

## MEMORANDUM

TO: Public Record for the 2008 Effluent Guidelines Program Plan  
EPA Docket Number EPA-HQ-OW-2006-0771 (www.regulations.gov)

FROM: Carey A. Johnston, P.E.  
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DATE: 27 June 2008

SUBJECT: Index of Record Items Supporting Coalbed Methane Extraction Sector Survey:  
Updated [DCN 05768]

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The purpose of this memorandum is to provide interested parties with an updated record index supporting EPA's Coalbed Methane (CBM) Detailed Study. EPA identified the CBM sector as a candidate for a detailed study in the final 2006 Effluent Guidelines Program Plan (71 FR 76656; December 21, 2006) and also announced plans to develop an industry questionnaire to support this detailed study. EPA also noticed it will conduct an ICR in the preliminary 2008 Plan (72 FR 61343; October 30, 2007). EPA is conducting the study to determine if it would be appropriate to initiate an effluent guidelines rulemaking for the Oil and Gas Extraction Point Source Category (40 CFR 435) to control pollutants discharged in CBM produced water.

### Public Comments on First Federal Register Notice for CBM ICR

On January 25, 2008 (73 FR 4556), EPA sought comments on this ICR pursuant to 5 CFR 1320.8(d). EPA received several comments during the comment period from 35 industry representatives; Federal, State, and Tribal representatives; public interest groups and landowners; and water treatment experts, which are addressed in this notice and in the supporting docket. The comment period ended on April 24, 2008 (73 FR 14983; March 20, 2008). A listing of these 35 public commenters is provided in Appendix A.

### New Documents Supporting the CBM ICR

The following is a list of documents EPA posted to the record after publication of the first Federal Register notice for this ICR. A listing of all documents supporting the CBM ICR is provided in Appendix B. This memorandum incorporates all CBM related documents in Docket No. EPA-HQ-OW-2004-0032 by reference into Docket No. EPA-HQ-OW-2006-0771.

- Draft 2007 Coalbed Methane Industry Screener - DCN 05761
- Draft Questionnaire for the Coalbed Methane Extraction Sector - DCN 05762

- Supporting Statement for Coalbed Methane Extraction Sector Questionnaire Information Collection Request Supporting the U.S. EPA Clean Water Act Section 304(b) Effluent Guidelines Annual Reviews - DCN 05763
- Final Meeting Notes from the Oklahoma Independent Petroleum Association Meeting on April 17, 2008 - DCN 05764
- Final Meeting Notes for Denver, CO CBM Questionnaire Meeting on May 14, 2008 - DCN 05765
- Final Meeting Notes for Questionnaire Meeting on June 26, 2008 - DCN 05766
- Potential Additional Costing Information - DCN 05767
- Index of Record Items Supporting Coalbed Methane Extraction Sector Survey: Updated - DCN 05768
- Memorandum to Carey Johnston, EAD/USEPA: Subj: Potential Exclusions to Screener: Operators with One and Two Wells Coalbed Methane Study - DCN 05769
- Memorandum to Carey Johnston, EAD/USEPA: Subj: Summaries of Data Available in the Sample Frame Coalbed Methane Study - DCN 05770
- Infiltration from an Impoundment for Coal-bed Natural Gas, Powder River Basin, Wyoming: Evolution of Water and Sediment Chemistry - DCN 05572
- Memorandum to Docket EPA-HQ-OW-2006-0771: Summary of Preliminary Public Record Items Concerning Adverse Impacts of Coalbed Methane Produced Water Discharges on Surface Water Quality - DCN 05773

**Appendix A:**  
Public Comments on First Federal Register Notice for CBM ICR  
January 25, 2008 (73 FR 4556)

**Public Comments on the Coalbed Methane Information Collection Request (ICR) - Published January 25, 2008**

Comments available from the following website ([www.regulations.gov](http://www.regulations.gov)) through a search function. The search will use the docket number (EPA-HQ-OW-2006-0771) and the primary ID. For example, to download the comments from the Marathon you would search on "EPA-HQ-OW-2006-0771-1079" at [www.regulations.gov](http://www.regulations.gov).

| Primary ID | Other IDs                                      | Commenter Name              | Organization Name                                    | Organization Type                       |
|------------|--|-----------------------------|--|---|
| 0858       |  | Stan Dempsey, Jr.           | Colorado Petroleum Association                       | Industry and Related Trade Associations |
| 1064       |  | Kurt Limbach                | Private Citizen                                      | Private Citizen                         |
| 1071       |  | Andrew L. Bobst             | Bureau of Land Management                            | Federal Government                      |
| 1073       |  | Pedro Ramirez               | Environmental Contaminants Specialist- USFWS         | Federal Government                      |
| 1074       |  | Michael Paules              | Williams Production RMT                              | Industry and Related Trade Associations |
| 1075       |  | John Robitaille             | Petroleum Association of Wyoming                     | Industry and Related Trade Associations |
| 1076       | 1076.1   | Angie Burckhalter           | Oklahoma Independent Petroleum Association           | Industry and Related Trade Associations |
| 1078       | 1078.1, 1078.2, 1078.3, 1078.4, 1078.5, 1078.6 | Dennis Lathem               | Coalbed Methane Association of Alabama               | Industry and Related Trade Associations |
| 1079       | 1079.1, 1079.2                                 | Jenny Yang                  | Marathon Oil Company                                 | Industry and Related Trade Associations |
| 1082       | 1082.1   | Richard A. Payton           | Energen Resources                                    | Industry and Related Trade Associations |
| 1083       |  | B. Sachau                   | Private Citizen                                      | Private Citizen                         |
| 1084       |  | Lisa Norton                 | Yates Petroleum                                      | Industry and Related Trade Associations |
| 1085       | 1085.1, 1100, 1100.1                           | Tray Taylor                 | HighMount Exploration & Production LLC               | Industry and Related Trade Associations |
| 1086       | 1086.1   | Jerry Barnes                | Williams Production RMT                              | Industry and Related Trade Associations |
| 1087       | 1087.1   | Lee Fuller                  | Independent Petroleum Association of America         | Industry and Related Trade Associations |
| 1088       | 1088.1   | Charles W. Pollard          | Petro-Canada Resources Inc.                          | Industry and Related Trade Associations |
| 1089       | 1094   | Monica M. Deromedi          | Coalbed Natural Gas Alliance                         | Industry and Related Trade Associations |
| 1090       | 1090.1   | Spencer Kimball             | Independent Petroleum Association of Mountain States | Industry and Related Trade Associations |
| 1091       | 1091.1   | Charlie Burd                | Independent Oil and Gas Association of West Virginia | Industry and Related Trade Associations |
| 1092       | 1092.1   | Gerald Jacob                | Pioneer Natural Resources USA Inc.                   | Industry and Related Trade Associations |
| 1093       | 1093.1   | John Robitaille             | Petroleum Association of Wyoming                     | Industry and Related Trade Associations |
| 1095       | 1095.1   | Karin V. Foster             | Independent Petroleum Association of New Mexico      | Industry and Related Trade Associations |
| 1096       | 1096.1   | Brooke S. Bell              | Anadarko Petroleum Corporation                       | Industry and Related Trade Associations |
| 1097       |  | Steve Malecha               | Triwatech  | Industry and Related Trade Associations |
| 1098       | 1098.1   | Joseph C. Icenogle          | Fidelity Exploration and Production Company          | Industry and Related Trade Associations |
| 1099       |  | Christi Zeller              | La Plata County Energy Council                       | Industry and Related Trade Associations |
| 1102       | 1102.1   | Ken Wonstolen               | Colorado Oil & Gas Association                       | Industry and Related Trade Associations |
| 1103       | 1103.1   | Randall W. Maxey            | Devon Energy Production Company                      | Industry and Related Trade Associations |
| 1105       | 1105.1, 1101, 1101.1                           | Stephanie R. Meadows        | American Petroleum Institute                         | Industry and Related Trade Associations |
| 1106       |  | Steve Dundorf               | U.S. Bureau of Reclamation                           | Federal Government                      |
| 1107       | 1107.1   | Dan Campbell                | City of Raton, NM                                    | Local Government                        |
| 1108       |  | Gary E. Slagel              | CNX Gas Corporation                                  | Industry and Related Trade Associations |
| 1109       |  | Art Hayes                   | Tongue River Water Users' Association                | Public Interest Group                   |
| 1110       | 1110.1   | Connie Morris               | Citizens for Responsible Development                 | Public Interest Group                   |
| 1111       |  | OK Congressional Delegation | U.S. Congress  | U.S. Congress                           |
| 1112       | 1112.1, 1112.2, 1112.3                         | Jennifer Goldman            | Oil and Gas Accountability Project                   | Public Interest Group                   |
| 1114       |  | David A. Galt               | Montana Petroleum Association                        | Industry and Related Trade Associations |

**Appendix B:**  
Listing of Documents Supporting the CBM ICR

# *Index of Record Items Supporting Coalbed Methane - EPA-HQ-OW-2006-0771*

| <i>EPA DOCKET_NUMBER</i> | <i>Author Date</i> | <i>TITLE</i>   | <i>ABSTRACT:</i>  | <i>DOCUMENT TYPE</i>                | <i>PAGE</i> | <i>COPYRIGHT PROTECTED</i> | <i>CBI</i> | <i>DCN</i> |
|--------------------------|--------------------|--|---|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0895 | 06/28/2007         | Final Meeting Notes from Stakeholder Teleconference on June 28, 2007 - DCN 05180 | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 8           | No                         | No         | 05180      |
| EPA-HQ-OW-2006-0771-0896 | 07/10/2007         | Final Meeting Notes from Stakeholder Teleconference on July 10, 2007 - DCN 05181 | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 8           | No                         | No         | 05181      |
| EPA-HQ-OW-2006-0771-0897 | 07/24/2007         | Final Meeting Notes from Stakeholder Teleconference on July 24, 2007 - DCN 05182 | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 6           | No                         | No         | 05182      |
| EPA-HQ-OW-2006-0771-0898 | 07/26/2007         | CBM Presentation by Marathon Oil - DCN 05183                                     |   | Meeting or Teleconference Materials | 78          | No                         | No         | 05183      |
| EPA-HQ-OW-2006-0771-0899 | 07/26/2007         | Final Meeting Notes from Stakeholder Teleconference on July 26, 2007 - DCN 05184 | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 7           | No                         | No         | 05184      |

| <i>EPA DOCKET_NUMBER</i> | <i>Author Date</i> | <i>TITLE</i>  | <i>ABSTRACT:</i>  | <i>DOCUMENT TYPE</i>                | <i>PAGE</i> | <i>COPYRIGHT PROTECTED</i> | <i>CBI</i> | <i>DCN</i> |
|--------------------------|--------------------|---|---|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0900 | 08/10/2007         | Organic Compounds in Produced Waters from Coalbed Natural Gas Wells in the Powder River Basin, Wyoming, USA - DCN 05185   | The organic composition of produced water samples from coalbed natural gas (CBNG) wells in the Powder River Basin, WY, sampled in 2001 and 2002 are reported as part of a larger study of the potential health and environmental effects of organic compounds derived from coal. The quality of CBNG produced waters is a potential environmental concern and disposal problem for CBNG producers, and no previous studies of organic compounds in CBNG produced water have been published. | Publication Other Government        | 17          | No                         | No         | 05185      |
| EPA-HQ-OW-2006-0771-0901 | 12/07/2007         | City of Raton, NM, Final Meeting Notes - DCN 05196  | The U.S. Environmental Protection Agency (EPA) met with representatives from the City of Raton, New Mexico on 26 October 2007 to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 5           | No                         | No         | 05196      |
| EPA-HQ-OW-2006-0771-0902 | 08/07/2007         | Alabama Coalbed Methane Industry Final Meeting Notes - DCN 05202  | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a meeting on 7 August 2007 to discuss EPA's CBM Detailed Study and the associated Information Collection Request (ICR).   | Meeting or Teleconference Materials | 22          | No                         | No         | 05202      |
| EPA-HQ-OW-2006-0771-0903 | 09/27/2007         | Final Meeting Notes from U.S. Fish and Wildlife, Daphne Field Office and Geological Survey of Alabama Meeting - DCN 05203 | The U.S. Environmental Protection Agency (EPA) met with representatives from the U.S. Fish and Wildlife Service, Daphne Field Office and the Geological Survey of Alabama (GSA) to discuss issues associated with the environmental impacts of coalbed methane (CBM) produced water management.   | Meeting or Teleconference Materials | 4           | No                         | No         | 05203      |
| EPA-HQ-OW-2006-0771-0904 | 08/08/2007         | Final Meeting Notes from Geological Survey of Alabama and State Oil and Gas Board of Alabama Meeting - DCN 05204          | The U.S. Environmental Protection Agency (EPA) met with representatives from the Geological Survey of Alabama (GSA) and the State Oil and Gas Board of Alabama (OGB) to discuss data sources that may be of use to EPA's coalbed methane (CBM) study.   | Meeting or Teleconference Materials | 3           | No                         | No         | 05204      |

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|--------------------------|--------------------|--|---|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0905 | 07/27/2007         | Economic Analysis of CBM Produced Water Management Costs Presentation Slides - DCN 05205   |   | Meeting or Teleconference Materials | 5           | No                         | No         | 05205      |
| EPA-HQ-OW-2006-0771-0906 | 08/01/2007         | List of Potential Topics for Industry Survey - DCN 05206   | This document is a straw man draft of the CBM survey to facilitate discussion between EPA and stakeholders.   | Meeting or Teleconference Materials | 6           | No                         | No         | 05206      |
| EPA-HQ-OW-2006-0771-0907 | 10/05/2007         | Final Meeting Notes from West Virginia Coalbed Methane Industry Stakeholder Meeting - DCN 05207  | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a meeting on September 24, 2007 to discuss EPA's CBM Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 6           | No                         | No         | 05207      |
| EPA-HQ-OW-2006-0771-0908 | 10/11/2007         | Final Meeting Notes from Pennsylvania Coalbed Methane Industry and Pennsylvania Department of Environmental Protection (PADEP) Meeting - DCN 05208 | The U.S. Environmental Protection Agency (EPA), representatives from the coalbed methane (CBM) industrial sector, and representatives from the Pennsylvania Department of Environmental Protection (PADEP) participated in a meeting on October 11, 2007 to discuss EPA's CBM Detailed Study and the associated Information Collection Request (ICR). | Meeting or Teleconference Materials | 49          | No                         | No         | 05208      |
| EPA-HQ-OW-2006-0771-0909 | 11/16/2007         | Oil and Gas Accountability Project Final Meeting Notes - DCN 05220   | The U.S. Environmental Protection Agency (EPA) met with Mr. Bruce Baizel from the Oil and Gas Accountability Project on 23 October 2007 in Durango, Colorado to discuss EPA's Coal Bed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 4           | No                         | No         | 05220      |



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|--------------------------|--------------------|---|--|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0910 | 10/11/2007         | Final Meeting Notes from Pennsylvania Public Interest Group Meeting - DCN 05209 | The U.S. Environmental Protection Agency (EPA), landowners, and representatives from public interest groups (Center for Coalfield Justice, Penn Future, Fayette County Conservation District, Mountain Watershed Association, and West Virginia Highlands Conservancy participated in a meeting on October 11, 2007 to discuss EPA's CBM Detailed Study and the associated Information Collection Request (ICR). | Meeting or Teleconference Materials | 13          | No                         | No         | 05209      |
| EPA-HQ-OW-2006-0771-0911 | 10/24/2007         | Ignacio, CO, Southern Ute Final Meeting Notes - DCN 05221                       | The U.S. Environmental Protection Agency (EPA) met with representatives from the Southern Ute tribe on 24 October 2007 in Ignacio, Colorado to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).   | Meeting or Teleconference Materials | 5           | No                         | No         | 05221      |
| EPA-HQ-OW-2006-0771-0912 | 11/16/2007         | Trinidad, CO, CBM Industry Final Meeting Notes - DCN 05222                      | The U.S. Environmental Protection Agency (EPA) and representatives from the Coal Bed Methane (CBM) industry participated in a meeting on 26 October 2007 in Trinidad, CO to discuss EPA's CBM Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 18          | No                         | No         | 05222      |
| EPA-HQ-OW-2006-0771-0913 | 11/16/2007         | Trinidad, CO, Public Interest Group Final Meeting Notes - DCN 05223             | The U.S. Environmental Protection Agency (EPA) and landowners and other interested stakeholders in the Raton Basin participated in a meeting on 26 October 2007 in Trinidad, CO to discuss EPA's Coal Bed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 8           | No                         | No         | 05223      |
| EPA-HQ-OW-2006-0771-0914 | 10/16/2007         | Final Meeting Notes from Broadus, MT Public Interest Group Meeting - DCN 05210  | The U.S. Environmental Protection Agency (EPA), representatives from Citizens for Resource Development, and other interested landowners participated in a meeting on 16 October 2007 in Broadus, Montana to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 33          | No                         | No         | 05210      |

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|--------------------------|--------------------|---|---|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0915 | 12/27/2007         | Final Meeting Notes for Teleconference with Mary Williams, Mineral Management Service - DCN 05224             | The U.S. Environmental Protection Agency (EPA) held a teleconference with Ms. Mary Williams, Manager, Federal Onshore Oil and Gas Compliance and Asset Management, U.S. Department of the Interior, Minerals Management Service, to discuss EPA's Detailed Study of the coalbed methane (CBM) sector and survey.  | Meeting or Teleconference Materials | 4           | No                         | No         | 05224      |
| EPA-HQ-OW-2006-0771-0916 | 11/02/2007         | Final Meeting Notes from Colorado Petroleum Association Meeting (1 November 2007) - DCN 05244                 | The U.S. Environmental Protection Agency (EPA) met with Colorado Petroleum Association (CPA) on 1 November 2007 to provide a brief overview of EPA's CBM Detailed Study and the upcoming industry survey. See DCN 05175. The CBM sector was identified for additional review in the final 2006 Effluent Guidelines Program Plan.  | Meeting or Teleconference Materials | 2           | No                         | No         | 05244      |
| EPA-HQ-OW-2006-0771-0917 | 11/16/2007         | Durango, CO, CBM Industry Stakeholder Final Meeting Notes - DCN 05216   | The U.S. Environmental Protection Agency (EPA) and representatives from the Coal Bed Methane (CBM) industry participated in a meeting on 22 October 2007 in Durango, CO to discuss EPA's CBM Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 8           | No                         | No         | 05216      |
| EPA-HQ-OW-2006-0771-0918 |                    | New Mexico Bureau of Geology and Mineral Resources's Frequently Asked Questions About Oil and Gas - DCN 05217 | This document was provided to EPA by the New Mexico Bureau of Geology and answers common questions about CBM.   | Publication Other Government        | 9           | Yes                        | No         | 05217      |
| EPA-HQ-OW-2006-0771-0919 | 07/01/2003         | Handout on the Remaining Oil and Natural Gas Resources in New Mexico - DCN 05218                              | New Mexico has produced 5.2 billion bbls of crude oil and 56 trillion cubic ft3 of natural gas since production of these resources began in the 1920's. During 2002, 67 million bbls oil and 1.6 trillion ft3 gas were produced in New Mexico. Available estimates of undiscovered resources indicate a minimum of 1.48 billion bbls oil and between 68 and 89 trillion ft3 gas remain to be produced in the state. | Publication Other Government        | 14          | No                         | No         | 05218      |

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|--------------------------|--------------------|--|---|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0920 | 11/16/2007         | Farmington, NM, Federal and State Regulators Final Meeting Notes - DCN 05219                                   | The U.S. Environmental Protection Agency (EPA) and representatives from New Mexico state agencies participated in a meeting on 22 October 2007 in Farmington, New Mexico, to discuss EPA's Coal Bed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR). | Meeting or Teleconference Materials | 6           | No                         | No         | 05219      |
| EPA-HQ-OW-2006-0771-0921 | 10/04/2005         | NPDES Permit Number WY0053830 (Nance Petroleum Corporation / St Mary Land and Exploration Company) - DCN 05248 | This is a permit for discharge of CBM produced water into surface impoundments.   | Permit, Registration                | 24          | No                         | No         | 05248      |
| EPA-HQ-OW-2006-0771-0922 |                    | Wyoming Oil and Gas Conservation Commission CBM Summary Information - DCN 05249                                | This guide provides summary data on the number and type of CBM operations in the state of Wyoming.  | Publication Other Government        | 3           | No                         | No         | 05249      |
| EPA-HQ-OW-2006-0771-0923 | 06/06/2007         | Estimates of Technically Recoverable CBM Resources by Basin - DCN 05251  | This spreadsheet was compiled by USGS and lists predicted reserves of CBM by basin or region.   | Data                                | 3           | No                         | No         | 05251      |
| EPA-HQ-OW-2006-0771-0924 | 06/22/2007         | Slide Presentation: Update on Water Issues in Wyoming; IPAMS Summer 2007 Meeting Vail, Colorado - DCN 05271    | Presentation addressing water management issues such as pipeline restrictions for re-injection of produced water in Wyoming.  |                                     | 19          | No                         | No         | 05271      |

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|--------------------------|--------------------|---|---|------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0925 |                    | Overview of New Mexico Oil Conservation Division Website - DCN 05272  | NMOCD internet directions for obtaining CBM well and permitting data.   | Other                        | 1           | No                         | No         | 05272      |
| EPA-HQ-OW-2006-0771-0926 | 12/31/2006         | OW Ranch CBM Development Soil and Water Assessment - DCN 05273  | In June 2006, Mr. James Guercio, Owner of OW Ranch, located in the headwaters area of Hanging Women Creek, arranged for an assessment of options and strategies for beneficial use and management of 'produced' water associated with contemplated coalbed methane (CBM) development within the boundaries of the OW ranch. The assessment presented here consists an extensive inventory, review, and assessment of currently existing flow and water quality conditions within Hanging Women Creek; a summary and assessment of soil physical and chemical conditions based on extensive soil sampling; and a vegetation inventory and summary of findings of that inventory. | Other                        | 227         | No                         | No         | 05273      |
| EPA-HQ-OW-2006-0771-0927 | 09/11/2007         | Technical Report on the Remco Metal Recovery Ion Exchange Process - DCN 05277   | The Remco Metal Recovery Ion Exchange (MRIX) process is unique in that all of our skid-mounted systems are complete water treatment units featuring microprocessor control, very low water use, complete prefiltration and very efficient regenerant usage.   | Report                       | 44          | No                         | No         | 05277      |
| EPA-HQ-OW-2006-0771-0928 | 07/01/2005         | Assessment of Contaminants Associated with Coal Bed Methane-Produced Water and Its Suitability for Wetland Creation or Enhancement Projects - DCN 05279 |   | Publication Other Government | 45          | No                         | No         | 05279      |
| EPA-HQ-OW-2006-0771-0930 | 12/03/1993         | Surface Discharge of Wastewaters from the Production of Methane from Coal Seams in Alabama, The Cedar Cove Model - DCN 05211                            | Significant accomplishment in the development of technologies to extract methane from coal seams as well as environmental regulations affecting many aspects of wastewaters associated with natural-gas development occurred in the 1980's.   | Publication Other Government | 259         | No                         | No         | 05211      |

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|--------------------------|--------------------|--|--|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0931 | 05/01/2007         | West Virginia Oil and Gas Facts - DCN 05240                          | This document was produced by West Virginia Department of Environmental Protection, Office of Oil and Gas, and provided to EPA by Penn Virginia Oil and Gas.   | Data                                | 43          | No                         | No         | 05240      |
| EPA-HQ-OW-2006-0771-0932 | 10/17/2007         | Wyoming CBM Industry Stakeholder Final Meeting Notes - DCN 05212     | The U.S. Environmental Protection Agency (EPA) and representatives from the CBM industry participated in a meeting on 17 October 2007 in Gillette, Wyoming to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).                                    | Meeting or Teleconference Materials | 20          | No                         | No         | 05212      |
| EPA-HQ-OW-2006-0771-0933 | 04/17/2007         | West Virginia General Land Application Permit - DNC 05241            | This is a general permit for CBM operations only. It was first issued in April of 2007.  | Permit, Registration                | 12          | No                         | No         | 05241      |
| EPA-HQ-OW-2006-0771-0934 | 10/17/2007         | Wyoming Federal and State Regulators Final Meeting Notes - DCN 05213 | The U.S. Environmental Protection Agency (EPA) and representatives from Wyoming state agencies and several Federal agencies participated in a meeting on 17 October 2007 in Sheridan, Wyoming to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR). | Meeting or Teleconference Materials | 4           | No                         | No         | 05213      |
| EPA-HQ-OW-2006-0771-0935 | 10/17/2007         | Wyoming Public Interest Group Final Meeting Notes - DCN 05214        | The U.S. Environmental Protection Agency (EPA) and interested landowners participated in a meeting on 17 October 2007 in Sheridan, Wyoming to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).  | Meeting or Teleconference Materials | 9           | No                         | No         | 05214      |
| EPA-HQ-OW-2006-0771-0936 | 10/18/2007         | Billings, MT, Public Interest Group Final Meeting Notes - DCN 05215  | The U.S. Environmental Protection Agency (EPA) and public interest stakeholders participated in a meeting on 18 October 2007 in Billings, Montana to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).   | Meeting or Teleconference Materials | 13          | No                         | No         | 05215      |

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|--------------------------|--------------------|--|--|-------------------------------------|-------------|----------------------------|------------|------------|
| EPA-HQ-OW-2006-0771-0937 |                    | List of Studies Relevant to CBM Referenced by US Forest Service - DCN 05194  |  | Meeting or Teleconference Materials | 2           | No                         | No         | 05194      |
| EPA-HQ-OW-2006-0771-0938 |                    | Geologic Map of the Pittsburgh Coal Seam - DCN 05266   | Provided to EPA by IOGAPA at Pennsylvania Industry Meeting | Other                               | 2           | No                         | No         | 05266      |
| EPA-HQ-OW-2006-0771-0939 | 06/01/2007         | Montana Department of Environmental Quality: Montana Pollution Discharge Elimination System Permit (MPDES) Application - DCN 05274 |  | Permit, Registration                | 213         | No                         | No         | 05274      |
| EPA-HQ-OW-2006-0771-0940 |                    | Map of Coalbed Methane Reserves in the United States - DCN 05253   | United States map of CBM reserves provided by USGS         | Publication; Other Government       | 1           | No                         | No         | 05253      |
| EPA-HQ-OW-2006-0771-0941 | 11/12/2002         | Map of US Coal Reserves/Basins: Data Source: USGS Open File Report 96-92 - DCN 05254   | A map of U.S. Coal reserves/basins.                        | Report                              | 1           | No                         | No         | 05254      |

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| EPA-HQ-OW-2006-0771-0942 |                    | Establishment of Native and Non-Native Grasses on Pipeline-right-of ways and/or Well Sites in the San Juan Oil and Gas Producing Basin - DCN 05255  | Research plots were established in April and October 2002 to determine time of planting and stand establishment of selected native and non-native grasses in the San Juan Oil and Gas producing region of northwest New Mexico.   | Publication; Other Government | 13          | No                         | No         | 05255      |
| EPA-HQ-OW-2006-0771-0943 | 05/01/2006         | Toxicity of Sodium Bicarbonate to Fish from Coal-Bed Natural Gas Production in the Tongue and Powder River Drainages, Montana and Wyoming - DCN 05260   | This study evaluates the sensitivity of aquatic life to sodium bicarbonate, a major constituent of coal-bed natural gas-produced water. Excessive amounts of sodium bicarbonate in freshwater streams and rivers may adversely affect the ability of fish to regulate their ion uptake. The study area includes the Tongue and Powder River drainages within the Powder River Basin in southeastern Montana and northeastern Wyoming.   | Publication Other Government  | 4           | No                         | No         | 05260      |
| EPA-HQ-OW-2006-0771-0944 |                    | List of Coalbed Methane Operators in the Fruitland Coal Basin - DCN 05263   | List of CBM operators including addresses   | Other                         | 1           | No                         | No         | 05263      |
| EPA-HQ-OW-2006-0771-0945 | 01/01/2007         | Water-Quality Characteristics for Sites in the Tongue, Powder, Cheyenne, and Belle Fourche River Drainage Basins, Wyoming and Montana, Water Years 2001-05, with Temporal Patterns of Selected Long-Term Water Quality Data - DCN 05269 | Water-quality sampling was conducted regularly at stream sites within or near the Powder River structural basin in northern eastern Wyoming and southeastern Montana during water years 2001-05 to characterize water quality in an area of coalbed natural gas development. The U.S. Geological Survey, in cooperation with the Wyoming Department of Environmental Quality, characterized the water quality at 22 sampling sites in the Tongue, Powder, Cheyenne and Belle Fourche River drainage basins. | Publication; Other Government | 76          | No                         | No         | 05269      |
| EPA-HQ-OW-2006-0771-0946 | 01/01/1985         | Technical Report on Water Quality for Agriculture - DCN 05280   | A field guide for evaluating the suitability of a water for irrigation. Included are suggestions for obtaining maximum utilization of an existing or potential water supply.  | Publication; Other Government | 210         | Yes                        | No         | 05280      |

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| EPA-HQ-OW-2006-0771-0947 | 06/06/2006         | Transforming Prarie-Dog Land into Productive Land, the "TOOLBOX" Way - DCN 05287                                   |  | Other                        | 6           | No                         | No         | 05287      |
| EPA-HQ-OW-2006-0771-0948 | 06/26/2007         | List of Beneficial Use, Treatment, and Storage Technologies for CBM Co-produced Water - DCN 05288                  |  | Letter, Memorandum, Email    | 3           | No                         | No         | 05288      |
| EPA-HQ-OW-2006-0771-0949 |                    | Co-Produced Water in the Western United States: Geographical Distribution, Occurrence, and Composition - DCN 05289 |  | Publication Other Government | 21          | No                         | No         | 05289      |
| EPA-HQ-OW-2006-0771-0950 |                    | Gypsum, the "snake oil" of the agricultural market - DCN 05320   |  | Other                        | 1           | No                         | No         | 05320      |
| EPA-HQ-OW-2006-0771-0951 |                    | Coalbed Methane (CBM) Resource Summary of Findings with Produced Water Technologies Review - DCN 05252             | A two-part effort was undertaken to support an upcoming Environmental Protection Agency (EPA) CBM Survey by addressing the following two points: #1 – Determine what Produced Water (PW) technologies exist other than those addressed in the Arthur Langus Lange (ALL) Consulting PW reports of 2003 and 2006, and identify any other PW research going on. PW research or technologies not included in the ALL work were to be identified. #2 – Identify data sources, outside the two usual sources (USGS and EIA), for CBM resource amounts and for locations where CBM might be developed in the future that would supplement the available data. | Publication USEPA            | 8           | No                         | No         | 05252      |



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| EPA-HQ-OW-2006-0771-0952 | 09/01/2003         | Eye on Environment: Coalbed Natural Gas Resources and Produced Water Management Issues- Fall 2003 - DCN 05265  | Private and government emphasis in recent years had stressed the growing importance of natural gas as a prime source of energy for industrial power and residential heating needs in the United States. Currently coalbed natural gas is supplying 8% of the US natural gas. This edition of the EYE on Environment will focus on produced water issues associated with the production of coalbed natural gas. | Publication; Other Government | 12          | No                         | No         | 05265      |
| EPA-HQ-OW-2006-0771-0953 | 01/01/2007         | Drake Process Technology Scope and Pricing Summary Based on Na+ Removal - Calendar Year 2007 - DCN 05283   |  | Publication; Other Government | 1           | No                         | No         | 05283      |
| EPA-HQ-OW-2006-0771-0954 |                    | Water Quality for Wyoming Livestock & Wildlife: A Review of the Literature Pertaining to Health Effects of Inorganic Contaminants - DCN 05296          |  | Other                         | 114         | No                         | No         | 05296      |
| EPA-HQ-OW-2006-0771-0955 | 11/09/2004         | Technology-Based Effluent Limitations for Coal Bed Methane-Produced Wastewater Discharges in the Powder River Basin of Montana and Wyoming - DCN 05324 | The purpose of this report is to provide recommendations for permit writers in establishing technology-based effluent limitations using their "best professional judgment" (BPJ) for coal bed methane (CBM) wastewater discharge in the Powder River Basin of Montana and Wyoming.   | Other                         | 69          | No                         | No         | 05324      |
| EPA-HQ-OW-2006-0771-0956 | 10/12/2007         | Coalbed Methane Montana Public Interest Stakeholder Meeting- draft agenda - DCN 05330  | The purpose of this meeting is to discuss EPA's CBM detailed study and the associated Information Collection Request (ICR)   | Other                         | 1           | No                         | No         | 05330      |

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| EPA-HQ-OW-2006-0771-0957 | 01/31/2005         | State Innovation Grant Program- Wyoming: Watershed-based NPDES Permitting for the Powder River Basin - DCN 05331 |  | Other                | 2           | No                         | No         | 05331      |
| EPA-HQ-OW-2006-0771-0958 | 02/01/2006         | The Effects of Coalbed Natural Gas Activities on Fish Assemblages: A Review of the Literature - DCN 05268        | Summary of available literature on the subject of CBM produced water on fish populations in the Powder River.  | Report               | 48          | No                         | No         | 05268      |
| EPA-HQ-OW-2006-0771-0959 | 03/01/2002         | Coalbed Methane Production in the Appalachian Basin - DCN 05275  | A series of reports on CBM production in the Appalachian Basin with some production data by state and coal seam.   | Report               | 62          | No                         | No         | 05275      |
| EPA-HQ-OW-2006-0771-0960 | 01/17/2008         | Draft Questionnaire for the CBM Extraction Sector - DCN 05365  | Draft Questionnaire for the CBM Extraction Sector for the first Federal Register Notice. EPA is soliciting comment on this draft.  | Report               | 72          | No                         | No         | 05365      |
| EPA-HQ-OW-2006-0771-0961 | 01/13/2004         | Chemical Constraints on CBM Produced Water Disposal In the Powder River Basin - DCN 05281                        | Laboratory investigations confirm results of geochemical modeling that show equilibrium water quality parameters are controlled by concentration of bicarbonate that suppresses solubility of calcium and magnesium. | Report               | 7           | Yes                        | No         | 05281      |

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| EPA-HQ-OW-2006-0771-0962 |                    | Brochure for the Drake Process - The Most Cost Effective Technology Available for Treatment of Saline Coal Bed Natural Gas Produced Water - DCN 05284 |   | Publication; Other Government       | 2           | No                         | No         | 05284      |
| EPA-HQ-OW-2006-0771-0963 | 03/23/2006         | Viability of Nanofiltration and Ultra-Low Pressure Reverse Osmosis Membranes for Multi-Beneficial Use of Methane Produced Water - DCN 05285           |   | Publication; Copyrighted Material   | 11          | Yes                        | No         | 05285      |
| EPA-HQ-OW-2006-0771-0964 | 09/30/2007         | Coalbed Methane Development in Pennsylvania Handout - DCN 05321   | Handout from IOGAPA at Pennsylvania Industry Meeting  | Meeting or Teleconference Materials | 8           | No                         | No         | 05321      |
| EPA-HQ-OW-2006-0771-0965 | 10/18/2007         | Northern Plains Resource Council's Prep Sheet for Meeting with EPA - DCN 05323  |   | Other                               | 2           | No                         | No         | 05323      |
| EPA-HQ-OW-2006-0771-0966 | 10/26/2007         | Final Site Visit Report: Penn Virginia Corporation Appalachian Basin Coalbed Methane Operations - DCN 05232   | On September 24, 2007, EPA visited Penn Virginia's West Virginia Coalbed Methane (CBM) operations. Penn Virginia provided an overview of their operations and led participants on a tour of wells and disposal facilities typical of their operations in West Virginia. | Report                              | 37          | No                         | No         | 05232      |

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| EPA-HQ-OW-2006-0771-0967 | 10/26/2007         | Final Site Visit Report: CNX Gas Central Appalachian Basin Coalbed Methane Operations - DCN 05233   | On September 25, 2007, EPA visited a CNX well site in Whitewood, Virginia. CNX provided an overview of their operations and discussed typical well site configuration and produced water disposal for their Coalbed Methane (CBM) projects in Virginia.  | Report               | 25          | No                         | No         | 05233      |
| EPA-HQ-OW-2006-0771-0968 | 10/26/2007         | Final Site Visit Report: CDX Gas Company LLC Appalachian Basin Coalbed Methane Operations - DCN 05234   | On September 25, 2007, EPA visited the CDX Gas West Virginia Field Office. CDX provided an overview of developing fields in the area and led participants on a tour of wells, produced water disposal facilities, and drilling sites typical of their operations in West Virginia.   | Report               | 36          | No                         | No         | 05234      |
| EPA-HQ-OW-2006-0771-0969 | 11/20/2007         | Final Site Visit Report for the Brinkerton Treatment Facility, Great Lakes Energy Partners, LLC Mount Pleasant Township, PA - DCN 05199   | On 10 October 2007, EPA visited a coalbed methane (CBM) well and produced water treatment system operated by Great Lakes Energy Partners, LLC.   | Report               | 27          | No                         | No         | 05199      |
| EPA-HQ-OW-2006-0771-0970 | 11/30/2007         | Final Site Visit Report: St Mary Land & Exploration Company (formerly Nance Petroleum Corporation) River 1 Project Sheridan and Campbell Counties, Wyoming Powder River Basin - DCN 05236 | Representatives from the U.S. Environmental Protection Agency (EPA) and other Federal and State agencies met with a representative from the Nance Petroleum Corporation ("Nance"), now St Mary Land & Exploration Corporation, on 15 October 2007 to visit their coalbed methane (CBM) River 1 Plan of Development (POD) located along the boundary between Sheridan and Campbell counties in northeastern Wyoming (44 o 54' 50.8" N, 106o 00' 58.5" W). CBM produced water management for the River-1 Project is a mix of injection wells, off-channel ponds, and on-channel alluvium infiltration ponds along a seven mile length of the Powder River. | Report               | 27          | No                         | No         | 05236      |
| EPA-HQ-OW-2006-0771-0971 | 11/30/2007         | Final Site Visit Report: Marathon and J.M. Huber Subsurface Drip Irrigation Projects Sheridan and Campbell County, WY - DCN 05237   | Representatives from the U.S. Environmental Protection Agency (EPA) and other Federal and State agencies met with representatives from BeneTerra, LLC ("BeneTerra"), the J.M. Huber Corporation ("Huber"), and the Marathon Oil Corporation ("Marathon") on 15 October 2007 to visit their subsurface drip irrigation projects on the Bow and Arrow Ranch (Latitude 44o 56' 35.3" North, Longitude 105o 55' 25.9" West) and on Badger Creek (Latitude 44o 57' 06.2" North, Longitude 106 o 42' 33.3" West).  | Report               | 33          | No                         | No         | 05237      |

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| EPA-HQ-OW-2006-0771-0972 | 11/30/2007         | Final Site Visit Report: OW Ranch Big Horn County, Montana (Powder River Basin) - DCN 05238   | Representatives from the U.S. Environmental Protection Agency (EPA), other Federal and State agencies, and industry met with representatives from the OW Ranch on 15 October 2007 to visit their existing ranch facilities in the headwaters area of Hanging Woman Creek in Big Horn country, Montana (Latitude 45o 08' 09.9" North, Longitude 106o 28' 35.3" West).  | Report               | 27          | No                         | No         | 05238      |
| EPA-HQ-OW-2006-0771-0973 | 12/12/2007         | Final Site Visit Report: Williams Exploration and Production Johnson County, WY (Powder River Basin) - DCN 05200  | Representatives from the U.S. Environmental Protection Agency (EPA) and other Federal and State agencies met with representatives from Williams Exploration and Production (Williams) on 16 October 2007 to visit their SG Palo and Kingsbury coalbed methane field located in Johnson County, Wyoming.   | Report               | 18          | No                         | No         | 05200      |
| EPA-HQ-OW-2006-0771-0974 | 11/30/2007         | Final Site Visit Report: Fidelity Exploration & Production Co. Countercurrent Ion Exchange Treatment Decker, MT (Powder River Basin) - DCN 05201  | Representatives from the U.S. Environmental Protection Agency (EPA) and other Federal agencies met with representatives from Fidelity Exploration & Production Company (Fidelity) and EMIT Water Discharge Technology, LLC (EMIT) on 19 October 2007 to visit their countercurrent ion exchange treatment units for the Fidelity Coalbed Methane (CBM) operations in Big Horn County, Montana, near the small town of Decker. | Report               | 60          | No                         | No         | 05201      |
| EPA-HQ-OW-2006-0771-0975 | 11/30/2007         | Final Site Visit Report Drake Water Technologies, LLC Gillette, WY (Powder River Basin) - DCN 05243   | Representatives from the U.S. Environmental Protection Agency (EPA) and other Federal and State agencies met with representatives from Drake Water Technologies, LLC ("Drake") on 16 October 2007 to discuss and observe their CBM produced water treatment technology.   | Report               | 21          | No                         | No         | 05243      |
| EPA-HQ-OW-2006-0771-0976 | 01/17/2008         | Supporting Statement for Coalbed Methane Extraction Sector Questionnaire Information Collection Request Supporting the U.S. EPA Clean Water Act Section 304(b) Effluent Guidelines Annual Reviews - DCN 05366 | This Information Collection Request (ICR) package requests the Office of Management and Budget (OMB) to review and approve the U.S. Environmental Protection Agency's (EPA's), Office of Water survey titled: "Coalbed Methane Extraction Sector Questionnaire." This document provides supporting information on the ICR including estimated burden and justification for each question.                                     | Report               | 55          | No                         | No         | 05366      |

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| EPA-HQ-OW-2006-0771-0977 | 01/25/2008         | Coalbed Methane Detailed Study 2007 Data Collection and Outreach - DCN 05354   | List of outreach activities for Coalbed Methane | Publication USEPA                   | 11          | No                         | No         | 05354      |
| EPA-HQ-OW-2006-0771-0978 | 09/01/2007         | Map of Davis Slough Outfall Location, Methane Energy Corporation - DCN 05264   |   | Other                               | 8           | No                         | No         | 05264      |
| EPA-HQ-OW-2006-0771-0980 | 09/14/2006         | Drake Process Post Treatment Study Summary - DCN 05282   |   | Publication; Other Government       | 1           | No                         | Yes        | 05282      |
| EPA-HQ-OW-2006-0771-0981 |                    | Pioneer Natural Resources- 2005 Annual Report - DCN 05319  |   | Publication; Other Government       | 151         | No                         | No         | 05319      |
| EPA-HQ-OW-2006-0771-0982 |                    | Assessment of Appalachian Basin Oil and Gas Resources: Carboniferous Coal-bed Gas Total Petroleum System - DCN 05336 |   | Publication; Other Government       | 98          | No                         | No         | 05336      |
| EPA-HQ-OW-2006-0771-0983 | 05/15/2007         | EPA Slide Presentation for Stakeholder Teleconferences - DCN 05175   |   | Meeting or Teleconference Materials | 30          | No                         | No         | 05175      |

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| EPA-HQ-OW-2006-0771-0984 | 05/15/2007         | Department of Energy's Office of Fossil Energy and Energy Information Administration Meeting Notes - DCN 05176 | EPA and DOE participated in a teleconference on 15 May 2007 to discuss EPA's Coalbed Methane (CBM) Detailed Study and Information Collection Request.   | Meeting or Teleconference Materials | 7           | No                         | No         | 05176      |
| EPA-HQ-OW-2006-0771-0985 | 06/21/2007         | Final Meeting Notes from Stakeholder Teleconference on June 21, 2007 - DCN 05177                               | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 5           | No                         | No         | 05177      |
| EPA-HQ-OW-2006-0771-0986 | 06/26/2007         | Final Meeting Notes from Stakeholder Teleconference on June 26, 2007 - DCN 05178                               | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 5           | No                         | No         | 05178      |
| EPA-HQ-OW-2006-0771-0987 | 06/27/2007         | Final Meeting Notes from Stakeholder Teleconference on June 27, 2007 - DCN 05179                               | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the coalbed methane (CBM) industrial sector participated in a teleconference to discuss EPA's information collection request. | Meeting or Teleconference Materials | 5           | No                         | No         | 05179      |
| EPA-HQ-OW-2006-0771-0988 | 11/28/2007         | Final Meeting Notes from Vendor Meeting - DCN 05242  |   | Meeting or Teleconference Materials | 6           | No                         | Yes        | 05242      |

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| EPA-HQ-OW-2006-0771-0989   | 07/03/2007         | December 2006 Production Report by Field for the State of Alabama - DCN 05337   |  | Data                          | 7           | No                         | No         | 05337      |
| EPA-HQ-OW-2006-0771-0990   |                    | Memorandum: The Case for More Environmental and Surface Owner Protections Relating to Coal Bed Methane Production Generally, and Horizontal Drilling Specifically - DCN 05342 |  | Letter, Memorandum, Email     | 48          | No                         | No         | 05342      |
| EPA-HQ-OW-2006-0771-0990.1 |                    | Environmental Risk Assessment Methods Useful for Coalbed Methane Development: Cost-Effective Ways to Manage Risk - DCN 05342A1  |  | Other                         | 10          | No                         | No         | 05342A1    |
| EPA-HQ-OW-2006-0771-0991   |                    | Topographic Map of Anadarko, Williams, and Drake Operations Provided by Wyoming Department of Environmental Quality - DCN 05345   |  | Other                         | 4           | No                         | No         | 05345      |
| EPA-HQ-OW-2006-0771-0992   | 04/30/2007         | Northern San Juan Basin Coal Bed Methane Project, Record of Decision - DCN 05358  | This document contains the rationale for the selection of proposed action number seven from the EIS for CBM development in the San Juan Basin. | Publication; Other Government | 57          | No                         | No         | 05358      |



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| EPA-HQ-OW-2006-0771-0993 | 10/31/2006         | A Guide to Changing Plant Communities - DCN 05355  |   | Publication; Other Government | 69          | No                         | No         | 05355      |
| EPA-HQ-OW-2006-0771-0994 |                    | Land and Water Inventory Guide for Landowners in Areas of Coal Bed Methane Development, First Edition - DCN 05356  | This guide addresses significant resource management issues encountered within the region.  | Publication; Other Government | 54          | No                         | No         | 05356      |
| EPA-HQ-OW-2006-0771-0995 | 07/31/2006         | Final Environmental Impact Statement for the Northern San Juan Basin Coal Bed Methane Project - DCN 05360          |   | Publication Other Government  | 803         | No                         | No         | 05360      |
| EPA-HQ-OW-2006-0771-0996 | 11/19/2007         | Final Site Visit Report for the Howard Treatment Facility, EnerVest Operating, LLC Blairsville, PA - DCN 05198     | On 10 October 2007, EPA visited a coalbed methane (CBM) produced water treatment system operated by EnerVest Operating, LLC ("EnerVest"). EnerVest provided a tour of their Howard Treatment Facility located at 2130 Campbells Mill Rd., Blairsville, PA 15717, in Indiana County (40o27'57.9" N, 79o13'56.7" W). This facility discharges to the Blacklick Creek under NPDES permit number PA0206075 and has the following Facility Registry System (FRS) number: 110010961478. | Report                        | 25          | No                         | No         | 05198      |
| EPA-HQ-OW-2006-0771-0997 | 06/10/2003         | Office of Science and Technology Confidential Business Information (OST-CBI) Application Security Plan - DCN 05359 | The document is EPA's Office of Science and Technology's approved plan for handling Confidential Business Information.  | Publication USEPA             | 64          | No                         | No         | 05359      |

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| EPA-HQ-OW-2006-0771-0998   | 08/09/2007         | Final Meeting Notes from U.S. Geologic Survey Meeting - DCN 05186   | The U.S. Environmental Protection Agency (EPA) met with representatives from the U.S. Geological Survey (USGS) to discuss data sources that may be of use to EPA's coalbed methane (CBM) study.   | Meeting or Teleconference Materials | 5           | No                         | No         | 05186      |
| EPA-HQ-OW-2006-0771-0999   | 08/10/2007         | Final Meeting Notes from U.S. Forest Service Meeting - DCN 05187  | The U.S. Environmental Protection Agency (EPA) met with representatives from the U.S. Forest Service to discuss their role in coalbed methane (CBM) development on federal lands and to discuss data sources that may be of use to EPA's CBM study.   | Meeting or Teleconference Materials | 3           | No                         | No         | 05187      |
| EPA-HQ-OW-2006-0771-1000   | 08/17/2007         | Department of Energy, Energy Information Administration Final Meeting Notes - DCN 05188                         | The U.S. Environmental Protection Agency (EPA) held a teleconference with representatives from the Department of Energy's Energy Information Administration (EIA) to discuss EIA data sources that may be of use to EPA's coalbed methane (CBM) detailed study.   | Meeting or Teleconference Materials | 7           | No                         | No         | 05188      |
| EPA-HQ-OW-2006-0771-1001   | 08/28/2007         | Final Site Visit Report: Black Warrior Basin Alabama Coalbed Methane Operations - DCN 05231                     | On August 5, 2007, EPA and staff from other government agencies visited the Alabama Coalbed Methane Operator. Alabama Coalbed Methane Operator provided a facility overview and led participants on a tour of wells and treatment facilities typical of their operations in the Black Warrior Basin.                        | Report                              | 69          | No                         | Yes        | 05231      |
| EPA-HQ-OW-2006-0771-1001.1 | 08/28/2007         | Final Site Visit Report: Black Warrior Basin Alabama Coalbed Methane Operations (NON-CBI VERSION) - DCN 05231A1 | (CBI REDACTED VERSION) On August 5, 2007, EPA and staff from other government agencies visited the Alabama Coalbed Methane Operator. Alabama Coalbed Methane Operator provided a facility overview and led participants on a tour of wells and treatment facilities typical of their operations in the Black Warrior Basin. | Report                              | 69          | No                         | No         | 05231A1    |

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| EPA-HQ-OW-2006-0771-1002 | 11/30/2007         | Final Site Visit Report: Anadarko Petroleum Corporation Johnson County, WY (Powder River Basin) - DCN 05239   | Representatives from the U.S. Environmental Protection Agency (EPA) and other Federal and State agencies met with representatives from the Anadarko Petroleum Corporation ("Anadarko") on 16 October 2007 to visit their Rohm & Haas ion exchange treatment system and County Line Pump Station located in Johnson County, Wyoming. Mr. Jon Jaffe, Staff Engineer, greeted the participants and provided an operational overview and a tour of the two facilities. | Report                            | 17          | No                         | No         | 05239      |
| EPA-HQ-OW-2006-0771-1003 | 07/30/2007         | Altela Inc. Receives EPA-based Approval for Produced Water Treatment Facility - DCN 05338                     |  | Publication; Copyrighted Material | 4           | Yes                        | No         | 05338      |
| EPA-HQ-OW-2006-0771-1004 |                    | AltelaRain System ARS-4000: Providing Your Intergrated Water Treatment Solutions - DCN 05340                  |  | Publication; Copyrighted Material | 1           | Yes                        | No         | 05340      |
| EPA-HQ-OW-2006-0771-1005 | 07/20/2007         | Trace Element Chemistry of Coal Bed Natural Gas Produced Water in the Powder River Basin, Wyoming - DCN 05341 |  | Publication; Copyrighted Material | 7           | Yes                        | No         | 05341      |
| EPA-HQ-OW-2006-0771-1006 |                    | Technology Drake Kinetic Studies Summary Column Test Degassing Kinetics - DCN 05352                           |  | Data                              |             | No                         | Yes        | 05352      |

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| EPA-HQ-OW-2006-0771-1007 |                    | Technology Drake Kinetic Studies Summary Beaker Test Degassing Kinetics - DCN 05353  |  | Data                                |             | No                         | Yes        | 05353      |
| EPA-HQ-OW-2006-0771-1009 | 08/30/2007         | Final Meeting Notes from Teleconference with CBM Trade Associations and Operators - DCN 05189  | The U.S. Environmental Protection Agency (EPA) met with coalbed methane (CBM) industry stakeholders to review an industry background briefing on CBM operations in the Powder River Basin (Wyoming, Montana) and to discuss the upcoming EPA site visits to CBM production areas.                                      | Meeting or Teleconference Materials | 3           | No                         | No         | 05189      |
| EPA-HQ-OW-2006-0771-1010 | 09/21/2007         | Final Meeting Notes from West Virginia Department of Environmental Protection Meeting - DCN 05191  | EPA's Engineering and Analysis Division (EAD) and West Virginia Department of Environmental Protection (WVDEP) participated in a teleconference on September 21, 2007 to discuss EPA's Coalbed Methane (CBM) Detailed Study, the general permitting process for CBM operations in West Virginia, and EPA's data needs. | Meeting or Teleconference Materials | 5           | No                         | No         | 05191      |
| EPA-HQ-OW-2006-0771-1011 | 12/18/2007         | Billings, MT, Northern Cheyenne Final Meeting Notes - DCN 05193  | The U.S. Environmental Protection Agency (EPA) and representatives from the Northern Cheyenne tribal government participated in a meeting on 19 October 2007 in Billings, Montana to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).                       | Meeting or Teleconference Materials | 6           | No                         | No         | 05193      |
| EPA-HQ-OW-2006-0771-1012 | 12/18/2007         | Final Site Visit Report: Altela, Inc. Thermal Distillation Produced Water Treatment Technology (AltelaRainSM) at the Blackshawl and Moncisco Sites Farmington, NM (San Juan Basin) - DCN 05225 | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from Altela, Inc. ("Altela") on 22 October 2007 to visit two coalbed methane (CBM) well pad sites in and around Farmington, New Mexico.                | Report                              | 32          | No                         | No         | 05225      |

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| EPA-HQ-OW-2006-0771-1013 | 11/26/2007         | Final Site Visit Report: XTO Energy, Inc. La Plata, NM & Durango, CO (San Juan Basin) - DCN 05227         | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from XTO Energy, Inc. ("XTO") on 23 October 2007 to visit one disposal well – Stanolind Gas Com Salt Water Disposal (SWD) #1 located northeast of La Plata, New Mexico (36o 59' 01.8" N, 108o 06' 55.2" W), and another XTO site with a compressor station and two injection disposal wells located just southeast of Durango, Colorado (37o 14' 04.3" N, 107o 44' 38.3" W). XTO provided an overview of the well pad configurations and their operations at each of these sites. | Report                    |             | No                         | Yes        | 05227      |
| EPA-HQ-OW-2006-0771-1014 | 11/28/2007         | Final Site Visit Report: Pioneer Natural Resources USA, Inc. Trinidad, Colorado (Raton Basin) - DCN 05229 | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from Pioneer Natural Resources USA, Inc. ("Pioneer") on 25 October 2007 to visit several CBM well pads and produced water disposal operations located west of Trinidad, Colorado. Pioneer provided an overview of well pad configurations and the water management and disposal operations at each of the visited sites.  | Report                    | 28          | No                         | Yes        | 05229      |
| EPA-HQ-OW-2006-0771-1015 | 11/21/2007         | Final Site Visit Report: XTO Energy, Inc. (Raton Basin) - DCN 05230                                       | On October 25, 2007, the U.S. Environmental Protection Agency (EPA), staff from other government agencies and representatives from XTO Energy, Inc. (XTO) visited four Coalbed Methane (CBM) wells and observed the associated CBM produced water management and disposal operations in the Raton basin located west of Trinidad, Colorado.   | Report                    | 0           | No                         | Yes        | 05230      |
| EPA-HQ-OW-2006-0771-1016 | 01/21/2008         | Recommended Materials for EPA to Review for the CBM Detailed Study - DCN 05369                            | EPA has received numerous suggestions for documents and Web sites to review for the CBM study. This memorandum documents these suggestions which EPA plans to review as part of the detailed study.   | Letter, Memorandum, Email | 3           | No                         | No         | 05369      |
| EPA-HQ-OW-2006-0771-1017 | 01/23/2008         | List of Reference Materials For the CBM Detailed Study Environmental Assessment - DCN 05378               | List of potential reference materials for the environmental assessment portion of the CBM detailed study.   | Letter, Memorandum, Email | 4           | No                         | No         | 05378      |

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| EPA-HQ-OW-2006-0771-1018 |                    | The CBM Water Discharge Problem Handout - DCN 05325   |  | Other                               | 11          | No                         | No         | 05325      |
| EPA-HQ-OW-2006-0771-1019 |                    | Coal Bed Methane Resources and Produced Water Management - DCN 05357                              | This document contains a report and power point presentations on CBM and BMPs.   | Report                              | 596         | No                         | No         | 05357      |
| EPA-HQ-OW-2006-0771-1020 | 08/31/2007         | Final Meeting Notes from Bureau from Land Management Meeting - DCN 05190                          | The U.S. Environmental Protection Agency (EPA) met with representatives from the Bureau of Land Management, Division of Fluid Minerals, to discuss their role in coalbed methane (CBM) development on federal lands and to discuss data sources that may be of use to EPA's CBM study. | Meeting or Teleconference Materials | 7           | No                         | No         | 05190      |
| EPA-HQ-OW-2006-0771-1021 | 11/16/2007         | U.S. Forest Service Northern San Juan Final Meeting Notes - DCN 05195                             | The U.S. Environmental Protection Agency (EPA) met with Mr. Walt Brown who is a geologist with the U.S. Forest Service on 22 October 2007 in Durango, Colorado to discuss EPA's Coal Bed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).         | Meeting or Teleconference Materials | 4           | No                         | No         | 05195      |
| EPA-HQ-OW-2006-0771-1022 | 05/04/2007         | Letter to WYOGCC Describing Rationale for Permitting Injection of Ion Exchange Wastes - DCN 05290 | Letter to WYOGCC Describing Rationale for Exemption of Ion Exchange Wastes from RCRA Subtitle C for Injection into a Class II Well   | Letter, Memorandum, Email           | 2           | No                         | No         | 05290      |

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| EPA-HQ-OW-2006-0771-1023 | 05/01/2002         | Memorandum to D. Edwin Hogle, Director of Ground Water Program for EPA Region III - DCN 05292                                  |  | Letter, Memorandum, Email     | 3           | No                         | No         | 05292      |
| EPA-HQ-OW-2006-0771-1024 |                    | Measured and Estimated Sodium-Absorption Ratios for Tongue River and its Tributaries, Montana and Wyoming, 2004-06 - DCN 05294 | This report documents SAR values measured in water samples collected at 12 monitoring sites in the Tongue River watershed and presents regression relations between specific conductance (SC) and SAR at each site for the years 2004-06. SAR in water samples was determined from laboratory-measured concentrations of sodium, calcium, and magnesium. The results of regression analysis indicated that SC and SAR were significantly related (p-values < 0.05) at most sites. The regression relations developed for most monitoring sites in the Tongue River watershed were used with continuous SC data to estimate daily SAR during the 2004 and 2005 irrigation seasons | Publication; Other Government | 54          | No                         | No         | 05294      |
| EPA-HQ-OW-2006-0771-1025 | 06/30/2006         | CBM Water in Spotted Horse Creek - DCN 05326   | Aerial photographs of the effects of CBM produced water on Spotted Horse Creek   | Other                         | 3           | No                         | No         | 05326      |
| EPA-HQ-OW-2006-0771-1026 | 11/30/2004         | Coal Bed Methane-Produced Water: Management Options for Sustainable Development - DCN 05329                                    | This study provides an overview of coal bed methane (CBM) - produced water characteristics, impacts, and potential uses. It identifies and discusses benefits and costs of various means of produced-water treatment and disposal. It recommends technology and water quality based limits on discharge to surface water. It also evaluates various options for disposal from a sustainable development standpoint.  | Other                         | 97          | No                         | No         | 05329      |
| EPA-HQ-OW-2006-0771-1027 | 10/20/2006         | AltelaRain- State of the Art Produced Water Treatment Technology - DCN 05334   |  | Publication; Other Government | 7           | No                         | No         | 05334      |

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| EPA-HQ-OW-2006-0771-1028 | 11/30/2003         | New Mexico's Raton Basin Coalbed Methane Play - DCN 05335  | The Raton Basin become New Mexico's newest natural gas-producing region in 1999 when a new pipeline allowed production of coalbed methane near Vermejo Park, west of Raton. As of May 2003, 256 wells had been drilled and completed, producing more than 22 billion cubic feet of coalbed methane from coals in the Upper Cretaceous to Paleocene Vermejo and Raton Formations. Less than half of the prospective areas as delimited by the presence of thermally mature coal has been developed. An extensive geologic data set exists at the New Mexico Resources including information from coal mining and coalbed methane production. Study of that data set has resulted and coal | Publication; Other Government     | 16          | No                         | No         | 05335      |
| EPA-HQ-OW-2006-0771-1029 |                    | Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and the Extent and Nature of Restrictions or Impediments to Their Development - DCN 05361 |  | Other                             | 147         | No                         | No         | 05361      |
| EPA-HQ-OW-2006-0771-1031 | 04/15/2007         | Beneficial Use of Co-Produced Water through Membrane Treatment: Technical-Economic Assessment - DCN 05286  |  | Publication; Copyrighted Material | 17          | Yes                        | No         | 05286      |
| EPA-HQ-OW-2006-0771-1032 | 11/01/2002         | Powder River Basin Coalbed Methane Development and Produced Water Management Study - DCN 05293   | The overall purpose of the Powder River Basin Study is to assist DOE/FE, NETL and NPTO better understand the energy impacts of the alternative water disposal options being considered for Powder River Basin coalbed methane.   | Publication; Other Government     | 213         | No                         | No         | 05293      |
| EPA-HQ-OW-2006-0771-1033 | 07/31/2007         | Water Year 2006 Overview of Surface Water Monitoring Data for SC, SAR and Flow in the Rosebud Creek Watershed - DCN 05295                                      | The Montana Board of Environmental Review (BER) has modified the EC and SAR standards which the MDEQ uses in its permitting process; however this report only considers those standards which were in force during water year 2006. The most substantial change adopted by the BER was to designate EC and SAR "harmful" parameters. This change has not yet been approved by the EPA, and so is not in force at this time.  | Other                             | 24          | No                         | No         | 05295      |



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| EPA-HQ-OW-2006-0771-1034   |                    | List of References from Stakeholder at Northern Plains Meeting - DCN 05332                                 | A list of contents from someone at Northern Plains meeting  | Meeting or Teleconference Materials | 1           | No                         | No         | 05332      |
| EPA-HQ-OW-2006-0771-1035   | 01/23/2008         | Minutes for the Industry Questionnaire Meeting (15 January 2008) - DCN 05368                               | The U.S. Environmental Protection Agency (EPA) and industry and trade group representatives met to discuss the initial draft of the Coalbed Methane (CBM) Information Collection Request (ICR) (Industry Questionnaire). EPA provided an initial version of the Questionnaire to industry stakeholders prior to this meeting. The purpose of this meeting was to obtain initial feedback from industry on the survey content and structure. EPA will not make significant changes to the questionnaire prior to the publication of the first FRN. | Meeting or Teleconference Materials | 9           | No                         | No         | 05368      |
| EPA-HQ-OW-2006-0771-1036   | 01/11/2008         | Email to Mary T. Smith/Carey Johnston, USEPA from Marc Himmelstein - DCCN 05372                            |   | Letter, Memorandum, Email           | 1           | No                         | No         | 05372      |
| EPA-HQ-OW-2006-0771-1036.1 | 01/11/2008         | Attachment to Email - Remaining Issues and Considerations for ELG Data Collection - DCN 05372A1            |   | Letter, Memorandum, Email           | 6           | No                         | No         | 05372A1    |
| EPA-HQ-OW-2006-0771-1037   | 12/31/2005         | Comments Before the Montana Board of Environmental Review on the Water Beyond Methane Proposal - DCN 05298 | My name is Michael Kavanaugh. I am an economist. I am here to comment on the Water beyond Methane proposal placed before the Board by the Petitioners. I have spent most of my professional life applying the principles of economics to environmental and natural resource issues. The Petitioners asked me to prepare these remarks. Although they helped me to obtain documents, data, and background information, I performed and shaped the inquiry and must bear responsibility for any analytical errors.                                  | Other                               | 15          | No                         | No         | 05298      |

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| EPA-HQ-OW-2006-0771-1038 | 09/30/2001         | The Majors' Shift to Natural Gas - DCN 05306   | The Majors' Shift to Natural Gas investigates the factors that have guided the United States' major energy producers' growth in the U.S. natural gas production relative to oil production. The analysis draws heavily on financial and operating data from the Energy Information Administration's Financial Reporting System (FRS). Pursuant to Section 205 (h) of the Department of Energy Organization Act, which established the FRS, the Energy Information Administration, through its Form EIA-28, collects financial information and other measures of energy-related business efforts and results for major energy companies. Since the FRS data are collected on a uniform, segmented | Publication; Other Government       | 32          | No                         | No         | 05306      |
| EPA-HQ-OW-2006-0771-1039 | 06/25/2007         | Email to Anne Jones, Bastern Research Group - DCN 05307  | Email originally from Dan Jackson, EPA Region 8, Affirming that Reverse Osmosis Wastewater is Suitable for Injection into a UIC Class II Well. Email forwarded from Carey Johnston, USEPA, from Dan Jackson, USEPA Region VIII   | Letter, Memorandum, Email           | 5           | No                         | No         | 05307      |
| EPA-HQ-OW-2006-0771-1040 | 10/18/2007         | Minutes from meeting between USEPA and Montana Department of Environmental Quality (DEQ), the Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service - DCN 05192 | The U.S. Environmental Protection Agency (EPA) and representatives from the Montana Department of Environmental Quality (DEQ), the Bureau of Land Management (BLM) and U.S. Fish & Wildlife Service participated in a meeting on 18 October 2007 in Billings, Montana to discuss EPA's Coalbed Methane (CBM) Detailed Study and the associated Information Collection Request (ICR).   | Meeting or Teleconference Materials | 9           | No                         | No         | 05192      |
| EPA-HQ-OW-2006-0771-1041 |                    | Soil Chemical Changes Resulting from Irrigation with Water Co-Produced with Coalbed Natural Gas - DCN 05308  | Land application of coalbed natural gas (CBNG) co-produced water is a popular management option within northwestern Powder River Basin of Wyoming. This study evaluated the impacts of land application CBNG waters on soil chemical properties at five sites. Soil samples were collected from different depths from sites that were irrigated with CBNG water for 2 to 3 years and control sites.  | Publication; Copyrighted Material   | 11          | Yes                        | No         | 05308      |
| EPA-HQ-OW-2006-0771-1042 | 06/30/2006         | Evaluation of Water Quality Criteria for Rain-Irrigation Cropping Systems - DCN 05309  | This report documents research conducted by the Salinity Laboratory USDA-ARS under an interagency agreement with EPA region 8. Water quality standards to be developed for Montana and other western states are to protect existing agricultural production from the adverse effects of salinity and sodicity. Salinity, generally represented by the solution electrical conductivity, has an adverse effect on plant growth, while sodium adversely impacts soil physical properties such as infiltration. This report is focused on the effects of sodium (and interactive effects with salinity) on water infiltration.  | Publication Other Government        | 61          | No                         | No         | 05309      |

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| EPA-HQ-OW-2006-0771-1043 | 10/31/2007         | Water Quality Changes as a Result of Coalbed Methane Development in a Rocky Mountain Watershed - DCN 05310                                   | The object of this study was to examine changes instream water quality, particularly sodicity and salinity, due to coalbed methane development in the Powder River watershed, which is located in the Rocky Mountain Region and traverses the states of Wyoming and Montana.  | Publication Copyrighted Material | 17          | Yes                        | No         | 05310      |
| EPA-HQ-OW-2006-0771-1044 | 04/30/2007         | Water Year 2006 Overview of Surface Water Monitoring Data for SC, SAR and Flow in the Tongue River Watershed - DCN 05311                     |   | Publication Other Government     | 115         | No                         | No         | 05311      |
| EPA-HQ-OW-2006-0771-1045 |                    | Total Coalbed Methane Development Activity in Pennsylvania - DCN 05317   |   | Other                            | 1           | No                         | No         | 05317      |
| EPA-HQ-OW-2006-0771-1046 | 01/03/2008         | Wyoming Department of Environmental Quality (WYDEQ) Coalbed Methane (CBM) Water Quality Technical Reference Bibliography Website - DCN 05318 | The purpose of this bibliography is to provide a list of reference documents relevant to CBM discharge that may be useful in understanding issues related to CBM water quality.   | Letter, Memorandum, Email        | 9           | No                         | No         | 05318      |
| EPA-HQ-OW-2006-0771-1047 | 11/19/2007         | Final Site Visit Report: CNX Gas Company LLC Upper Appalachian Basin Coalbed Methane Operations - DCN 05235                                  | On 10 October 2007, EPA visited staff from CNX Gas Company LLC ("CNX") at their Waynesburg, Pennsylvania office and toured a nearby well field in Greene County, Pennsylvania. CNX provided an overview of their Coalbed Methane (CBM) operations in Pennsylvania, including their horizontal drilling technology and produced water management (zero discharge). | Report                           | 27          | No                         | No         | 05235      |

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| EPA-HQ-OW-2006-0771-1048 | 11/16/2007         | Final Site Visit Report: Triwatech, LLC Treatment System Summary – Pilot Plant Tour Raton, New Mexico (26 October 2007)<br>Raton, New Mexico (26 October 2007) - DCN 05226 | The U.S. Environmental Protection Agency (EPA) and representatives from Triwatech, LLC participated in a meeting on 26 October 2007 in Raton, New Mexico to view the Triwatech Coalbed Methane (CBM) pilot treatment unit. | Report                       | 4           | No                         | No         | 05226      |
| EPA-HQ-OW-2006-0771-1049 |                    | District Court, Water Division 7, State of Colorado - DCN 05339  |  | Other                        | 7           | No                         | No         | 05339      |
| EPA-HQ-OW-2006-0771-1050 | 08/31/2007         | Water Year 2006 Overview of Surface Water Monitoring Data for SC, SAR and Flow in the Powder River Watershed - DCN 05312   |  | Publication Other Government | 63          | No                         | No         | 05312      |
| EPA-HQ-OW-2006-0771-1051 |                    | 2006 Annual Coalbed Methane Regional Ground-Water Monitoring Report: Northern Portion of the Powder River Basin - DCN 05313  | This report presents ground-water data collected from within the northern portion of the Powder River Basin during 2006, and brief discussions of those data.  | Publication Other Government | 95          | No                         | No         | 05313      |
| EPA-HQ-OW-2006-0771-1052 |                    | Fruitland Formation Studies Referenced in the NSJB EIS Project Record - DCN 05328  |  | Other                        | 2           | No                         | No         | 05328      |

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| EPA-HQ-OW-2006-0771-1053 |                    | Landowners Fact Sheet - "Give CMB a Chance!" Handout - DCN 05297                          | Handout provided to EPA by CFRD at Public Interest Group Meeting in Broadus, MT.  | Meeting or Teleconference Materials | 20          | No                         | No         | 05297      |
| EPA-HQ-OW-2006-0771-1054 | 11/01/2004         | GTI Report #8657 Coalbed Methane Produced Water Treatment - DCN 05314                     | This project was designed to test the applicability of selected water treatment methods to purify produced waters from CBM wells, to assess the economic viability of these treatments as an alternative to classic disposal by re-injection and finally to make recommendations as to applicability of these treatments on differing types of CBM produced waters. | Other                               | 267         | No                         | No         | 05314      |
| EPA-HQ-OW-2006-0771-1055 |                    | Technical Report on Groundwater Monitoring at CBM Produced Water Impoundments - DCN 05315 | The DEQ has maintained a database of groundwater monitoring results from CBNG impoundments since 2004.This is the first published summary of these data.  | Publication Other Government        | 11          | No                         | No         | 05315      |
| EPA-HQ-OW-2006-0771-1056 |                    | Map of Southwestern Pennsylvania Showing CBM drilling activity as of 9/2007 - DCN 05316   |   | Other                               | 1           | No                         | No         | 05316      |
| EPA-HQ-OW-2006-0771-1057 | 05/31/2007         | Minutes from meeting held on October 17, 2007 "We Want the Water" Handout - DCN 05322     | Handout provided by the Citizens for Resource Development at the Broadus, MT meeting.   | Other                               | 22          | No                         | No         | 05322      |

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| EPA-HQ-OW-2006-0771-1058 | 01/01/2004         | Channel Morphology for the Tongue River and Selected Tributaries - DCN 05343   | This report presents data on stream hydrology for the Tongue River watershed, including channel depth, width, and location.   | Publication; Other Government | 105         | No                         | No         | 05343      |
| EPA-HQ-OW-2006-0771-1060 | 11/28/2007         | NON-CBI Version: Final Site Visit Report: Pioneer Natural Resources USA, Inc. Trinidad, Colorado (Raton Basin) - DCN 05229A1   | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from Pioneer Natural Resources USA, Inc. ("Pioneer") on 25 October 2007 to visit several CBM well pads and produced water disposal operations located west of Trinidad, Colorado. Pioneer provided an overview of well pad configurations and the water management and disposal operations at each of the visited sites.  | Report                        | 28          | No                         | No         | 05229A1    |
| EPA-HQ-OW-2006-0771-1061 | 11/29/2007         | NON-CBI Version: Final Site Visit Report: XTO Energy, Inc. (Raton Basin) - DCN 05230A1   | On October 25, 2007, the U.S. Environmental Protection Agency (EPA), staff from other government agencies and representatives from XTO Energy, Inc. (XTO) visited four Coalbed Methane (CBM) wells and observed the associated CBM produced water management and disposal operations in the Raton basin located west of Trinidad, Colorado.   | Report                        | 31          | No                         | No         | 05230A1    |
| EPA-HQ-OW-2006-0771-1062 | 11/26/2007         | Final Site Visit Report: Sandia National Laboratories (SNL) Pilot Treatment Plant and New Mexico State University (NMSU) Land Application Study ConocoPhillips Well Pad (San Juan 32-8 #237A) West of Navajo Lake, NM (San Juan Basin) - DCN 05270 | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from Sandia National Laboratories (SNL) and New Mexico State University (NMSU) on 23 October 2007 to visit the ConocoPhillips well pad (San Juan 32-8 #237A), pilot treatment system and land application test site located west of Navajo Lake off of Highway 511 in New Mexico (36o 52' 50.1" N, 107o 38' 20.6" W).   | Report                        | 23          | No                         | Yes        | 05270      |
| EPA-HQ-OW-2006-0771-1063 | 11/26/2007         | NON-CBI VERSION - Final Site Visit Report: XTO Energy, Inc. La Plata, NM & Durango, CO (San Juan Basin) - DCN 05227A1  | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from XTO Energy, Inc. ("XTO") on 23 October 2007 to visit one disposal well – Stanolind Gas Com Salt Water Disposal (SWD) #1 located northeast of La Plata, New Mexico (36o 59' 01.8" N, 108o 06' 55.2" W), and another XTO site with a compressor station and two injection disposal wells located just southeast of Durango, Colorado (37o 14' 04.3" N, 107o 44' 38.3" W). XTO provided an overview of the well pad configurations and their operations at each of these sites. | Report                        | 34          | No                         | No         | 05227A1    |

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| EPA-HQ-OW-2006-0771-1064 | 10/08/2007         | Comments from Pennsylvania Landowner on CBM Development - DCN 05371                       | Kurt Limbach, landowner and environmental officer of the Tubmill Trout Club provided comments on the CBM development in his area.  | Letter, Memorandum, Email           | 5           | No                         | No         | 05371      |
| EPA-HQ-OW-2006-0771-1065 | 10/03/2007         | Presentation Slides from API Clean Water Task Force Meeting, October 3, 2007 - DCN 05373  |  | Meeting or Teleconference Materials | 12          | No                         | No         | 05373      |
| EPA-HQ-OW-2006-0771-1066 | 01/02/2008         | Petroleum Association of Wyoming Letter to U.S. EPA - DCN 05370                           |  | Letter, Memorandum, Email           | 3           | No                         | No         | 05370      |
| EPA-HQ-OW-2006-0771-1067 | 02/11/2008         | Coalbed Methane EPA-HQ-2006-0771 Docket Crosswalk spreadsheet - DCN 05379                 | Listing of OW-2006-0771 Coalbed Methane documents in the Federal Register.   | Other                               | 30          | No                         | No         | 05379      |
| EPA-HQ-OW-2006-0771-1068 | 12/28/2007         | Final Meeting Notes from CBM Industry Stakeholders Meeting (11 December 2007) - DCN 05245 | On 11 December 2007, the U.S. Environmental Protection Agency (EPA) met with coalbed methane (CBM) industry stakeholders to discuss the upcoming CBM information collection request (ICR). | Meeting or Teleconference Materials | 13          | No                         | No         | 05245      |

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| EPA-HQ-OW-2006-0771-1069 | 11/07/2007         | Final Meeting Notes from a Teleconference with Methane Energy Corporation (31 October 2007) - DCN 05246   | Mr. Steve Pappajohn, President, and Ms. Peggy Halferty, Environmental Manager, Methane Energy Corporation, spoke with me by telephone on 31 October 2007 to discuss the produced water management at their coalbed methane (CBM) operations in Coos Bay, Oregon.  | Meeting or Teleconference Materials | 5           | No                         | No         | 05246      |
| EPA-HQ-OW-2006-0771-1070 | 12/27/2007         | Final Meeting Notes from Department of Interior, Bureau of Reclamation Teleconference (27 December 2007) - DCN 05247  | The U.S. Environmental Protection Agency (EPA) held a teleconference with representatives from the U.S. Department of the Interior, Bureau of Reclamation to discuss EPA's Detailed Study of the coalbed methane (CBM) sector and survey. Table 1 lists the teleconference participants. The purpose of the teleconference was to discuss the potential mutual benefits of sharing information between EPA and the Bureau of Reclamation. Mr. Carey Johnston, EPA, started the teleconference by providing an overview of EPA's study of the CBM industry sector. | Meeting or Teleconference Materials | 2           | No                         | No         | 05247      |
| EPA-HQ-OW-2006-0771-1072 | 11/26/2007         | NON-CBI VERSION: Final Site Visit Report: Sandia National Laboratories (SNL) Pilot Treatment Plant and New Mexico State University (NMSU) Land Application Study ConocoPhillips Well Pad (San Juan 32-8 #237A) West of Navajo Lake, NM (San Juan Basin) - DCN 05270 | Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, and the U.S. Fish and Wildlife Service met with representatives from Sandia National Laboratories (SNL) and New Mexico State University (NMSU) on 23 October 2007 to visit the ConocoPhillips well pad (San Juan 32-8 #237A), pilot treatment system and land application test site located west of Navajo Lake off of Highway 511 in New Mexico (36o 52' 50.1" N, 107o 38' 20.6" W).   | Report                              | 23          | No                         | No         | 05270A1    |
| EPA-HQ-OW-2006-0771-1116 |                    | Agency Information Collection Activities; Submission to OMB for Review and Approval; Comment Request; Coalbed Methane Extraction Sector Survey (New), EPA ICR Number 2291.01, OMB Control No. 2040-NEW - DCN 05774  | Federal Register of July 15, 2008, (73 FR 40575) (FRL-8692-2)   | Federal Register Document           | 2           | No                         | No         | 05774      |



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| EPA-HQ-OW-2006-0771-1117 | 06/26/2008         | Draft 2007 Coalbed Methane Industry Screener - DCN 05761  | EPA developed this draft screener in response to comments on the first Federal Register Notice dated January 25, 2008. EPA is soliciting comments on this draft.   | Report                              | 9           | No                         | No         | 05761      |
| EPA-HQ-OW-2006-0771-1118 |                    | Draft Questionnaire for the Coalbed Methane Extraction Sector - DCN 05762   | Draft Questionnaire for the second Federal Register Notice.  | Report                              | 77          | No                         | No         | 05762      |
| EPA-HQ-OW-2006-0771-1119 | 06/01/2008         | Supporting Statement for Coalbed Methane Extraction Sector Questionnaire Information Collection Request Supporting the U.S. EPA Clean Water Act Section 304(b) Effluent Guidelines Annual Reviews - DCN 05763 | This Information Collection Request (ICR) package requests the Office of Management and Budget (OMB) to review and approve the U.S. Environmental Protection Agency's (EPA's), Office of Water survey titled: "Coalbed Methane Extraction Sector Questionnaire." This document contains Part A of the supporting statement and provides information on the estimated burden and justification for each question. | Publication USEPA                   | 78          | No                         | No         | 05763      |
| EPA-HQ-OW-2006-0771-1120 | 04/30/2008         | Final Meeting Notes from the Oklahoma Independent Petroleum Association Meeting on April 17, 2008 - DCN 05764   | The U.S. Environmental Protection Agency (EPA) and representatives from OIPA participated in a teleconference to discuss EPA's information collection request and its potential impact on small, independent oil producers.  | Meeting or Teleconference Materials | 3           | No                         | No         | 05764      |
| EPA-HQ-OW-2006-0771-1121 | 06/23/2008         | Final Meeting Notes for Denver, CO CBM Questionnaire Meeting on May 14, 2008 - DCN 05765  | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the CBM sector met in Denver, CO to discuss EPA's proposed Information Collection Request.   | Meeting or Teleconference Materials | 5           | No                         | No         | 05765      |

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| EPA-HQ-OW-2006-0771-1122 | 06/26/2008         | Final Meeting Notes for Questionnaire Meeting on June 26, 2008 - DCN 05766  | The U.S. Environmental Protection Agency (EPA) and representatives from organizations involved with the CBM sector had a teleconference to discuss EPA's proposed Information Collection Request. | Meeting or Teleconference Materials | 7           | No                         | No         | 05766      |
| EPA-HQ-OW-2006-0771-1123 | 06/24/2008         | Potential Additional Costing Information - DCN 05767  | This memorandum describes the cost information EPA would like to collect for produced water management technologies.  | Letter, Memorandum, Email           | 4           | No                         | No         | 05767      |
| EPA-HQ-OW-2006-0771-1124 | 06/27/2008         | Memorandum to Public Record EPA-HQ-OW-2006-0771, Subj: Index of Record Items Supporting Coalbed Methane Extraction Sector Survey: Updated - DCN 05768 | This memorandum lists the documents related to coalbed methane that have been added to the record between the first and second Federal Register Notices (January 2008 to July 2008).              | Letter, Memorandum, Email           | 40          | No                         | No         | 05768      |
| EPA-HQ-OW-2006-0771-1125 | 06/25/2008         | Memorandum to Carey Johnston, EAD/USEPA: Subj: Potential Exclusions to Screener: Operators with One and Two Wells Coalbed Methane Study - DCN 05769   |   | Letter, Memorandum, Email           | 6           | No                         | No         | 05769      |
| EPA-HQ-OW-2006-0771-1126 | 06/25/2008         | Memorandum to Carey Johnston, EAD/USEPA: Subj: Summaries of Data Available in the Sample Frame Coalbed Methane Study - DCN 05770                      |   | Letter, Memorandum, Email           | 50          | No                         | No         | 05770      |

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| EPA-HQ-OW-2006-0771-1127 | 06/27/2008         | Infiltration from an Impoundment for Coalbed Natural Gas, Powder River Basin, Wyoming: Evolution of Water and Sediment Chemistry - DCN 05772  |                  | Other                     | 16          | No                         | No         | 05772      |
| EPA-HQ-OW-2006-0771-1128 | 06/30/2008         | Memorandum to Docket EPA-HQ-OW-2006-0771: Summary of Preliminary Public Record Items Concerning Adverse Impacts of Coalbed Methane Produced Water Discharges on Surface Water Quality - DCN 05773 |                  | Letter, Memorandum, Email | 2           | No                         | No         | 05773      |