

EXHIBIT A-1

Certified Index of the Administrative Record

West Bay Exploration Company (WBEC), Haystead #9 SWD
(Permit #MI-079-2D-0010)

May 23, 2014

Tim Elkins, EPA

Index to the Administrative Record
West Bay Exploration Company, Haystead #9 SWD well (Permit #MI-079-2D-0010)

<u>Doc</u>	<u>Date of doc</u>	<u>Date received</u>	<u>Time</u>	<u>Title/Description/Subject/Subject Line of Email</u>	<u>Author/sender</u>	<u>Addressee</u>
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I. Draft Permit Administrative Record (40 C.F.R. § 124.18(b))

a. Permit application (40 C.F.R. § 124.9(b)(1))

1	4/27/2011	4/29/2011	N/A	UIC permit Application: Haystead #9 SWD, Jackson County Michigan	Timothy Brock, West Bay Exploration	Lisa Perenchio, EPA
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b. Supporting documentation supplied by permit applicant (40 C.F.R. § 124.9(b)(1))

2	4/18/2011	9/20/2011	N/A	Re: National Historic Register Request	Ann M. Baker, West Bay Exploration	Brian Conway, State Historic Preservation Office
3	7/18/2011	9/20/2011	N/A	Re: ER111-451 Westshore Consulting Well Projects - Haystead 9 SWD, Section 9, T4S, R2E, Norvell Township, Jackson County (EPA)	Martha MacFarlane Faes, Deputy State Historic Preservation Office	Jeffrey McDonald, EPA
4	9/19/2011	9/20/2011	N/A	Re: Haystead 9 SWD Previously submitted application	Ann M. Baker, West Bay Exploration	USEPA Region 5
5	9/29/2011	10/3/2011	N/A	Re: Haystead 9 SWD, West Bay 22 SWD performance bonds	Ann M. Baker, West Bay Exploration	Dave Davis, MDEQ
6	11/28/2011	11/28/2011	13:26	Subject Line of Email: West Bay Exploration Company Haystead 9 SWD Application	Timothy Brock, West Bay Exploration	Katherine Owens, EPA
7	11/28/2011	11/29/2011	N/A	Re: Request for bond acceptance	Ann M. Baker, West Bay Exploration	Rebecca L. Harvey, EPA
8	12/9/2011	12/9/2011	11:24	Subject Line of Email: Fw: West Bay Exploration Company Haystead 9 SWD Application	Lisa Perenchio, EPA	Tim Elkins, EPA
9	12/14/2011	12/14/2011	19:23	Subject Line of Email: Haystead 9 SWD Application	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
10	12/15/2011	12/15/2011	6:37	Response to: Haystead 9 SWD Application	Timothy Brock, West Bay Exploration	Tim Elkins, EPA
11	1/26/2012	1/30/2012	N/A	Re: Haystead 9 SWD permit application (ammended/ re-submitted application)	Ann M. Baker, West Bay Exploration	Tim Elkins, EPA
12	2/10/2012	2/15/2012	N/A	Re: Additional Information Requested for the Haystead SWD #9 injection well, U.S. EPA UIC Permit Application #MI-075-2D-0010	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
13	3/19/2012	3/20/2012	N/A	Re: USEPA File: WU-16J Additional Information Requested for the Haystead SWD #9 Injection Well, Permit Application #MI-075-2D-0010	Eric R. Johnson, Westshore Consulting	Tim Elkins, EPA
14	4/9/2012	4/16/2012	N/A	Re: USEPA file: WU-16J Proposed Haystead SWD #9	Timothy Baker, West Bay Exploration	Tim Elkins, EPA
15	4/9/2012	4/9/2012	13:13	Subject Line of Email: West Bay Exploration Co. Haystead 9 SWD	Timothy Brock, West Bay Exploration	Tim Elkins, EPA
16	4/10/2012	4/10/2012	15:59	Subject Line of Email: Re: West Bay Exploration Co. Haystead 9 SWD	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
17	5/9/2012	5/9/2012	12:43	Subject Line of Email: Haystead 9 SWD (Slurry volume, cementing record request)	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
18	5/9/2012	5/9/2012	13:39	Subject Line of Email: Re: Haystead 9 SWD	Timothy Brock, West Bay Exploration	Tim Elkins, EPA
19	5/21/2012	5/21/2012	13:47	Subject Line of Email: Re: Re: Hastead 9 SWD	Timothy Brock, West Bay Exploration	Tim Elkins, EPA

Doc	Date of doc	Date received	Time	Title/Description/Subject/Subject Line of Email	Author/sender	Addressee
20	5/22/2012	5/22/2012	11:18	Subject Line of Email:Re: Re: Re: Hasteard 9 SWD	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
21	9/24/2012	9/24/2012	12:06	Subject Line of Email: Re: Haystead 9 SWD Application	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
22	1/10/2013	1/10/2013	15:06	Subject Line of Email: Petition for review	Tim Elkins, EPA	Timothy Brock, West Bay Exploration
23	3/5/2013	3/5/2013	9:27	Subject Line of Email: West Bay Exploration Haystead 9 SWD	Timothy Brock, West Bay Exploration	Tim Elkins, EPA
24	3/5/2013	3/5/2013	13:13	Subject Line of Email: Re: West Bay Exploration Haystead 9 SWD	Tim Elkins, EPA	Timothy Brock, West Bay Exploration

c. Draft permit or notice of intent to deny the application or terminate the permit (40 C.F.R. § 124.9(b)(2))

25	3/27/2013	4/1/2013	N/A	U.S. EPA, Underground Injection Control Draft Permit, Class II, MI-075-2D-0010, Haystead #9 SWD well in Jackson County	Lisa Perenchio, EPA	Timothy Brock, West Bay Exploration
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d. Statement of basis or fact sheet (40 C.F.R. § 124.9(b)(3))

26	3/27/2013	4/1/2013	N/A	Statement of Basis for Issuance of UIC Permit, MI-075-2D-0010	Lisa Perenchio, EPA	Timothy Brock, West Bay Exploration
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e. All documents cited in the statement of basis or fact sheet (40 C.F.R. § 124.9(b)(4))

27	N/A	N/A	N/A	Safe Drinking Water Act and Regulations at 40 C.F.R. 144 and 146 (publically available online)	N/A	N/A
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f. Other documents contained in the supporting file for the draft permit (40 C.F.R. § 124.9(b)(5))

28	1981	N/A	N/A	Michigan Hydrologic Atlas, Parts I (Hydrology for Underground Injection Control in Michigan) and Part II (atlas maps), Department of Geology, Western Michigan University, Kalamazoo, Michigan, 1981. Publically available at University Libraries.	N/A	N/A
29	2000	N/A	N/A	Stratigraphic Nomenclature for Michigan, Michigan Department of Environmental Quality, 2000. Michigan stratigraphic column.	N/A	N/A
30	5/17/2011	5/17/2011	N/A	UIC Area of Review Investigation	Steve Roy, EPA	Tim Elkins, EPA
31	Jan. 2012	N/A	N/A	Haystead #9 SWD Construction Evaluation, Haystead #9 SWD Plugging Plan Evaluation, Haystead #1-9 and Haystead #3-9 Construction Evaluations.	Tim Elkins, EPA	N/A
32	Jan. 2012	N/A	N/A	EPA Region 5 UIC Program Technical Review Sheet for the Haystead #9 SWD (MI-075-2D-0010)	Tim Elkins, EPA	N/A
33	Jan. 2012	N/A	N/A	Michigan Department of Natural Resources, Endangered Species Assessment Tool (no longer in operation) http://www.michigan.gov/dnr/0,4570,7-153-10370_12141_12168-30516--,00.html	Tim Elkins, EPA	N/A
34	Jan. 2012	N/A	N/A	U.S. Fish and Wildlife Service Site. Indiana bat (<i>Myotis sodalis</i>); Indiana Bat, Summer Life History Information for Michigan, January 2007. http://www.fws.gov/midwest/Endangered/section7/s7process/lifehistory.html	Tim Elkins, EPA	N/A
35	2007	N/A	N/A	Apple, Beth A. and Howard W. Reeves—Summary of Hydrogeologic Conditions by County for the State of Michigan—U.S. Geological Survey Open-File Report 2007-1236, 87 pp. Date Posted: September 21, 2007: [http://pubs.water.usgs.gov/ofr2007-1236/]	N/A	N/A
36	2009	4/9/2013	N/A	The United States Geological Survey (USGS) Site. Geologic Hazards Science Center, 2009 Earthquake Probability Mapping Application. Web. 9 April 2013. https://geohazards.usgs.gov/eqprob/2009/index.php	N/A	N/A

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37	4/11/2013	4/11/2013	N/A	The United States Geological Survey (USGS) Site. Earthquake Hazards Program, Global Earthquake Search (Beta) Application. Web. 11 April 2013. http://earthquake.usgs.gov/earthquakes/eqarchives/epic/	N/A	N/A
38	3/15/2013	N/A	N/A	The Michigan Department of Environmental Quality (MDEQ) Well File #60076, MDEQ Site. The GeoWebFace Web Accessible Maps, Data, Files Application, 2013. Web. 15 March 2013. http://ww2.deq.state.mi.us/GeoWebFace/# (EPA Haystead #9 SWD Administrative Record File Folder 2 of 2)	N/A	N/A
39	3/15/2013	N/A	N/A	The Michigan Department of Environmental Quality (MDEQ) Well File #60078, MDEQ Site. The GeoWebFace Web Accessible Maps, Data, Files Application, 2013. Web. 15 March 2013. http://ww2.deq.state.mi.us/GeoWebFace/# (EPA Haystead #9 SWD Administrative Record File Folder 2 of 2)	N/A	N/A
40	4/13/2010	4/13/2010	16:39	Subject Line of Email: Attached are three permit applications in Jackson County, Norvell Twp. (4S 2E), Section 9. (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mark Snow, Michigan DNRE	Mike Sanders, Michigan DNRE
41	4/22/2010	4/27/2010	N/A	Re: West Bay Exploration Company, Haystead 1-9 & 3-9 Permit Applications (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Robert Schulz, Westshore Consulting	Mark Snow, Michigan DNRE
42	4/24/2010	4/24/2010	18:07	Subject Line of Email: Re: West Bay Exploration, Haystead 1, 2, 3-9, A100062-4 (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mike Sanders, Michigan DNRE	Mark Snow, Michigan DNRE
43	4/26/2010	4/26/2010	10:38	Just to clarify. (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mark Snow, Michigan DNRE	Mike Sanders, Michigan DNRE
44	4/27/2010	4/27/2010	17:09	Subject Line of Email: Re: West Bay Exploration, Haystead 1, 2, 3-9, A100062-4 (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mike Sanders, Michigan DNRE	Mark Snow, Michigan DNRE
45	4/28/2010	N/A	N/A	Re: West Bay Exploration Company - Haystead 1-9, Haystead 2-9, and Haystead 3-9, T4S, R2E, Norvell Township, Jackson County (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Eric Johnson, Westshore Consulting	Lori Sargent, Michigan DNRE
46	4/28/2010	4/28/2010	9:01	Subject Line of Email: I apologize for the added confusion. (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mark Snow, Michigan DNRE	Mike Sanders, Michigan DNRE
47	4/30/2010	4/30/2010	12:01	Subject Line of Email: RE: West Bay Exploration, Haystead 1, 2, 3-9, A100062-4 (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mike Sanders, Michigan DNRE	Mark Snow, Michigan DNRE
48	5/3/2010	5/3/2010	9:00	Subject Line of Email: Thanks Mike. (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mark Snow, Michigan DNRE	Mike Sanders, Michigan DNRE
49	5/4/2010	5/4/2010	11:17	Subject Line of Email: RE: West Bay Exploration, Haystead 1, 2, 3-9, A100062-4 (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Mike Sanders, Michigan DNRE	Mark Snow, Michigan DNRE
50	5/4/2010	5/4/2010	15:54	Subject Line of Email: Haystead 1-9, 2-9, 3-9: Applications A100062-64 (Record contained in MDEQ Well File. (See the Haystead #9 SWD Administrative Record citations 32 and 33 above)	Kristine Shimko, Michigan DNRE	Mark Snow, Michigan DNRE

II. All Comments Received During the Public Comment Period (40 C.F.R. § 124.18(b)(1))

51	3/30/2013	3/30/2013	18:03	Subject Line of Email: RE: UIC Class II Draft Permit Public Notice	Timothy Porter	Lilateese Simmons, EPA
52	4/16/13	4/16/13	20:57	Subject Line of Email: RE: Petition For Review: Haystead #9 permit (Permit No. MI-075-2D-0010)	Peter Bormuth	Anna Miller, EPA

Doc	Date of doc	Date received	Time	Title/Description/Subject/Subject Line of Email	Author/sender	Addressee
53	4/30/2013	4/30/2013	16:07	Subject Line of Email: RE: Haystead #9 injection well permit.	Douglas (D.M) Hutchins	Tim Elkins, EPA
54	4/30/2013	4/30/2013	10:21	Subject Line of Email: RE: West Bay Haystead #9	Peter Bormuth	Tim Elkins, EPA
55	4/30/2013	5/13/2013	N/A	RE: The Right to Appeal: Public Hearing	Fred Marsh	Tim Elkins, EPA
56	4/30/2013	5/13/2013	N/A	RE: The Right to Appeal: Public Hearing	Donna Marsh	Tim Elkins, EPA
57	5/1/2013	5/6/2013	N/A	RE: Underground Sewage Holding Take	Norman Yassay	Tim Elkins, EPA
58	5/2/2013	5/2/2013	09:08	Subject Line of Email: RE: West Bay Haystead #9	Peter Bormuth	Tim Elkins, EPA
59	5/6/2013	5/6/2013	17:52	Subject Line of Email: RE: Comment about Haystead #9 SWD	Nancy Witter	Tim Elkins, EPA
60	5/7/2013	5/13/2013	N/A	RE: Comments on new Disposal well permit near Brooklyn, Michigan Haystack (sic) #9 SWD	Mike R. Stein	Tim Elkins, EPA
61	5/9/2013	5/10/2013	14:28	RE: MI-075-2D-0010 Haystead No. 9 well West Bay Exploration Company	Sandra K. Yerman	Tim Elkins, EPA
62	5/11/2013	5/11/2013	21:39	Subject Line of Email: RE: The West Bay Exploration Co.'s Haystead #9 SWD well draft permit	Linda Britt	Tim Elkins, EPA
63	5/13/2013	5/13/2013	12:18	Subject Line of Email: RE: Comments regarding Haystead #9 injection well	Nancy Shiffler, Michigan Chapter Sierra Club	Tim Elkins, EPA
64	5/14/2013	5/16/2013	N/A	RE: Addendum to...MI-075-2D-0010 Haystead No. 9 well West Bay Exploration Company	Sandra K. Yerman	Tim Elkins, EPA

III. Tape or Transcript of Public Hearings (40 C.F.R. § 124.18(b)(2))

65	4/30/2013	5/8/2013	11:44	Haystead #9 Saltwater Disposal Injection Well Permit for Underground Injection Oil [sic], State of Michigan in the County of Jackson, Village of Brooklyn	Karen Klerekoper, Jane Rose Reporting	Jeffrey Wawczak, EPA
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IV. Written Materials Submitted at Public Hearings (40 C.F.R. § 124.18(b)(3))

66	4/30/2013	4/30/2013	N/A	RE: Why?	David Lamb	Tim Elkins, EPA
67	4/30/2013	4/30/2013	N/A	RE: Class II wells in Michigan	Lisa Downey	Tim Elkins, EPA

V. Response to Comments (40 C.F.R. § 124.18(b)(4))

a. Response to comments

68	4/9/2014	4/14/2014	11:22	Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010, West Bay exploration Company, Haystead #9 SWD well in Jackson County, Michigan	Tink G. Hyde, EPA	Timothy Brock, West Bay Exploration
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b. New records considered by the Agency in Developing response to comments

69	1964	11/19/2013	N/A	Stratigraphic Succession in Michigan, Paleozoic through Recent, Michigan Department of Conservation, Geologic Survey Division, 1964. "Michigan stratigraphic column". Eddy, G.E. Web 19 November 2013 http://ngmdb.usgs.gov/Prodesc/proddesc_90398.htm	N/A	N/A
70	2001	N/A	N/A	Stratigraphic Lexicon for Michigan, Michigan Department of Environmental Quality (MDEQ), Geologic Survey Division and the Michigan Basin Geologic Society, Lansing, Michigan, 2001. Also available at: http://www.michigan.gov/documents/deq/GIMDL-BU08_216121_7.pdf	N/A	N/A

Doc	Date of doc	Date received	Time	Title/Description/Subject/Subject Line of Email	Author/sender	Addressee
71	2013	11/4/2013	N/A	The Michigan Department of Environment Quality (MDEQ) Site. Water Well Viewer Application. Web. 04 November 2013 http://wellviewer.rsgis.msu.edu/	N/A	N/A
72	2014	2/11/2014	N/A	The Michigan Department of Environment Quality (MDEQ) Site. Groundwater Mapping Project. Web. 11 February 2014 http://gwmap.rsgis.msu.edu/	N/A	N/A
73	2014	2/11/2014	N/A	Direction of Groundwater Flow near the Haystead #9 SWD (Based on MDEQ Groundwater Viewer Contours) Map	Tim Elkins, EPA	N/A
74	2/13/2014	2/13/2014	N/A	EPA UIC Report: Calculation of Injection Induced Pressure Effects	Tim Elkins, EPA	N/A
75	8/27/2013	8/27/2013	11:00	EPA Region 5 UIC Meeting (Microsoft Outlook Meeting Reservation), West Bay Seismic Report: EPA "Meeting to review and discuss West Bay cross sections and seismic reports".	Jeff Wawczak, EPA	Tim Elkins and Ross Micham, EPA
76	2012	N/A	N/A	Preliminary Report on the Northstar1 Class II Injection Well and the Seismic Events in Youngstown, Ohio Area, Ohio Department of Natural Resources, March 2012	N/A	N/A
77	4/23/2013	4/23/2013	9:58	Subject Line of Email: RE: Haystead 9 SWD and "Induced Seismicity Consideration of Induced Seismicity"	Timothy Brock, West Bay Exploration	Tim Elkins, EPA
78	8/15/2013	8/15/2013	14:36	Subject Line of Email: EPA Xsections	Timothy Baker, West Bay Exploration	Jeff Wawczak and Tim Elkins, EPA
79	8/15/2013	8/15/2013	14:36	Seismic Cross Section entitled "Perspective Salt Water Disposal Wells, Napoleon Field, Jackson County, Michigan"	Timothy Brock, West Bay Exploration	Jeff Wawczak and Tim Elkins, EPA
80	8/15/2013	8/15/2013	14:36	Geologic Cross Section entitled "Perspective Salt Water Disposal Wells, Napoleon Field, Jackson County, Michigan"	Timothy Brock, West Bay Exploration	Jeff Wawczak and Tim Elkins, EPA
81	8/6/2013	8/9/2013	N/A	Re: Draft Permit for the Haystead #9 SWD Well, Jackson County, Michigan; U.S. EPA Permit Number MI-075-2D-0010; MDEQ Permit Number 60425	Rebecca L. Harvey, EPA	Scott Hicks, U.S. FWS
82	9/4/2013	9/10/2013	N/A	Re: Draft Permit for the Haystead #9 SWD Well, Jackson County, Michigan; U.S. EPA Permit Number MI-075-2D-0010; MDEQ Permit Number 60425	Scott Hicks, U.S. FWS	Rebecca L. Harvey, EPA

VI. Other Records in the Supporting File for the Permit (40 C.F.R. § 124.18(b)(6))

83	2013	N/A	N/A	Induced Seismicity Potential in Energy Technologies. Washington, DC: The National Academies Press, 2013.	N/A	N/A
84	2013	N/A	N/A	A White Paper Summarizing a Special Session on Induced Seismicity, Ground Water Research & Education Foundation, February 2013	N/A	N/A
85	2009	N/A	N/A	Owen, D.E. (2009). How to use stratigraphy terminology in papers, illustrations, and talks. <i>Stratigraphy</i> , Vol. 6, No. 2, Pgs. 106 - 116.	N/A	N/A
86	1999	N/A	N/A	Howell, P.D. and van der Pluijm, B.A. (1999). Structural sequences and styles of subsidence in the Michigan basin. <i>GSA Bulletin</i> , Vol. 111, No. 7, Pgs. 974 - 991.	N/A	N/A
87	2013	N/A	N/A	Kim, W.Y. (2013). Induced seismicity associated with fluid injection into a deep well in youngstown, Ohio. <i>Journal of Geophysical Research: Solid Earth</i> , Vol. 118, Pgs. 1 - 13.	N/A	N/A
88	2010	N/A	N/A	Sass, I. and U. Burbaum (2010) Damage to the historic town of Staufen (Germany) caused by geothermal drillings through anhydrite-bearing formations. <i>Acta Carsologica</i> , Vol. 39, pp. 233-245	N/A	N/A

Doc	Date of doc	Date received	Time	Title/Description/Subject/Subject Line of Email	Author/sender	Addressee
89	2005	N/A	N/A	Sievert, A. A. Wolter, N. Singh (2005) Hydration of anhydrite of gypsum (CASO4II) in a ball mill. Cement and Concrete Research, Vol. 35, pp.623-630	N/A	N/A
90	1967	N/A	N/A	Hardie, L. (1967) The gypsum-anhydrite equilibrium at one atmosphere pressure. American Mineralogist, Vol. 52, pp.171-200	N/A	N/A
91	1958	N/A	N/A	Conley, R.F. and W.M. Bundy (1958) Mechanism of gypsification. Geochimica et Cosmochimica Acta, Vol. 15, pp. 57-72 (abstract)	N/A	N/A
92	1964	N/A	N/A	Murray, R.C. (1964) Origin and Diagenesis of gypsum and anhydrite. Journal of Sedimentary Petrology Vol. 34, pp. 512-523 (abstract)	N/A	N/A
93	1955	N/A	N/A	Ogniben, L. (1955) Inverse graded bedding in primary gypsum of chemical deposition. Journal of Sedimentary Petrology Vol. 25, pp. 273-281 (abstract)	N/A	N/A
94	2013	N/A	N/A	Region 5 Guidance, entitled Example: Underground Injection Control Class II Permit Application. (publicly available at http://www.epa.gov/region5/water/uic/forms/act-samp.pdf)	N/A	N/A
95	2012	N/A	N/A	Lawrence Berkeley National Laboratory, (2010) Final Report and Recommendations, Workshop on Induced Seismicity Due to Fluid Injection/Production From Energy-Related Applications	N/A	N/A
96	2012	N/A	N/A	Zoback, M.D. (2012) Managing the seismic risk posed by wastewater disposal. Earth, Web http://www.earthmagazine.org/article/managing-seismic-risk-posed-wastewater-disposal	N/A	N/A
97	4/30/2013	4/30/2013	N/A	EPA Public Hearing Sign-in Sheets	N/A	N/A
98	4/30/2013	4/30/2013	N/A	Presentation: EPA Draft Permit for Class II Injection Well, Haystead #9 SWD. Author: Tim Elkins, Permit Writer	N/A	N/A
99	3/27/2013	3/29/2013	N/A	EPA Public Notice: New Disposal Well Permit Near Brooklyn, Michigan	Tim Elkins, EPA	Sandra K. Yerman
100	3/30/2013	3/30/2013	N/A	EPA Public Notice Newspaper Advertisement: Public Comment Period and Public Hearing for West Bay Exploration Co.'s Request for a new Underground Injection Well Permit, Jackson County, Michigan	Jeff Wawczak and Peter Cassell, EPA	Jackson Citizen Patriot
101	3/30/2013	3/30/2013	07:50	Subject Line of Email: RE: UIC Class II Draft Permit Public Notice "I received your notice. Thank you."	Peter Bormuth	Lilateese Simmons, EPA
102	3/27/2013	4/1/2013	10:06	Re: UIC Draft Permit for Repository	Lisa Perenchio, EPA	Reference Dept, Jackson District Library
103	2/24/2012	2/24/2012	17:54	Subject Line of Email: Re: MI-075-2D-0010 permit application	Eric and Pam Johnson	Katherine Owens, EPA
104	4/25/2013	4/25/2013	11:41	Subject Line of Email: Re: Haystead 9 SWD DRAFT permit	Tim Elkins, EPA	Tessa, Jackson District Library Reference Dept.
105	4/25/2013	4/25/2013	11:20	Subject Line of Email: Re: Haystead 9 SWD DRAFT permit	Tessa, Jackson District Library Reference Dept.	Tim Elkins, EPA
106	4/25/2013	4/25/2013	14:59	Subject Line of Email: Re: Haystead 9 SWD DRAFT permit	Nancy Shiffler, Michigan ChapterSierra Club	Tim Elkins, EPA
107	4/25/2013	4/25/2013	16:26	Subject Line of Email: Re: Haystead 9 SWD DRAFT permit	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club

<u>Doc</u>	<u>Date of doc</u>	<u>Date received</u>	<u>Time</u>	<u>Title/Description/Subject/Subject Line of Email</u>	<u>Author/sender</u>	<u>Addressee</u>
108	4/26/2013	4/26/2013	18:42	Subject Line of Email: Re: Haystead 9 SWD application	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
109	4/26/2013	4/26/2013	18:48	Subject Line of Email: Re: Haystead 9 SWD application_Attachment 1	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
110	4/26/2013	4/26/2013	18:51	Subject Line of Email: Re: Haystead 9 SWD application_Attachment 2	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
111	4/26/2013	4/26/2013	19:16	Subject Line of Email: Re: Haystead 9 SWD application_Attachment 3	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
112	4/26/2013	4/26/2013	19:17	Subject Line of Email: Re: Haystead 9 SWD application_Attachment 4	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
113	4/26/2013	4/26/2013	19:19	Subject Line of Email: Re: Haystead 9 SWD application_Attachment 5	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
114	4/27/2013	4/27/2013	12:57	Subject Line of Email: Re: Haystead 9 SWD DRAFT permit	Nancy Shiffler, Michigan ChapterSierra Club	Tim Elkins, EPA
115	4/29/2013	4/29/2013	11:23	Subject Line of Email: Re: Haystead 9 SWD DRAFT permit	Tim Elkins, EPA	Nancy Shiffler, Michigan ChapterSierra Club
116	4/29/2013	4/29/2013	11:28	Subject Line of Email: Re: attachment 3	Tim Elkins, EPA	Valoria Robinson, EPA
117	4/29/2013	4/29/2013	11:53	Subject Line of Email: Re: Revised Haystead 9 Permit Application - Intro Email	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
118	4/29/2013	4/29/2013	11:57	Subject Line of Email: Re: 1. Revised Haystead 9 permit and attachments pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
119	4/29/2013	4/29/2013	11:57	Subject Line of Email: Re: 2. Revised Haystead 9 Attachment Q pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
120	4/29/2013	4/29/2013	11:58	Subject Line of Email: Re: 3. Revised Haystead 9 Attachment R pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
121	4/29/2013	4/29/2013	12:04	Subject Line of Email: Re: 4. Revised Haystead 9 appendix 1 and 2 pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
122	4/29/2013	4/29/2013	12:06	Subject Line of Email: Re: 5. Revised Haystead 9 Appendix 4 Part1of3 pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
123	4/29/2013	4/29/2013	12:10	Subject Line of Email: Re: 6. Revised Haystead 9 Appendix 4 Part2of3 pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
124	4/29/2013	4/29/2013	12:12	Subject Line of Email: Re: 7. Revised Haystead 9 Appendix 4 Part3of3 pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
125	4/29/2013	4/29/2013	12:12	Subject Line of Email: Re: 8. Revised Haystead 9 appendix 5 pdf	Valoria Robinson, EPA	Nancy Shiffler, Michigan ChapterSierra Club
126	5/6/2013	5/6/2013	17:57	Subject Line of Email: RE: Comment about Haystead #9 SWD	Tim Elkins, EPA	Nancy Witter
127	5/1/2013	5/1/2013	17:43	Subject Line of Email: RE: West Bay Haystead #9	Tim Elkins, EPA	Peter Bornmuth
128	5/1/2013	5/1/2013	18:44	Subject Line of Email: RE: Haystead #9 injection well permit	Tim Elkins, EPA	Douglas (D.M) Hutchins

<u>Doc</u>	<u>Date of doc</u>	<u>Date received</u>	<u>Time</u>	<u>Title/Description/Subject/Subject Line of Email</u>	<u>Author/sender</u>	<u>Addressee</u>
129	5/13/2013	5/13/2013	09:45	Subject Line of Email: RE: public comment	Tim Elkins, EPA	Linda Britt
130	5/13/2013	5/13/2013	12:38	Subject Line of Email: RE: Comments regarding Haystead #9 injection well	Tim Elkins, EPA	Nancy Shiffler, Michigan Chapter Sierra Club
131	5/23/2013	5/30/2013	N/A	Re: Public Comments on U.S. EPA Draft Permit #MI-075-2D-0010	Lisa Perenchio, EPA	Norman Yassay
132	5/23/2013	6/5/2013	N/A	Re: Public Comments on U.S. EPA Draft Permit #MI-075-2D-0010	Lisa Perenchio, EPA	Mike Stein
133	5/23/2013	5/30/2013	N/A	Re: Public Comments on U.S. EPA Draft Permit #MI-075-2D-0010	Lisa Perenchio, EPA	Fred Marsh
134	5/23/2013	5/30/2013	N/A	Re: Public Comments on U.S. EPA Draft Permit #MI-075-2D-0010	Lisa Perenchio, EPA	Donna J. Marsh
135	5/23/2013	6/6/2013	N/A	Re: Public Comments on U.S. EPA Draft Permit #MI-075-2D-0010	Lisa Perenchio, EPA	Sandra K. Yerman
136	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Pam Anderson
137	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	John Bancroft
138	4/9/2014	4/17/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Peter Bormuth
139	4/9/2014	4/15/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Linda Britt
140	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Jack Curtis
141	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Dennis Curtis
142	4/9/2014	4/12/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Lisa Downey
143	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Steve Duskak
144	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Bob Elrod, Columbia Township
145	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Bob Gilmore
146	4/9/2014	4/15/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Harriet Haystead
147	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Scott Hicks, U.S. FWS
148	4/9/2014	4/14/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Roger Howe
149	4/9/2014	4/9/2014	17:53	Subject Line of Email: Response to Comments for the Haystead #9 SWD well in Jackson County, Michigan. Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tim Elkins, EPA	Douglas (D.M.) Hutchins

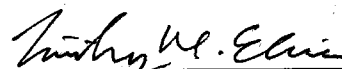
Doc	Date of doc	Date received	Time	Title/Description/Subject/Subject Line of Email	Author/sender	Addressee
150	4/9/2014	4/20/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Eric Johnson, Norvell Township
151	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Sylvia Kay
152	4/9/2014	4/15/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	John Kuschell
153	4/9/2014	N/A	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	David Lamb
154	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Dr. Patricia Mack-Duslak
155	4/9/2014	4/21/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Donna J. Marsh
156	4/9/2014	N/A	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Fred Marsh
157	4/9/2014	4/12/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Mark Muhich, Michigan Chapter Sierra Club
158	4/9/2014	4/9/2014	17:54	Subject Line of Email: Response to Comments for the Haystead #9 SWD well in Jackson County, Michigan. Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tim Elkins, EPA	Timothy Porter
159	4/9/2014	4/14/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Victoria Powell
160	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Nancy L. Shiffler, Michigan Chapter Sierra Club
161	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Vernon L. Sigourney
162	4/9/2014	4/14/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Mike Stein
163	4/9/2014	4/14/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Susan Stewart, Committee to Ban Fracking
164	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Nancy Witter, Committee to Ban Fracking
165	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Norman Yassay
166	4/9/2014	4/11/2014	N/A	Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tink G. Hyde, EPA	Sandra K. Yerman
167	4/9/2014	4/9/2014	17:20	Subject line of Email: Final Permit for West Bay Exploration Company's Haystead 9 SWD (MI-075-2D-0010). Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tim Elkins, EPA	Kristie Shimko, Louis Schineman, Rick Henderson, Mark Snow, MDEQ
168	4/9/2014	4/9/2014	18:44	Subject line of Email: RE: Haystead 9 SWD FINAL permit (MI-075-2D-0010) and Response to Comment. Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Tim Elkins, EPA	Tessa, Jackson District Library Reference Dept.
169	4/17/2014	4/21/2014	N/A	RE: Haystead 9 SWD FINAL permit (MI-075-2D-0010) and Response to Comment. Notification of Final Permit and Response to Public Comments, U.S. EPA Underground Injection Control Permit #MI-075-2D-0010	Dana Rzeznik, EPA	Jackson District Library Reference Dept.

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VII. Final Permit (40 C.F.R. § 124.18(b)(7))

170	4/9/2014	4/14/2014	11:22	Cover Letter to West Bay Corporation RE: Final Permit for the Haystead #9 SWD Well in Jackson County; U.S. EPA Permit Number MI-075-2D-0010, MDEQ Permit Number 60425	Tink G. Hyde, EPA	Timothy Brock, West Bay Exploration
171	4/9/2014	4/14/2014	11:22	U.S. EPA, Underground Injection Control Draft Permit, Class II, MI-075-2D-0010, Haystead #9 SWD well in Jackson County	Tink G. Hyde, EPA	Timothy Brock, West Bay Exploration

I, Timothy M. Elkins, permit writer for the Underground Injection Control Branch, Region 5, U.S.EPA certify that the administrative record for this final permit decision is complete on 5/23/2014. The administrative record includes, to the best of my knowledge, all documents required under 40 C.F.R. § 124.18. The above Administrative Record Index references all documents in the administrative record for this final permit termination decision.



Timothy M. Elkins, Permit Writer,
Underground Injection Control Branch, U.S. EPA Region 5

5/23/14

Date