17	4.25	102.36	
10/24/2008		10/27/2008	0.01	97.47	1.62	NA	0.00	0.17	4.37	103.64	
10/31/2008	11:00 AM	11/3/2008									sample invalid, analytical system error
11/14/2008	11:49 AM	11/20/2008	0.75	98.67	0.22	NA	0.00	0.27	3.04	102.95	
12/8/2008	12:34 PM	12/10/2008									no sample, cylinder leaked
12/15/2008	12:34 PM	12/16/2008	< 0.01	96.48	1.59	NA	0.00	0.02	4.11	102.21	
8/25/2009	2:10 PM	8/27/2009	0.03	92.25	1.84	0.48		0.05	4.90	99.55	
	Injection Begins 9/8/2009										
9/9/2009	10:16 AM	9/10/2009									no sample, cylinder leaked
9/16/2009	10:30 AM	9/17/2009	0.02	92.76	1.85	0.49		<0.01	4.99	100.11	
9/30/2009	9:22 AM	10/1/2009	0.01	92.54	1.85	0.48		0.02	4.79	99.69	
12/10/2009	11:32 AM	12/14/2009	0.01	92.88	1.89	0.48		0.06	5.03	100.35	
1/26/2010	10:46 AM	1/27/2010	0.02	91.50	1.85	0.47		0.10	5.28	99.22	
3/9/2010											no sample, access road impassable
3/19/2010	9:43 AM	3/23/2010	0.02	92.46	1.88	0.49		0.13	5.15	100.13	
4/22/2010											no sample, cylinder leaked
7/12/2010	11:45 AM	7/13/2010	0.03	92.85	1.88	0.49		0.04	5.06	100.35	
11/19/2010	10:34 AM	11/23/2010	0.03	93.06	1.89	0.48		0.04	4.94	100.44	
2/15/2011	9:57 AM	2/16/2010	0.02	91.86	1.87	0.47		0.05	5.33	99.60	
3/2/2011											not sampled
3/24/2011	11:27 AM	3/25/2011	0.02	92.37	1.88	0.47		0.08	5.37	100.19	
4/29/2011	11:18 AM	5/3/2011	0.03	92.01	1.88	0.47	0.00	0.08	5.49	99.96	
6/1/2011											not sampled, sampling hardware problem
7/18/2011	2:05 PM	7/20/2011	0.16	92.73	1.77	0.45	0.00	0.04	5.12	100.27	
8/23/2011	11:24 AM	8/26/2011	0.04	92.62	1.89	0.49	0.00	0.05	5.11	100.20	
10/17/2011	11:40 AM	10/18/2011	0.06	96.11	1.74	0.43	0.00	0.01	3.83	102.18	
11/17/2011											no sample, cylinder leaked
2/9/2012	10:45 AM	2/10/2012	0.06	93.17	1.67	0.34	0.00	0.05	5.04	100.33	
3/28/2012	10:32 AM	3/29/2012	0.05	92.46	1.66	0.33	ND	0.04	5.36	99.90	
5/17/2012	10:43 AM	5/18/2012	0.02	92.02	1.87	0.46	ND	0.05	5.75	100.17	
7/18/2012	10:18 AM	7/19/2012	0.05	92.39	1.65	0.33	ND	0.03	5.68	100.13	
8/15/2012	10:33 AM	8/16/2012	0.02	92.05	1.88	0.46	ND	0.07	5.79	100.27	
9/17/2012	12:03 PM	9/18/2012	0.02	91.56	1.62	0.33	ND	0.08	5.82	99.43	
10/25/2012	10:05 AM	10/26/2012	0.01	91.91	1.62	0.33	ND	0.11	5.77	99.75	
12/13/2012	10:07 AM	12/14/2012	0.06	92.91	1.66	0.35	ND	0.03	4.19	99.20	
1/15/2013	9:32 AM	1/16/2013	0.10	91.65	1.72	0.34	ND	0.03	5.94	99.78	
2/1/2013	10:50 AM	2/6/2013	0.09	94.84	1.62	0.30	ND	0.06	5.84	102.75	
2/7/2013	9:55 AM	2/12/2013	0.09	92.58	1.65	0.36	ND	0.03	5.86	100.57	
2/13/2013	10:10 AM	2/15/2013	0.09	93.56	1.64	0.32	ND	0.36	6.91	102.88	
2/18/2013	9:58 AM	3/5/2013	0.21	94.61	1.66	0.35	ND	0.06	5.83	102.72	
3/8/2013	10:02 AM	3/11/2013	0.23	93.08	1.71	0.32	ND	0.06	5.76	101.16	
5/20/2013	10:04 AM	5/23/2013	0.28	91.58	3.00	0.39	ND	0.07	5.85	101.17	
7/2/2013	9:55 AM	7/3/2013	0.02	91.89	1.62	0.34	ND	0.08	5.45	99.40	
7/12/2013	9:55 AM	7/15/2013	0.02	91.65	1.07	0.24	ND	0.07	5.84	98.89	
7/18/2013	1:15 PM	7/23/2013	0.02	91.67	1.70	0.35	ND	0.07	5.97	99.78	
8/2/2013	10:06 AM	8/5/2013	0.02	90.94	1.64	0.36	ND	0.07	5.89	98.92	
8/30/2013	1:57 PM	9/3/2013	0.02	90.94	1.54	0.36	ND	0.07	5.92	98.85	
9/4/2013	9:46 AM	9/4/2013	0.02	91.69	1.37	0.39	ND	0.08	5.97	99.52	
9/5/2013	11:08 AM	9/6/2013	0.02	91.11	1.54	0.37	ND	0.02	5.19	98.25	
9/10/2013	9:54 AM	9/11/2013	0.02	91.21	1.72	0.36	ND	0.07	6.03	99.41	
9/12/2013	10:48 AM	9/12/2013	0.01	92.68	1.69	0.36	ND	ND	3.91	98.65	
9/19/2013	10:05 AM	9/20/2013	0.02	91.09	1.62	0.37	ND	0	5.22	98.32	
10/3/2013	11:40 AM	10/4/2013	0.02	91.21	1.57	0.36	ND	0	5.32	98.61	
10/21/2013	11:05 AM	10/22/2013	0.03	92.74	1.64	0.39	ND	0	5.60	100.54	
11/14/2013	11:26 AM	11/15/2013	0.04	91.46	1.63	0.38	ND	0.11	5.99	99.61	
3/27/2014	10:10 AM	4/1/2014	0.03	91.44	0.00	0.31	ND	0.14	6.02	97.94	
07/16/14	11:23 AM	07/17/14	0.04	90.68	1.61	0.33	ND	0.08	5.83	98.57	
09/30/14	9:50 AM	10/02/14	0.03	91.23	1.64	0.33	ND	0.08	5.86	99.17	
03/23/15	9:48 AM	03/24/15	0.02	92.25	1.63	0.33	ND	0.08	5.88	100.19	
07/29/15	9:48 AM	07/31/15	0.02	94.02	1.67	0.34	ND	0.02	5.80	101.87	
09/09/15	9:00 AM	09/10/15	0.03	92.36	1.65	0.33	ND	0.09	5.75	100.20	
12/02/15	9:15 AM	12/02/15	0.02	91.49	1.63	0.33	ND	0.24	6.31	100.02	
										0.00	

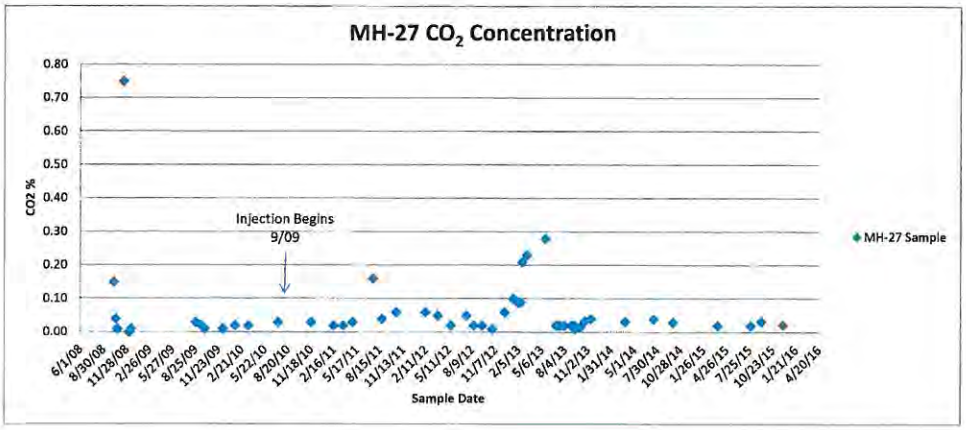
Insert Row on Line above to add new sample data



Gas Analysis
Well No. MH-27

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		10/20/2008	0.02	85.84	1.45	NA	0.00	2.35	10.72	100.38	
10/17/2008		10/20/2008	1.12	85.40	1.14	NA	0.00	2.47	10.02	100.15	
10/24/2008		10/27/2008	0.05	96.84	1.51	NA	0.00	0.38	4.97	103.75	
10/31/2008	10:55 AM	11/3/2008									sample invalid, analytical system error
11/14/2008	11:54 AM	11/20/2008	0.04	95.90	1.58	NA	0.00	0.16	4.30	101.98	
12/8/2008	12:19 PM	12/10/2008	0.13	78.06	1.55	NA	0.00	4.29	15.34	99.37	
12/15/2008	12:19 PM	12/16/2008	1.81	98.78	0.53	NA	0.00	0.05	1.04	102.21	
8/25/2009	2:02 PM	8/27/2009	< 0.01	91.12	1.79	0.43		0.05	4.97	98.37	
	Injection Begins 9/8/2009										
9/9/2009	9:30 AM	9/10/2009	0.01	92.38	1.80	0.52		0.04	5.11	99.86	
9/16/2009	10:08 AM	9/16/2009	0.01	92.60	1.81	0.52		0.12	5.11	100.17	
9/30/2009	9:02 AM	10/1/2009	0.01	92.30	1.79	0.52		0.05	4.94	99.61	
12/10/2009											no pressure at well head, suspect ice plugging
1/26/2010											no pressure at well head, suspect ice plugging
3/9/2010											no sample, access road impassable
3/19/2010	10:28 AM		0.02	89.47	1.77	0.50		0.50	6.48	98.74	
4/22/2010	11:30 AM	4/26/2010	0.01	92.62	1.81	0.52		0.03	4.68	99.67	
7/12/2010	11:30 AM	7/13/2010	0.01	92.51	1.81	0.52		0.04	4.92	99.81	
11/19/2010	10:14 AM	11/23/2010	0.02	91.61	1.81	0.51		0.12	5.14	99.21	
2/15/2011	11:31 AM										no sample, cylinder leaked
3/2/2011	11:05 AM	3/3/2011	0.05	92.10	1.82	0.53		0.08	5.06	99.64	
3/24/2011	10:46 AM	3/25/2011	0.05	92.54	1.82	0.52		0.08	4.98	99.99	
4/29/2011	11:00 AM	5/3/2011	0.05	92.24	1.82	0.52	0.00	0.08	4.95	99.66	
6/1/2011	11:56 AM	6/7/2011	0.06	94.50	1.82	0.51	0.00	0.04	4.90	101.83	
7/18/2011	11:15 AM	7/20/2011	0.18	92.84	1.71	0.49	0.00	0.04	4.89	100.15	
8/23/2011	11:07 AM	8/26/2011	0.05	92.79	1.83	0.48	0.00	0.04	4.87	100.06	
10/17/2011	11:23 AM	10/18/2011	0.06	92.98	1.57	0.44	0.00	0.05	4.91	100.01	
11/17/2011	9:45 AM	11/18/2011	0.07	94.12	1.57	0.14	0.00	0.11	5.79	101.80	
2/9/2012	10:30 AM	2/10/2012	0.09	93.23	1.59	0.36	0.00	0.05	4.88	100.20	
3/28/2012	10:18 AM	3/29/2012	0.10	92.97	1.60	0.37	ND	0.04	4.85	99.93	
5/17/2012	10:23 AM	5/18/2012	0.06	92.97	1.82	0.52	ND	0.05	4.85	100.27	
7/18/2012	10:00 AM	7/19/2012	0.10	93.21	1.60	0.37	ND	0.03	4.80	100.11	
8/15/2012	10:17 AM	8/16/2012	0.06	92.68	1.83	0.52	ND	0.10	5.04	100.23	
9/17/2012	11:49 AM	9/18/2012	0.06	93.33	1.57	0.37	ND	0.07	4.92	100.32	
10/25/2012	9:48 AM	10/26/2012	0.07	92.74	1.57	0.38	ND	0.11	4.97	99.84	
12/13/2012	9:40 AM	12/14/2012	0.20	95.57	1.55	0.33	ND	0.05	3.66	101.36	
1/15/2013	9:14 AM	1/16/2013	0.12	93.16	1.66	0.39	ND	0.04	4.97	100.34	
2/1/2013										0.00	bad sample
2/7/2013	9:38 AM	2/12/2013	0.13	93.34	1.70	0.40	ND	0.05	4.96	100.58	
2/13/2013	9:50 AM	2/15/2013	0.10	95.72	1.55	0.39	ND	0.06	4.89	102.71	
2/28/2013	9:45 AM	3/5/2013	0.26	95.45	1.65	0.39	ND	0.06	4.89	102.70	
3/8/2013	9:55 AM	3/11/2013	0.27	95.59	1.66	0.38	ND	0.05	4.88	102.83	
5/20/2013	9:50 AM	5/23/2013	0.33	92.71	2.90	0.42	ND	0.09	4.90	101.35	
7/2/2013	9:45 AM	7/3/2013	0.08	92.92	1.58	0.38	ND	0.09	4.46	99.51	
7/12/2013	9:45 AM	7/15/2013	0.08	92.51	1.04	0.27	ND	0.08	4.88	98.86	
7/18/2013	1:00 PM	7/23/2013	0.08	92.90	1.62	0.39	ND	0.10	5.05	100.14	
8/2/2013	9:53 AM	8/5/2013	0.08	92.25	1.57	0.41	ND	0.11	5.10	99.52	
8/30/2013	1:43 PM	9/3/2013	0.08	92.25	1.50	0.36	ND	0.07	4.95	99.21	
9/4/2013	9:38 AM	9/4/2013	0.08	92.93	1.51	0.42	ND	0.09	4.99	100.02	
9/5/2013	11:00 AM	9/6/2013	0.08	91.81	1.50	0.42	ND	0.03	4.21	98.05	
9/10/2013	9:47 AM	9/11/2013	0.10	93.40	1.67	0.35	ND	0.07	4.94	100.53	
9/12/2013	10:43 AM	9/12/2013	0.06	93.58	1.58	0.41	ND	0.00	3.28	98.91	
9/19/2013	9:55 AM	9/20/2013	0.08	91.85	1.64	0.42	ND	0	4.21	98.21	
10/3/2013	11:17 AM	10/4/2013	0.08	93.45	1.53	0.00	ND	0	4.17	99.26	
10/21/2013	10:56 AM	10/22/2013	0.09	92.95	1.60	0.44	ND	0	4.56	99.65	
11/14/2013	11:18 AM	11/15/2013	0.10	92.80	1.59	0.42	ND	0.05	4.78	99.74	
3/27/2014	10:00 AM	4/1/2014	0.09	92.51	0.00	0.44	ND	0.14	5.02	98.19	
07/16/14	11:05 AM	07/17/14	0.09	94.40	1.57	0.37	ND	0.03	4.72	101.18	
09/30/14	9:42 AM	10/02/14	0.09	92.66	1.60	0.38	ND	0.02	4.66	99.41	
03/23/15	9:24 AM	03/24/15	0.06	92.98	1.59	0.37	ND	0.13	5.03	100.16	
09/09/15	3:40 PM	09/10/15	0.09	93.59	1.60	0.38	ND	0.11	4.78	100.53	
12/02/15	7:55 AM	12/02/15	0.06	92.38	1.58	0.37	ND	0.25	5.31	99.94	
										0.00	

Insert Row on Line above to add new sample data



Gas Analysis
Well No. 1588

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											not sampled
10/17/2008		10/20/2008	0.34	72.94	0.85	NA	0.00	5.33	19.02	98.48	
10/24/2008		10/27/2008	0.30	78.51	0.96	NA	0.00	4.42	15.42	99.61	
10/31/2008	8:01 AM	11/3/2008	0.28	81.60	0.94	NA	0.00	4.23	12.42	99.47	
11/14/2008	8:17 AM	11/18/2008	0.26	80.64	1.03	NA	0.00	4.63	16.64	103.20	
12/8/2008	8:16 AM	12/10/2008	0.29	79.53	0.91	NA	0.00	4.66	14.49	99.88	
12/15/2008	8:01 AM	12/16/2008	0.31	81.59	1.03	NA	0.00	4.02	13.23	100.18	
8/25/2009	10:00 AM	8/27/2009	0.39	77.33	1.19	0.29		3.63	16.27	99.10	
	Injection Begins 9/8/2009										
9/9/2009	11:31 AM	9/10/2009	0.39	78.49	1.20	0.30		3.30	15.30	98.98	
9/16/2009	12:09 PM	9/17/2009	0.39	80.42	1.23	0.31		2.92	13.82	99.09	
9/30/2009											no sample, access road impassable
12/10/2009											no sample, access road impassable
1/26/2010											no sample, access road impassable
3/9/2010											no sample, access road impassable
3/19/2010	1:09 PM		0.29	84.25	1.16	0.28		2.85	10.40	99.23	
4/22/2010	1:06 PM	4/24/2010	0.36	75.24	1.25	0.33		4.27	18.05	99.50	
7/12/2010	12:56 PM	7/13/2010	0.37	76.99	1.36	0.38		3.53	16.29	98.92	
11/19/2010	12:22 PM	11/23/2010	0.32	76.83	1.14	0.28		4.54	16.70	99.81	
2/15/2011											no sample, access road impassable
3/2/2011											no sample, access road impassable
3/24/2011											no sample, access road impassable
4/29/2011											no sample, access road impassable
6/1/2011	1:17 PM	6/7/2011	0.32	71.15	1.19	0.31	0.00	5.67	20.75	99.39	
7/18/2011	12:27 PM	7/19/2011	0.69	82.24	1.17	0.28	0.00	2.39	11.56	98.33	
8/23/2011	12:43 PM	8/26/2011	0.36	81.55	1.38	0.28	0.00	2.91	12.22	98.70	
10/17/2011	12:49 PM	10/18/2011	0.39	81.14	1.08	0.28	0.00	2.67	13.27	98.83	
11/17/2011										0.00	no sample, access road impassable
2/9/2012	12:01 PM	2/10/2012	0.56	86.66	1.11	0.26	0.00	1.96	9.51	100.06	
3/28/2012	12:00 PM	3/29/2012	0.49	81.24	1.12	0.28	ND	2.90	13.09	99.12	
5/17/2012	12:28 PM	5/18/2012	0.38	80.11	1.28	0.36	ND	3.06	14.08	99.27	
7/18/2012	12:11 PM	7/19/2012	0.37	70.35	0.94	0.22	ND	4.91	22.08	98.87	
8/15/2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/17/2012	2:45 PM	9/18/2012	0.35	82.67	1.62	0.46	ND	2.52	11.09	98.71	
10/25/2012										0.00	NO ACCESS DUE
12/13/2012										0.00	TO PIPELINE
1/15/2013										0.00	CONSTRUCTION
2/1/2013										0.00	
2/7/2013										0.00	
2/13/2013										0.00	
2/28/2013										0.00	
3/8/2013										0.00	
5/20/2013		5/23/2013	0.63	74.15	1.33	0.45	ND	4.13	18.30	98.99	
7/2/2013	11:40 AM	7/3/2013	0.43	78.70	1.36	0.44	ND	2.91	14.46	98.30	
7/12/2013											no sample, bag leak
7/18/2013	10:05 AM	7/23/2013	0.35	74.51	1.05	0.30	ND	4.87	17.50	98.58	
8/2/2013	11:55 AM	8/5/2013	0.40	86.13	1.41	0.43	ND	2.05	8.34	98.76	
8/30/2013		9/3/2013	0.47	85.21	0.47	<0.01	ND	1.48	8.95	96.58	
9/19/2013	11:42 AM	9/20/2013	0.37	76.64	1.47	0.50	ND	3.40	14.93	97.32	
3/27/2014	1:57 PM	4/1/2014	0.25	47.55	0.92	ND	ND	10.03	39.88	98.62	
07/16/14	2:05 PM	07/17/14	0.28	64.55	1.39	0.57	ND	6.04	25.63	98.46	
09/30/14	1:41 PM	10/01/14	0.31	79.29	2.14	0.77	ND	2.47	12.84	97.82	
03/23/15	12:50 PM	03/24/15	0.26	82.11	2.18	0.81	ND	2.46	12.47	100.29	
07/29/15	11:38 AM	07/30/15	0.14	38.08	0.96	0.37	ND	12.05	47.39	98.98	
09/09/15	11:00 AM	09/10/15	0.27	78.02	2.25	0.87	ND	2.94	14.47	98.82	
12/02/15	11:36 AM	12/02/15	0.13	50.62	1.57	0.64	ND	9.27	36.92	99.15	
										0.00	

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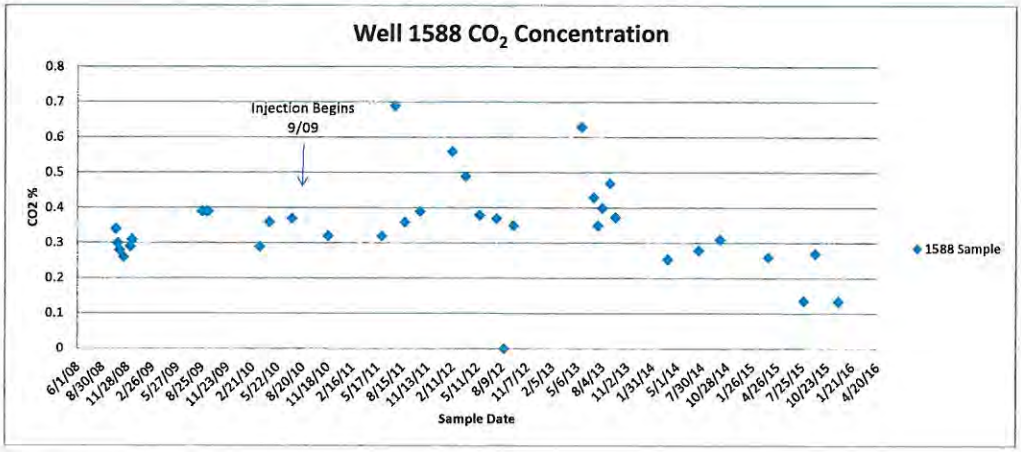
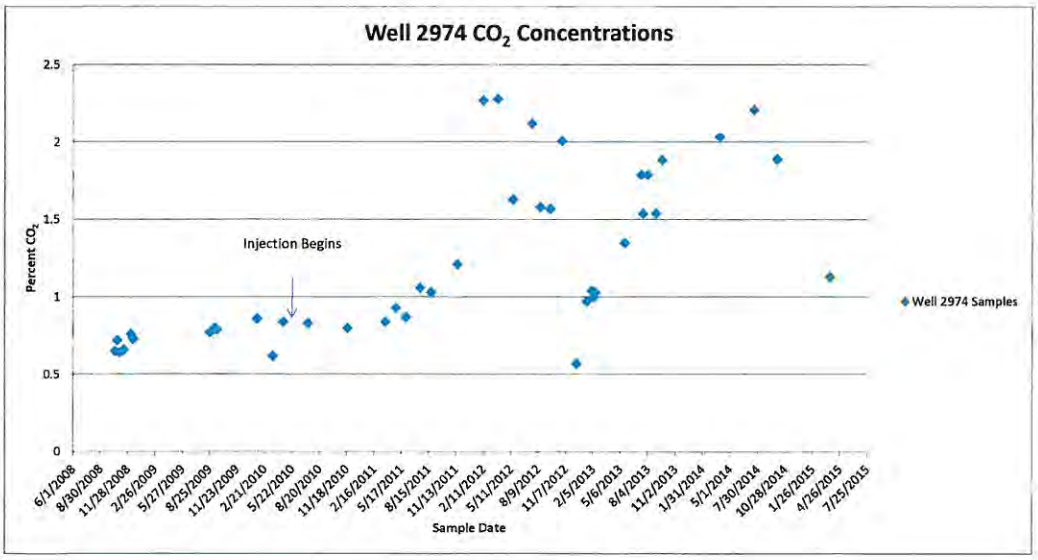


Gas Analysis
Well No. 2974

Sample Date	Time	Analysis Date	% Composition CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		no sample									
10/17/2008		10/20/2008	0.65	85.66	0.90	NA	0.00	3.00	10.92	101.13	
10/24/2008		10/27/2008	0.72	83.95	0.92	NA	0.00	2.82	11.90	100.31	
10/31/2008	8:25 AM	11/3/2008	0.64	83.88	0.89	NA	0.00	3.21	10.99	99.61	
11/14/2008	11:53 AM	11/18/2008	0.66	82.92	0.85	NA	0.00	3.73	12.04	100.20	
12/8/2008	3:45 PM	12/10/2008	0.76	90.83	0.93	NA	0.00	1.76	7.63	101.91	
12/15/2008	8:35 AM	12/16/2008	0.73	90.79	0.93	NA	0.00	1.54	7.72	101.71	
8/25/2009	10:48 AM	8/27/2009	0.77	84.17	1.05	0.56		1.99	10.47	99.01	
	Injection Begins 9/8/2009										
9/9/2009	12:14 PM	9/10/2009	0.80	85.62	1.09	0.21		1.38	9.51	98.61	
9/16/2009	12:43 PM	9/16/2009	0.79	87.67	1.12	0.22		2.11	9.03	100.94	
9/30/2009											no sample, access road impassable
12/10/2009											no sample, access road impassable
1/26/2010	1:06 PM	1/27/2010	0.86	88.34	1.11	0.20		0.86	7.56	98.93	
3/9/2010											no sample, access road impassable
3/19/2010	3:47 PM		0.62	86.27	1.07	0.20		1.95	8.95	99.06	
4/22/2010	1:48 PM	4/24/2010	0.84	86.63	1.11	0.21		1.44	9.05	99.28	
7/12/2010	:13:38	7/13/2010	0.83	81.54	1.07	0.20		2.39	12.66	98.69	
11/19/2010	1:20 PM	11/23/2010	0.80	74.99	0.95	0.16		4.48	18.28	99.66	
2/15/2011											not sampled
3/2/2011											not sampled
3/24/2011	1:15 PM	3/25/2011	0.84	85.06	0.94	0.01		1.73	10.34	98.92	
4/29/2011	1:51 PM	5/3/2011	0.93	83.51	1.00	0.02	0	2.81	10.81	99.08	
6/1/2011	1:59 PM	6/7/2011	0.87	79.40	0.92	0.15	0.00	3.64	13.97	98.95	
7/18/2011	1:16 PM	7/19/2011	1.06	87.93	0.99	0.17	0.00	0.95	6.84	97.94	
8/23/2011	1:26 PM	8/26/2011	1.03	85.14	1.01	0.16	0 00	1.91	9.07	98.32	
10/17/2011											not sampled
11/17/2011	1:08 PM	11/18/2011	1.21	87.87	0.91	0.13	0.00	1.13	7.32	98.57	
2/9/2012	12:46 PM	2/10/2012	2.27	87.67	0.88	0.07	0.00	1.58	7.30	99.77	
3/28/2012	12:59 PM	3/29/2012	2.28	86.38	0.85	0.06	ND	1.63	7.71	98.91	
5/17/2012	1:16 PM	5/18/2012	1.63	79.64	0.96	0.09	ND	3.11	13.31	98.74	
7/18/2012	12:55 PM	7/19/2012	2.12	84.91	0.86	0.07	ND	1.93	8.71	98.60	
8/15/2012	12:52 PM	8/16/2012	1.58	81.80	1.02	0.11	ND	2.69	11.47	98.67	
9/17/2012	2:10 PM	9/18/2012	1.57	83.37	0.84	0.08	ND	2.29	9.99	98.14	
10/25/2012	12:30 PM	10/26/2012	2.01	83.19	0.85	0.07	ND	2.41	10.33	98.86	
12/13/2012	1:03 PM	12/14/2012	0.57	84.80	0.90	0.09	ND	2.03	8.89	97.28	
1/15/2013	11:45 AM	1/16/2013	0.97	87.29	1.05	0.30	ND	1.61	7.70	98.92	
2/1/2013	1:15 PM	2/6/2013	1.04	93.29	1.02	0.12	ND	0.65	4.98	101.10	
2/7/2013	12:10 PM	2/12/2013	1.00	77.93	0.98	0.20	ND	3.47	15.50	99.08	
2/13/2013	11:45 AM	2/15/2013	1.03	93.57	1.07	0.13	ND	0 48	4.58	100.86	
2/28/2013										0.00	no sample, access road impassable
3/8/2013										0.00	no sample, access road impassable
5/20/2013		5/23/2013	1.35	49.48	0.63	0.17	ND	9.53	36.60	97.76	
2/28/2013										0.00	no sample, access road impassable
7/12/2013	12:29 PM	7/15/2013	1.79	85.66	0.62	0.07	ND	1.93	7.63	97.70	
7/18/2013	10:44 AM	7/23/2013	1.54	86.28	0.94	0.10	ND	2.38	6.71	97.95	
8/2/2013	12:45 PM	8/5/2013	1.79	88.10	0.98	<0.01	ND	1.34	5.21	97.42	
8/30/2013	11:40 AM	9/3/2013	1.54	77.03	1.54	<0.01	ND	3.97	14.27	98.35	
9/19/2013	12:15 PM	9/20/2013	1.89	89.44	1.02	0.16	ND	0.62	3.40	96.52	
3/27/2014	1:22 PM	4/1/2014	2.04	88.74	1.02	ND	ND	0.77	6.11	98.67	
07/16/14	1:23 PM	07/17/14	2.21	81.72	0.98	0.21	ND	2.16	11.24	98.52	
09/30/14	12:55 PM	10/01/14	1.89	85.49	1.03	0.13	ND	1.52	9.89	99.95	
03/23/15	12:20 PM	03/24/15	1.13	59.63	0.80	0.10	ND	7.64	31.44	100.74	
										0.00	

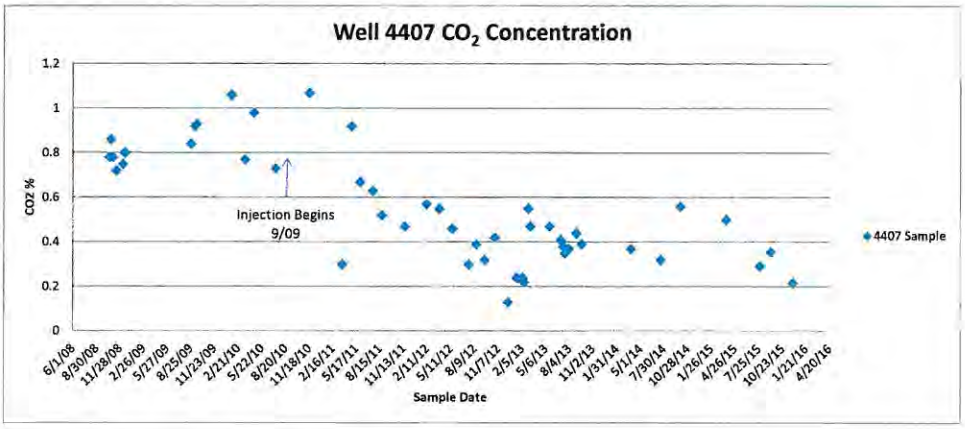
Insert Row on Line above to add new sample data



Gas Analysis
Well No. 4407

Sample Date	Time	Analysis Date	% Composition CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											not sampled
10/17/2008		10/20/2008	0.78	83.02	0.75	NA	0.00	3.42	11.80	99.77	
10/24/2008		10/27/2008	0.86	82.72	0.78	NA	0.00	3.26	12.60	100.22	
10/31/2008	8:55 AM	11/3/2008	0.78	78.92	0.73	NA	0.00	4.29	13.69	98.41	
11/14/2008	9:25 AM	11/18/2008	0.72	71.59	0.67	NA	0.00	6.16	18.37	97.51	
12/8/2008	9:18 AM	12/10/2008	0.75	68.49	0.64	NA	0.00	6.48	21.13	97.49	
12/15/2008	9:01 AM	12/16/2008	0.80	72.71	0.39	NA	0.00	5.49	18.48	97.87	
8/25/2009	11:28 AM	8/27/2009	0.84	71.84	0.87	0.48		4.51	20.51	99.05	
	Injection Begins 9/8/2009										
9/9/2009	10:14 AM	9/10/2009	0.92	74.03	0.91	0.13		3.99	19.20	99.18	
9/16/2009	1:33 PM	9/17/2009	0.93	73.38	0 91	0.13		4.12	19.44	98.91	
9/30/2009											no sample, well inaccessable
12/10/2009	1:42 PM	12/14/2009									sample invalid, ambiant air contamination
1/26/2010	2:12 PM	1/27/2010	1.06	74.76	0.92	0.12		3.84	17.96	98.66	
3/9/2010											no sample, access road impassable
3/19/2010	3:22 PM		0.77	71.85	0.86	0.11		5.04	20.47	99.10	
4/22/2010	2:23 PM	4/24/2010	0.98	72.84	0.90	0.13		4.61	20.03	99.49	
7/12/2010	2:17 PM	7/13/2010	0.73	66.45	0.84	0.13		5.43	25.33	98.91	
11/19/2010	1:56 PM	11/23/2010	1.07	73.48	0.90	0.11		4.82	19.15	99.53	
2/15/2011											not sampled
3/2/2011											not sampled
3/24/2011	1:54 PM	3/25/2011	0.30	19.47	0.26	0.26		17.10	62.91	100.30	
4/29/2011	2:28 PM	5/3/2011	0.92	66.00	0.82	0.14	0	6.17	25.18	99.23	
6/1/2011	2:35 PM	6/7/2011	0.67	56.88	0.71	0.11	0.00	7.96	33.12	99.45	
7/18/2011	1:41 PM	7/19/2011	0.63	60.97	0.75	0.14	0.00	6.12	30.15	98.76	
8/23/2011	2:13 PM	8/26/2011	0.52	57.35	0.75	0.14	0.00	7.28	32.82	98.86	
10/17/2011											not sampled
11/17/2011	2:10 PM	11/18/2011	0.47	43.53	0.51	0.09	0.00	10.05	44.60	99.25	
2/9/2012	1:17 PM	2/10/2012	0.57	44.00	0.42	0.07	0.00	9.96	44.82	99.84	
3/28/2012	1:34 PM	3/29/2012	0.55	47.63	0.46	0.08	ND	9.02	41.62	99.36	
5/17/2012	2:00 PM	5/18/2012	0.46	44.61	0.59	0.12	ND	9.81	43.93	99.52	
7/18/2012	1:35 PM	7/19/2012	0.30	51.05	0.51	0.09	ND	8.42	38.53	98.90	
8/15/2012	1:50 PM	8/16/2012	0.39	52.48	0.71	0.13	ND	8.33	37.35	99.39	
9/17/2012	3:22 PM	9/18/2012	0.32	57.53	0.59	0.10	ND	7.25	33.16	98.95	
10/25/2012	1:22 PM	10/26/2012	0.42	46.23	0.46	0.07	ND	10.00	42.58	99.76	
12/13/2012	1:40 PM	12/14/2012	0.13	46.61	0.46	0.08	ND	10.91	40.02	98.21	
1/15/2013	12:15 PM	1/16/2013	0.24	44.42	0.45	0.08	ND	10.37	43.61	99.17	
2/1/2013	1:55 PM	2/6/2013	0.23	48.56	0.48	0.10	ND	9.52	41.13	100.02	
2/7/2013	12:46 PM	2/12/2013	0.24	40.34	0.42	0.08	ND	11.00	47.14	99.22	
2/13/2013	12:20 PM	2/15/2013	0.22	43.02	0.43	0.09	ND	10.64	45.29	99.69	
2/28/2013		3/5/2013	0.55	48.22	0.48	0.11	ND	9.36	41.52	100.24	
3/8/2013		3/11/2013	0.47	35.09	0.35	0.07	ND	12.22	51.07	99.27	
5/20/2013		5/23/2013	0.47	37.56	0.39	0.17	ND	11.28	48.34	98.21	
7/2/2013		7/3/2013	0.41	34.46	0.37	0.08	ND	12.07	51.32	98.71	
7/12/2013	1:20 PM	7/15/2013	0.38	37.47	0.24	0.05	ND	11.59	47.83	97.56	
7/18/2013	11:40 AM	7/23/2013	0.35	36.39	0.33	<0.01	ND	12.34	50.43	99.84	
8/2/2013	12:42 PM	8/5/2013	0.37	35.83	0.35	<0.01	ND	11.82	49.57	97.94	
8/30/2013	10:06 AM	9/3/2013	0.44	38.41	0.44	<0.01	ND	11.11	48.20	98.60	
9/19/2013	1:00 PM	9/20/2013	0.39	38.15	0.39	0.11	ND	11.14	47.69	97.87	
3/27/2014	2:27 PM	4/1/2014	0.37	43.40	ND	ND	ND	10.05	44.06	97.89	
07/16/14	2:30 PM	07/17/14	0.32	42.66	0.47	0.19	ND	10.48	46.69	100.81	
09/30/14	11:30 AM	10/01/14	0.56	52.26	0.58	0.08	ND	8.33	36.27	98.08	
03/23/15	1:20 PM	03/24/15	0.50	49.92	0.56	0.08	ND	9.05	39.00	99.11	
07/29/15	12:40 PM	07/30/15	0.29	42.92	0.49	0.09	ND	10.32	44.77		
09/09/15	12:13 PM	09/10/15	0.36	45.32	0.51	0.09	ND	9.75	41.78	97.81	
12/02/15	1:15 PM	12/02/15	0.22	45.00	0.51	0.09	ND	10.10	42.91	98.82	
										0.00	

Insert Row on Line above to add new sample data



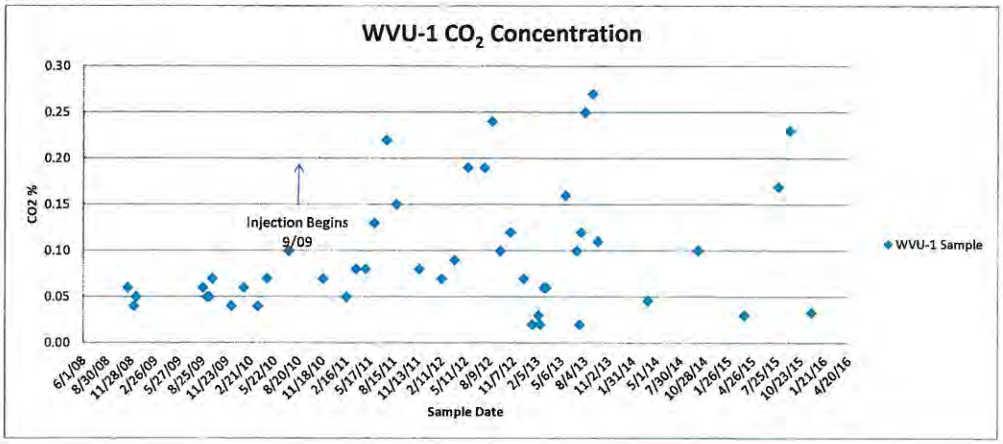
Gas Analysis
Well No. 4392

Sample Date	Time	Analysis Date	% Composition CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008		no sample									
10/17/2008		10/20/2008	0.04	7.50	0.10		0.00	18.50	71.77	97.91	
10/24/2008		10/27/2008	0.04	9.23	0.14		0.00	18.41	71.53	99.35	
10/31/2008	10:03 AM	11/3/2008	0.04	8.91	0.12		0.00	18.48	71.97	99.52	
11/14/2008	10:23 AM	11/18/2008	0.05	6.06	0.09		0.00	19.11	73.22	98.53	
12/8/2008	10:28 AM	12/10/2008	0.09	5.84	0.08		0.00	19.56	73.09	98.66	
12/15/2008	10:04 AM	12/16/2008	0.04	7.39	0.11		0.00	19.11	72.26	98.91	
8/25/2009	12:46 PM	8/27/2009	0.04	5.96	0.12	0.02		19.30	73.80	99.24	
Injection Begins 9/8/2009											
9/9/2009	10:51 AM	9/10/2009	0.04	11.04	0.20	0.04		17.84	69.74	98.90	
9/16/2009	11:37 AM	9/17/2009	0.05	10.89	0.21	0.04		18.25	69.95	99.39	
9/30/2009											no sample, access road impassable
12/10/2009											no sample, access road impassable
1/26/2010											no sample, access road impassable
3/9/2010											no sample, access road impassable
3/19/2010											no sample, access road impassable
4/22/2010											no sample, access road impassable
7/12/2010											no sample, access road impassable
11/19/2010											no sample, access road impassable
4/29/2011											no sample, access road impassable
6/1/2011											no sample, access road impassable
7/18/2011											no sample, access road impassable
3/27/2014	11:38 AM	4/1/2014	0.05	1.69	ND	ND	ND	20.30	76.48	98.52	
07/16/14	10:45 AM	07/17/14	0.05	3.98	0.05	0.01	ND	19.81	74.94	98.84	
09/30/14	11:35 AM	10/01/14	0.12	9.26	0.11	<0.01	ND	18.37	70.17	98.03	
03/23/15	11:00 AM	03/24/15	0.04	3.04	0.04	0.77	ND	20.05	75.73	99.67	
07/29/15	10:36 AM	07/30/15	0.06	7.04	0.08	<0.01	ND	18.97	72.51		
09/09/15	10:08 AM	09/10/15	0.07	6.44	0.07	ND	ND	19.22	71.56	97.36	
Insert Row on Line above to add new sample data											

Gas Analysis
Well No. WVU #1

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											not sampled
10/17/2008											not sampled
10/24/2008											not sampled
10/31/2008											not sampled
11/14/2008	12:17 PM	11/18/2008	0.06	0.58	0.01	NA	0.00	20.50	77.22	98.37	
12/8/2008	11:11 AM	12/10/2008	0.04	0.04	<0.01	NA	0.00	20.77	77.00	97.85	
12/15/2008	11:50 AM	12/16/2008	0.05	0.03	<0.01	NA	0.00	21.05	77.59	98.72	
8/25/2009	1:49 PM	8/27/2009	0.06	0.01	<0.01	0.00	NA	20.75	77.95	98.77	
	Injection Begins 9/8/2009										
9/9/2009	2:00 PM	9/10/2009	0.05	ND	<0.01	0.00	NA	20.72	77.73	98.50	
9/16/2009	11:19 AM	9/17/2009	0.05	<0.01	<0.01	0.00	NA	20.69	78.30	99.04	
9/30/2009	9:42 AM	10/1/2009	0.07	<0.01	ND	0.00	NA	20.66	77.60	98.33	
12/10/2009	1:42 PM	12/14/2009	0.04	<0.01	ND	0.00	NA	20.85	78.17	99.06	
1/26/2010	11:45 AM	1/27/2010	0.06	<0.01	ND	0.00	NA	20.72	77.77	98.55	
3/9/2010											no sample, access road impassable
3/19/2010	12:19 PM		0.04	0.02	ND	0.00	NA	20.76	77.89	98.71	
4/22/2010	12:08 PM	4/24/2010	0.07	0.11	<0.01	0.01	NA	20.79	77.85	98.83	
7/13/2010	10:36 AM	7/13/2010	0.10	0.04	<0.01	0.01	NA	20.77	78.17	99.09	
11/19/2010	11:25 AM	11/23/2010	0.07	0.15	<0.01	0.01	NA	20.64	78.09	98.96	
2/15/2011	11:25 AM	2/16/2010	0.05	0.03	<0.01	0.01	NA	20.81	77.77	98.67	
3/2/2011											not sampled
3/24/2011	11:33 AM	3/25/2011	0.08	0.70	0.01	0.01	NA	20.44	77.61	98.85	
4/29/2011	12:41 PM	5/3/2011	0.08	1.93	0.02	<0.01	0.00	20.05	76.98	99.06	
6/1/2011	11:09 AM	6/6/2011	0.13	0.33	<0.01	<0.01	2.00	20.29	77.47	100.22	
7/18/2011	10:58 AM	7/19/2011	0.22	0.24	<0.01	<0.01	0.00	20.52	78.35	99.33	
8/23/2011	10:46 AM	8/25/2011	0.15	0.04	<0.01	<0.01	0.50	20.53	77.90	99.12	
10/17/2011											not sampled
11/17/2011	11:59 AM	11/18/2011	0.08	0.09	<0.01	<0.01	0.00	20.62	77.78	98.57	
2/9/2012	10:11 AM	2/10/2012	0.07	0.51	<0.01	<0.01	0.50	20.65	77.88	99.61	
3/28/2012	11:15 AM	3/30/2012	0.09	0.66	0.01	<0.01	5	20.40	77.56	103.72	
5/17/2012	11:46 AM	5/18/2012	0.19	0.23	<0.01	<0.01	ND	20.44	78.03	98.89	
7/18/2012	11:19 AM	7/19/2012	0.19	0.04	<0.01	<0.01	ND	20.50	78.10	98.83	
8/15/2012	11:33 AM	8/16/2012	0.24	0.83	0.01	<0.01	ND	20.07	77.82	98.97	
9/17/2012	1:03 PM	9/18/2012	0.10	0.15	<0.01	<0.01	ND	20.57	77.90	98.72	
10/25/2012	11:20 AM	10/26/2012	0.12	0.27	0.01	0.01	ND	20.58	77.97	98.96	
12/13/2012	10:40 AM	12/14/2012	0.07	0.24	0.01	0.01	ND	20.61	77.78	98.72	
1/15/2013	9:57 AM	1/16/2013	0.02	0.02	<0.01	<0.01	ND	20.77	78.06	98.87	
2/1/2013										0.00	no sample, port frozen shut
2/7/2013	10:50 AM	2/12/2013	0.03	ND	ND	ND	ND	20.74	78.11	98.88	
2/13/2013	10:41 AM	2/15/2013	0.02	ND	0.00	ND	ND	20.75	76.70	97.47	
2/28/2013	10:30 AM	3/5/2013	0.06	ND	ND	ND	ND	20.72	76.56	97.34	
3/8/2013	10:43 AM	3/11/2013	0.06	ND	ND	0.00	ND	20.78	76.60	97.44	
5/20/2013	11:04 AM	5/22/2013	0.16	<.01	<.01	<.01	ND	20.41	76.79	97.36	
7/2/2013	10:35 AM	7/3/2013	0.10	<.01	<.01	<.01	ND	20.70	78.03	98.83	
7/12/2013	10:45 AM	7/15/2013	0.02	<0.01	<0.01	<0.01	ND	20.34	78.04	98.40	
7/18/2013	1:40 PM	7/23/2013	0.12	<0.01	<0.01	<0.01	ND	20.66	77.58	98.36	
8/2/2013	10:52 AM	8/5/2013	0.25	<0.01	<0.01	<0.01	ND	20.14	77.81	98.20	
8/30/2013	12:41 PM	9/3/2013	0.27	<0.01	<0.01	<0.01	ND	20.01	78.10	98.38	
9/19/2013	10:40 AM	9/20/2013	0.11	ND	ND	ND	ND	20.63	77.86	98.60	
3/27/2014	11:05 AM	4/1/2014	0.05	ND	ND	ND	ND	20.70	77.89	98.63	
7/16/2014	Unable to locate well. Weeds overgrown.										
09/30/14	11:20 AM	10/01/14	0.10	<0.01	<0.01	<0.01	ND	20.59	77.59	98.28	
03/23/15	10:50 AM	03/24/15	0.03	<0.01	<0.01	<0.01	ND	20.78	78.03	98.84	
07/29/15	10:30 AM	07/30/15	0.17	<0.01	<0.01	<0.01	ND	20.42	78.14	98.73	
09/09/15	9:55 AM	09/10/15	0.23	0.09	<0.01	ND	ND	20.50	76.34	97.16	
12/02/15	8:50 AM	12/02/15	0.03	ND	ND	ND	ND	20.83	77.87	98.73	
										0.00	

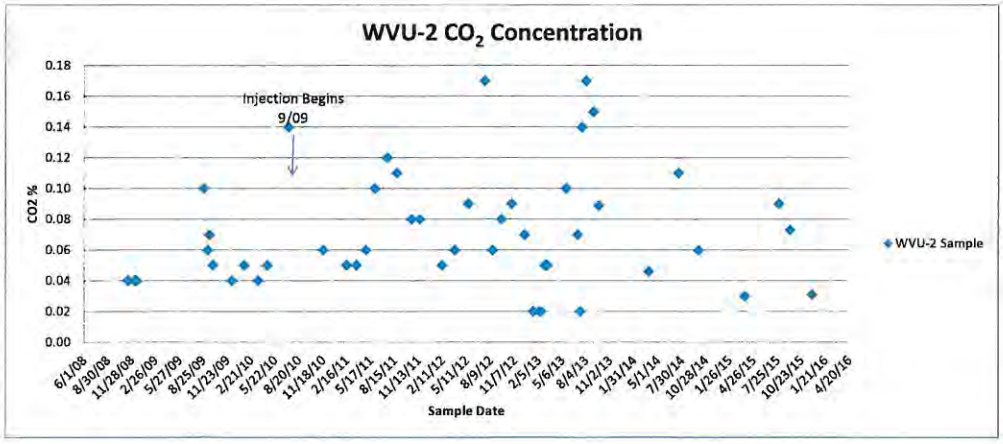
Insert Row on Line above to add new sample data



Gas Analysis
Well No. WVU #2

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											not sampled
10/17/2008											not sampled
10/24/2008											not sampled
10/31/2008											not sampled
11/14/2008	12:05 PM	11/18/2008	0.04	0.13	0.01	NA	0.00	20.59	77.59	98.36	
12/8/2008	11:03 AM	12/10/2008	0.04	1.00	0.01	NA	0.00	20.76	77.01	98.82	
12/15/2008	11:11 AM	12/16/2008	0.04	0.01	0.01	NA	0.00	21.06	77.76	98.88	
8/25/2009	9:01 AM	8/27/2009	0.10	0.01	<0.01	0.00	NA	20.37	78.41	98.89	
	Injection Begins 9/8/2009										
9/9/2009	9:44 AM	9/10/2009	0.06	0.00	<0.01	0.00	NA	20.74	77.85	98.65	
9/16/2009	10:40 AM	9/17/2009	0.07	0.02	<0.01	0.00	NA	20.69	77.78	98.56	
9/30/2009	9:31 AM	10/1/2009	0.05	0.00	0.00	0.00	NA	20.69	77.60	98.34	
12/10/2009	11:56 AM	12/14/2009	0.04	0.00	0.00	0.00	NA	20.84	78.17	99.05	
1/26/2010	10:52 AM	1/27/2010	0.05	0.00	0.00	0.00	NA	20.82	77.75	98.62	
3/9/2010											no sample, access road impassable
3/19/2010	10:10 AM		0.04	0.01	0.00	0.00	NA	20.76	77.98	98.79	
4/22/2010	11:58 AM	4/24/2010	0.05	<0.01	<0.01	0.01	NA	20.91	77.88	98.85	
7/12/2010	11:54 AM	7/13/2010	0.14	<0.01	<0.01	0.01	NA	20.78	78.05	98.98	
11/19/2010	10:45 AM	11/23/2010	0.06	1.21	0.01	0.01	NA	20.36	77.39	99.04	
2/15/2011	10:05 AM	2/16/2011	0.05	0.02	<0.01	0.01	NA	20.76	77.73	98.57	
3/2/2011											not sampled
3/24/2011	11:16 AM	3/25/2011	0.05	0.12	<0.01	0.01	NA	20.60	77.86	98.64	
4/29/2011	11:37 AM	5/3/2011	0.06	0.01	<0.01	<0.01	0.00	20.80	78.09	98.96	
6/1/2011	12:21 PM	6/6/2011	0.10	0.23	<0.01	<0.01	0.00	20.50	78.29	99.12	
7/18/2011	11:39 AM	7/19/2011	0.12	0.01	<0.01	<0.01	0.00	20.73	77.93	98.79	
8/23/2011	11:43 AM	8/25/2011	0.11	0.01	<0.01	<0.01	0.00	20.67	77.73	98.52	
10/17/2011	11:49 AM	10/18/2011	0.08	0.03	<0.01	<0.01	0.00	20.66	77.81	98.58	
11/17/2011	11:11 AM	11/18/2011	0.08	0.06	<0.01	<0.01	0.00	20.55	77.86	98.55	
2/9/2012	10:56 AM	2/10/2012	0.05	0.18	<0.01	<0.01	0.00	20.67	78.15	99.05	
3/28/2012	10:34 AM	3/30/2012	0.06	0.38	<0.01	<0.01	5	20.40	77.82	103.66	
5/17/2012	10:51 AM	5/18/2012	0.09	0.01	<0.01	<0.01	ND	20.72	77.99	98.81	
7/18/2012	10:28 AM	7/19/2012	0.17	0.02	<0.01	<0.01	ND	20.65	77.90	98.74	
8/15/2012	10:43 AM	8/16/2012	0.06	4.20	0.02	<0.01	ND	19.25	75.40	98.93	
9/17/2012	12:10 PM	9/18/2012	0.08	0.20	<0.01	<0.01	ND	20.67	77.91	98.86	
10/25/2012	10:20 AM	10/26/2012	0.09	0.01	< 0.01	< 0.01	ND	20.78	78.48	99.38	
12/13/2012	10:18 AM	12/14/2012	0.07	0.46	< 0.01	< 0.01	ND	20.51	77.83	98.89	
1/15/2013	9:41 AM	1/16/2013	0.02	0.01	<0.01	<0.01	ND	20.76	78.07	98.86	
2/1/2013										0.00	no sample, port frozen shut
2/7/2013	10:05 AM	2/12/2013	0.02	ND	ND	ND	ND	20.76	78.25	99.03	
2/13/2013	10:16 AM	2/15/2013	0.02	ND	0.00	0.00	ND	20.76	76.79	97.57	
2/28/2013	10:07 AM	3/5/2013	0.05	ND	0.00	0.01	ND	20.75	76.37	97.18	
3/8/2013	10:14 AM	3/11/2013	0.05	ND	0.00	0.00	ND	20.79	76.74	97.58	
5/20/2013	10:12 AM	5/22/2013	0.10	<.01	<.01	<.01	ND	20.63	77.65	98.38	
7/2/2013	10:07 AM	7/3/2013	0.07	<.01	<.01	<.01	ND	20.75	77.93	98.75	
7/12/2013	10:07 AM	7/15/2013	0.02	<0.01	<0.01	<0.01	ND	20.78	78.03	98.83	
7/18/2013	1:20 PM	7/23/2013	0.14	<0.01	<0.01	<0.01	ND	20.74	78.09	98.97	
8/2/2013	10:18 AM	8/5/2013	0.17	<0.01	<0.01	<0.01	ND	20.50	77.64	98.31	
8/30/2013	2:07 PM	9/3/2013	0.15	<0.01	<0.01	<0.01	ND	20.41	78.00	98.56	
9/19/2013	10:15 AM	9/20/2013	0.09	ND	ND	ND	ND	20.73	77.85	98.67	
3/27/2014	10:41 AM	4/1/2014	0.05	ND	ND	ND	ND	20.67	77.91	98.62	
07/16/14	11:37 AM	07/17/14	0.11	0.30	<0.01	<0.01	ND	20.53	78.04	98.98	
09/30/14	10:20 AM	10/01/14	0.06	<0.01	<0.01	<0.01	ND	20.73	77.61	98.40	
03/23/15	10:02 AM	03/24/15	0.03	<0.01	<0.01	<0.01	ND	20.80	78.09	98.92	
07/29/15	10:02 AM	07/30/15	0.09	<0.01	<0.01	<0.01	ND	20.71	77.98	98.78	
09/09/15	9:17 AM	09/10/15	0.07	<0.01	ND	ND	ND	20.77	76.35	97.19	
12/02/15	8:25 AM	12/02/15	0.03	ND	ND	ND	ND	20.82	77.84	98.69	
										0.00	

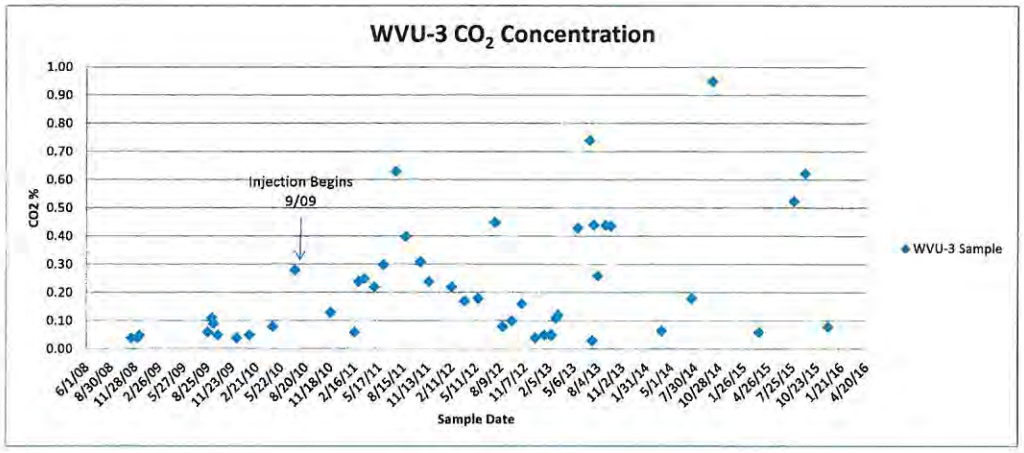
Insert Row on Line above to add new sample data



Gas Analysis
Well No. WVU #3

			% Composition								
Sample Date	Time	Analysis Date	CO_2	CH_4	C_2H_6	C_3H_8	CO	O_2	N_2	Total %	Comments
10/10/2008											not sampled
10/17/2008											not sampled
10/24/2008											not sampled
10/31/2008											not sampled
11/14/2008	11:32 AM	11/18/2008	0.04	0.01	0.01	NA	0.00	20.71	77.80	98.57	
12/8/2008	12:29 PM	12/10/2008	0.04	0.01	0.01	NA	0.00	20.77	77.04	97.87	
12/15/2008	11:00 AM	12/16/2008	0.05	2.53	0.01	NA	0.00	20.35	75.06	98.00	
8/25/2009	9:21 AM	8/27/2009	0.06	0.03	<0.01	0.00	NA	20.68	77.94	98.71	
	Injection Begins 9/8/2009										
9/9/2009	9:24 AM	9/10/2009	0.11	0.00	<0.01	0.00	NA	20.44	78.27	98.82	
9/16/2009	10:21 AM	9/17/2009	0.09	0.01	<0.01	0.00	NA	20.48	78.12	98.70	
9/30/2009	9:15 AM	10/1/2009	0.05	0.00	0.00	0.00	NA	20.67	77.60	98.32	
12/10/2009	11:46 AM	12/14/2009	0.04	0.34	<0.01	0.00	NA	20.74	77.92	99.04	
1/26/2010	10:34 AM	1/27/2010	0.05	0.07	0.00	0.00	NA	20.82	77.68	98.62	
3/9/2010											no sample, access road impassable
3/19/2010											no sample, access road impassable
4/22/2010	11:41 AM	4/24/2010	0.08	1.87	<0.01	0.01	NA	20.17	76.66	98.79	
7/12/2010	11:49 AM	7/13/2010	0.28	0.25	<0.01	0.01	NA	20.10	78.59	99.23	
11/19/2010	10:24 AM	11/23/2010	0.13	6.28	0.04	0.01	NA	19.19	73.54	99.19	
2/15/2011	9:46 AM	2/16/2011	0.06	<0.01	<0.01	0.01	NA	20.76	77.63	98.46	
3/2/2011	11:18 AM	3/3/2011	0.24	14.17	0.08	0.01	NA	16.77	67.78	99.05	
3/24/2011	10:56 AM	3/25/2011	0.25	13.43	0.06	0.01	NA	17.40	69.88	101.03	
4/29/2011	11:10 AM	5/3/2011	0.22	9.76	0.05	<0.01	0.00	18.10	71.09	99.22	
6/1/2011	12:06 PM	6/6/2011	0.30	0.52	<0.01	<0.01	0.00	19.86	78.52	99.20	
7/18/2011	11:23 AM	7/19/2011	0.63	2.41	<0.01	<0.01	0.00	18.96	77.24	99.24	
8/23/2011	11:20 AM	8/25/2011	0.40	16.10	0.07	<0.01	1.00	16.09	66.52	100.18	
10/17/2011	11:32 AM	10/18/2011	0.31	22.65	0.13	<0.01	0.00	14.74	61.14	98.97	
11/17/2011	11:36 AM	11/18/2011	0.24	27.26	0.15	<0.01	0.00	13.89	57.56	99.10	
2/9/2012	10:38 AM	2/10/2012	0.22	17.73	0.08	<.01	0.00	16.35	65.43	99.81	
3/28/2012	10:26 AM	3/30/2012	0.17	10.20	0.04	<0.01	7	18.34	71.70	107.45	
5/17/2012	10:34 AM	5/18/2012	0.18	9.26	0.04	<0.01	ND	18.77	72.52	100.77	
7/18/2012	10:12 AM	7/19/2012	0.45	4.03	0.01	<0.01	ND	19.13	76.06	99.68	
8/15/2012	10:25 AM	8/16/2012	0.08	5.88	0.03	<0.01	ND	19.03	73.89	98.91	
9/17/2012	11:55 AM	9/18/2012	0.10	10.21	0.04	<0.01	ND	18.33	70.41	99.09	
10/25/2012	10:57 AM	10/26/2012	0.16	10.69	0.05	0.01	ND	18.11	70.17	99.19	
12/13/2012	9:56 AM	12/14/2012	0.04	24.57	0.11	0.01	ND	14.80	56.93	96.46	
1/15/2013	9:25 AM	1/16/2013	0.05	8.65	0.04	<0.01	ND	18.69	71.57	99.00	
2/1/2013										0.00	no sample, port frozen shut
2/7/2013	9:42 AM	2/12/2013	0.05	3.55	0.01	ND	ND	19.88	75.64	99.13	
2/13/2013	10:58 AM	2/15/2013	0.05	8.53	0.04	0.00	ND	18.77	70.61	98.00	
2/28/2013	9:52 AM	3/5/2013	0.11	11.03	0.05	0.00	ND	18.24	68.70	98.13	
3/8/2013	10:01 AM	3/11/2013	0.12	5.52	0.03	0.00	ND	19.32	72.86	97.85	
5/20/2013	9:57 AM	5/22/2013	0.43	<.01	<.01	<.01	ND	19.71	77.40	97.54	
7/2/2013	9:51 AM	7/3/2013	0.74	2.14	<.01	<.01	ND	18.18	78.15	99.21	
7/12/2013	9:53 AM	7/15/2013	0.03	8.34	0.03	<0.01	ND	18.48	71.65	98.53	
7/18/2013	1:06 PM	7/23/2013	0.44	1.46	<0.01	<0.01	ND	19.21	78.05	99.16	
8/2/2013	10:01 AM	8/5/2013	0.26	<0.01	<0.01	<0.01	ND	20.15	78.00	98.41	
8/30/2013	1:51 PM	9/3/2013	0.44	<0.01	<0.01	<0.01	ND	19.62	78.68	98.74	
9/19/2013	10:02 AM	9/20/2013	0.44	ND	ND	ND	ND	19.76	78.55	98.75	
3/27/2014	10:30 AM	4/1/2014	0.07	ND	ND	ND	ND	20.67	77.87	98.60	
07/16/14	11:18 AM	07/17/14	0.18	0.96	<0.01	<0.01	ND	19.46	78.21	98.81	
09/30/14	10:00 AM	10/01/14	0.95	1.17	<0.01	<0.01	ND	18.06	78.72	98.90	
03/23/15	9:42 AM	03/24/15	0.06	<0.01	<0.01	<0.01	ND	20.75	78.09	98.90	
07/29/15	9:40 AM	07/30/15	0.53	<0.01	<0.01	<0.01	ND	19.33	79.08	98.94	
09/09/15	3:53 PM	09/10/15	0.62	<0.01	ND	ND	ND	19.38	77.50	97.50	
12/02/15	3:05 PM	12/02/15	0.08	2.09	<0.01	ND	ND	20.13	76.21	98.51	
										0.00	

Insert Row on Line above to add new sample data



Gas Analysis
Well No. 2287

% Composition

Date	Time	O_2	CH_4	C_2H_6	CO_2	N_2	C_3H_8	Total %	Comments
Pre-09 Baseline		20.75	0.05	<0.01	0.05	77.37		98.22	
8/25/2009	11:46 AM	20.73	0.02	<0.01	0.08	78.05	ND	98.88	
Injection Begins 9/8/2009									
9/9/2009	Ambient:	No	Longer	Being	Sampled			0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	

Gas Analysis

Well No. 3038

% Composition

Date	Time	O_2	CH_4	C_2H_6	CO_2	N_2	C_3H_8	Total %	Comments
Pre-09 Baseline		20.94	0.05	<0.01	0.05	77.97		99.01	
8/25/2009			No	Sample				0.00	
Injection Begins 9/8/2009									
9/9/2009	10:26 AM	20.70	0.01	0.01	0.07	77.96	ND	98.75	
9/16/2009	11:23 AM	20.71	0.02	<0.01	0.05	77.93	ND	98.71	
9/30/2009	9:49 AM	20.61	0.04	<0.01	0.06	77.76	ND	98.47	
12/10/2009		no longer sampling						0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	
								0.00	

Appendix J

Economic Evaluation

ECONOMIC ANALYSIS OF CO2 SEQUESTRATION DEMONSTRATION PROJECT AND CONCEPTUAL BROWNFIELD SITE IN UNMINEABLE COAL SEAM

Supports Table 28, Table 31, and Table 32 in the main body of the report

	Demonstration Project			Conceptual Brownfield Site	
Capital	cost	unit cost		cost	
Access Road	$195,361			$0	
Drilling	$4,217,577	$107.19	/ft	$0	
Site Prep	$675,453			$0	
Pumping System	$72,254			$0	
Total cost	$5,160,645	$131.16	/ft	$0	
Capital Processing					
CO2 Injection Equipment & Well Conversion	$320,895	$64,179	per well	$562,685	
Pipeline cost	$10,000	$2,000	per well	$190,000	
Miles	0			3	
Compression cost	$197,190	$39,438	per well	$0	
Total capital processing	$528,085	$105,617	total per well	$752,685	
O&M (Life of Project)					
New Production Site	$57,412			$96,305	
New Injection Well- pre inject act as prod	$12,655			$0	
New Injection Well	$54,238			$240,763	
Pipeline -pgh& freeport produce	$1,558			$0	
Compression	$46,750			$0	
Gas Processing- CO2	$79,333			$0	
Pipeline- only freeport produce	$0			$0	
Compression	$0			$0	
Gas Processing- CO2	$0			$0	
Safety, Monitoring & Verification	$110,409			$185,202	
Pipeline- only freeport produce with CO2	$0			$0	
Compression	$0			$0	
Gas Processing- CO2	$0			$0	
CO2 Pipeline	$943			$1,395	
Water disposal - yr 1	$67,998			$407,988	
Water disposal - after yr 1	$1,283,080			$0	
Water disposal - during ECBM	$1,150,397			$2,093,740	
Total operating & maintenance cost	$2,864,773			$3,025,393	
O&M cost/yr	$259,470			$490,069	
O&M cost/yr/well	$129,735			$54,452	
Req'd Production to pay O&M (mcfd/well)	62.07			26.05	
Req'd Production to pay O&M (mcfd/prod well)	124.15			39.08	
Gas production					
Production well - Pittsburgh (mcf)	915,550			0	
Production well - Upper Freeport (UF) (mcf)	56,141			0	
Production well- UF during ECBM (mcf)	45,674			274,046	
Total production (mcf)	1,017,365			274,046	
Total revenue	$5,825,434			$1,569,185	
$/mcf gas	**$5.726**			**$5.726**	
Production years					
Pittsburgh	11.043			0.000	
Upper Freeport	4.867			0.000	
Production well- UF during ECBM	6.173			6.173	
			% of total		
Summary			expense		
Total capital	$5,688,730		61.1%	$752,685	
Total O&M	$3,619,165	$/Mcfd CH4	38.9%	$5,288,506	$/Mcfd CH4
Total expenses (capital + O&M)	$9,307,896	$9.15		$6,041,191	$22.04
Total Revenue	$5,825,434	$/ton CO2		$1,569,185	$/ton CO2
Benefit (revenue-expenses)	-$3,482,462	-$700.95		-$4,472,006	-$300.04
Benefit $MM	-$3.48			-$4.47	
CO2 injection-ton	4,968			14,905	
CO2 injection-tonne	4,507			13,521	
Cost of CO2	$754,392			$2,263,113	
Avg cost/ton of CO2	**$151.84**			**$151.84**	

ECONOMIC ANALYSIS OF CONCEPTUAL BROWNFIELD SITE WHEN VARY SALE PRICE OF METHANE AND COST OF CARBON DIOXIDE WITH EXPANDED DRAINAGE AREA

Supports Figure 60 in main body of the report

	Breakeven Point when CO2 at $70/ton	Vary $CH4/mcf with CO2 cost at $0/ton			Vary $CH4/mcf when CO2 cost at $151.84/ton					Sale price CH4 at $5.726/mcf and vary $CO2/ton				
Capital														
Access Road	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Drilling	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Site Prep	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water & Gas	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Processing														
CO2 Injection Equipment & Well Conversion	562685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685
Pipeline cost	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000
Miles	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Compression cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total capital processing	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685
O&M (Life of Project)														
New Production Site	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225
New Injection Well- pre inject act as prod	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Injection Well	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063
Pipeline -pgh& freeport produce	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compression	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gas Processing- CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pipeline- only freeport produce	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compression	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gas Processing- CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Safety, Monitoring & Verification	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510
Pipeline- only freeport produce with CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compression	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gas Processing- CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CO2 Pipeline	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259
Water disposal - yr 1	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988
Water disposal - after yr 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water disposal - during ECBM	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748
Total operating & maintenance cost	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793
O&M cost/yr	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844
O&M cost/yr/well	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649
Req'd Production to pay O&M (mcfd/well)	26.15	149.72	49.91	13.61	26.15	13.61	16.64	49.91	149.72	26.15	26.15	26.15	26.15	26.15
Req'd Production to pay O&M (mcfd/prod well)	39.22	224.59	74.86	20.42	39.22	20.42	24.95	74.86	224.59	39.22	39.22	39.22	39.22	39.22
Gas production														
Production well - Pittsburgh (mcf)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production well - Upper Freeport (UF) (mcf)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production well- UF during ECBM (mcf)	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885
Total production (mcf)	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885
Total revenue	$10,414,935	$1,818,885	$5,456,655	$20,007,733	$10,414,935	$20,007,733	$16,369,964	$5,456,655	$1,818,885	$10,414,935	$10,414,935	$10,414,935	$10,414,935	$10,414,935
$/mcf gas	**$5.726**	**$1.00**	**$3.00**	**$11.00**	**$5.726**	**$11.00**	**$9.00**	**$3.00**	**$1.00**	**$5.726**	**$5.726**	**$5.726**	**$5.726**	**$5.726**
Production years														
Pittsburgh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Upper Freeport	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Production well- UF during ECBM	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950
Summary														
Total capital	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685
Total O&M	$9,388,141	$2,434,793	$2,434,793	$2,434,793	$17,518,023	$17,518,023	$17,518,023	$17,518,023	$17,518,023	-$2,531,884	-$48,545	$2,434,793	$7,401,470	$12,368,147
Total expenses (capital + O&M)	$10,140,826	$3,187,478	$3,187,478	$3,187,478	$18,270,708	$18,270,708	$18,270,708	$18,270,708	$18,270,708	-$1,779,199	$704,140	$3,187,478	$8,154,155	$13,120,832
Total Revenue	$10,414,935	$1,818,885	$5,456,655	$20,007,733	$10,414,935	$20,007,733	$16,369,964	$5,456,655	$1,818,885	$10,414,935	$10,414,935	$10,414,935	$10,414,935	$10,414,935
Benefit (revenue-expenses)	$274,109	-$1,368,593	$2,269,176	$16,820,255	-$7,855,773	$1,737,025	-$1,900,744	-$12,814,053	-$16,451,823	$12,194,134	$9,710,795	$7,227,457	$2,260,780	-$2,705,898
Benefit $MM	$0.27	-$1.37	$2.27	$16.82	-$7.86	$1.74	-$1.90	-$12.81	-$16.45	$12.19	$9.71	$7.23	$2.26	-$2.71
CO2 injection-ton	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334
CO2 injection-tonne	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114
Cost of CO2	$6,953,348	0	0	0	$15,083,230	$15,083,230	$15,083,230	$15,083,230	$15,083,230	-$4,966,677	-$2,483,339	$0.00	$4,966,677	$9,933,354
Avg cost/ton of CO2	**$70.00**	**$0.00**	**$0.00**	**$0.00**	**$151.84**	**$151.84**	**$151.84**	**$151.84**	**$151.84**	**-$50.00**	**-$25.00**	**$0.00**	**$50.00**	**$100.00**

ECONOMIC ANALYSIS OF CONCEPTUAL BROWNFIELD SITE WHEN VARY SALE PRICE OF METHANE AND COST OF CARBON DIOXIDE

Supports Figure 61 and Table 33 in main body of report

	Breakeven Point-when CO2 at $0/ton	Vary $CH4/mcf with cost CO2 at -$12/ton			Vary $CH4/mcf with cost CO2 at $30/ton			Vary $CH4/mcf with cost CO2 at $0/ton		
Capital										
Access Road	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Drilling	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Site Prep	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water & Gas	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Processing										
CO2 Injection Equipment & Well Conversion	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685	$562,685
Pipeline cost	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000
Miles	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Compression cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total capital processing	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685
O&M (Life of Project)										
New Production Site	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225	$77,225
New Injection Well- pre inject act as prod	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Injection Well	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063	$193,063
Pipeline -pgh& freeport produce	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compression	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gas Processing- CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pipeline- only freeport produce	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compression	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gas Processing- CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Safety, Monitoring & Verification	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510	$148,510
Pipeline- only freeport produce with CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compression	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gas Processing- CO2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CO2 Pipeline	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259	$9,259
Water disposal - yr 1	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988	$407,988
Water disposal - after yr 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water disposal - during ECBM	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748	$1,598,748
Total operating & maintenance cost	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793	$2,434,793
O&M cost/yr	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844	$491,844
O&M cost/yr/well	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649	$54,649
Req'd Production to pay O&M (mcfd/well)	83.18	26.15	149.72	13.61	26.15	149.72	13.61	149.72	49.91	13.61
Req'd Production to pay O&M (mcfd/prod wel	124.77	39.22	224.59	20.42	39.22	224.59	20.42	224.59	74.86	20.42
Gas production										
Production well - Pittsburgh (mcf)	0	0	0	0	0	0	0	0	0	0
Production well - Upper Freeport (UF) (mcf)	0	0	0	0	0	0	0	0	0	0
Production well- UF during ECBM (mcf)	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885
Total production (mcf)	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885	1,818,885
Total revenue	$3,273,993	$10,414,935	$1,818,885	$20,007,733	$10,414,935	$1,818,885	$20,007,733	$1,818,885	$5,456,655	$20,007,733
$/mcf gas	**$1.800**	**$5.726**	**$1.000**	**$11.000**	**$5.726**	**$1.000**	**$11.000**	**$1.000**	**$3.000**	**$11.000**
Production years										
Pittsburgh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Upper Freeport	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Production well- UF during ECBM	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950	4.950
Summary										
Total capital	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685	$752,685
Total O&M	$2,434,793	$1,242,791	$1,242,791	$1,242,791	$5,414,799	$5,414,799	$5,414,799	$2,434,793	$2,434,793	$2,434,793
Total expenses (capital + O&M)	$3,187,478	$1,995,476	$1,995,476	$1,995,476	$6,167,484	$6,167,484	$6,167,484	$3,187,478	$3,187,478	$3,187,478
Total Revenue	$3,273,993	$10,414,935	$1,818,885	$20,007,733	$10,414,935	$1,818,885	$20,007,733	$1,818,885	$5,456,655	$20,007,733
Benefit (revenue-expenses)	$86,515	$8,419,459	-$176,591	$18,012,258	$4,247,450	-$4,348,599	$13,840,249	-$1,368,593	$2,269,176	$16,820,255
Benefit $MM	$0.09	$8.42	-$0.18	$18.01	$4.25	-$4.35	$13.84	-$1.37	$2.27	$16.82
CO2 injection-ton	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334	99,334
CO2 injection-tonne	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114	90,114
Cost of CO2	$0	-$1,192,002	-$1,192,002	-$1,192,002	$2,980,006	$2,980,006	$2,980,006	$0	$0	$0
Avg cost/ton of CO2	**$0.00**	**-$12.00**	**-$12.00**	**-$12.00**	**$30.00**	**$30.00**	**$30.00**	**$0.00**	**$0.00**	**$0.00**

ECONOMIC ANALYSIS OF CONCEPTUAL BROWNFIELD SITE WHEN NEW INJECTION WELL IS DRILLED FOR CO2 SEQUESTRATION COMPARED TO CONVERTING AN EXISTING PRODUCTION WELL

Supports Figure 62 and Table 33 in the main body of the report

	No New Injection Well Drilled (Convert Existing Production Well)						Drill New Injection Well						Drill New Injection Well at Lower Cost	
	Vary $CH4/mcf with CO2 at $0/ton		Sale price CH4 at $5.726/mcf and vary $CO2/ton				Vary $CH4/mcf with CO2 at $0/ton		Sale price CH4 at $5.726/mcf and vary $CO2/ton				CH4 at $5.726/mcf and CO2 at $30/ton	
Capital														
Access Road	$0	$0	$0		$0		$195,361	$195,361	$195,361		$195,361		$15,707	
Drilling	$0	$0	$0		$0		$3,147,128	$3,147,128	$3,147,128		$3,147,128		$2,466,879	
Site Prep	$0	$0	$0		$0		$675,453	$675,453	$675,453		$675,453		$343,473	
Pumping System	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Total cost	$0	$0	$0		$0		$4,017,942	$4,017,942	$4,017,942		$4,017,942		$2,826,059	
Capital Processing														
CO2 Injection Equipment & Well Conversion	$562,685	$562,685	$562,685		$562,685		$562,685	$562,685	$562,685		$562,685		$562,685	
Pipeline cost	$190,000	$190,000	$190,000		$190,000		$190,000	$190,000	$190,000		$190,000		$190,000	
Miles	3.3	3.3	3.3		3.3		3.3	3.3	3.3		3.3		3.3	
Compression cost	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Total capital processing	$752,685	$752,685	$752,685		$752,685		$752,685	$752,685	$752,685		$752,685		$752,685	
O&M (Life of Project)														
New Production Site	$77,225	$77,225	$77,225		$77,225		$138,114	$138,114	$138,114		$138,114		$138,114	
New Injection Well- pre inject act as prod	$0	$0	$0		$0		$30,444	$30,444	$30,444		$30,444		$30,444	
New Injection Well	$193,063	$193,063	$193,063		$193,063		$193,063	$193,063	$193,063		$193,063		$193,063	
Pipeline -pgh& freeport produce	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Compression	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Gas Processing- CO2	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Pipeline- only freeport produce	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Compression	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Gas Processing- CO2	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Safety, Monitoring & Verification	$148,510	$148,510	$148,510		$148,510		$265,604	$265,604	$265,604		$265,604		$265,604	
Pipeline- only freeport produce with CO2	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Compression	$0	$0	$0		$0		$0	$0	$0		$0		$0	
Gas Processing- CO2	$0	$0	$0		$0		$0	$0	$0		$0		$0	
CO2 Pipeline	$9,259	$9,259	$9,259		$9,259		$9,259	$9,259	$9,259		$9,259		$9,259	
Water disposal - yr 1	$407,988	$407,988	$407,988		$407,988		$611,982	$611,982	$611,982		$611,982		$611,982	
Water disposal - after yr 1	$0	$0	$0		$0		$587,464	$587,464	$587,464		$587,464		$587,464	
Water disposal - during ECBM	$1,598,748	$1,598,748	$1,598,748		$1,598,748		$1,598,748	$1,598,748	$1,598,748		$1,598,748		$1,598,748	
Total operating & maintenance cost	$2,434,793	$2,434,793	$2,434,793		$2,434,793		$3,434,678	$3,434,678	$3,434,678		$3,434,678		$3,434,678	
O&M cost/yr	$491,844	$491,844	$491,844		$491,844		$387,948	$387,948	$387,948		$387,948		$387,948	
O&M cost/yr/well	$54,649	$54,649	$54,649		$54,649		$43,105	$43,105	$43,105		$43,105		$43,105	
Req'd Production to pay O&M (mcfd/well)	13.61	149.72	26.15		26.15		118.10	10.74	20.62		20.62		20.62	
Req'd Production to pay O&M (mcfd/prod well	20.42	224.59	39.22		39.22		177.15	16.10	30.94		30.94		30.94	
Gas production														
Production well - Pittsburgh (mcf)	0	0	0		0		0	0	0		0		0	
Production well - Upper Freeport (UF) (mcf)	0	0	0		0		2,235,713	2,235,713	2,235,713		2,235,713		2,235,713	
Production well- UF during ECBM (mcf)	1,818,885	1,818,885	1,818,885		1,818,885		1,818,885	1,818,885	1,818,885		1,818,885		1,818,885	
Total production (mcf)	1,818,885	1,818,885	1,818,885		1,818,885		4,054,597	4,054,597	4,054,597		4,054,597		4,054,597	
Total revenue	$20,007,733	$1,818,885	$10,414,935		$10,414,935		$4,054,597	$44,600,572	$23,216,625		$23,216,625		$23,216,625	
$/mcf gas	**$11.00**	**$1.00**	**$5.726**		**$5.726**		**$1.00**	**$11.00**	**$5.726**		**$5.726**		**$5.726**	
Production years														
Pittsburgh	0.000	0.000	0.000		0.000		0.000	0.000	0.000		0.000		0.000	
Upper Freeport	0.000	0.000	0.000		0.000		3.903	3.903	3.903		3.903		3.903	
Production well- UF during ECBM	4.950	4.950	4.950		4.950		4.950	4.950	4.950		4.950		4.950	
Summary														
Total capital	$752,685	$752,685	$752,685		$752,685		$4,770,627	$4,770,627	$4,770,627		$4,770,627		$3,578,744	
Total O&M	$2,434,793	$2,434,793	$17,518,023	$/Mcfd CH4	$5,414,799	$/Mcfd CH4	$3,434,678	$3,434,678	$18,517,908	$/Mcfd CH4	$6,414,684	$/Mcfd CH4	$6,414,684	$/Mcfd CH4
Total expenses (capital + O&M)	$3,187,478	$3,187,478	$18,270,708	$10.05	$6,167,484	$3.39	$8,205,305	$8,205,305	$23,288,534	$5.74	$11,185,311	$2.76	$9,993,428	$2.46
Total Revenue	$20,007,733	$1,818,885	$10,414,935	$/ton CO2	$10,414,935	$/ton CO2	$4,054,597	$44,600,572	$23,216,625	$/ton CO2	$23,216,625	$/ton CO2	$23,216,625	$/ton CO2
Benefit (revenue-expenses)	$16,820,255	-$1,368,593	-$7,855,773	-$79.08	$4,247,450	$42.76	-$4,150,707	$36,395,268	-$71,909	-$0.72	$12,031,314	$121.12	$13,223,197	$133.12
Benefit $MM	$16.82	-$1.37	-$7.86		$4.25		-$4.15	$36.40	-$0.07		$12.03		$13.22	
CO2 Injection-ton	99,334	99,334	99,334		99,334		99,334	99,334	99,334		99,334		99,334	
CO2 injection-tonne	90,114	90,114	90,114		90,114		90,114	90,114	90,114		90,114		90,114	
Cost of CO2	$0	$0	$15,083,230		$2,980,006		$0	$0	$15,083,230		$2,980,006		$2,980,006	
Avg cost/ton of CO2	**$0.00**	**$0.00**	**$151.84**		**$30.00**		**$0.00**	**$0.00**	**$151.84**		**$30.00**		**$30.00**	

ECONOMIC ANALYSIS OF CONCEPTUAL BROWNFIELD SITE WHEN NEW INJECTION WELL IS DRILLED FOR CO2 SEQUESTRATION

COMPARED TO CONVERTING EXISTING PRODUCTION WELL WHEN SALE PRICE OF METHANE IS $3.00/MCF AND CARBON DIOXIDE COST IS $0/TON

Supports Table 34 in the main body of the report

	No new injection well drilled						New Injection Well Drilled						New Injection Well Drilled at Reduced Costs					
Capital							$195,361						$15,707					
Access Road	$0						$3,147,128						$2,466,879					
Drilling	$0						$675,453						$343,473					
Site Prep	$0						$0						$0					
Pumping System	$0						$4,017,942						$2,826,059					
Total cost	$0																	
Capital Processing							$562,685						$562,685					
CO2 injection Equipment & Well Conversion	$562,685						$190,000						$190,000					
Pipeline cost	$190,000						3.3						3.3					
Miles	3.3						$0						$0					
Compression cost	$0						$752,685						$752,685					
Total capital processing	$752,685																	
O&M (Life of Project)							$138,114						$138,114					
New Production Site	$77,225						$30,444						$30,444					
New Injection Well- pre inject act as prod	$0						$193,063						$193,063					
New Injection Well	$193,063						$0						$0					
Pipeline -pgh& freeport produce	$0						$0						$0					
Compression	$0						$0						$0					
Gas Processing- CO2	$0						$0						$0					
Pipeline- only freeport produce	$0						$0						$0					
Compression	$0						$0						$0					
Gas Processing- CO2	$0						$265,604						$265,604					
Safety, Monitoring & Verification	$148,510						$0						$0					
Pipeline- only freeport produce with CO2	$0						$0						$0					
Compression	$0						$0						$0					
Gas Processing- CO2	$0						$9,259						$9,259					
CO2 Pipeline	$9,259						$611,982						$611,982					
Water disposal - yr 1	$407,988						$587,464						$587,464					
Water disposal - after yr 1	$0						$1,598,748						$1,598,748					
Water disposal - during ECBM	$1,598,748						$3,434,678						$3,434,678					
Total operating & maintenance cost	$2,434,793						$387,948						$387,948					
O&M cost/yr	$491,844						$43,105						$43,105					
O&M cost/yr/well	$54,649						39.37						39.37					
Req'd Production to pay O&M (mcfd/well)	49.91						59.05						59.05					
Req'd Production to pay O&M (mcfd/prod well)	74.86																	
Gas production							0						0					
Production well - Pittsburgh (mcf)	0						2,235,713						2,235,713					
Production well - Upper Freeport (UF) (mcf)	0						1,818,885						1,818,885					
Production well- UF during ECBM (mcf)	1,818,885						4,054,597						4,054,597					
Total production (mcf)	1,818,885						$12,163,792						$12,163,792					
Total revenue	$5,456,655						$3.000						$3.000					
$/mcf gas	$3.00																	
Production years							0.000						0.000					
Pittsburgh	0.000						3.903						3.903					
Upper Freeport	0.000						4.950						4.950					
Production well- UF during ECBM	4.950																	
Summary							$4,770,627						$3,578,744					
Total capital	$752,685						$3,434,678						$3,434,678					
Total O&M	$2,434,793						$8,205,305						$7,013,421					
Total expenses (capital + O&M)	$3,187,478						$12,163,792						$12,163,792					
Total Revenue	$5,456,655						$3,958,488						$5,150,371					
Benefit (revenue-expenses)	$2,269,176						$3.96						$5.15					
Benefit $MM	$2.27						99,334						99,334					
CO2 injection-ton	99,334						90,114						90,114					
CO2 injection-tonne	90,114																	
Cost of CO2	$0						$0						$0					
Avg cost/ton of CO2	$0.00						$0.00						$0.00					

Simplified NPV Calculation

	Year	Revenue	Capital Cost	O&M Cost	Revenue-Capital-O&M
	1	$1,102,280	$752,685	$491,844	-$142,249
	2	$1,102,280		$491,844	$610,436
	3	$1,102,280		$491,844	$610,436
	4	$1,102,280		$491,844	$610,436
	5	$1,047,535		$467,417	$580,119
		$5,456,655		$2,434,793	$2,269,176

	prod/yr
	0
	367,427
	$/mcf
	$3.00
	yrs
	0
	4.95
	4.95
	0.95
	Discount rate
	0.121
	NPV
	$1,506,477

$/Mcfd CH4	$1.75
$/ton CO2	$22.84

Simplified NPV Calculation

	Year	Revenue	Capital Cost	O&M Cost	Revenue-Capital-O&M
	1	$1,718,404	$4,770,627	$387,948	-$3,440,171
	2	$1,718,404		$387,948	$1,330,456
	3	$1,718,404		$387,948	$1,330,456
	4	$1,658,714		$387,948	$1,270,767
	5	$1,102,280		$387,948	$714,332
	6	$1,102,280		$387,948	$714,332
	7	$1,102,280		$387,948	$714,332
	8	$1,102,280		$387,948	$714,332
	9	$940,748		$331,097	$609,652
		12,163,792		3,434,678	3,958,488

	prod/yr
	572,801
	367,427
	$/mcf
	$3.00
	yrs
	3.90
	4.95
	3.00
	Total yrs
	8.853
	Discount rate
	0.121
	NPV
	$3,396,230

$/Mcfd CH4	$2.02
$/ton CO2	$39.85

Simplified NPV Calculation

	Year	Revenue	Capital Cost	O&M Cost	Revenue-Capital-O&M
	1	$1,718,404	$3,578,744	$387,948	-$2,248,288
	2	$1,718,404		$387,948	$1,330,456
	3	$1,718,404		$387,948	$1,330,456
	4	$1,658,714		$387,948	$1,270,767
	5	$1,102,280		$387,948	$714,332
	6	$1,102,280		$387,948	$714,332
	7	$1,102,280		$387,948	$714,332
	8	$1,102,280		$387,948	$714,332
	9	$940,748		$331,097	$609,652
		$12,163,792		$3,434,678	$5,150,371

	prod/yr
	572,801
	367,427
	$/mcf
	$3.000
	yrs
	3.903
	4.950
	8.853
	Discount rate
	0.121
	NPV
	$2,391,462

$/Mcfd CH4	$1.73
$/ton CO2	$51.85