ENVIRONMENTAL QUALITY COUNCIL

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ENVIRONMENTAL
ANALYST
Todd Everts

ENVIRONMENTAL QUALITY COUNCIL
February 8, 2002
FINAL MINUTES

COUNCIL MEMBERS PRESENT

SEN. BEA McCARTHY, Chair
REP. DEBBY BARRETT
SEN. MACK COLE
SEN. KEN TOOLE
REP. DON HEDGES
REP. MONICA LINDEEN
SEN. JON TESTER
REP. DOUG MOOD
REP. PAUL CLARK
SEN. WALTER McNUTT
MR. HOWARD STRAUSE
MR. TOM EBZERY
MS. JULIA PAGE
MS. ELLEN PORTER

COUNCIL MEMBERS EXCUSED

MR. TODD O'HAIR
REP. CHRISTOPHER HARRIS
SEN. PETE EKEGREN

STAFF MEMBERS PRESENT

MR. TODD EVERTS
MR. LARRY MITCHELL
MS. MARY VANDENBOSCH
Ms. Robyn Lund, secretary

AGENDA

Attachment 1

VISITORS' LIST

Attachment 2

COUNCIL ACTION

- Approved minutes.
- Accepted Subcommittee reports.
- Moved EQC July meeting to July 28 and 29.

I CALL TO ORDER

SEN. McCARTHY asked for the roll call to be taken.

II ADOPTION OF MINUTES

MOTION/VOTE: SEN. COLE moved to adopt the December minutes. Motion passed unanimously.

III ADMINISTRATIVE MATTERS

MR. EVERTS said that **EXHIBIT 1** referred to the EQC budget numbers. The EQC is scheduled to have 5 more meetings. The average cost for meeting is $8,500.

MR. EVERTS said that the July 26 meeting coincides with the NCSL meeting in Denver. Attending the meeting would be a meaningful opportunity for staff and legislators. He would request a change in the schedule to accommodate that. He offered July 19 or August 2 as alternative dates.

MR. EBZERY asked if it would take a week for the NCSL meeting in Denver. He said that the Governors Cup is August 2.

MR. EVERTS said that it needs to be a two-day block to accommodate both the Subcommittees and the full EQC.

MR. EBZERY asked if August 5 and 6 would work.

SEN. MCCARTHY offered the 29th and 30th of July.

SEN. TESTER said that if they cut a crop, that would be in August.

SEN. MCCARTHY said that the date would be moved to the 29th and 30th of July.

IV SUBCOMMITTEE REPORTS

- ***Coal Bed Methane(CBM)/Water Policy Subcommittee***

SEN. COLE said that the CBM Subcommittee received good presentations and comments from those present. John Wheaton, from the Montana Bureau of Mines and Geology (MBMG) spoke about what happens when water is withdrawn from the ground, as far as wells are concerned. He offered information about the depression cone, wells and production.

Mr. Wheaton explained how when you start with a CBM well, the amount of water being drawn down is high, but after about a year, there is an appreciable drop and the gas is coming up in greater amounts. He also offered geologic information about the strata forms. The bottom line was that everything is site specific.

Russ Levens from the Montana Department of Natural Resources and Conservation (DNRC) spoke about the ground water monitoring program that has been going on for some time. He also spoke about the monitoring wells in the controlled ground water area.

There was a panel discussion by Jack Stults from the DNRC, and attorneys Holly Franz and John Bloomquist. The panel discussed water rights as they specifically related to CBM development. Water produced by CBM production is considered de-watering and therefore does not require a water right. One of the things mentioned was the mitigation agreements that are required by legislation passed in the last session. The mitigation agreements protect the user of the water in a way that would be beneficial. A couple comments that came out were the need to make sure that the CBM developer is a reputable company and that you have a good mitigation agreement.

The Department of Environmental Quality (DEQ) gave a status report on the CBM EIS. The draft should be out on February 15. The final EIS will hopefully be done this fall. There are some studies that won't be out in the draft EIS at this point in time, but will be in the final EIS.

Total Maximum Daily Loads (TMDL's) were also discussed by the DEQ. In 1996 there were 800 streams that were to be looked at for TMDL's. Now we are down to around 400 streams. The Sage Creek TMDL's were discussed. SEN. TESTER said he would like to meet with the people in Chester that dealt with the Sage Creek TMDL in order to get a better idea of what the TMDL operation is like on the ground and where there may be improvements.

There were staff updates that will tie into the next meeting.

MS. PAGE said that Mr. Wheaton also presented that, by design, when the CBM wells are pumped the water level in the coal seam is lowered. The distance out from the field that will be affected is very site specific, but is significant. The controlled ground water area only protects wells that are within a mile of the field. Recharge was also discussed. The length of time needed for the aquifer to recharge is also very site specific. There will be recovery, but it will take a while. Another figure was 90% recovery after 5 years outside the field, and 70% after 10 to 15 years within the field. This is all site specific.

SEN. TESTER said that the Sage Creek TMDL watershed was one of the first to be done. It is his hope that a group will meet with the producers in the Sage Creek watershed group and possibly go back to the DEQ with suggestions to improve the TMDL process. This process will be applied to many streams throughout the state.

SEN. TESTER said that Russ Levens' presentation showed that the base-line information is incomplete about where the water level is in the aquifers. The necessity for a lead agency to figure out where the water levels are is critical. The baseline information, although incomplete, is one of two protections for downstream water users. The second protection is the mitigation agreement. The mitigation agreements only apply to those within one mile of the field, after that the agricultural producer must show damage.

SEN. MCCARTHY said that MS. VANDENBOSCH supplied the Subcommittee with a summary of CBM legislation from the last session.

MS. VANDENBOSCH said that she has a sign-up sheet for those who are interested in receiving the draft EIS. There are four options for receiving the draft.

· ***Energy Policy Subcommittee***

REP. LINDEEN said that the Subcommittee heard from Matthew Brown, National Conference of State Legislatures (NCSL), who gave a history of the federal Power Act and the Federal Energy Regulatory Commission's (FERC) Orders 888 and 2000. He defined what kind of control the state legislature has as opposed to the federal control. The state control was over transmission siting, generation siting, retail prices and use, oversight of the Public Service Commission (PSC), and renewables and efficiency policy.

The next presentation was from Joel Cook, Pacific Power and Light (PPL), who explained power marketing. There was a presentation from Dave Wheelihan, Montana Rural Electric Cooperatives, who gave a history of the cooperatives and the role that they play in the energy situation in the state. Mr. Wheelihan said that there are some things in SB 390 that are good for the cooperatives, which they would like to retain. He discussed the issue of the Regional Transmission Organizations (RTO). The RTO's are going to have a huge impact on how things develop in the future.

The next presentation had to do with the settlement agreement and the associated stranded costs. Don Quander, Dennis Lopach, John Alke, and John Bushnell were all present for the panel discussion. They shared the process that had been gone through to reach the settlement. They all agreed that it was a difficult process and they are happy to have it over.

The next presentation dealt with renewables and conservation. A representative from Northwest Energy gave information on the benefits of conservation. Doug Barba, Ameresco, gave a presentation about the wind-harness project that they are developing. This project is included in the default supply portfolio. Ameresco has filed for the interconnection agreement. The areas that they are looking at include Cut Bank, Helena, Judith Gap, Springville, and Whitehall. The presentation included some background on how wind projects work and experiences that this particular company has had in the past.

The two decisions that the Subcommittee made were that the Montana Energy Briefing Book will be available for all legislators and the public. The DEQ staff has agreed to put the book together for the EQC and to make any necessary changes just before the session begins to ensure that the book is current and correct. The other decision was regarding whether to pursue changes in the energy policy statement and it was decided that the current policy is broad and doesn't need to be changed.

REP. HEDGES said that, in the wind energy area, the development of wind energy in Montana is dependant on a 1.7 cent tax credit per kilowatt. That legislation is in process in Washington DC to reauthorize the wind tax credit. Without that credit wind energy is not competitive. If the state is serious about developing wind energy in Montana, it needs to lobby congressmen in Washington DC and encourage the passage of this incentive.

REP. CLARK said that there were some questions left unanswered. One of the things that is unknown about the portfolio is that it is built on generation that has not been developed yet. There is a great deal of uncertainty in which aspects of the portfolio are certain. They were not able to get the specifics of the settlement agreement. This could be an ongoing process.

- ***Agency Oversight/MEPA Subcommittee***

MR. MITCHELL said that the Subcommittee continued with its oversight of the state remediation programs: the Controlled Allocation of Liability Act (CALA) and the state Superfund. Department of Environmental Quality (DEQ) staff talked about funding problems with the Comprehensive Environmental Cleanup and Responsibility Act (CECRA) program. The Orphan Share program is funded by the Resource Indemnity Trust (RIT) taxes. It has a healthy balance because it hasn't been spent. It is only after the remediation is complete those costs are reimbursed. While there is a big balance in the fund, it is promised money. The state Superfund program is funded by RIT interest and therefore is on a fixed income. The interest funds a number of other programs. These agencies have a savings account of $100 million in that whatever interest comes off of that gets distributed to the various agencies. They are dependant on the interest rates. The CECRA program is also funded by cost recovery of money that is spent by the state in oversight roles or remediation roles for cleanup. There is a delay with this. Cost recovery is a tenuous funding source.

There was also a presentation on the Petro fund from DEQ. This is a fund established to help pay for the cost of remediation of underground storage tank leaks because insurance is not available. The fund is paid by fees on meter fuels. The Subcommittee heard from some members of the Petro board that help allocate the fund for reimbursement. They are in a position where they are getting more claims than there is money for reimbursement. The anticipated fund balance at the end of the fiscal year is $50,000. There may be some recommendations from the Subcommittee on how to address the funding for this.

The Subcommittee heard about the statutorily required compliance and enforcement reports. This report has been done twice now. The Subcommittee had a meeting with the three agencies that produce the enforcement report to decide if the statute should be repealed or expanded. The Subcommittee decided that the report was valuable, but the EQC has done an inadequate job of reviewing the report in the past. There are some suggestions about requiring the report to be submitted at the beginning of the interim, rather than the end. They will be putting together a letter to the agencies to provide them guidance in the future.

There were also presentations on the Montan Environmental Protection Act (MEPA). DEQ presented some information on the cost of MEPA and the difficulties that the agencies have in getting the anticipated costs for the MEPA process. The fee statute is not working as intended, but nobody had a solution at this point. The Subcommittee wants to get some additional information from private individuals.

The Subcommittee wants to update the MEPA handbook and put together a brochure on MEPA public participation for use by the agencies. Since no agencies have stepped forward to produce that brochure, EQC staff will be doing that.

The MEPA litigation update was given by staff. There is also a case filed regarding the Big Hole Beaverhead river rule issue.

The Subcommittee reviewed a letter asking the Oversight Subcommittee to look at cleanup for methamphetamine labs. There may be some more information at a later date.

The Subcommittee discussed and agreed on the concept of having an informational meeting on the Milltown Dam. A U.S. Environmental Protection Agency (EPA) superfund decision is coming out soon. The Subcommittee felt that they should hear some current information on the project. His impression was that the members would like a significant amount of time to hear this information.

REP. BARRETT thanked MR. MITCHELL for doing a good job.

MR. STRAUSE added that in regard to the petroleum board and the underground storage tank fund, everyone who testified said that this is an important fund. Right now, each individual spill, the owner of the site must pay $17,500. After that, the state fund takes over. It was emphasized that this is really important in small communities that may only have one gas station. Panel participants said that they are looking at ways to stretch the dollar, but don't think that they will be able to.

SEN. MCCARTHY said that the Milltown Dam issue would be discussed during a break and she will later ask for input from EQC members.

SEN. TESTER asked if the Subcommittee is going to revisit the idea of stretching Petro fund dollars. He has noticed that the consultants tend to perpetuate the projects and therefore raise the cost of the cleanup. It may be money well spent to have some oversight on the consultants.

REP. BARRETT said that there are 800 remaining sites. She did request an update on the status of these sites and the prioritizing of them. She does expect some more information.

MR. STRAUSE said that the amount of time required and ways to speed up the process were discussed.

V NATURAL RESOURCE INFORMATION SYSTEM (NRIS) PRESENTATION

MR. EVERTS said that the EQC was instrumental in putting together the NRIS program in state government. NRIS disseminates natural resource information to a variety of people, both in the private and public sectors. It has been a very effective program.

Jim Hill, NRIS, said that the EQC was instrumental in getting NRIS started. About a year ago, NRIS provided an update to the EQC on the water information system. At this point he wanted to offer a general overview and visit a couple issues that are of concern to the Council.

NRIS was established in 1983 and was mandated to simplify the task of locating natural resource information. NRIS today is not what it once was because of the new technology that they are able to use. The Internet is a primary means of finding and presenting information. The original vision of NRIS is still accurate. NRIS is located at the state library and is dedicated to providing Montana with comprehensive and accurate information that is essential to managing the state's natural resources. They have data sharing arrangements with most of the state agencies. They also try to use current technology. The Internet-based tools provide users with access to GIS and display tools. The NRIS program is a natural resource information

clearinghouse. Data storage has now reached 1.5 terabytes. What that says is that the idea of consolidating the data in one place to avoid replication is a concept that holds true. Beyond data, NRIS provides users with access and display tools. NRIS staff is also available to help users access the data.

NRIS operates two programs. The Natural Heritage Program is the state's clearinghouse for information on native animals and plants emphasizing species of concern and high quality habitats such as wetlands. The Heritage Program has scientists on staff that go into the field to collect data. That program also produces reports that will become the primary reference for the information that has been collected. The Heritage Program data is used for many things such as preventing ESA listings and tracking of species of concern. The Heritage Program data is used in the War on Weeds to ensure that the pesticides used are appropriate and won't harm species of concern that may be in the same area. Expediting environmental reviews for various projects has been attributed to the Heritage Program. The other statutorily mandated program is the Water Information System which is the starting point for locating water resources information in the state. One of the earliest programs under the Water Information System was the drought monitoring in the state; this is a continuing problem.

When DEQ had to make their TMDL information available to the public they came to NRIS to help put that information online. NRIS also moved the Department of Fish, Wildlife and Parks' (FWP) Montana Rivers Information to the Internet. One of the more recent applications was making the Department of Natural Resources and Conservation (DNRC) water rights information available to the Internet. This data base contains over one million points. There is a lot of interest in accessing this information. This applies to all water rights.

The issues that are of concern to the EQC include water policy, CBM, and environmental trends. The Water Information System consolidates a lot of the information for water policy in one place. CBM is a new issue. A year ago they worked with DEQ to put together a map series to help support the scoping meetings that dealt with CBM.

SEN. COLE asked if the wells are registered. **Mr. Hill** said yes. **SEN. COLE** said that a complete listing of all the wells would be helpful in looking at draw downs and monitoring. **Mr. Hill** said that the DNRC listing includes a list of registered wells. The Montana Bureau of Mines and Geology (MBMG) manages the "G-Web," which is the ground water information system database. Both systems are now available through the NRIS mapping concern. **SEN. COLE** said that there are a lot of shallow wells that are not registered that need to be included. **Mr. Hill** said that is a possible issue that should be identified as one to go forward with.

Mr. Hill continued about the mapping. This is a basic use of all the data that is out there. The analysis doesn't need to take place at NRIS, but the data needs to be available. The Natural Heritage Program is working with the Bureau of Land Management (BLM) to survey the area and get a complete inventory of plants and plant communities in Rosebud, Big Horn and Powder River Counties.

Environmental trend monitoring is an area that they are struggling to getting a hold on. They want to answer questions like: what are the long-term trends that affect the state? What are the effects of these trends on the state's natural resources and environment? What effect do the natural resource agency programs actually have on improving the environmental conditions? It

is easy to carry temporal information in the database that may help answer some of these questions. He offered the example of the census data. This does increase the amount of data that needs to be stored.

NRIS asked what can they do for EQC. They need to identify what data gaps need to be filled and identify improvements in the online applications. NRIS has a small and efficient staff. They have an expertise in science, data management, GIS, and the Internet. They have both a hardware and software infrastructure. There are data sharing partnerships. NRIS is service oriented and has a quick response to user needs, but they need to know what those needs are. To make this system work, there is a fundamental level of staffing that they can't drop below. They are lacking the ability to ensure that the applications run 24/7.

Sue Crispin, NRIS, presented a couple of reports to use as examples of what the Heritage Program has done. They want to make sure that people have the means to get to the web site. The reports include the names of many other agencies that they work with. They try to take advantage of their partnerships with the other agencies.

Mr. Hill referred to some Independent Record articles that talked about the way that they work with the agencies and a brochure about the program, see **EXHIBITS 2 and 3.**

MS. PAGE asked what prompted the report. **Ms. Crispin** said that they had been working with the DEQ on a wetlands program to begin systematically collecting information on wetlands and watersheds throughout the state. They started to proceed watershed by watershed. They are now working in the Jefferson watershed. They hope it will continue to progress throughout the state.

VI UPDATE ON STATE WILDFIRE SUPPRESSION COSTS

MR. MITCHELL said that this agenda item originates from HJR 42. This basically asks that an interim committee look at the state fire suppression costs and policy. He referred to **EXHIBIT 4**. One of the issues is funding and how the costs of a fire year are covered. The Council allocated 1/10th of an FTE to this effort and advised staff to work with the Legislative Fiscal Division that was working on the financing end of this, and also to work with the DNRC, Forestry Division, which is putting together some planning efforts for Fire Odyssey 2001 that looks at fire management in the state.

Gary Hamel, Legislative Fiscal Division, said that for the second year in a row the fire season in Montana has been very difficult. A substantial funding source to fight the fires has been the Governor's emergency fund, but that is now strained. There is the potential for the Federal Emergency Management Act (FEMA) funding in the years where the fires are particularly bad. Quantifying fire suppression costs is a complex issue. It can take several months to settle bills related to fires. Other issues that need to be taken into account are how big is the fire, where did the fire start and who is responsible for protection. Timing can extend the payment of those costs for many months after the fire season. They are still working on fire bills from the last season.

There is a three-tiered system of responsibility when responding to fires: county control, federal control, and DNRC control. It is decided in advance who will pay what. Montana is divided among agencies for fire suppression purposes. Negotiations with these agencies need to take

place before the fires start. There are three types of costs: suppression costs that must be paid immediately (food to the fire fighters); costs that DNRC will pay after the fire season ends; net costs. The U.S. Forest Service bill is a large bill that comes after the fire season has ended. There are cases with the net costs where other states will pay for our services provided to the other states. Total established cost for state fires for 2001 is $15,513,592. Mr. Hamel offered a breakdown of the total, (Exhibit 4.)

How will the fire costs be paid? There are two sources of authority that DNRC can use to pay the costs. Those are internal department funding, and the Governor's emergency fund. The department may need to approach the Legislature for a supplemental appropriation. Last year Montana used FEMA as a third source, but this year there is no FEMA funding for Montana.

For further information see Exhibit 4.

SEN. MCCARTHY asked for further information on the money spent from the Governor's emergency fund for the terrorism. **Mr. Hamel** provided that information in **EXHIBIT 5**.

Mr. Hamel continued that only 36% of the Governor's emergency fund is remaining, but 71% of the biennium is remaining.

The current system of the supplemental appropriation works, but is problematic. The DNRC is faced with trying to find additional sources of authority to pay for wild land suppression costs. Lack of spending authority potentially puts the Legislature in the position of calling a special session if internal authority, emergency funding, FEMA funds and borrowing from other departments is not sufficient to cover the suppression costs. The Legislative Finance Committee has been presented with some options when examining how fire suppression costs are funded, an example would be a HB 2 appropriation.

SEN. MCCARTHY asked for an average of what that would take. **Mr. Hamel** said that he could get that information, he believed that it was roughly $6 million. **SEN. MCCARTHY** asked for that average for the last 10 years. **Mr. Hamel** said he would provide that to the committee.

Mr. Hamel said that if the Legislature made an appropriation through HB 2, the remainder of the fire costs could be funded through supplemental appropriations. Another suggestion is to set aside part of the emergency fund specifically for fire suppression.

MS. PAGE asked if that is essentially that way now, or is the emergency fund first-come, first-serve. **Mr. Hamel** said that first the Governor has to declare an emergency. Once that has occurred the agency then has the authority to use that fund. The problem is that the situation may not be serious enough to declare an emergency, and the DNRC is left to find the authority within its budget to pay for the fire suppression costs.

REP. CLARK asked what the DNRC is doing to increase the efficiency of the operation.
Mr. Hamel said that the DNRC is working on a ten-year fire planning process. There will be a briefing at the next meeting. The Fire Odyssey is looking at ways to make the fire program more efficient, but that is only at the state level.

Mr. Hamel said that another suggestion is to develop a fund that would be used to fund fire suppression costs. Currently fires are funded through the general fund; this would shift that

funding into state special revenue. Other funding sources are charging fees to various entities. There is another list through the Fire Odyssey that the department is exploring for potential sources of income to fund such a trust.

Fire Odyssey 2001 is an effort to develop a ten-year strategic action plan. The DNRC looked at implementation of solutions, public expectations of fire and aviation programs, developing a new DNRC fire mission, DNRC's role in all risk incident management, staffing, and the relations between agencies. Funding options that came out of the Fire Odyssey are to establish a suppression fund, a separate administration budget, undertake an analysis of the whole fire program and include the at-risk lands based on property values, or to develop an assessment structure based on the values of the land protected. The outcome of this study could have potential long-term impacts on the way that this funding is received.

MR. STRAUSE said that the state is suing someone for starting a fire last year. If the state wins, where will that money go? **Mr. Hamel** said that money would go back into the general fund. **MR. STRAUSE** asked if there had been any effort to determine the increased costs of protecting structures in the forest. **Mr. Hamel** had not done that.

SEN. MCCARTHY asked for Don Artley, Chief Forester, to comment. **Mr. Artley** assured the Council that his staff is working with the EQC staff in preparing a report and recommendations in relation to HJR 42. Those will be presented at the July meeting.

REP. CLARK asked what changes would be made in the program if the budget was decreased. **Mr. Artley** said that they are being required to propose a reduction. All they could do is to cut services to some portion of the citizenry in Montana or they would have to find another funding source. We are beginning to see a discrepancy between those who are paying costs and those who are receiving benefits. They believe that the general fund should pay less.

REP. HEDGES asked if we are taking a portion of the revenue from the school trust lands to put in a fire suppression fund, or part of the payment in lieu of tax revenue. **Mr. Artley** said that they are not. Fire suppression is funded from the general fund.

SEN. TOOLE said that if there are residences it increases what needs to be done to fight the fire. We need to look at ways to reflect the costs in the payments that come from people who choose to live in that type of area. **Mr. Artley** agreed. It is an increasing burden on the general fund. Half of the forest fires occur in areas of subdivisions and private residences. These people pay the same fees as those without houses on the land.

VII OTHER BUSINESS

SEN. MCCARTHY feels that the issue of the Milltown Dam warrants full Council attention. It will be included at an upcoming meeting. Background information will be provided to the members.

SEN. MCCARTHY invited Sen. Christiaens to speak about the methamphetamine issue.

Sen. Chris Christiaens, Great Falls, said that he wants to speak about methamphetamine labs and their cleanup. He has been working on this with EQC staff. There are no standards as to any cleanup or contamination on sites where there have been methamphetamine labs. The labs are moving from the urban areas to the rural areas and that trend will probably continue.

There are two types of methamphetamines, phosphorous red and hydrous ammonia. The phosphorous red has been predominant in southwestern Montana. Hydrous ammonia is more prevalent in the agricultural areas.

The problems that are being faced, especially in the rural areas, is that if it is flushed into a septic tank, it can contaminate an entire septic field and leak into underground water. In urban areas it is not as much of a concern. The federal government through the DEA is coming in and filing notices on all of the liens and property where a meth lab site is found. If Montana doesn't have standards, how does the state know if the proper cleanup has been done? This would fall to the health department, but they won't do it because they don't want the liability. They also lack staff, money and expertise to do the job properly.

There were 21 methamphetamine labs discovered last year in Cascade County. Law enforcement is also concerned. There is federal money to help with cleanup, but it is mostly just the moving of the chemicals out-of-state. There is no money for the actual cleanup, leaving the property owner to pay for the entire thing. There needs to be work to decide if it is a cook site or a deal site. Property owners will be asking for a change in value for tax purposes, so the Department of Revenue is getting involved. We need to be involved now or it will be a huge issue in the next session. Should the EQC decide not to look at this, perhaps the Legislative Council might be able to undertake it. He feels that because of the environmental issues it fits with the EQC.

MR. MITCHELL said that there was a brief informal discussion with Jan Sensibaugh and she stated that the DEQ has a person tracking these sites right now. They have no problem with outdoor remediation. The problem with residential cleanup is that there is no DEQ involvement. There are no clean air standards for indoors. The Drug, Alcohol, and Tobacco committee (DAT) has recently been formed and they may be a source of information for this issue in the future.

Sen Christiaens said that the DAT committee didn't want to touch this because it was beyond their capacity.

SEN. COLE asked how many labs there are statewide. **Sen. Christiaens** said that Flathead county had 30 labs during the last session. Additional money was not appropriated for dealing with those labs. The labs have proliferated all over the state. When there has been a bust, all of those chemicals need to be checked by the crime lab to determine what chemicals have been involved. The Attorney General's office will be asking for more money to run these tests. We also need to look at the cost of treatment of addicts, which lasts six months to a year.

VIII LANDOWNER'S PERSPECTIVE ON COAL BED METHANE (CBM) DEVELOPMENT

SEN. MCCARTHY said that, after the September tour, it was clear that there is a high level of interest on these issues. She had requested that the Council hear from a landowner that doesn't favor CBM. There was also a request for soils and water quality information.

Northern Plains Resource Council (NPRC) presented supplemental information, see **EXHIBIT 6**.

Clint McRae, NPRC, submitted written testimony, **EXHIBIT 7**. He said that he is not comfortable with the way the issue is being handled. He is a rancher. The most valuable resource on any ranch is water. Industry has claimed that the average CBM well produces

around 11 gallons of water per minute. Well spacing is limited to one well every 80 acres. At the CX ranch near Decker there are three coal seams being dewatered at the same time.

There are many sources of water on his ranch; he is fortunate to have shallow aquifers. Every well on his land is shallow and all the wells are in coal seams. The massive amounts of water discharged through CBM threaten all the wells and springs on his ranch. How do you replace a spring that doesn't require a power source?

He is also concerned about the water quality. Two years ago, he lost several head of steer calves. After the calves started dying, it was concluded that the cause of the deaths was high sulfates in the water. The same result could happen with CBM discharges dewatering an aquifer at the same level where sulfates could concentrate. Water quality is a huge issue for ranchers and farmers. Water quality also affects irrigation. The most common crop in his area is alfalfa. A sodium absorption ratio (SAR) level of 3 begins to negatively impact alfalfa. A neighbor of his has a 25 acre field on a center pivot irrigation system. Since CBM water has been discharged into the Tongue there has been a 20 ton decrease on that field. He is convinced that the reduction is a result of high SAR discharge water on the upper stream. Another neighbor bought a farm in that area because of the water quality, climate and soil type. He raises organic vegetables and ships those vegetables to California. An SAR of 3 will severely limit the growth of those crops. Should the agricultural community be expected to sacrifice their irrigated ground for a short-term industry. High SAR water will also affect sub-irrigated ground. He has 250 acres of sub-irrigated ground on the Rosebud. The BLM has concluded that water in the Rosebud will be unsuitable for irrigation.

It has become obvious that any negative impacts caused by CBM development will become an agricultural problem, not an industry problem. The CBM industry should be held to the same standards as other industries. The agricultural community doesn't need the volume of water produced by the CBM development. The CX field produces enough water in one day to water 14,400 head of cattle. They are also concerned about surface damages. There could be a significant amount of rangeland taken out of production. Landowners who don't own the minerals have very little say in what will happen. The way to solve the problem is to do it now. What happens when this industry is over? This is a short-term industry.

IX UNDERSTANDING THE SCIENCE OF WATER AND SOILS IN RELATION TO COAL BED METHANE DEVELOPMENT

John Wheaton, Montana Bureau of Mines and Geology, said that his group is mandated to provide scientific information about the earth sciences of Montana. The data and the information is site specific. CBM is a natural gas produced by non-traditional means. In traditional natural gas development, there is a deep geological unit with a pocket of gas that is tapped by drilling a well in; the formation pressure pushes the gas out to the surface. With this there is very little water discharged. Any impact on the geologic structure is separated from the shallow systems by other geologic strata. In the Powder River Basin the CBM is in the shallow coal seams that are being used for aquifers. The competition for that water is very contentious.

CBM can be produced by biogenic means or thermogenic means. The biogenic method produces lower concentrations of gas in the coal. The Powder River Basin is the only producing field that is biogenic. The Powder River Basin CBM water is disposed of by surface discharge; most other fields use injection as the method of disposal. There hasn't been much new activity

in Montana due to the moratorium; only 231 wells online. Montana has 1/3 of the nation's coal resources, more than any other state. There is a lot of interest in coal in the Bull Mountain area. The two areas of current CBM interest are the Livingston-Bozeman field and the Powder River Basin.

The ground water issues with the CBM development are the depletion of the water resources and impacts to the water quality due to discharge. In the Powder River Basin there are 4,520 recorded wells and 1,100 springs, but that number is low.

Mr. Wheaton showed some cross sections of the Powder River Basin area. The major coal seams are the Anderson and the Knobloch coal seams. As you go north there is less coal and less overburden. This reduces the potential for gas and CBM development. Erosion is what is providing springs and shallow areas, but this also reduces the gas potential. Coal seams have greater continuity than other strata formations, such as sandstone.

MS. PAGE asked for the name of the major coal seam. **Mr. Wheaton** said that was the Canyon Coal Seam. The Anderson shows up in part of that area as well. **MS. PAGE** asked if the Canyon is the big seam in the Hanging Woman area. **Mr. Wheaton** said that is right. They also believe that the Knobloch is in that area.

Mr. Wheaton said that aquifer draw down is an issue because the pressure in the aquifer is what powers wells and springs. CBM development reduces that pressure to remove the gas and therefore impacts the potential yield from the wells and the springs. The water in the coal seam is under pressure that is greater than the coal seam. The wells will have a cone of depression form around each well where the pressure is lower. Turning a well on allows water to be pushed around the adjacent aquifer. There will be very little pressure in the area of influence to push water to the wells. Impacts to wells depend on the draw down. The ground water system recovers through recharge and time after the wells are turned off. Recharge to the outcrop of the aquifer is needed. Wells that are closer to the field will have a greater potential drop off of the maximum yield. There is a gradual draw down with coal mining and a quick draw down with CBM mining. He showed a chart that offered an example of a coal mine for 30 years with the draw down and then maintaining the low water level and then a fairly quick recovery after reclamation.

The amount of CBM produced water will vary per field depending on size and number of wells. The amount of water produced will decrease as time goes on. The gas production starts low and will increase for a while and then taper off again. Eventually the well will no longer be valuable. There can be a wide range of values in the same area.

SEN. TESTER asked if it is true that if the water is put in the ground it will eventually flow to the river, except what evaporates. **Mr. Wheaton** said that was correct. The minerals will not evaporate, but rather some will be absorbed into the soil profile.

REP. CLARK asked if the average annual flow is related to the estimated average annual discharge rate, will there be a natural draw down in the river bed in reduction of the ground water contribution. **Mr. Wheaton** said that what is happening is the water that is already moving through the system is being moved. Then there is less water moving through the aquifer and at some time that will likely lead to some reduction in the base flow to the river.

Mr. Wheaton said that one of the issues with disposal of the water is the quality; the potential impact of sodium and SAR to te soil. SAR has no relationship to the total salts in the water. EC is the ability of the water to transmit electricity and is an estimate of the total dissolved solids in the water. As the water moves through the ground water flow system, it starts at the recharge area dissolving calcite and andolomite. The total dissolved solids (TDS) are very low and the SAR is very low. As it moves through the system, there are oxidation reactions that increase the sulfate concentration. The TDS increases and is now a magnesium, calcium, sulfate type water. Farther into the system, contact with shale will absorb the calcium and magnesium and release sodium. The TDS and SAR increase again. Farther through the flow system, the sulfate is consumed by bacteria. The end result is that the TDS decreases a little, leaving a water dominated by sodium bicarbonate. This water is what is found throughout the CBM fields.

Within the Powder River Basin, as you go north and west the EC and the SAR increases.

REP. CLARK asked if the high SAR readings, 45 and 53, are a natural result or because of development. **Mr. Wheaton** said that those are naturally occurring ground water levels. CBM will not have an effect on the ground water quality.

Mr. Wheaton continued, saying that CBM has a few disposal options. It can go to streams or holding ponds. Discharge to a holding pond is not zero discharge. There is evaporation, seepage, and infiltration. Deep injection or injection into a different part is another option.

The Livingston coal field is 35 miles and the target drilling is fairly deep.

SEN. MCCARTHY asked where that field is. **SEN. COLE** said that it is near Jackson Creek.

Mr. Wheaton said that the quality of water discharged will be high in sodium and SAR. They have looked for wells in the area that show coal.

Draw down within producing fields will be to the top of the producing coal. Less draw down will occur with overburden. They are estimating about 10 feet of draw down reaching out 5 to 10 miles. In some areas, that distance will reach the outcrop, which is where the springs are.

MR. STRAUSE asked if the draw down was based on a model. **Mr. Wheaton** said that it is a model. The Wyoming EIS shows more draw down than that, nearly 100 feet of draw down. **MR. STRAUSE** asked how the difference is accounted for. **Mr. Wheaton** said that it is different assumptions in the models. There will be a range and the actual draw down will be based on measurements.

Mr. Wheaton said that the draw down will translate to decreased availability of wells and springs. The amount of decrease would be site specific. It will take monitoring to know what the impacts are. The recovery will take the life of the production plus recharge. The water level will approach 90% recovery within 5 years and within the field there will be 70% recovery in 19 to 15 years.

CBM is a diverse energy source, but there is a conflict because of the impact to current water users. Monitoring is necessary to allow water management plans to be developed.

Dr. Jim Bauder, MSU, showed slides that depicted a coal seam that was exposed and, therefore, leaking water. The water in the coal seam needs to be managed. One of the disposal options is land application. Wyoming provides a good reference for what goes on. He showed pictures of different land applications both with no impacts and with impacts.

SEN. COLE asked if there are before and after pictures. **Dr. Bauder** said that he did have those if they were wanted.

Dr. Bauder said there are sites that have natural accumulations of salts on the surface. The presence of salts is a result of a geologic process. It is not something new as a result of the CBM development. MSU was able to gather some foundation data as a result of other issues on the Tongue and Powder Rivers. They have been actively involved with the BLM in assessing soil and water management applications. In a lot of cases they deal with water that has passed through the shale zones, which are often contributors to the salts. The potential hazards of irrigation with CBM water are the salinity and the sodicity of the water, and the soil.

Salinity in the soil is related to the salinity in the water and can be up to three times higher. Sodium is a part of the salt, but not the entire thing. The other issue is the alkalinity of the soil. Soils in the south eastern area of Montana are naturally alkaline. The exchangeable sodium percentage is the amount of the soil surface that is occupied by sodium. This is a critical issue when looking at the impact of irrigation on different soils. The SAR is the amount of the sodium in the water relative to the calcium and magnesium.

Different plants respond differently to the salinity of the soil and water. The threshold soil salinity levels vary from crop to crop, this is the point at which the plant begins to show reduction in its performance. These are typically biomass production as a result of the soil water reaching the threshold salinity level. For example, barley has a threshold of 8, while alfalfa has a threshold of 2.

There was a study in about 1983 where sites in the Powder River Basin that had at least 40 years of irrigation were selected. It was found that salt accumulates in dry land soils at the depth of natural leaching. When irrigation water is added, that well-drained soil can essentially be cleaned. The soil equilibrated with the irrigation water. On soil that is not well drained, the salinity on the surface was increased, but deeper down the amount of salinity was decreased. Irrigation seemed to elevate the salinity of the soil over the long term. If we assume reasonably good management, a unit increase of salt concentration in the irrigation water is typically accompanied by a threefold increase in the concentration of salt in the soil solution.

How good is the water coming in? The quality is dictated by the intended use. Most CBM water is unsuitable for irrigation, but usable for many other areas. The standard reference is a threshold of 15%, which equilibrates to a SAR of 13. As the SAR goes up, the risk of dispersion goes up. If you disperse a soil, the leaching potential is decreased. The pattern of leaching ability depends on the profile of the soil.

The two issues that have to be dealt with, with respect to sodium, are swelling and dispersion. The swelling process does reverse itself, but the dispersion issue does not. As we elevate the ESP, the amount of water that can be put into the soil decreases. It is difficult to identify a single particular soil in the landscape. It is not simply a matter of applying the water to the soil, you have to not impact the soil around the area that you are trying to apply the water to. More than

50% of the soils in south eastern Montana fall into the category of having the montmorillonitic base, which means that those soils have very high sensitivities to sodium conditions in the soil. The other consequence is that the SAR elevates in the surface channel at a rate higher than the salinity because of the chemical processes that are going on.

There was a study in the early 1980's that tried to define different criteria. To do so, the study created three different conditions. The concern was that oil and gas development and sequestering water was going to have an impact on the Powder River. There were three water quality scenarios: past, present, and future. The values created for the future are similar to that which was used for the CBM. They found that the soils equilibrate with the water that is applied under the best of conditions. Fine textured soils and soils with thick clay layers presented a problem for future irrigation, particularly if the water quality deteriorates.

You can take the salinity and SAR of irrigation water, given the right combinations, the risk of that impacting the soil is very little. The wrong combination can lead to a very high risk. EC affects the plant and SAR affects the soil. In combination, the two can be managed.

He showed a chart that depicted the average EC in the Tongue River compared to the discharge water of CBM production, which was more than twice as high in EC. If we look at the SAR, there is a very low average in the Tongue River and the CBM water has a significantly higher amount of SAR. This is a problem for irrigation management. You need to look at watersheds separately. CBM has provided another platform for us to gain the appreciation for the relation for the soil and the water quality.

MR. EBZERY asked if Dr. Bauder did outside consulting. **Dr. Bauder** said that he did.

MR. EBZERY asked if he did any consulting for industry. **Dr. Bauder** said no.

MR. EBZERY asked if he was involved in the process with the Northern Cheyenne tribe. **Dr. Bauder** said that he was not. **MR. EBZERY** asked if he worked for any other groups. **Dr. Bauder** said no. **MR. EBZERY** said that there was some mention that Dr. Bauder had worked on the Northern Cheyenne standards. **Dr. Bauder** said that he had helped them establish their standards for surface water relative to land application. It was a university contract, not a consulting job. He wrote a document for the Northern Cheyenne tribe that presented standards as a recommendation and that was the last of his involvement. He has not seen the standards.

SEN. TESTER asked if that line of questioning was to determine if Dr. Bauder was a neutral source. **MR. EBZERY** said that he wanted to find out if there is a consistency in the water quality standards. **Dr. Bauder** said that he feels there will be some consistency. He has been actively involved with the DEQ when the department invited him to look at the standards. **MR. EBZERY** said that he is looking with the perspective of someone who will someday comply with those standards. What does Dr. Bauder potentially see for an operator with two sets of standards. **Dr. Bauder** said that the numbers may not be exactly the same, but they are close.

SEN. TESTER asked if the figures were based on flood irrigation or sprinkler irrigation. **Dr. Bauder** said that was based on water being applied, irrespective of the method.

SEN. TESTER asked if the type of application would affect the results. **Dr. Bauder** said that sustainable irrigation can be accomplished with any type of system if it is properly managed. Flood irrigation can be efficient the way it is now. Sprinkler irrigation if it is properly managed can have the same result. The salt would just get pushed to a different place, just below the root zone. In a flood system the salt is likely to move all the way through.

SEN. TESTER asked about some research that is being done in Wyoming on using the CBM water to increase grassland carrying capacity by irrigating range land. **Dr. Bauder** said that it is a possibility. There have been studies to show the consequences of added rainfall where a one-time event is applied. Sometimes the crop will respond to that single event for many years.

SEN. TESTER asked if there is enough dilution on the Tongue River so that the proposed CBM developers can be absorbed and the irrigators can continue to irrigate long term. **Dr. Bauder** could not answer that because he doesn't know what the inputs are going to be. **SEN. TESTER** asked if you took the average flow of the Tongue, could that be determined. **Dr. Bauder** said that the calculation could be done, but it would depend on the water supplier being able to supply the water. It would change the water management/irrigation plan. The other issue is more complicated in that the soil doesn't occur in squares. He hasn't found two chunks the same yet. Irrigation is developed for square fields. It can be done.

REP. CLARK asked if Dr. Bauder had developed a single set of standards for the tribe for use on all soil types. **Dr. Bauder** said that he developed a rationale for standards. He presented three different rationales and then based on the management practices and the available resources, he selected standards that would fit within the current resources in terms of management and soil units. **REP. CLARK** asked if there was a situation where if you want to continue to irrigate, you could apply a different set of standards and you need to know the distribution of that soil type. **Dr. Bauder** said generally that was true, but that if you didn't have high risk soils you wouldn't need to worry about the boundaries. **REP. CLARK** asked if the DEQ is privy to all of the information, concerns and limitations that were presented.

Dr. Bauder said that they were. The document that was prepared by the Northern Cheyenne was open for public comment. He did receive some requests from NPRC, DEQ, and industry for a copy of the report that he presented the tribe. **REP. CLARK** asked if it is likely that there will be some mistakes made in the process that will cause some damage. **Dr. Bauder** said yes.

MS. PAGE asked if over half of the soils in certain counties have clay soils. **Dr. Bauder** said that if you look at the soils that appear in the alluvial channels, that is true. **MS. PAGE** asked if irrigators in those channels face an increased challenge. **Dr. Bauder** said that was true. The irrigators will face a problem of magnitude that is more significant than that they are facing now.

MS. PAGE asked if the Tongue River is already seeing an increase in SAR values. **Dr. Bauder** hadn't seen that. **MS. PAGE** said that inevitably, if discharge is allowed to occur from an increased amount of wells, there will be a dramatic effect. **Mr. Wheaton** said that there are a lot of scenarios about how development will occur. The worst case scenario could be calculated, in which SAR's could be up in the 10 and 12 range. That is only one scenario. **MS. PAGE** asked if the average flow coming into the Tongue River accounted to the initial flush that will go into the river. **Mr. Wheaton** said that the flow rate used 1,000 wells per year coming on line with the initial spike. The Tongue River monthly flow has high variations. **MS. PAGE** asked considering

the low flow levels, what kind of input and characteristics can be seen with the constant flow that would come with the discharge of the CBM water. **Mr. Wheaton** hadn't looked at that. There is a spread sheet on the Internet that would figure that out.

REP. LINDEEN asked why all the other states are using injection. **Mr. Wheaton** said that the CBM is from deep coal seams and that water quality is lower.

REP. LINDEEN asked if Mr. McRae had any comments. **Mr. McRae** said that he has as much concern now as he did before the presentations. At what point should a landowner accept negative impacts. There are a lot of things about this that he is uncomfortable with. As a landowner he will have to start monitoring. The burden of proof is going to fall on the landowner. He wants to see that same burden on the industry as far as self-monitoring. There is no state or federal entity monitoring the water quality.

MR. EBZERY asked if one of the members of the Montana Coal Bed Natural Gas Alliance was on the Brannaman place. **Mr. McRae** said that the outfit that is drilling is not part of the Coal Bed Alliance, however, he has received information that they transferred that permit to someone else that possibly is a member of the group. **MR. EBZERY** asked if there was any implication that CBM had anything to do with Mr. McRae's calves that were lost. **Mr. McRae** said no. **MR. EBZERY** asked who he had spoken to on the CX Ranch. **Mr. McRae** has not talked to landowners who are affected by the CX Ranch.

Mr. McRae said that the landowner doesn't have the control of the CBM methane affecting the ranch. The Coal Bed Natural Gas Alliance is only as good as the worst company out there.

MR. STRAUSE asked about the rancher who has had decreased yield and believes that it is a result of CBM activity, is that a reasonable conclusion for the rancher to make. If so, how much time and expense will this rancher have to expend to prove that? **Dr. Bauder** said that at this point in the game it would be expensive to the rancher. He just finished a project similar to this where a landowner had asked for an independent assessment. The soil investigation alone was over $11,000.

MR. STRAUSE asked if Mr. McRae is right in his concern that even if he is not irrigating from the creek, it could affect his property. **Mr. Wheaton** said that the salts in the water could work out from the creek some.

MR. EBZERY asked if the drought would have anything to do with the drop in crop of Mr. McRae's neighbor. **Dr. Bauder** said that if the lack of water were such that there was a evapo-concentration process, it could have potentially elevated the salinity. He is working on a model of a stream channel that will show that an acre-foot of water will get used by ten irrigators downstream. They know that there is the potential to affect the entire channel.

SEN. COLE asked if there would be certain chemicals that go back into the soil and will increase as you go down stream. **Dr. Bauder** said that was correct. **SEN. COLE** asked, in reference to return flows and raising the water level in the streams, would that have an effect on the drainage. **Dr. Bauder** said that with anything you do, that evapo-concentration process occurs. The more you spread the water, the more you increase that process. **SEN. COLE** asked if no matter what you do, it could have an effect down stream. **Dr. Bauder** said that was true.

Mr. McRae said that he is concerned about the consequences if the creek floods and gets the high sodium water onto the hay fields.

SEN. COLE said that he does know that if you don't have drainage you tend to have evaporation and get salts that accumulate in the land.

SEN. TESTER asked if the soils are clay or sandy. **Mr. McRae** said that they are mostly sandy soils.

SEN. TESTER said that all this comes back to the fairness issue of who has the burden of proof. He doesn't think that there is a chance that a producer could go to court and prove that it was CBM water, even if it was.

SEN. MCCARTHY said that she appreciates all the work that went into the presentations. At this point she doesn't know of any legislation that they are proposing yet. She asked the presenters to keep in touch with the Council.

X SAGE GROUSE UPDATE

REP BARRETT said the technical group on sage grouse is still meeting. Things are progressing slowly. April is still the target to have the document done in some form. At that stage, decisions of what process to embark on will be made. Her concern is the process. The conservation plan is not following the MEPA process. There is a concern about public input. Now only the technical group is meeting. She has requested the comments from the public meetings so that the Council can see how the agencies address the public's concerns in the plan. That request has been made three times, but it will be made again in writing.

MR. EBZERY said that he had asked FWP about a listing. The Council might ask for an update on that as well.

XI CONFIRM LOCATION OF NEXT MEETING AND INSTRUCTIONS TO STAFF

SEN. MCCARTHY said that the next meeting is the 8th and 9th of May. There is some thought about moving the meeting to Missoula.

XII ADJOURN

There being no further business, the meeting was adjourned.

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