

PART 625 - MINERAL WELL PERMIT APPLICATION FLOW SHEET

Application number MWB 70082	Date application received 10-30-09	+ days Date to send to field
Applicant Beeland Group, LLC	Company No: 6344	+ days Date report to District
Well Name & No: Bay Harbour Disposal Well #1		+ days Date District recommend
<input type="checkbox"/> New Company <input type="checkbox"/> Organization report <input type="checkbox"/> Correct address and phone number <input checked="" type="checkbox"/> Check #, Bank, City		+ days Due Date Issue or notice to Company of Public Hearing
<input checked="" type="checkbox"/> Waste Disposal (\$2,500) <input type="checkbox"/> Hazardous <input type="checkbox"/> Non-hazardous <input type="checkbox"/> Brine Production (\$500) <input type="checkbox"/> CONFIDENTIAL (Production well) <input type="checkbox"/> Processed brine Disposal (\$500) or <input type="checkbox"/> Storage (\$500) <input type="checkbox"/> Test well (\$500) or <input type="checkbox"/> Blanket Test wells (\$75-\$150-\$300-\$600) <input type="checkbox"/> CONFIDENTIAL (Test well/s)		
Distribution <input type="checkbox"/> Original 7200-1 and check to Cashier <input type="checkbox"/> Copy to DNR, if on State surface <input type="checkbox"/> Copy to Mineral Well specialist <input type="checkbox"/> Copy to USDA, if on Federal surface		

INITIAL REVIEW

Reviewer: **PT**

<input type="checkbox"/> Complete application	<input checked="" type="checkbox"/> EQP 7200-1 <input checked="" type="checkbox"/> EQP 7500-3 EIA <input checked="" type="checkbox"/> EQP 7200-14 Inj. well Data <input checked="" type="checkbox"/> Valid bond No. 6658081	<input checked="" type="checkbox"/> EQP 7200-2 <input checked="" type="checkbox"/> Supplemental plat <input type="checkbox"/> Directional plan	<input checked="" type="checkbox"/> EQP 7200-4 BOP diagram <input checked="" type="checkbox"/> EQP 7200-18 Soil Erosion <input type="checkbox"/> Add info <input type="checkbox"/> Blanket <input checked="" type="checkbox"/> Single
<input type="checkbox"/> Natural Features	<input type="checkbox"/> No match found <input checked="" type="checkbox"/> Match found Program H2S/HS2 Personnel contacted _____		
<input type="checkbox"/> Distribution	Area geologist: <input type="checkbox"/> Cad. <input checked="" type="checkbox"/> Gay. <input type="checkbox"/> Lan <input type="checkbox"/> Liv. <input type="checkbox"/> Bay. <input type="checkbox"/> Kzoo. District geologist: <input checked="" type="checkbox"/> Cad <input type="checkbox"/> Lan. <input type="checkbox"/> Confidential		
Date sent to Field # 11-16-09 <i>NEVER received in office mail</i> <i>RV had carried on 11/18/09</i>			

REVIEW FOR COMPLETE AND ACCURATE INFORMATION

Reviewer: **PT**

<input checked="" type="checkbox"/> Location	<input type="checkbox"/> 7200-1 deficiencies or conflicts <input type="checkbox"/> 7200-2 deficiencies or conflicts <input checked="" type="checkbox"/> Zoning Public Utility Dist. <input type="checkbox"/> Posted on map (not confidential)
<input type="checkbox"/> Public Notice or Hearing	<input checked="" type="checkbox"/> Public Notice required <input type="checkbox"/> NO Date Applicant sent Public Notice Instructions _____ <input type="checkbox"/> Proof of Publication Date _____ <input type="checkbox"/> Comment period ends Date _____ <input type="checkbox"/> Public Hearing recommended
<input type="checkbox"/> Injection wells	Well type: <input type="checkbox"/> BDW <input type="checkbox"/> _____ <input type="checkbox"/> Supplemental survey, all producing/plugged wells within 1320' <input type="checkbox"/> No migration of inj fluids <input checked="" type="checkbox"/> 7200-14 complete <input type="checkbox"/> All records of 1320' wells <input type="checkbox"/> Inj into a prod oil/gas horizon <input type="checkbox"/> Deficiencies _____
<input type="checkbox"/> Ownership	<input checked="" type="checkbox"/> Private surface <input type="checkbox"/> State surface <input type="checkbox"/> Federal surface
<input type="checkbox"/> Casing & Sealing	<input type="checkbox"/> Rotary <input type="checkbox"/> Combination <input type="checkbox"/> Cable <input type="checkbox"/> Surface adequate <input type="checkbox"/> BOP adequate <input type="checkbox"/> Proper hole/casing size <input type="checkbox"/> Deficiencies _____
<input type="checkbox"/> Field review	<input type="checkbox"/> EIA Part I / A-B <input type="checkbox"/> Wetlands <input type="checkbox"/> Natural rivers <input type="checkbox"/> Critical dunes <input type="checkbox"/> Endangered species <input type="checkbox"/> Need additional information _____ <input type="checkbox"/> Deficiencies _____
<input type="checkbox"/> Reconcile Field & Lansing review	<input type="checkbox"/> Notice to applicant Date _____ <input type="checkbox"/> Lansing recommend issuance Date _____ <input type="checkbox"/> Denial recommend to Division Chief Date _____

BEELAND GROUP LLC

*Michael Sniegowski
Vice President*

October 30, 2009

Mr. Rex Tefertiller
Michigan Department of Environmental Quality
Geological and Land Management Division
Constitution Hall
525 W. Allegan St., South Tower, 1st Floor
Lansing, MI 48933

RE: Beeland Group, LLC Mineral Well Act Permit; Authorization of Agents

Dear Mr. Tefertiller:

The Beeland Group, LLC, a wholly owned subsidiary of the CMS Land Company, which is a wholly owned subsidiary of CMS Energy Company, submitted an Application to Drill and Operate a Mineral Well for non-hazardous fluid disposal to the Michigan Department of Environmental Quality dated October 30, 2009. The proposed well will be located at the following address:

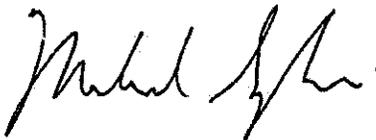
5548 US 31
Petoskey MI 49770

The Beeland Group, LLC has submitted all required forms pertaining to the MDEQ permitting process including a form 7200-13 regarding permittee organization. Please accept this letter as formal notification of authorization for the following individuals to make submittals, sign forms and correspondence and interact with representatives of the MDEQ regarding this Mineral Well Act Permit application as may be required by Part 625 of Act 451 PA 1994, as amended.

Mr. David Dowhan – Beeland Group, LLC 517-768-7517
Mr. Ken Cooper – Petrotek Engineering Corp 303-290-9414

Please contact me at the above address and telephone number should you have any questions or if I can be of further assistance regarding this matter.

Sincerely,



BEELAND GROUP LLC

*Michael Sniagowski
Vice President*

October 30, 2009

Mr. Raymond Vugrinovich
Michigan Department of Environmental Quality
Geological and Land Management Division
Constitution Hall
525 W. Allegan St , South Tower, 1st Floor
Lansing, MI 48933

RE: Beeland Group, LLC Mineral Well Act Permit; Bay Harbor, Michigan

Dear Mr. Vugrinovich:

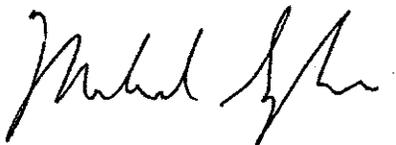
The Beeland Group, LLC, a wholly owned subsidiary of the CMS Land Company, which is a wholly owned subsidiary of CMS Energy Company, with the enclosed application requests authorization to drill and operate a Mineral Well for non-hazardous fluid disposal. The proposed well will be located at the following address:

5548 US 31
Petoskey MI 49770

In the attached document, the Beeland Group, LLC has submitted all required forms pertaining to the MDEQ permitting process. As requested, three copies of the application have been included to assist with your review process.

Please contact me at the above address and telephone number should you have any questions or if I can be of further assistance regarding this matter.

Sincerely,





APPLICATION FOR PERMIT TO:

DRILL DEEPEN CONVERT AND OPERATE A WELL

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

1a. Part 615 Supervisor of Wells

- Oil and Gas
Brine Disposal
Hydrocarbon Storage
Injection for Secondary Recovery

1b. Part 625 Mineral Wells

- Waste Disposal
Brine Production
Processed brine disposal
Storage
Test, fee sched. on rev.

1c. Fee enclosed

- Yes
No, revision of application
No, leg of horz drainhole

List all previous permit numbers NA

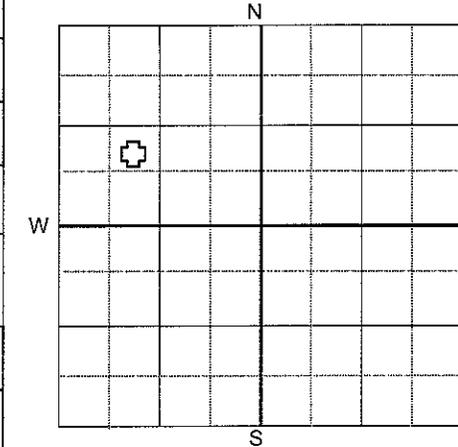
3. Fed. ID No. (do not use SSN) 20-5321543

Locate well and outline drilling unit on section plat

4. Conformance bond: Blanket, Single well
5. Attached: On file
6. Bond number: TBD
7. Bond amount: \$60,000

8. Applicant (name of permittee as bonded) Beeland Group, LLC

9. Address: 5548 US 31, Petoskey MI 49770
mailing: One Energy Plaza, Jackson MI 49201
Phone: 517-768-7330
I authorize DEQ 4 additional days to process this application: Yes



10. Lease or well name (be as brief as possible) Bay Harbor Disposal Well
Well number No. 1

11. Surface owner Bay Harbor Company

12. Surface location NE 1/4 of SW 1/4 of NW 1/4 of Sec 9 T 34N R 6W Township Resort County Emmet

13. If directional, bottom hole location 1/4 of 1/4 of 1/4 of Sec T R Township County

14. The surface location for this well is 1630 feet from nearest (N/S) N section line AND 1180 feet from nearest (E/W) W section line

15. Is this a directional well? No Yes If yes, complete line 15. The bottom hole location for this well is feet from nearest (N/S) section line AND feet from nearest (E/W) section line

16. The bottom hole location (whether straight or directional) of this well is feet from nearest (N/S) drilling unit line AND feet from nearest (E/W) drilling unit line

18. Is sour oil or gas expected? No Yes H2S Cont. plan enclosed
19. Base of lowest known fresh water aquifer Formation Traverse Depth 540'

20. Intended total depth MD 7,500 TVD 7,500
21. Formation at total depth Mt. Simon
22. Producing/injection formation(s) Mt. Simon
23. Objective pool, field or project n/a, disposal

24. PROPOSED DRILLING, CASING AND CEMENTING AND SEALING PROGRAM

Table with columns: HOLE (Depth, Geol. Formation, Bit Dia.), CASING (O.D. Size, Wt/Ft, Grade, Condition, Depth), CEMENT (Sacks, T.O.C., W.O.C.), MUD (Wt., Vis.). Rows for depths 0-250, 0-540, 950-6,010, and 6,010-7,500.

25. DETAIL CEMENTING PROGRAM. IDENTIFY ALL CEMENT CLASSES, ADDITIVES, AND VOLUMES (IN CU. FT.) FOR EACH CASING STRING.

Surface 208 ft3 Class A equivalent w/additives per hole conditions
Intermediate 762 ft3 Class A equivalent w/additives per hole conditions
Production/Injection 1010 ft3 w/additives per hole conditions. tail Class A equivalent w/additives

26. Send correspondence and permit to Name Michael C. Sniegowski, Vice-President E-mail mcsniego@cmsenergy.com
Address One Energy Plaza, Jackson, MI 49201 Phone 517-768-7330

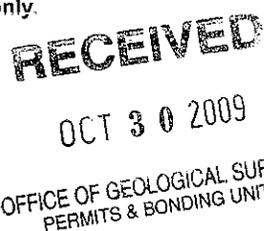
CERTIFICATION "I state that I am authorized by said applicant. This application was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Enclose permit fee of \$300 for all Part 615 wells; \$2,500 for a Part 625 waste disposal well; or \$500 for a brine production, processed brine disposal, or storage well. Make checks payable to State of Michigan. DEQ Cashier use only.

27. Application prepared by (print or type) Michael C. Sniegowski Phone 517-768-7330
Signature Date 10-30-09

Office of Geological Survey Use Only

Table with columns: Permit number, API number, Date issued, Owner number (6344)





APPLICATION FOR PERMIT TO:

DRILL DEEPEN CONVERT AND OPERATE A WELL

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended Non-submission and/or falsification of this information may result in fines and/or imprisonment.

1a. Part 615 Supervisor of Wells

- Oil and Gas
Brine Disposal
Hydrocarbon Storage
Injection for Secondary Recovery

1b. Part 625 Mineral Wells

- Waste Disposal
Brine Production
Processed brine disposal
Storage
Test, fee sched. on rev.

1c. Fee enclosed

- Yes
No, revision of application
No, leg of horz drainhole

List all previous permit numbers NA

3. Fed. ID No. (do not use SSN) 20-5321543

Locate well and outline drilling unit on section plat

4. Conformance bond Blanket Single well

5. Attached On file

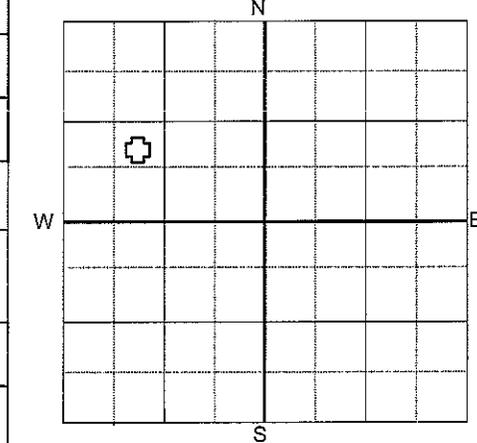
6. Bond number TBD

7. Bond amount \$60,000

8. Applicant (name of permittee as bonded) Beeland Group, LLC

9. Address facility: 5548 US 31, Petoskey MI 49770 mailing: One Energy Plaza, Jackson MI 49201

Phone 517-768-7330 I authorize DEQ 4 additional days to process this application Yes No



10. Lease or well name (be as brief as possible) Bay Harbor Disposal Well Well number No. 1

11. Surface owner Bay Harbor Company

12. Surface location NE 1/4 of SW 1/4 of NW 1/4 of Sec 9 T 34N R 6W Township Resort County

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16. The bottom hole location (whether straight or directional) of this well is feet from nearest (N/S) drilling unit line AND feet from nearest (E/W) drilling unit line

Kind of tools Rotary Cable Combination

18. Is sour oil or gas expected? No Yes H2S Cont. plan enclosed

19. Base of lowest known fresh water aquifer Formation Traverse Depth 540'

20. Intended total depth MD 7,500 TVD 7,500

21. Formation at total depth Mt. Simon

22. Producing/injection formation(s) Mt. Simon

23. Objective pool, field, or project n/a, disposal

24. PROPOSED DRILLING, CASING AND CEMENTING AND SEALING PROGRAM

Table with columns: HOLE (Depth, Geol. Formation, Bit Dia.), CASING (O.D. Size, Wt/Ft, Grade, Condition, Depth), CEMENT (Sacks, T.O.C., W.O.C.), MUD (Wt., Vis.). Rows include depths 0-250, 0-540, 950-6,010, and 6,010-7,500.

25. DETAIL CEMENTING PROGRAM. IDENTIFY ALL CEMENT CLASSES, ADDITIVES, AND VOLUMES (IN CU. FT.) FOR EACH CASING STRING.

Surface 208 ft3 Class A equivalent w/additives per hole conditions
Intermediate 762 ft3 Class A equivalent w/additives per hole conditions
Production/Injection 1010 ft3 w/additives per hole conditions. tail Class A equivalent w/additives

26. Send correspondence and permit to Name Michael C. Sniegowski, Vice-President E-mail mcsniego@cmsenergy.com Address One Energy Plaza, Jackson, MI 49201 Phone 517-768-7330

CERTIFICATION I state that I am authorized by said applicant. This application was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge.

27. Application prepared by (print or type) Michael C. Sniegowski Phone 517-768-7330 Signature Date 10-30-09

Enclose permit fee of \$300 for all Part 615 wells; \$2,500 for a Part 625 waste disposal well; or \$500 for a brine production, processed brine disposal, or storage well. Make checks payable to State of Michigan.

DEQ Cashier use only.

RECEIVED stamp: GEOM 652793-1-1 11 08 08 71361 66617 9096 OCT 30 2009 AY 2010 \$2 500 OFFICE OF GEOLOGICAL SURVEY PERMITS & BONDING UNIT

Table for Office of Geological Survey Use Only with columns: Permit number, API number, Date issued, Owner number.

Tefertiller, Rex (DEQ)

From: Vugrinovich, Ray (DEQ)
Sent: Monday, November 02, 2009 5:36 AM
To: Tefertiller, Rex (DEQ)
Subject: FW: Replacement Pages for the Beeland Bay Harbor Application Today
Attachments: Bay Harbor MDEQ Replacement pages 21 and 22 Oct 30 2009 pdf

This app was delivered Friday I trust you've found it by now

From: Ken Cooper [mailto:ken.cooper@petrotek.com]
Sent: Friday, October 30, 2009 10:02 PM
To: Vugrinovich, Ray (DEQ)
Cc: David J. Dowhan
Subject: Replacement Pages for the Beeland Bay Harbor Application Today

Ray,

Please pull and discard pages 21 and 22 of the three copies of the documents delivered today for the Beeland Bay Harbor well application.

The attached PDF file pages 21 and 22 are the replacements and should be printed and inserted in their place

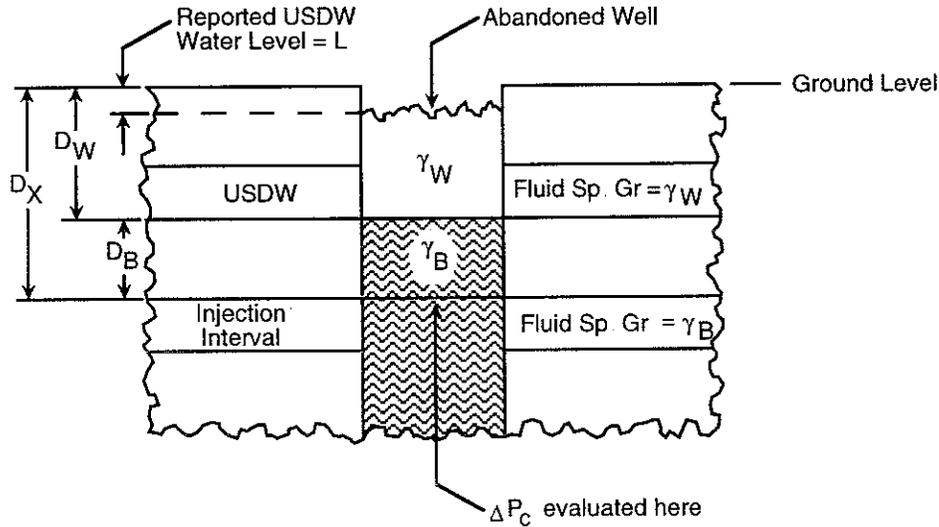
Thanks for your help with this, please let me know if you have any questions.

Best Regards, Ken

Ken Cooper
Petrotek Engineering Corporation
10288 West Chatfield Avenue, Suite 201
Littleton, Colorado 80127-4239 USA
ken.cooper@petrotek.com
303-290-9414 ext 15 Voice
303-290-9580 Fax

where P_o is the original, pre-injection value for pressure at the top of the injection interval expressed in psi units.

FIGURE 7 CRITICAL PRESSURE RISE



Original pressure in the Mt. Simon has been estimated from typical fluid gradients found in northern Michigan for this formation. For the estimated top of the injection interval of 6,010 feet, a gradient of 0.4 psi/ft yields a pressure of 2,404 psi at the top of the Injection Interval, the top of which is the Franconia. Note that it is assumed that while the Mt. Simon is the injection zone, it is also assumed that the entire Cambrian column is in hydrostatic equilibrium, and the top of this column is the Franconia.

In assigning the critical pressure rise and calculating the cone-of-influence at this site, the base of the lowermost USDW is assigned as 540 feet, as discussed in Response 2.D of this document. The lowest potentiometric surface of the water table within 1/2 miles of the Bay Harbor well is projected to be between 210-35 feet below ground surface, based on local water well data. Therefore, in these calculations, it is assumed that the water table is at approximately 210 feet below ground level, which is larger than anticipated drawdown, and is deeper than the total depth of many of the water wells in the area.

TABLE 2 CRITICAL PRESSURE CALCULATION PARAMETERS

Parameter	Value
Original pressure, P_o	2,404 psi @ 6,010 feet
Depth to base of USDW, D_w	540 feet*
Depth to top of injection zone, D_x	6,010 feet
Depth to USDW fluid level, L	35-210 feet BGS (within 1/2 mile radius of site)
Specific Gravity of USDW fluids, γ_w	1.0
Density of injectate or injection zone brine, γ_B	1.16 (Briggs, 1968)

*could be as deep as 2,000 ft; 540 ft assumes USDW is base of Traverse excluding Bell Shale

These values were used in the above equation to compute the critical pressure rise as follows:

$$P_c = 0.433[1.16(6,010-540) + 1.0(540-210)] - 2,404 \text{ psi}$$

or:

$$P_c = 288 \text{ psi}$$

Cone-of-Influence

Based on the calculated value for the critical pressure rise, the cone-of-influence can be calculated for the Bay Harbor well over a twenty-year period of injection. At the proposed Bay Harbor well, there is projected to be less than a 3-mile cone-of-influence for continuous injection at a rate of 200 gpm (6,857 bwpd). This value can be confirmed by examination of the following calculation (oilfield units) of pressure rise in the reservoir at a distance of five feet from the injection well:

$$dP = -70.6 Bq\mu / kh * \ln ([1,688 \mu c_r^2 / kt] -2s)$$

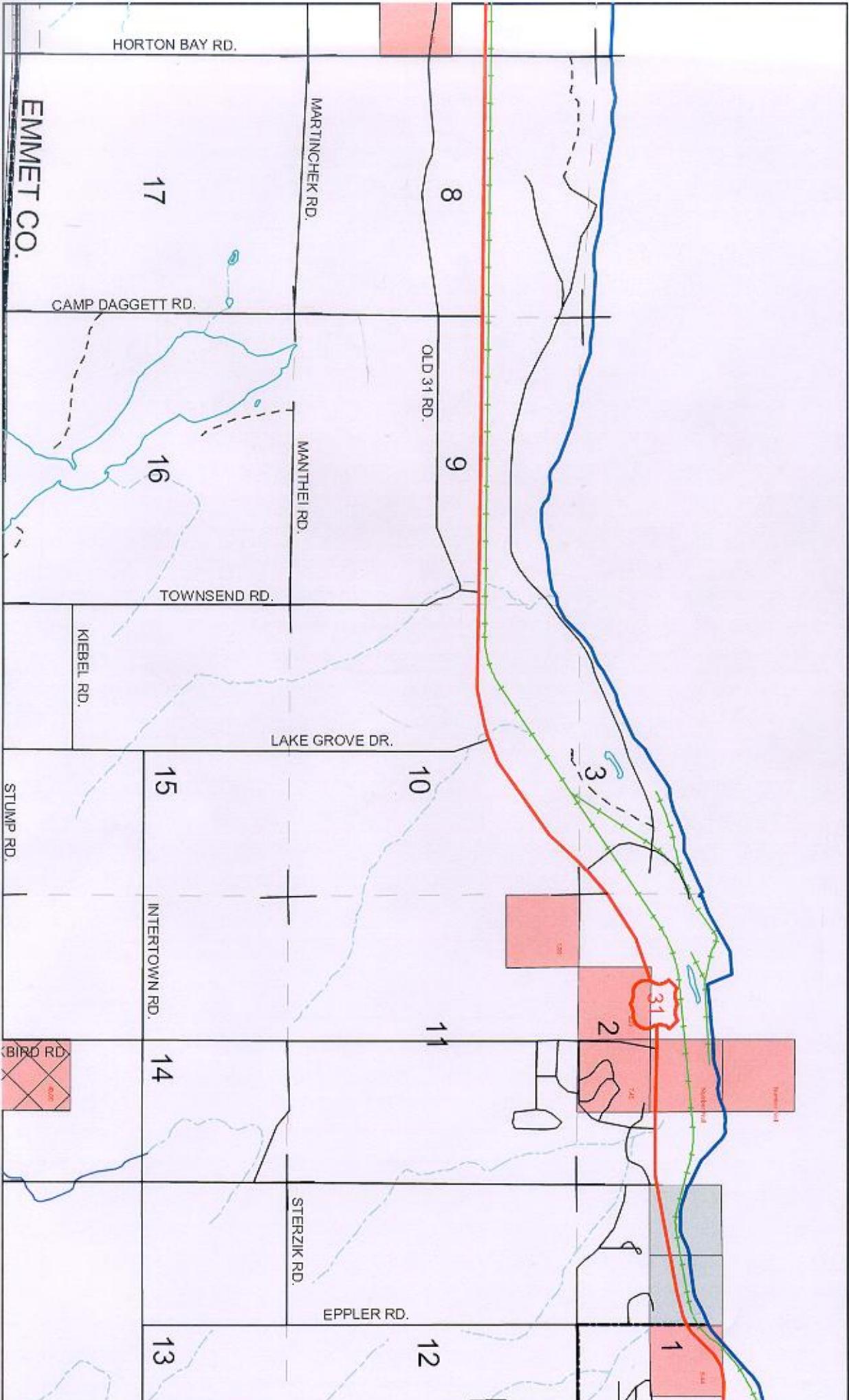
where the values listed in Table 2 have been assigned based on estimates for site-specific information

The above calculation for pressure rise due to twenty years of injection at a rate of 200 gpm yields an increase of approximately 284 psi. This value is smaller than the conservatively calculated critical pressure, P_c , of 288 psi which would be necessary before there is potential for upward fluid movement to the base of a USDW if an open pathway were present. Therefore, the cone-of-influence at this site is approximately 3 miles, even under a conservative scenario. Due to the complete lack of potential pathways, significant depth, high-density natural brine, and relatively low original pressure of the Mt. Simon sandstone injection formation at this site, there exists no potential for contamination of USDW resources in the Radius area of review.

TABLE 3 CONE-OF-INFLUENCE PARAMETERS

Parameter	Calculation	Value
Flow rate, q	200 gpm *1440 min/day* bbl/42 gal	6,857 bbl/d
Thickness, h	General estimate of 0>5%	300 feet (conservative estimate for entire Munising Group based on projected estimates, Milstein 1983, 1989)
Formation Volume Factor, B		1.015
Porosity, Φ		0.05 (from MIDCARB website)
Permeability, k		10 md
Viscosity, μ		0.6 centipoise @ 72 degrees F 0.013 degrees/ft gradient with td temp of 123, temperature at 30 ft BGS of 45 degrees, and depth of 6010 ft, values estimated from the Hand Well No.1
Total Compressibility, C_t	$3.2 \times 10^{-6} \text{ psi}^{-1} + 4.8 \times 10^{-6} \text{ psi}^{-1}$	$8 \times 10^{-6} \text{ psi}^{-1}$
Radius, r		15,840 feet
Time, t	20 years x 365 25 days/yr * 24hr/day	175,320 hours

Land and Water Management Division - Spatial Interests		11/9/2009																																																																																																																								
<h2>Spatial Interest Search</h2>																																																																																																																										
34N, 6W Section:9																																																																																																																										
Spatial Location Lookup: <div style="text-align: center;">34N, 6W</div> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr> <tr><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> <tr><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td></tr> <tr><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td></tr> <tr><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td></tr> </table>	6	5	4	3	2	1	7	8	9	10	11	12	18	17	16	15	14	13	19	20	21	22	23	24	30	29	28	27	26	25	31	32	33	34	35	36	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">Spatial Mapping Resources</td> </tr> <tr><td colspan="3">Aerial Imagery Archive</td></tr> <tr><td colspan="3">MapQuest - Internet Mapping and Imagery</td></tr> <tr><td colspan="3">TopoZone - Internet Topographic Quads</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">CIWPIS Special Interests</td> </tr> <tr> <th>Organization</th> <th>Description</th> <th>Comment</th> </tr> <tr><td>Dept of State History</td><td>Historical/Arch</td><td></td></tr> <tr><td>DEQ - Land and Water</td><td>Coastal Zone Area</td><td></td></tr> <tr><td>Land and Water Management</td><td>Coastal Zone Boundary</td><td></td></tr> <tr><td>Land and Water Management</td><td>Watershed Council</td><td>TIP OF MITT WS</td></tr> <tr><td>U.S. Army</td><td>USACE Section 10 Waterways</td><td></td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">CIWPIS Permits</td> </tr> <tr> <th>Permit Number</th> <th>Applicant</th> <th>Activity</th> </tr> <tr><td>04240044</td><td></td><td>Riprap Shore Protection</td></tr> <tr><td>08240023</td><td></td><td>Discharge Structure</td></tr> <tr><td>92050019</td><td></td><td>Culverts</td></tr> <tr><td>97050084</td><td></td><td>Sewer Line</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">Compliance Tracking</td> </tr> <tr> <th>File Number</th> <th>Waterbody</th> <th>Complaint</th> </tr> <tr><td>08240003</td><td>Wetland</td><td>Possible wetland fill for RV Park</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="3">Drinking Water Supply Wells</td> </tr> <tr> <th>Well ID</th> <th>Well Owner</th> <th>Well Depth</th> </tr> <tr><td>24000000149</td><td>CITY OF PETOSKEY</td><td>405</td></tr> <tr><td>24000000643</td><td>CITY OF PETOSKEY, Well #5</td><td>425</td></tr> <tr><td>24000000644</td><td>CITY OF PETOSKEY</td><td>420</td></tr> <tr><td>24000000646</td><td>BAY HARBOR DEV. C/O VICTOR INT</td><td>423</td></tr> <tr><td>24000000685</td><td>Bay Harbor Development Co.</td><td>405</td></tr> <tr><td>24000003063</td><td>JOHN FERGUSON</td><td>177</td></tr> </table>		Spatial Mapping Resources			Aerial Imagery Archive			MapQuest - Internet Mapping and Imagery			TopoZone - Internet Topographic Quads			CIWPIS Special Interests			Organization	Description	Comment	Dept of State History	Historical/Arch		DEQ - Land and Water	Coastal Zone Area		Land and Water Management	Coastal Zone Boundary		Land and Water Management	Watershed Council	TIP OF MITT WS	U.S. Army	USACE Section 10 Waterways		CIWPIS Permits			Permit Number	Applicant	Activity	04240044		Riprap Shore Protection	08240023		Discharge Structure	92050019		Culverts	97050084		Sewer Line	Compliance Tracking			File Number	Waterbody	Complaint	08240003	Wetland	Possible wetland fill for RV Park	Drinking Water Supply Wells			Well ID	Well Owner	Well Depth	24000000149	CITY OF PETOSKEY	405	24000000643	CITY OF PETOSKEY, Well #5	425	24000000644	CITY OF PETOSKEY	420	24000000646	BAY HARBOR DEV. C/O VICTOR INT	423	24000000685	Bay Harbor Development Co.	405	24000003063	JOHN FERGUSON	177
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DEQ - Land and Water	Coastal Zone Area																																																																																																																									
Land and Water Management	Coastal Zone Boundary																																																																																																																									
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Permit Number	Applicant	Activity																																																																																																																								
04240044		Riprap Shore Protection																																																																																																																								
08240023		Discharge Structure																																																																																																																								
92050019		Culverts																																																																																																																								
97050084		Sewer Line																																																																																																																								
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File Number	Waterbody	Complaint																																																																																																																								
08240003	Wetland	Possible wetland fill for RV Park																																																																																																																								
Drinking Water Supply Wells																																																																																																																										
Well ID	Well Owner	Well Depth																																																																																																																								
24000000149	CITY OF PETOSKEY	405																																																																																																																								
24000000643	CITY OF PETOSKEY, Well #5	425																																																																																																																								
24000000644	CITY OF PETOSKEY	420																																																																																																																								
24000000646	BAY HARBOR DEV. C/O VICTOR INT	423																																																																																																																								
24000000685	Bay Harbor Development Co.	405																																																																																																																								
24000003063	JOHN FERGUSON	177																																																																																																																								
New Search Spatial Resources: <ul style="list-style-type: none"> • SiteMap • IMap • Lat/Lon Search • Aerial Imagery • Live Search Maps • Mapquest • TerraServer-USA • National Maps • Digital Map Store 																																																																																																																										
Spatial Data: <ul style="list-style-type: none"> • Geographic Data Library • Geography Network 																																																																																																																										
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<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="font-size: 2em; font-weight: bold; background-color: #ccc; padding: 5px;">1</div> <div> <p>My Town, Range and Section are:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; padding: 2px;">34n</td> <td style="border: 1px solid black; padding: 2px;">6w</td> <td style="border: 1px solid black; padding: 2px;">9</td> </tr> </table> <p>Use the Spatial Location Lookup for resolving place names into Town and Range</p> </div> </div>			34n	6w	9																																																																																																																					
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Spatial Interest Data: Data is retrieved from various DEQ SQL databases. The data displayed here is only those data sets which have been made available to Intranet users to search and have records matching the town, range and section criteria. To include additional data bases to this search page please have the appropriate IT staff contact DEQ-Webmaster@michigan.gov.																																																																																																																										



HORTON BAY RD.

EMMET CO.

MARTINCHEK RD.

17

8

CAMP DAGGETT RD.

OLD 31 RD.

MANTHEIL RD.

9

16

TOWNSEND RD.

KIEBEL RD.

LAKE GROVE DR.

10

15

3

STUMP RD.

INTERTOWN RD.

11

14

BIRD RD.

STERZIK RD.

EPPLER RD.

12

13

1

31

2

Tefertiller, Rex (DEQ)

From: Tefertiller, Rex (DEQ)
Sent: Tuesday, November 17, 2009 9:52 AM
To: Cromell, Mark (DEQ)
Cc: Henderson, Rick (DEQ); Duszynski, James (DEQ); Vugrinovich, Ray (DEQ); Jennings, Jennifer (DEQ); Snow, Mark (DEQ)
Subject: Beeland Group, LLC, Bay Harbor Disposal Well #1, App # MW090082
Attachments: MW090082 doc

Mark, this is the Beeland disposal well for the lechate from CMS's remediation facility. There is a Nat Features Hit: History/Archeology. There are also a number of deficiencies on the 7200-1, i.e. Line #12—County not named, Line #24—Geol.Fmn. missing for 13 3/8" and 7" casing. Depth of 7" csg appears that it is a liner, not a full string from the surface: the same for the 6 1/4" open hole section. Cement Sx need to be indicated in "Sacks" column. TOC needs to be filled out w/ "surface". WOC column needs to be filled out. Mud—Wt. & Vis. Need to be filled out. Casing condition—"New"? Line #25 cement additives not specified. If you note any other deficiencies or omissions, please let me know as soon as possible, since a public hearing will be scheduled as soon as the application is Administratively complete. Thanks, Rex.

To: H. R. Fitch
From: J. R. Duszynski
Subject: Bay Harbor Mineral well permit application
Date: December 17, 2009

Mineral well permit application A090082 from Beeland Group, LLC for the Bay Harbor Disposal Well #1 in Resort Twp., Emmet County was received on Friday October 30, 2009.

November 2, 2009, two replacement pages were received for the application.

The application was reviewed by the permit coordinator, Rex Tefertiller and the Mineral well specialist, Ray Vugrinovich. Potential impact was noted from the Natural Features Database for Historical/ Archeological sites. Technical deficiencies were found on form EQP 7200-1.

November 17, 2009 E-mail notification was sent to Field geologist and District Supervisor sharing the application transmittal and noting the technical deficiencies found within the application. Requested review for omissions to determine if Administrative complete.

Copy of the application notebook was hand delivered to the Cadillac District Supervisor, Rick Henderson for site review and recommendations by Ray Vugrinovich on November 18, 2009.

The application is now pending District recommendations.

Tefertiller, Rex (DEQ)

From: Tefertiller, Rex (DEQ)
Sent: Thursday, December 17, 2009 10:53 AM
To: Anderson, Dean
Subject: Beeland Group, LLC, Bay Harbor Disposal Well #1, App # MW090082
Attachments: 20091217104537643 pdf

Good Morning Dean, the Spatial Interests database has indicated a History/Archeology match with the referenced application. This is a Confidential Mineral Waste Disposal Well. The attached survey and supplemental plat shows the location. The site is zoned "Public Utility District". Would a well at this location affect any Historical or Archeological sites? Thanks, Rex.

Tefertiller, Rex (DEQ)

From: Anderson, Dean
Sent: Friday, December 18, 2009 11:55 AM
To: Tefertiller, Rex (DEQ)
Subject: Re: Beeland Group, LLC, Bay Harbor Disposal Well #1, App # MW090082

Rex,

We have no record of an archaeological site at the proposed well location. The only site we have on record in Section 9 is in the southern half of the section, well away from the proposed location. No concerns on our part.

Dean

Dean L. Anderson, Historical Archaeologist Michigan Historical Center Box 30740
702 West Kalamazoo Street
Lansing, MI 48909-8240
E-mail: AndersonD15@michigan.gov
Phone: (517) 373-1618
Fax: (517) 241-4738

PLEASE NOTE that my email address has changed.
My new address is: AndersonD15@michigan.gov.

Michigan Archaeology Day at the Michigan Historical Museum is filled with discoveries from underground and underwater. Learn more about the Oct. 10 event when you discover your connections at www.michiganhistory.org.

>>> Tefertiller, Rex (DEQ) 12/17/2009 10:52 AM >>>

Good Morning Dean, the Spatial Interests database has indicated a History/Archeology match with the referenced application. This is a Confidential Mineral Waste Disposal Well. The attached survey and supplemental plat shows the location. The site is zoned "Public Utility District". Would a well at this location affect any Historical or Archeological sites? Thanks, Rex.



August 6, 2010

Mr. Rex Tefertiller
Permit Coordinator
Michigan Department of Natural Resources and Environment
Office of Geological Survey
Permits and Bonding Unit
525 West Allegan Street
Lansing, Michigan 48909-7756

RE: Comments and Additional Requirements for Beeland Group, LLC Emmet County, Michigan Disposal Well #MW 090882 MDNRE Permit Application

Dear Mr. Tefertiller:

As discussed over the last several months, the Beeland Group and its consultants have reviewed the technical concerns identified to date during the ongoing MDNRE review of the Bay Harbor, Michigan injection well permit application. This letter provides a summary of responses to your inquiries, including those identified in your letter of February 11, 2010. MDNRE comments are recited, followed with a technical response.

SURFACE AND EIA ISSUES

Land and Water Management Division indicate that the site may impact regulated wetlands and may require a permit. It is recommended that CMS/Beeland Group hire a consultant to conduct a review with snow cover off. The consultant must use the Federal Wetland delineation method, per the recent amendments to the wetland statute.

The requested study performed to address state concerns regarding the potential for wetland impacts has been completed and is submitted as an attachment to this letter.

CASING AND SEALING PROGRAM

The casing program is undersized. The conductor should be 16" driven pipe. Area well logs indicate a drift thickness of approximately 100'. Surface casing should be 11 3/4" and set a minimum of 100' into competent bedrock. Excess depth of surface casing may create problems if loss zones are encountered at depth, e.g. Traverse Limestone. A 9 5/8" intermediate string of casing should be set in the Bass Island formation to enable and ensure control. Both strings should be cemented to surface. The 7" string should be set and cemented where appropriate after evaluation. The well head blowout control system pressures on the blind rams, pipe rams and casing, need to be increased from 3,000 psi to 5,000 psi.

The casing program was intended to include conductor, surface and long-string casing with sufficient size to allow flexibility. Attached to this letter is a copy of a replacement Figure 5, summarizing the revised casing program. As requested, revised BOP details with 5,000 psi sour trim ratings (to be applied for the 7" casing only) are also included with a modified MDNRE form. As discussed with representatives from the MDNRE, both the state and the applicant do not believe that these precautions will be necessary to address probable conditions, but are

acceptable to the Beeland Group for this high-profile project. BOP tests and shoe tests will be conducted consistent with the ability of pipe (as specified) and formations to withstand test pressures.

The casing program has been modified as requested to include driving 20" conductor casing to a depth of 100'. Surface casing (still proposed at a larger 13-3/8" size rather than the state proposed 11-3/4" diameter) will be set approximately 100' into bedrock to a depth of approximately 250' as requested. As also requested, the 9 5/8" intermediate string (originally proposed with a shoe depth of between 540' to 2,000') will now be run to a depth of not less than 1,750' or at least 100' into the Bass Islands Group. Depths and casing designs are consistent with historic offset analog exploratory wells. It continues to be proposed that the surface, intermediate, and long string casings be cemented to surface. Site specific well conditions will be utilized to finalize cementing programs and details.

H2S CONTINGENCY PLAN

The potential to encounter H2S exists, so a H2S contingency plan, Part" is required. Additionally, the BOP must have sour trim.

Although none of the offset wells (2-3 miles SW, 20 miles SE, 30+ miles NE) have historically been required to submit sour gas contingency plans and sour gas is not expected, Beeland has committed to sour trim for the BOP and an H2S contingency plan. In conversations regarding the well plan, the state has indicated that it is aware of no specific technical data that suggests sour conditions will be encountered, but that the contingency plan will be required as a general precaution due to the lack of local well control. Attached to this letter is a copy of Part II of the requested contingency plan. As final drilling procedures and contractors/equipment are selected, the plans will be finalized for use in the field.

IDENTIFICATION OF POTENTIAL DISPOSAL ZONES

The purpose of this well is to identify and utilize disposal zones with adequate confining formations. There are several potential disposal zones/formations below the corrected intermediate casing set point and the Mt. Simon target formation including the Guelph Dolomite, Burnt Bluff Group, Trenton/Black River formations, and possibly others. A discussion of how the well will be completed if more than one disposal zone is present, should be included.

Beeland and its consultants have reviewed available data and determined that formations with higher probability for suitable use in long-term injection (>10 years) of significant fluid volumes (>5 bpm) are more likely to exist within the Cambrian and PreCambrian than other zones. However, it is acknowledged that little data is available to characterize the properties of potential target injection zones and that other, more shallow targets, might also be suitable for injection. Beeland intends to monitor drilling progress and review all data and geophysical well logs to determine if formations within the Middle Silurian or Ordovician might also be suitable injection targets. If data collected during well installation appears promising, and insufficient capacity is projected for the primary Cambrian/PreCambrian targets, efforts to further characterize pressures, permeability and fluid quality in other porous zones below the Salina Group including

the Niagaran Group, Black River/Trenton, and others will be pursued prior to running the 7" long-string casing. The well will be completed openhole in the primary target (6,000'-7,500'), and alternative secondary target completions will be selectively perforated (through casing) as deemed appropriate and approved by regulators. Depending on the nature of the porosity development found in alternative injection zones, acid or fracture treatments may be proposed to enhance well capacity. Due to the highly speculative nature of such potential injection targets, additional design details will be submitted once well specific data becomes available. A modified Figure 5 is presented illustrating a potential combined completion. Should insufficient deeper injectivity be present and significant pressure differentials are found that lead to cross-flow complications, the deeper zones may be plugged back as needed to preserve maximum injectivity.

A map showing the final staked well location that is 211' to the west of the originally proposed location is enclosed. This change was made due to surface access issues and is within the existing AOR. No details regarding the area of review or geology are altered in any way by this minor location change.

Based on discussions with Beeland and MDNRE, it is Petrotek's understanding that the state has identified no additional data requirements at this time. Upon completion of the application review, Beeland would appreciate the opportunity to review draft permit conditions and request clarification of the permit language prior to public notice in order to reduce the potential for delays in the process of issuing the permit to drill. Please feel free to call us at your earliest convenience with any questions or if additional clarification is required.

Sincerely,

Via E-mail

Petrotek Engineering Corporation
Ken Cooper, PE

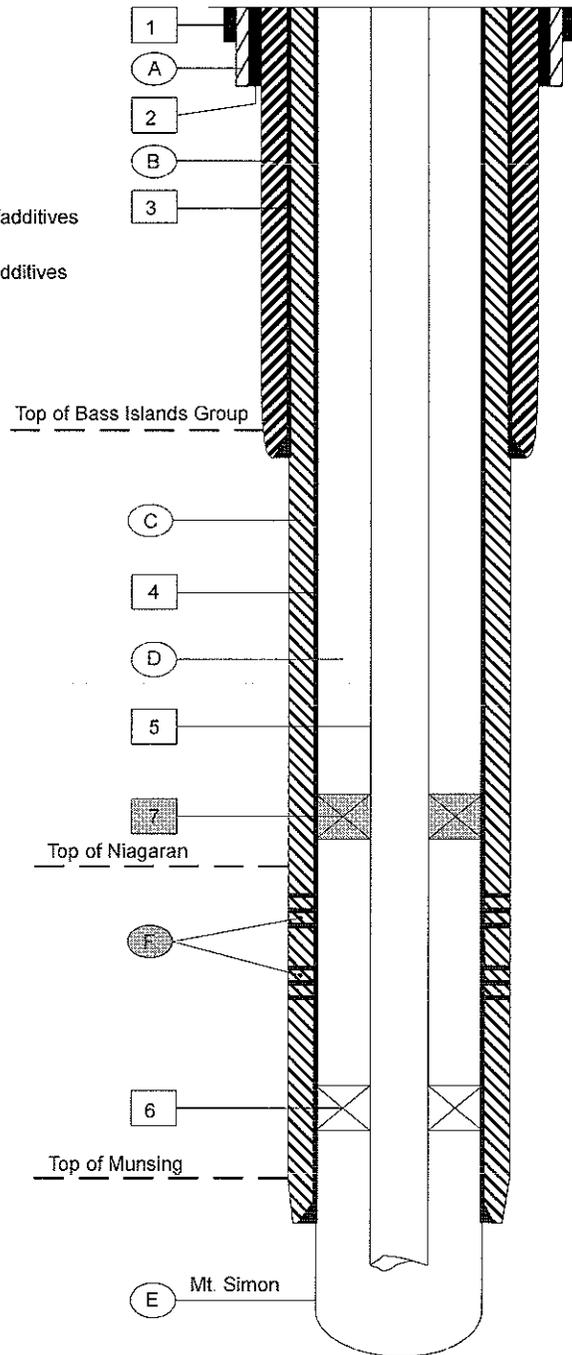
cc: Rick Henderson – MDNRE
Mark Cromell – MDNRE
Ray Vugrinovich – MDNRE
Mike Sniegowski – Beeland Group
Dave Dowhan – Beeland Group

The logo for Petrotek, featuring the word "Petrotek" in a stylized, italicized font with horizontal lines through the letters.

- CEMENT, VOLUMES FLUIDS and HOLE SIZE
- TUBULARS and COMPONENTS
- A 17 1/2' Hole Cemented to Surface with 208 sacks* Class A
- B 12 1/4' Hole Cemented to Surface with 552 sacks* Class A w/additives
- C 8 1/2' Hole, Cemented to Surface with 797 sacks* Class A w/additives
- D Annulus Fluid: Fresh water with Inhibitor and scavenger
- E Completion: 6 1/4' Open Hole total depth @ +/- 7 500
- F Alternate Completion: Perforations may be pursued in any identified Middle Silurian or Ordovician injection targets (~3 079' - 5 635').

* Cementing in open hole with 20% excess

- 1 Conductor Pipe 20' driven to ~100
- 2 Surface Casing: 13 3/8" 61#/ft Set at approximately 250 (~100' into bedrock)
- 3 Intermediate Casing: 9 5/8" 36 lb/ft, K-55 or J-55, Set @ approximately 1 750' (minimum 100' into Bass Islands Group)
- 4 Long String Casing: 7 26 lb/ft J-55 or K-55 Set @ approximately 6 010'
- 5 Injection Tubing: 4 1/2" 11 6 lb/ft J-55
- 6 Packer: 7' x 4 1/2' Large Bore Set @ approximately 6 000
- 7 Packer may be set +/- 50 above any alternate Middle Silurian or Ordovician injection targets



TD Approx +/- 7 500'

Beeland Group, LLC

5548 US 31 Petoskey, MI 49770

Figure 5 (revised) Proposed Well Schematic

2009 Bay Harbor Disposal Well No.1 Permit

Scale: NTS

Date: June 2010

BH_MDEQ_Fig 5_Revised.ai

By: JLM

Checked: KC

Petrotek

10288 West Chaffield Ave. Suite 201
Littleton, Colorado 80127-4239 USA
303-260-8414
www.petrotek.com



INJECTION WELL DATA

Supplemental information for drilling or converting to an injection well

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended

Non-submission and/or falsification of this information may result in fines and/or imprisonment

Applicant
Beeland Group, LLC

Well name and number
Bay Harbor Disposal Well No. 1

- INSTRUCTIONS:** Complete all portions of form which apply to this well. **Attach supplemental documents as needed.**
- File a separate plat which identifies the depth and location of this proposed well and all producing, abandoned or drilling wells within 1320 feet of it. Also identify the permittee of each producing well within 1320 feet of this proposed well.
 - Enclose a copy of the completion reports for all wells and the plugging records for all plugged wells shown on the plat. Identify what steps will be necessary to prevent injected fluids from migrating up or into inadequately plugged or completed wells.
 - If this is an existing well to be converted to an injection well, enclose this form with an Application To Change Well Status (form EQP 7200-6). Also enclose a copy of the completion report and geologic description and electric logs for this well.
 - Injection wells (except for gas storage) must receive a mechanical integrity test every 5 years pursuant to Rule 324.805.

5. Type of fluids to be injected
- Brine Natural Gas (omit #7 & #12)
- Fresh Water (omit #12) Other Non hazardous remediation

6. Maximum expected injection rate 200 gpm

7. Specific gravity of injected fluid 1.01-1.05 (max calc. @ 1.10)

8. Maximum expected injection pressure 563 psig

9. Maximum bottom hole injection pressure 3426 psi
Show calculations 563 + 1.1 * 0.433 * 6010

10. Fracture pressure of confining formation 4207 psi at base
Show calculations 0.7 * 6010
also Eaton method, see B.12

11. Fracture pressure of injection formation >3426 psi
Show calculations 0.57 * 6010
also Eaton method, see B.12

12. Chemical analysis of representative samples of injected fluid
Specific conductance TBD

Cation (mg/l)	Anions (mg/l)
Calcium <u>12.1</u>	Chloride <u>1,730</u>
Sodium <u>889</u>	Sulfate <u>14,500</u>
Magnesium <u><0.5</u>	Bicarbonate <u>1,620</u>
Potassium <u>13,800</u>	

What was the source of this representative sample? Injectate from Bay Harbor Michigan Remediation, source of injection, DW

13. Is this well to be completed in a potential or previous oil or gas producing formation? Yes No
If yes, provide a list of all offset permittees and proof of service of notification of this application to all permittees by certified mail.

14. Attach proposed plugging and abandonment plan OR Briefly list depths, volumes and types of cement and mechanical plugs and depths where casing will be recovered
Attached plan and Figure Q-1 from October 2009 EPA permit application for this well

Schematic of wellbore construction

Complete bottom of diagram as needed to conform with proposed construction (e.g. show rat hole below casing, open hole completion, packer loc. etc.)

Fresh water fms name & depth
Traverse: 0 - 540' BGS
other formations to be tested _____

Base of freshwater name & depth
540' - Traverse: possible 2,000' Base of Bass Islands

Surface casing 13 3/8" x 250'
Amount of cement 177 sacks
T O C ground surface

Intermediate casing (if applicable)
9 5/8" x 1750 - 2000'
Amount of cement 552 @ 1750' sacks
T O C ground surface

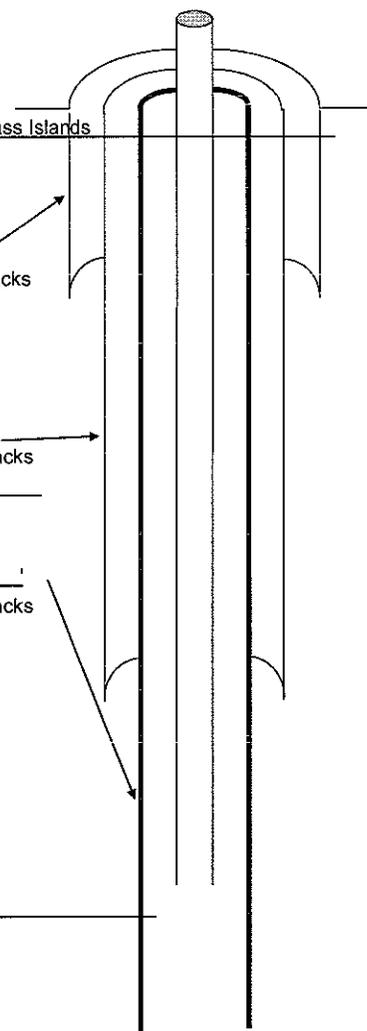
Long string casing 7" x 6010'
Amount of cement 797 sacks
T O C ground surface

Confining formation(s) _____
Depth to top 4434'
Depth to base 6010'

Injection formation(s) Mt. Simon/Munising
Depth to top 6010'
Depth to base 7500'

Tubing 4 1/2" x >6010'
Packer Depth 6000'

Bottom TD or PBTD 7500 ft



15. Application prepared by (print or type):

Kenneth Cooper, PE, Consultant/Petrotek Engineering Corporation

Date

6/2/2010

H2S Sour Gas Contingency Plan
 Beeland Group, LLC DW No. 1
 SW 1/4 of NW 1/4 of Section 9 T34N R6W
 Emmet County Michigan

EMERGENCY TELEPHONE NUMBERS

		LOCATION		NUMBER(S)
Company Personnel:	Michael Sniagowski	2939 Charlevoix Avenue	Petoskey	231-622-8541
Department of Natural Resources (DNR)	Natural Resources Conservation Service Environmental Emergency	2235 Mitchell Park Drive	Petoskey	231-347-2133 1-800-292-4706 (within Michigan) 1-517-373-7660 (outside Michigan)
	Cadillac District Office Gaylord Field Office	120 W Chapin St 2100 West M-32	Cadillac Gaylord	231-775-3960 989-731-4920
Sheriff	Office	450 Bay Street	Petoskey	347-2032
Emergency Service	Emergency Management Health Department	1694 US 131S 3434 M-119	Petoskey Harbor Springs	439-3333 347-6014
State Police	Petosky Post #78	1200 M-119	Petoskey	231-347-8102
Ambulance	Life Link Ambulance Service DAO of Health LLC Little Traverse Area Bay Band	501 West Mitchell Street 480 W Mitchell St 1080 Hager Dr	Petoskey Petoskey Petoskey	231-533-8040 231-34-3009 231-242-1700
Hospital	Bay Bluffs Medical Care Facility	750 E Main St	Petoskey	526-2161
Fire Department	Petoskey Fire Department	100 West Lake Street	Petoskey	231-347-2500
City of Petoskey	Director of Public Safety Michigan Public Power Association	101 E Lake St 809 Centennial Way	Petoskey Lansing	231-347-2500 517-323-8919
Emmet County Emergency Management	Emergency Service (See above)	imesser@cce911.com	Petoskey	231-439-3333
Nearest Public Telephone	N/A physical site inspection of the area conducted as of 7/1/2010 indicates all pay phones have been removed			
Mud Treatment	To be determined based on rig contractor selected and final drilling plan a gas buster will be provided as necessary			

H2S Sour Gas Contingency Plan
 Beeland Group, LLC DW No. 1
 SW 1/4 of NW 1/4 of Section 9 T34N R6W
 Emmet County, Michigan

PID	OWNER	OWNER02	ADDRESS	CITY	STATE	ZIP	OPHONE
52-18-09-110-112	GOLF SITES, LLC		5434 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2500
52-18-09-110-127	TRERICE BYRON W JR & MAUREEN E &	TRERICE BYRON WARE II ET AL	5514 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-347-6092
52-18-09-110-128	TRERICE BYRON W JR & MAUREEN E		5544 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-347-6092
52-18-09-110-129	FRIESS GEORGE & MAIGA		5574 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-487-0307
52-18-09-110-130	KING THOMAS E TRUST	KING THOMAS E TTEE	5604 COASTAL WOODS CT	BAY HARBOR	MI	49770	no local listing
52-18-09-110-131	BOYNE USA, INC		5634 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-4000
52-18-09-110-132	SEBOLD THOMAS & ASSOCIATES INC		5664 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-7711
52-18-09-110-133	JP MORGAN CHASE BANK NA		5694 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-347-7711
52-18-09-110-107	DREW STEPHEN R & CLARICE (Grand Rapids #)		5284 COASTAL WOODS CT	BAY HARBOR	MI	49770	616-956-0257
52-18-09-110-109	GOLF SITES, LLC		5344 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-119	DELTA ACQUISITIONS LLC (owner of record as of 5/7/09 Marilax Corporation)		5285 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-536-9950
52-18-09-110-123	GOLF SITES, LLC		5405 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-108	GOLF SITES, LLC		5314 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-111	GOLF SITES, LLC		5404 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-122	GOLF SITES, LLC		5375 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-110	GOLF SITES, LLC		5374 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-120	DELTA ACQUISITIONS LLC (owner of record as of 5/7/09 Marilax Corporation)		5315 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-536-9950
52-18-09-110-124	GOLF SITES, LLC		5435 COASTAL WOODS CT	BAY HARBOR	MI	49770	231-439-2541
52-18-09-110-121	MICHIGAN HERITAGE BANK (closed by State of Michigan Office of Financial and Insurance R		5345 COASTAL WOODS CT	BAY HARBOR	MI	49770	no local listing
52-18-09-110-125	DEMARTINIS SHARON		5475 COASTAL WOODS CT	BAY HARBOR	MI	49770	586-677-1501
52-18-09-110-126	BAY HARBOR VILLAGE CO		5505 COASTAL WOODS CT (address with	BAY HARBOR	MI	49770	231-439-2500
52-18-09-152-011	CITY OF PETOSKEY		100 W Lake St	PETOSKEY	MI	49770	231-347-2500
52-18-09-152-012	CITY OF PETOSKEY		100 W Lake St	PETOSKEY	MI	49770	231-347-2500
52-18-09-152-014	BAY HARBOR CO, LLC		CHARLEVOIX AV	BAY HARBOR	MI	49770	231-439-2500
52-18-09-152-010	BAY HARBOR GOLF CLUB, INC		3600 Village Harbor Dr	PETOSKEY	MI	49770	231-439-4028
52-18-09-152-013	BAY HARBOR CO, LLC		5548 CHARLEVOIX RD	PETOSKEY	MI	49770	231-439-2500
52-18-09-250-001	BAY HARBOR GOLF CLUB, INC		CHARLEVOIX AV	BAY HARBOR	MI	49770	231-439-4028
13-18-09-200-003	WENSON JOHN & AMANDA		5756 OLD US 31	PETOSKEY	MI	49770	248-645-9894
13-18-09-100-013	SIGNATURE RESORTS OF MI INC (owner of record as of 6/1/09 Michigan RV Resort LLC)		5505 US 31 South	BAY HARBOR	MI	49770	231-348-2400
13-18-09-100-014	BAY HARBOR CO, LLC		5251 CHARLEVOIX RD	PETOSKEY	MI	49770	231-439-2500
13-18-09-300-003	MOORE GEORGE E & GARNETTE		5613 OLD US 31	PETOSKEY	MI	49770	231-348-1815
13-18-09-300-004	MOORE GARNETTE		5565 OLD US 31	PETOSKEY	MI	49770	231-348-1815
13-18-09-300-005	LEGATO JEFFREY & LYNETTE		5541 OLD US 31	PETOSKEY	MI	49770	231-347-1213
13-18-09-300-007	KIRWAN PETER & CAROL		5467 OLD US 31	PETOSKEY	MI	49770	231-347-6132
13-18-09-300-011	MARQUARDT JOHN & LYNN	MARQUARDT TRUST	5505 OLD US 31	PETOSKEY	MI	49770	231-439-0342
13-18-09-300-013	MARQUARDT VIRGINIA TRUSTEE			PETOSKEY	MI	49770	231-347-3516
13-18-09-300-015	MOORE DANIEL C & ESTHER L			PETOSKEY	MI	49770	231-547-2209
13-18-09-300-016	PETTENGER RONALD & RUBY		5681 OLD US 31	PETOSKEY	MI	49770	231-547-2209
13-18-09-300-017	MARQUARDT FAMILY TRUST & MARQUARDT	LIVING TRUST ET AL (1/3 INT EA)	5631 OLD US 31	PETOSKEY	MI	49770	231-347-5440
13-18-09-150-101	SIGNATURE RESORTS OF MI INC		5121 OLD US 31	PETOSKEY	MI	49770	231-347-3516
13-18-09-150-102	SIGNATURE RESORTS OF MI INC		5410 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-103	SIGNATURE RESORTS OF MI INC		5408 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-104	SIGNATURE RESORTS OF MI INC		5402 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-105	SIGNATURE RESORTS OF MI INC		5398 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-106	SIGNATURE RESORTS OF MI INC		5394 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-107	SIGNATURE RESORTS OF MI INC		5390 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-108	SIGNATURE RESORTS OF MI INC		5386 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-109	SIGNATURE RESORTS OF MI INC		1362 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-110	SIGNATURE RESORTS OF MI INC		1380 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-111	SIGNATURE RESORTS OF MI INC		1368 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-112	SIGNATURE RESORTS OF MI INC		1416 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-113	SIGNATURE RESORTS OF MI INC		1434 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-114	SIGNATURE RESORTS OF MI INC		1452 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-115	SIGNATURE RESORTS OF MI INC		1470 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-116	SIGNATURE RESORTS OF MI INC		1488 WATERFALL LN	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-117	SIGNATURE RESORTS OF MI INC		1483 CLUB LANE EAST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-118	SIGNATURE RESORTS OF MI INC		1465 CLUB LANE EAST	PETOSKEY	MI	49770	231-348-2400

H2S Sour Gas Contingency Plan
 Beeland Group, LLC DW No. i
 SW 1/4 of NW 1/4 of Section 9 T34N R6W
 Emmet County, Michigan

PID	OWNER	OWNER02	ADDRESS	CITY	STATE	ZIP	OPHONE
13-18-09-150-119	SIGNATURE RESORTS OF MI INC		1447 CLUB LANE EAST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-120	SIGNATURE RESORTS OF MI INC		1428 CLUB LANE EAST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-121	SIGNATURE RESORTS OF MI INC		1411 CLUB LANE EAST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-122	SIGNATURE RESORTS OF MI INC		1393 CLUB LANE EAST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-123	SIGNATURE RESORTS OF MI INC		5302 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-124	SIGNATURE RESORTS OF MI INC		5306 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-125	SIGNATURE RESORTS OF MI INC		5303 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-126	SIGNATURE RESORTS OF MI INC		5307 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-127	SIGNATURE RESORTS OF MI INC		5311 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-128	SIGNATURE RESORTS OF MI INC		5315 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-129	SIGNATURE RESORTS OF MI INC		5319 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-130	SIGNATURE RESORTS OF MI INC		5323 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-131	SIGNATURE RESORTS OF MI INC		5327 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-132	SIGNATURE RESORTS OF MI INC		5331 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-133	SIGNATURE RESORTS OF MI INC		5335 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-134	SIGNATURE RESORTS OF MI INC		5339 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-135	SIGNATURE RESORTS OF MI INC		5343 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-136	SIGNATURE RESORTS OF MI INC		5347 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-137	SIGNATURE RESORTS OF MI INC		5351 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-138	SIGNATURE RESORTS OF MI INC		5355 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-139	SIGNATURE RESORTS OF MI INC		5359 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-140	SIGNATURE RESORTS OF MI INC		5363 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-141	SIGNATURE RESORTS OF MI INC		5367 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-142	SIGNATURE RESORTS OF MI INC		5371 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-143	SIGNATURE RESORTS OF MI INC		5375 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
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13-18-09-150-145	SIGNATURE RESORTS OF MI INC		5415 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
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13-18-09-150-147	SIGNATURE RESORTS OF MI INC		5423 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-148	SIGNATURE RESORTS OF MI INC		5427 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
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13-18-09-150-150	SIGNATURE RESORTS OF MI INC		5435 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-151	SIGNATURE RESORTS OF MI INC		5439 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-152	KIRVAN RONALD FREDERICK & LOUISE E		5443 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2401
13-18-09-150-153	SIGNATURE RESORTS OF MI INC		5447 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-154	SIGNATURE RESORTS OF MI INC		5451 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-155	SIGNATURE RESORTS OF MI INC		5455 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-156	SIGNATURE RESORTS OF MI INC		5459 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-157	SIGNATURE RESORTS OF MI INC		5463 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-158	SIGNATURE RESORTS OF MI INC		5467 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-159	SIGNATURE RESORTS OF MI INC		5471 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-160	SIGNATURE RESORTS OF MI INC		5475 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-161	SIGNATURE RESORTS OF MI INC		5483 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-162	SIGNATURE RESORTS OF MI INC		5487 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-163	SIGNATURE RESORTS OF MI INC		5491 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-164	SIGNATURE RESORTS OF MI INC		5495 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-165	SIGNATURE RESORTS OF MI INC		5499 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-166	SIGNATURE RESORTS OF MI INC		1468 CLUB LANE WEST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-167	SIGNATURE RESORTS OF MI INC		1468 CLUB LANE WEST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-168	SIGNATURE RESORTS OF MI INC		1450 CLUB LANE WEST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-169	SIGNATURE RESORTS OF MI INC		1432 CLUB LANE WEST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-170	SIGNATURE RESORTS OF MI INC		1414 CLUB LANE WEST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-171	SIGNATURE RESORTS OF MI INC		1398 CLUB LANE WEST	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-172	SIGNATURE RESORTS OF MI INC		5668 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-173	SIGNATURE RESORTS OF MI INC		5664 BIRCH VIEW CIR	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-174	SIGNATURE RESORTS OF MI INC		5605 CHARLEVOIX RD	PETOSKEY	MI	49770	231-348-2400
13-18-09-150-001	SIGNATURE RESORTS OF MI INC		5680 BIRCH VIEW CIR	PETOSKEY	MI	49771	231-348-2400



WELLHEAD BLOWOUT CONTROL SYSTEM

Worksheet supplement for Application for Permit to Drill or Deepen a Well

This information is required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, Act 451 PA 1994, as amended in order to obtain a permit

Applicant Beeland Group, LLC One Energy Plaza Jackson, MI 49201
Well name and number Bay Harbor Disposal Well No 1

Max. anticipated surface pressure 1000 psi

- B.O.P.**
- Manual
 - Hydraulic
 - Sour Trim

Annular B O P 9", 5000 psi W P

B O P Pipe Rams 4 1/2", 5000 psi W P.
(Pipe/Blind)

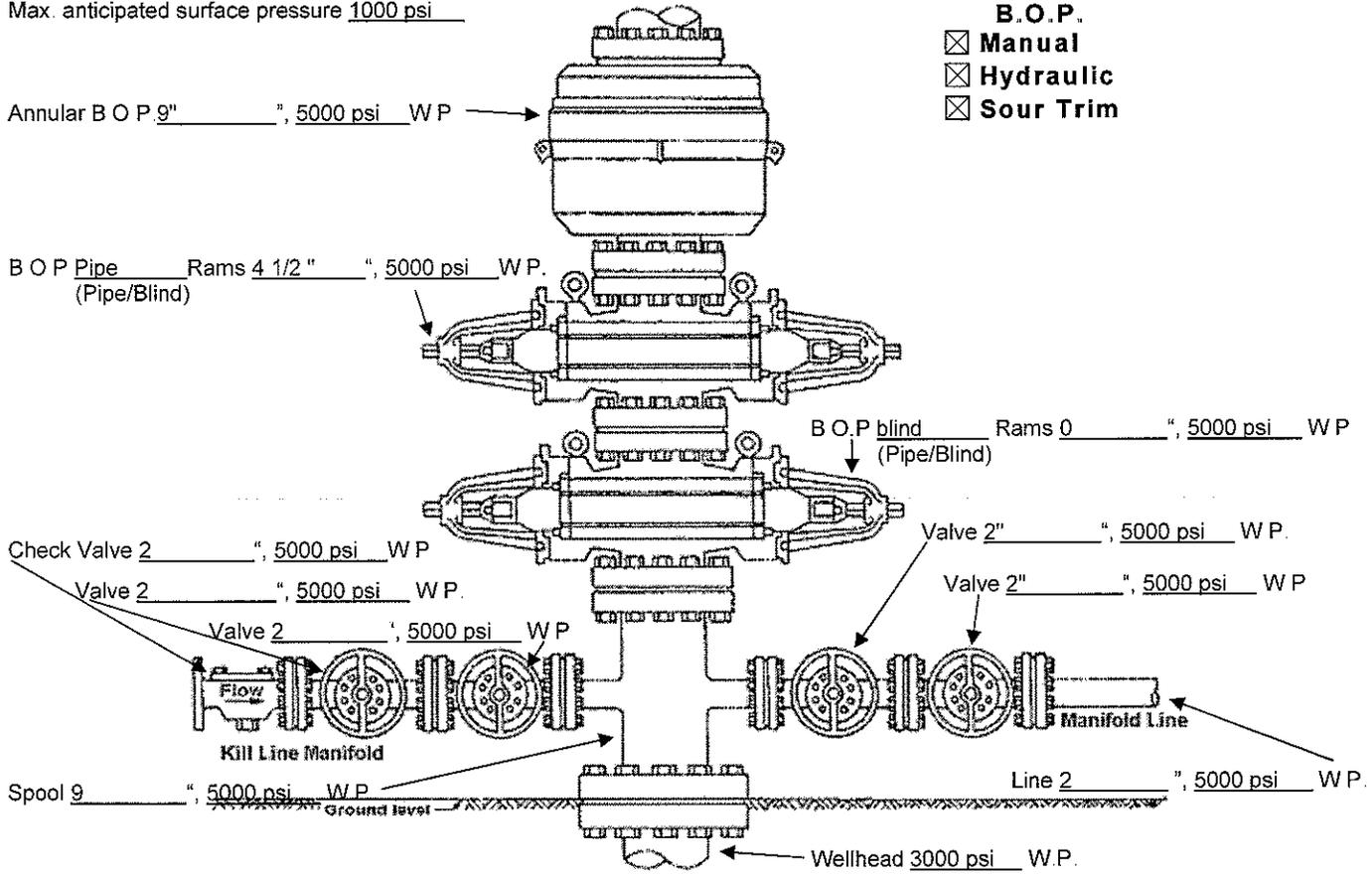
B O P blind Rams 0", 5000 psi W P
(Pipe/Blind)

Check Valve 2", 5000 psi W P

Spool 9", 5000 psi W P

Line 2", 5000 psi W P

Wellhead 3000 psi W P



Fill above blanks with applicable information. If not applicable enter "N.A." or cross-out item shown. Describe test pressures and procedure for conducting pressure test. Identify any exceptions to R324 406 being requested.

Standard pressure testing and verification of operation to be conducted before drilling out of 9 5/8" at >1,750' BGL
Standard pressure testing and verification of operation to be conducted before drilling out of 7" at >6,010' BGL.
Wellhead/casing design and tests to be conducted based on maximum casing specifications 3,000 psi BOP to be used for all shallow casing strings (except 7" long-string). Shoe tests to be conducted at below anticipated formation fracture pressures.

No exceptions to R324 406 requested at this time



SURVEY RECORD OF WELL LOCATION

This information is required by authority of Part 615 Supervisor of Wells, or Part 625 Mineral Wells, of Act 451 PA 1994, as amended, in order to obtain a drilling permit

Applicant
BEELAND GROUP LLC

Well name and number
BAY HARBOR DISPOSAL WELL NO. 1

1a. Surface location
 NE 1/4 of SW 1/4 of NW 1/4 of section **9** T **34N** R **0W** Township **RESORT** County **EMMET**

1b. If this is a directional well, bottom hole location will be
 1/4 of 1/4 of 1/4 of section T R

Instructions: Outline drilling unit for oil/gas wells (Part 615) or property boundary for mineral wells (Part 625) and spot well location on plat shown. Locate the well in two directions from the nearest section, quarter section, and unit (or property, Part 625) lines.

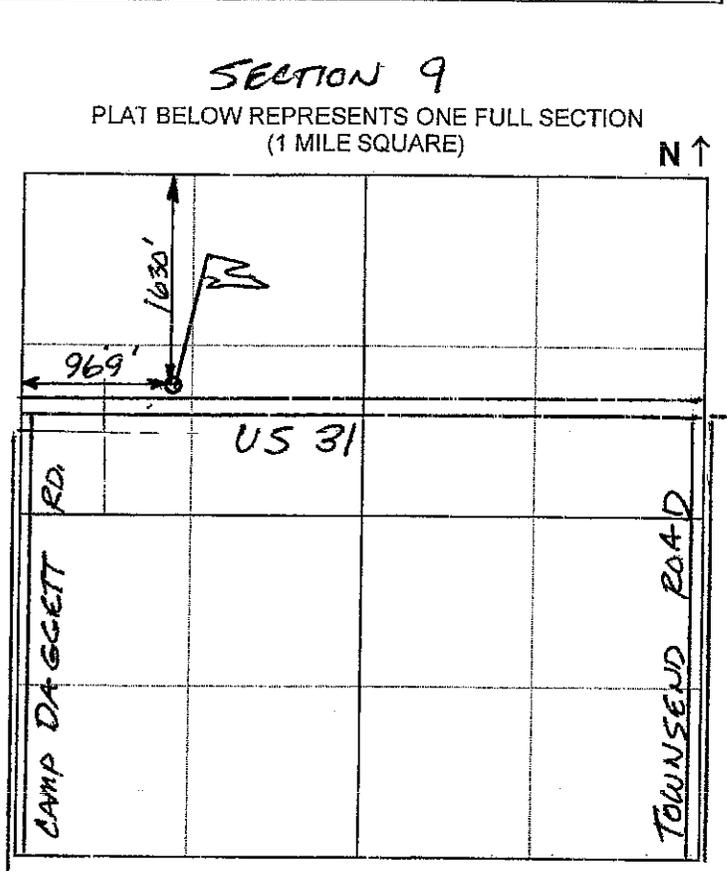
2 The surface location is
1630 ft. from nearest (N/S) **N** section line
969' ft. from nearest (E/W) **W** section line
 and
 _____ ft. from nearest (N/S) _____ quarter section line
 _____ ft. from nearest (E/W) _____ quarter section line

3 Bottom hole will be (if directional)
 _____ ft. from nearest (N/S) _____ section line
 _____ ft. from nearest (E/W) _____ section line
 and
 _____ ft. from nearest (N/S) _____ quarter section line
 _____ ft. from nearest (E/W) _____ quarter section line

4 Bottom hole will be (directional or straight)
1630 ft. from nearest (N/S) **N** SECTION LINE drilling unit line
969' ft. from nearest (E/W) **W** SECTION LINE drilling unit line

5 Show access to stake on plat and describe if it is not readily accessible.
STAKE
15 READILY ACCESSIBLE

6. Zoning Residential, effective date _____
 Initial date of residential zoning _____
 Other **PUBLIC UTILITY DISTRICT**

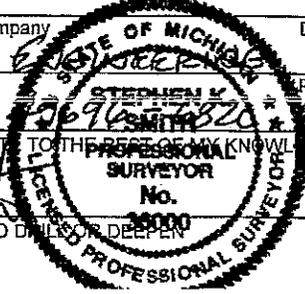


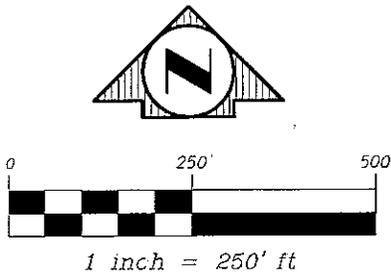
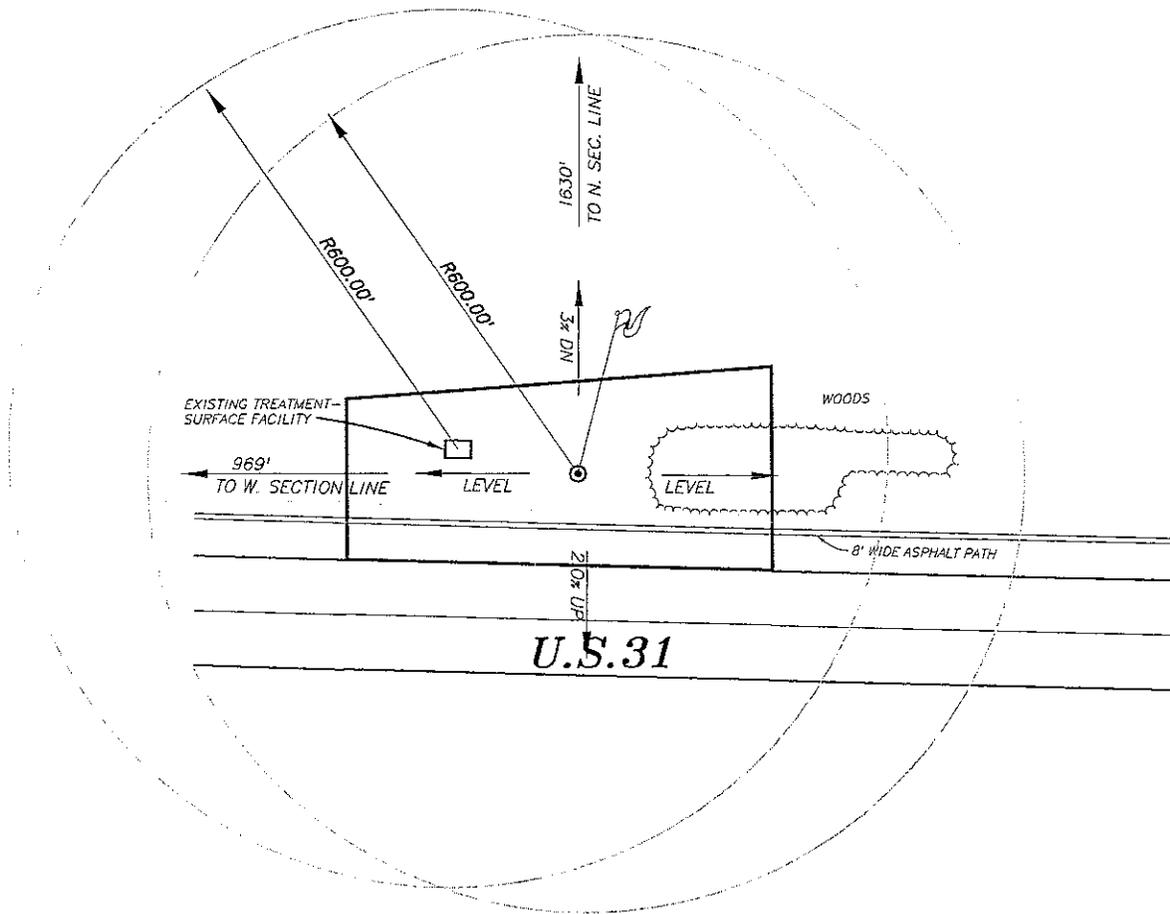
ON SEPARATE PLAT OR PLOT PLAN, LOCATE, IDENTIFY AND SHOW DISTANCES TO:
 A All roads power lines, buildings, residences, fresh water wells, and other man-made features, within 600 feet of the stake.
 B All lakes, streams, wetlands, drainage-ways, floodplains, environmentally sensitive areas, natural rivers, critical dune areas, and threatened or endangered species within 1320 feet of the stake.
 C All type I and IIa public water supply wells within 2000 feet and all type IIb and III public water supply wells within 800 feet of the well stake.

Name of individual who surveyed site **GERALD LIRA** Company **INLAND SEAS** Date of survey **9-30-09**

Address **PO. BOX 6820, TRAVERSE CITY, MI.** Phone **(231) 933-4041**

Signature of licensed surveyor (affix seal) **Stephen K Smith** Date **9-15-10**



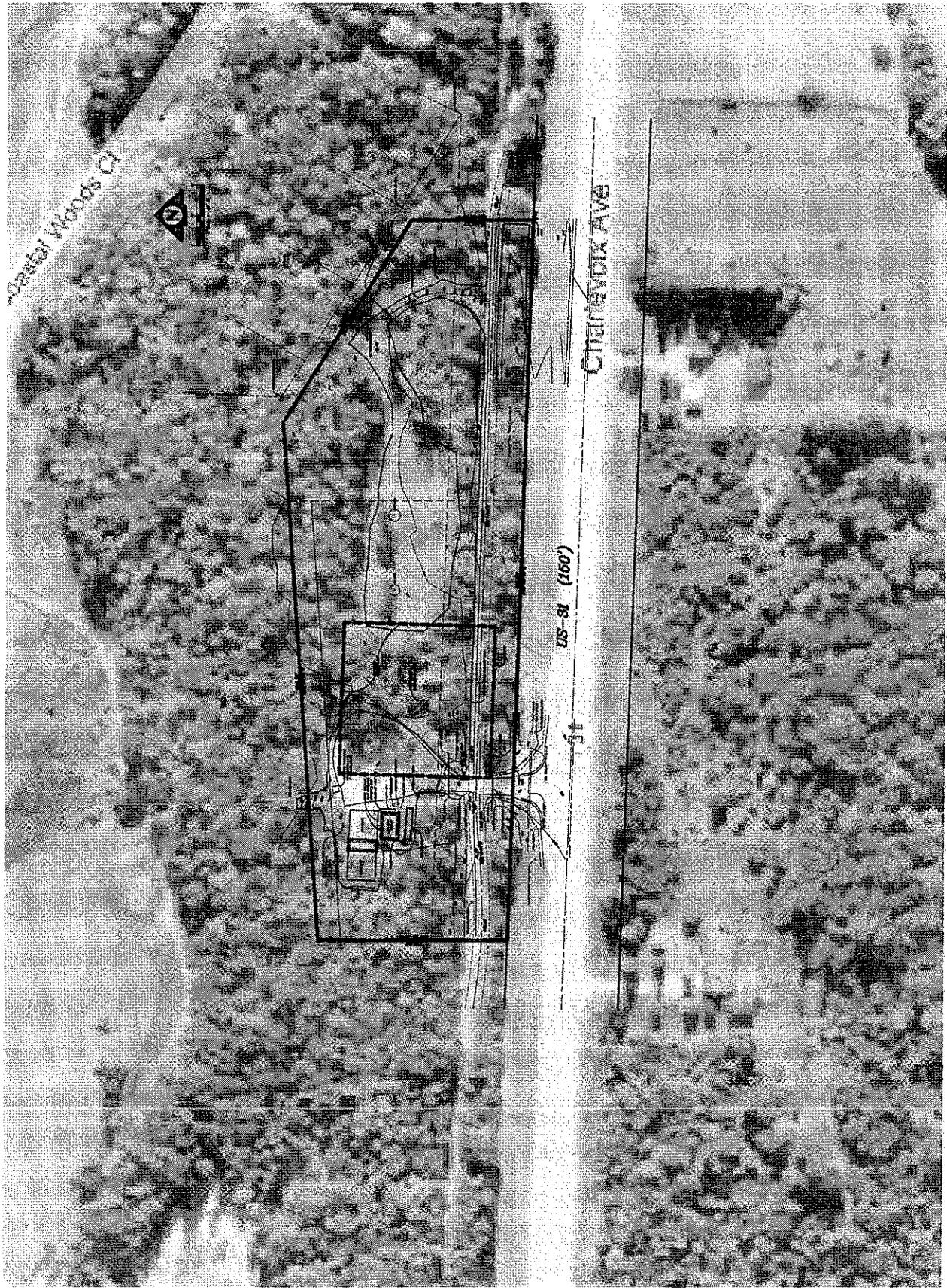


PROPOSED WELL: BEELAND DISPOSAL WELL NO. 1
 LOCATION: 969' FROM THE WEST SECTION LINE LINE AND 1630' FROM
 THE NORTH SECTION LINE OF THE SE 1/4 OF SECTION 9,
 T34N, R6W RESORT TOWNSHIP, EMMET COUNTY, MICHIGAN

INLAND SEAS ENGINEERING INC
 Traverse City, MI
 231-933-4041
 Flushing, MI
 810-487-0555

PLOT PLAN

SCALE : 1"=250'	DRAWN BY : SKS
DATE : 4-16-10	CHECKED BY : AJS
PROJECT # : 09120	1
DRAWING : 250.DWG	



Pastal Woods Ct



US-31 (160')

CHATEAUX AVE

ft

Tefertiller, Rex (DNRE)

From: Rasmusson, Scott (DNRE)
Sent: Friday, January 22, 2010 9:37 AM
To: Cromell, Mark (DNRE)
Subject: CMS/Bay Harbor

Mark,

I reviewed the information you provided me, and conducted a site inspection on 1/21/10. At the location of the proposed injection well it was unclear if the area was wetland due to the time of year and snow cover. There was a mix of both upland and wetland plants in this area. The soils were a loam with some sand components to it, and were 6-8 inches deep with sand below this depth

The site needs to be re-visited after the snow is gone and we are in the growing season to accurately determine if it meets the criteria for a wetland. I would recommend that CMS/Bay Harbor, hire a qualified wetland consultant to conduct a wetland delineation at that time. The consultant should also determine that if the site is a wetland, that it is regulated. I would also request that CMS/Bay Harbor document that this area is not under a conservation easement with the DNRE or a private land trust.

Should you have any questions, please contact me.

Scott Rasmusson
Land & Water Management
rasmussons@michigan.gov
989-705-3437
989-731-6181 (fax)

Tefertiller, Rex (DNRE)

From: Arevalo, John (DEQ)
Sent: Friday, January 22, 2010 10:00 AM
To: Cromell, Mark (DNRE); Rasmusson, Scott (DNRE)
Subject: RE: CMS/Bay Harbor

If CMS/Bay Harbor hires a wetland consultant, as Scott has suggested, they must use the federal wetland delineation method, per the recent amendments to the wetland statute.

From: Cromell, Mark (DEQ)
Sent: Friday, January 22, 2010 9:48 AM
To: Rasmusson, Scott (DNRE)
Cc: Arevalo, John (DNRE)
Subject: RE: CMS/Bay Harbor

Scott,

Thank you for your input and for reviewing this site so promptly

Mark Cromell
DNRE - OGS, Gaylord Office
(989)705-3407
cromellm@michigan.gov

From: Rasmusson, Scott (DNRE)
Sent: Friday, January 22, 2010 9:37 AM
To: Cromell, Mark (DNRE)
Subject: CMS/Bay Harbor

Mark,

I reviewed the information you provided me, and conducted a site inspection on 1/21/10. At the location of the proposed injection well it was unclear if the area was wetland due to the time of year and snow cover. There was a mix of both upland and wetland plants in this area. The soils were a loam with some sand components to it, and were 6-8 inches deep with sand below this depth.

The site needs to be re-visited after the snow is gone and we are in the growing season to accurately determine if it meets the criteria for a wetland. I would recommend that CMS/Bay Harbor, hire a qualified wetland consultant to conduct a wetland delineation at that time. The consultant should also determine that if the site is a wetland, that it is regulated. I would also request that CMS/Bay Harbor document that this area is not under a conservation easement with the DNRE or a private land trust.

Should you have any questions, please contact me.

Scott Rasmusson
Land & Water Management
rasmussons@michigan.gov
989-705-3437
989-731-6181 (fax)

2/4/2010

Tefertiller, Rex (DNRE)

From: Cromell, Mark (DNRE)
Sent: Friday, January 29, 2010 1:34 PM
To: Tefertiller, Rex (DNRE)
Cc: Henderson, Rick (DNRE); Vugrinovich, Ray (DNRE); Godbold, Tom (DNRE)
Subject: Beeland Group - Bay Harbor Disposal Well #1
Attachments: RE: CMS/Bay Harbor; CMS/Bay Harbor

Rex,

The following requirements / deficiencies / corrections to the application have been identified at the district level:

1) Surface / EIA issues:

LWMD staff indicates that the site may impact regulated wetlands and may require a permit. They recommend that CMS / Beeland Group hire a consultant to conduct the review with snow cover off (see attached).

2) Casing / Sealing Program:

The casing program is undersized. The conductor should be 16" driven pipe – area well logs indicate a drift thickness of approx. 100'. Surface casing should be 11 3/4" and set a min. 100' into competent bedrock – excess depth of surface casing may create problems if loss zones are encountered at depth (Traverse Ls).

A 9 5/8" intermediate string of casing should be set in the Bass Island Fm to enable and ensure well control. Both strings should be cemented to surface.

The 7" disposal string should be set and cemented where appropriate after evaluation.

The well head blowout control system pressures on the blind rams, pipe rams and casing need to be increased from 3000 / 2000 psi to 5000 psi.

3) Identification of Potential Disposal Zones:

The purpose of this well is to identify and utilize disposal zones with adequate confining zones. There are several potential disposal zones / formations below the corrected intermediate casing set point and the Mt. Simon target formation; including the Niagaran, Clinton, Trenton, Black River and possibly others. Fluid loss monitoring, porosity logs, DST's and other techniques (see Ray V. for input) should be employed on zones that indicate injection potential.

These corrections should enable us to move ahead with the permitting process.

Thanks.

Mark Cromell
 DNRE - OGS, Gaylord Office
 (989)705-3407
 cromellm@michigan.gov



STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

REBECCA A. HUMPHRIES
DIRECTOR

February 11, 2010

Mr. Michael C. Sniegowski
Beeland Group, LLC
One Energy Plaza
Jackson, MI 49201

Dear Mr. Sniegowski:

SUBJECT: Beeland Group, LLC - Application #MW 090882
Bay Harbor Disposal Well #1

A number of requirements and corrections to the above subject application have been identified as follows:

SURFACE AND EIA ISSUES

Land and Water Management Division indicate that the site may impact regulated wetlands and may require a permit. It is recommended that CMS/Beeland Group hire a consultant to conduct a review with snow cover off. The consultant must use the Federal Wetland delineation method, per the recent amendments to the wetland statute.

CASING AND SEALING PROGRAM

The casing program is undersized. The conductor should be 16" driven pipe. Area well logs indicate a drift thickness of approximately 100'. Surface casing should be 11 3/4" and set a minimum of 100' into competent bedrock. Excess depth of surface casing may create problems if loss zones are encountered at depth, e.g. Traverse Limestone.

A 9 5/8" intermediate string of casing should be set in the Bass Island formation to enable and ensure control. Both strings should be cemented to surface.

The 7" string should be set and cemented where appropriate after evaluation.

The well head blowout control system pressures on the blind rams, pipe rams and casing, need to be increased from 3000 psi to 5000 psi.

H2S CONTINGENCY PLAN

The potential to encounter H2S exists, so a H2S contingency plan, Part II is required. Additionally, the BOP must have sour trim.

Mr. Michael C. Sniegowski
Page 2
February 11, 2010

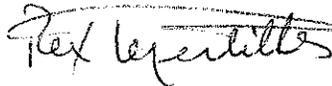
IDENTIFICATION OF POTENTIAL DISPOSAL ZONES

The purpose of this well is to identify and utilize disposal zones with adequate confining formations. There are several potential disposal zones/formations below the corrected intermediate casing set point and the Mt. Simon target formation including the Guelph Dolomite, Burnt Bluff Group, Trenton/Black River formations, and possibly others. A discussion of how the well will be completed if more than one disposal zone is present, should be included.

Please send the requested information and revisions addressed to my attention here in Lansing, and a copy to Mr. Mark Cromell in our Gaylord Field Office, 2100 West M-32, Gaylord, MI 49735.

If you have any questions you may contact me at the number listed below.

Sincerely,



Rex Tefertiller
Permit Coordinator
Permits and Bonding Unit
Office of Geological Survey
517-241-1523

cc: Mr Rick Henderson-DNRE
Mr. Mark Cromell-DNRE
Mr. Raymond Vugrinovich-DNRE



727 Lake Park Drive
Boyne City, MI 49712

Bus (231) 582-3498
Fax (231) 582-2300
www.voiceenv.com

**WETLAND AND JURISDICTION DETERMINATION
OF THE 250' BY 250' AREA SURROUNDING CMS ENERGY'S
PROPOSED BAY HARBOR DISPOSAL WELL #1,
RESORT TOWNSHIP, EMMET COUNTY, MICHIGAN**

Prepared for: Heather M. Prentice, P.E.
1945 W. Parnall Road
Jackson, MI 49201

Prepared by: Steven P. Voice, MS, PWS, CSE
Senior Ecologist & Regulatory Specialist

VEI Project Number: 10-1376

Inspection Dates: May 24 and July 16, 2010

Report Date: July 30, 2010

EXECUTIVE SUMMARY

A wetland determination and boundary delineation was performed for CMS Energy & Beeland Group, LLC at the proposed Bay Harbor Disposal Well #1 site, located adjacent to their current treatment facility on US 31 in Resort Township, Emmet County Michigan. It is the professional opinion of the investigator, Senior Ecologist & Regulatory Specialist Steven P. Voice, that the subject area supports two (2) extremely small areas that appear to marginally meet statutory criteria for wetland designation, as shown on the attached "Wetland Delineation" map by prepared by Barr Engineering Co. dated July 20, 2010.

However, neither of these extremely small, depressional areas appears to be within 500' of an inland lake or pond, river or stream, or within 1000' of Lake Michigan, nor obviously is either over 5 acres in size. Accordingly, it is professional opinion of the investigator that neither area would be subject to regulation by the Michigan Department of Natural Resources and Environment (DNRE) under Part 303, Wetland Protection, of NREPA.

Respectfully submitted,

VOICE ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read "S. P. Voice".

Steven P. Voice, MS, PWS, CSE
Senior Ecologist and Regulatory Specialist

Tefertiller, Rex (DNRE)

From: Tefertiller, Rex (DNRE)
Sent: Thursday, September 16, 2010 9:51 AM
To: Steve Smith
Cc: ddowhan@cmsenergy.com; ken.cooper@petrotek.com
Subject: RE: Scan from Inland Seas Engineering, Inc

Mr. Smith, the revised Survey Record of Well Location (EQP 7200-2) contains errors in parts 2 and 4. The distance to the west section line is still shown to be 1180'. It should be 969' from the west section line. Please send a corrected copy to me as soon as possible. Thanks, Rex Tefertiller.

-----Original Message-----

From: Steve Smith [mailto:sks@inlandseaseng.com]
Sent: Wednesday, September 15, 2010 5:25 PM
To: Tefertiller, Rex (DNRE)
Cc: ddowhan@cmsenergy.com; ken.cooper@petrotek.com
Subject: FW: Scan from Inland Seas Engineering, Inc.

-----Original Message-----

From: scan@inlandseaseng.com [mailto:scan@inlandseaseng.com]
Sent: Wednesday, September 15, 2010 1:26 PM
To: Steve Smith
Subject: Scan from Inland Seas Engineering, Inc.

Updated 7200-2 form

Stephen K. Smith
Inland Seas Engineering Inc.
(231) 933-4041



SURVEY RECORD OF WELL LOCATION

This information is required by authority of Part 615 Supervisor of Wells, or Part 625 Mineral Wells, of Act 451 PA 1994 as amended, in order to obtain a drilling permit

Applicant

BEELAND GROUP LLC

Well name and number

BAY HARBOR DISPOSAL WELL NO. 1

1a. Surface location

Township

County

NE 1/4 of SW 1/4 of NW 1/4 of section 9 T 34N R 6W RESORT EMMET

1b If this is a directional well, bottom hole location will be

Township

County

1/4 of 1/4 of 1/4 of section T R

Instructions: Outline drilling unit for oil/gas wells (Part 615) or property boundary for mineral wells (Part 625) and spot well location on plat shown. Locate the well in two directions from the nearest section, quarter section, and unit (or property, Part 625) lines.

2 The surface location is

1630 ft. from nearest (N/S) N section line
1180 ft. from nearest (E/W) W section line
and
ft. from nearest (N/S) quarter section line
ft. from nearest (E/W) quarter section line

3 Bottom hole will be (if directional)

ft. from nearest (N/S) section line
ft. from nearest (E/W) section line
and
ft. from nearest (N/S) quarter section line
ft. from nearest (E/W) quarter section line

4 Bottom hole will be (directional or straight)

1630 ft. from nearest (N/S) N SECTION LINE drilling-unit line
1180 ft. from nearest (E/W) W SECTION LINE drilling-unit line

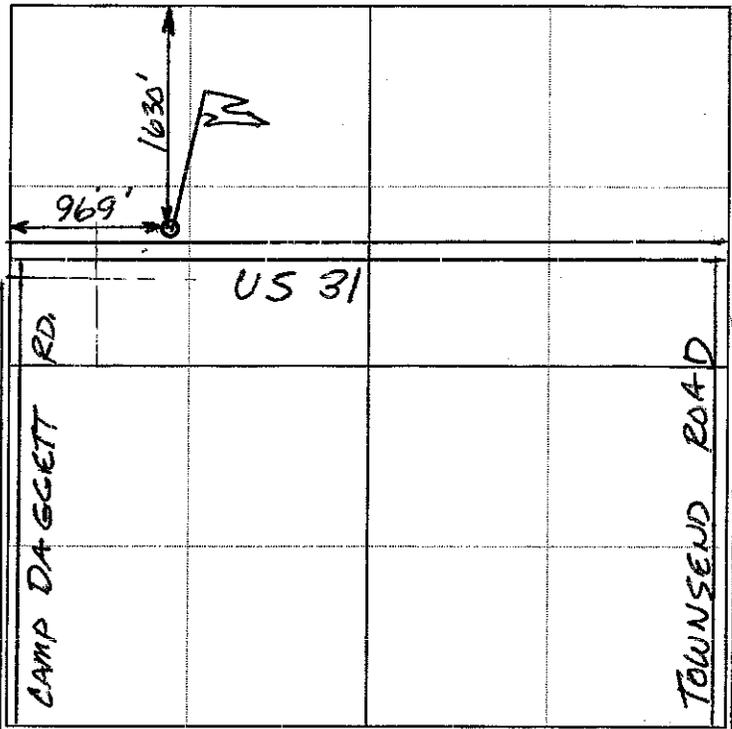
5 Show access to stake on plat and describe if it is not readily accessible

STAKE
IS READILY ACCESSIBLE

6 Zoning

Residential, effective date _____
Initial date of residential zoning _____
 Other PUBLIC UTILITY DISTRICT

SECTION 9
PLAT BELOW REPRESENTS ONE FULL SECTION
(1 MILE SQUARE)



ON SEPARATE PLAT OR PLOT PLAN, LOCATE, IDENTIFY AND SHOW DISTANCES TO:

- A All roads, power lines, buildings, residences, fresh water wells, and other man-made features, within 600 feet of the stake
- B All lakes, streams, wetlands, drainage-ways, floodplains, environmentally sensitive areas, natural rivers, critical dune areas, and threatened or endangered species within 1320 feet of the stake.
- C All type I and IIa public water supply wells within 2000 feet and all type IIb and III public water supply wells within 800 feet of the well stake.

Name of individual who surveyed site

GERALD LIRA

Company

INLAND SEAS

Date of survey

9-30-09

Address

PO. BOX 6820, TRAVERSE CITY, MI.

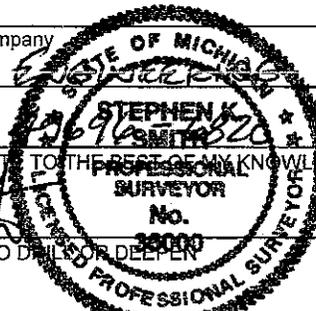
Phone

(231) 933-4041

I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Signature of licensed surveyor (affix seal)

Stephen K Smith



Date

9-15-10

INJECTION WELL AGREEMENT

CMS Land Company (CMS) and the Michigan Department of Natural Resources and Environment (MDNRE) enter into this Injection Well Agreement (Agreement).

BACKGROUND

1. CMS is a party to an Administrative Order on Consent with the United States Environmental Protection Agency (EPA) entitled *In the Matter of Little Traverse Bay CKD Release Site* (EPA AOC), which addresses leachate formed when groundwater comes in contact with cement kiln dust located at East Park in Resort Township and the Bay Harbor Development (collectively Bay Harbor). The EPA AOC was executed on February 22, 2005 pursuant to EPA's authority under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601 *et seq.*, and assigned Docket No. VW-05-C-810. This Agreement is expected to facilitate the negotiation of the "enforceable agreement" referenced in section 15.x. of the EPA AOC, which is not this Agreement and which the Parties anticipate negotiating in good faith at a later date. This Agreement, as well as the Well Evaluation and the Completion of Construction Report contemplated in this Agreement, may be considered, referenced, or incorporated when the Parties negotiate the agreement required under section 15.x. of the EPA AOC.

2. In October 2009, CMS submitted a Mineral Well Permit Application under Part 625 of the Michigan Natural Resources and Environmental Protection Act, MCL 324.62501 *et seq.*, (Part 625 Permit) in order to evaluate the potential for deep well injection as a disposal method for cement kiln dust leachate. CMS and MDNRE have determined that the Well Evaluation and Completion of Construction Report addressed in this agreement will facilitate evaluation of this disposal method.

PURPOSE OF AGREEMENT

3. The Parties have entered into this Agreement solely to define the obligation of CMS to conduct the Well Evaluation, prepare and submit a Completion of Construction Report, and address events that could affect whether the Completion of Construction Report will be prepared. The Well Evaluation and Completion of Construction Report are intended to determine if an injection well located at Bay Harbor will meet the objective of providing complete and reliable disposal in compliance with all applicable federal and state laws for all leachate collected as required by section 15.x. of the EPA AOC and as may be required by any subsequent agreements with the EPA or MDNRE (the Objective).

PERMITS AND AUTHORIZATIONS

4. *Necessary Permits and Authorizations as Condition Precedent.* Completing the Completion of Construction Report (Report) will require physical site work subject to a number of permitting and authorization requirements. Preparing the Report is wholly dependent on first being able to conduct a Well Evaluation that includes but is not limited to characterization of the injection zone, characterization of the confining zone, comparison of injection pressure to the fracture pressure gradient, and successful dispersion/diffusion of injected fluids. Consequently, the Parties agree that CMS must obtain all necessary permits and work authorizations as a

condition precedent to the obligation to conduct the Well Evaluation and complete the Report described in this Agreement. In the event that CMS is unable to obtain any necessary permit or authorization to conduct the work for the Well Evaluation, or that any necessary permit or authorization is effectively suspended or revoked before the Well Evaluation is completed, it will have satisfied all its obligations under this Agreement and will have no remaining obligations under this Agreement.

5. **Necessary Permits and Authorizations.** The necessary permits and authorizations to conduct the Well Evaluation include, but are not limited to:

(a) an injection well permit issued by the Supervisor of Mineral Wells pursuant to Part 625 of the Michigan Natural Resources and Environmental Protection Act, MCL 324.62501 *et seq.*, (Part 625 Permit);

(b) an injection well permit issued by EPA pursuant to the Underground Injection Control program of the federal Safe Drinking Water Act, 40 CFR 300h *et seq.*, (UIC Permit); and

(c) a soil erosion and sedimentation control permit issued by Emmet County pursuant to Part 91 of the Michigan Natural Resources and Environmental Protection Act, MCL 324.9101 *et seq.*, and county ordinance; and

(d) authorization from one or more owners of surface property and subsurface injection rights to conduct the Well Evaluation at Bay Harbor in return for reasonable compensation.

6. **CMS Obligation to Pursue Injection Well Permits.** CMS agrees to pursue the Part 625 permit and UIC permit for an injection well at Bay Harbor until it obtains a final agency decision on the pending permit applications. Nothing in this Agreement obligates CMS to continue to pursue a valid Part 625 and UIC permit following a final agency decision. CMS retains the unilateral discretion to challenge or appeal, or defend against a challenge or appeal following a final agency decision concerning the Part 625 permit and the UIC permit.

CMS shall not be obliged to continue to pursue an injection well permit and will be deemed unable to obtain a necessary permit or authorization within the meaning of paragraph 4 of this Agreement if:

(a) there is a final agency decision denying either the Part 625 permit or the UIC permit; or

(b) EPA does not issue the UIC permit within three years of the Effective Date of this Agreement; or

(c) the Supervisor of Mineral Wells (MDNRE) does not issue the Part 625 permit within three years of the Effective Date of this Agreement; or

(d) Resort Township prohibits injection wells or the work required for the Well Evaluation within its jurisdiction before CMS completes the work for the Well Evaluation; or

(e) any person, entity, or agency obtains an injunction, administrative or agency order or directive, or court order preventing CMS from conducting the Well Evaluation or preparing the Report, from drilling or testing an injection well at Bay Harbor, or from acting under any permits issued in connection with the Bay Harbor injection well; provided, however, that a temporary restraining order issued by a court in relation to the Part 625 permit or the UIC permit that is actually dissolved or otherwise voided within ninety days of its entry does not constitute an inability to obtain a necessary permit or authorization. CMS will undertake reasonable efforts to oppose any request for a temporary restraining order and to set aside any temporary restraining order that has been issued by a court.

These circumstances apply only to the Part 625 or UIC permit. CMS is not obligated to demonstrate the existence of one or more of these circumstances in order to show that it was unable to obtain any other required permit or authorization under paragraph 4.

WELL EVALUATION AND COMPLETION OF CONSTRUCTION REPORT

7. ***Well Evaluation.*** The Well Evaluation is intended to address whether an injection well at the Bay Harbor location identified in the Part 625 and UIC permit applications will meet the Objective identified in this Agreement. As part of the Well Evaluation, CMS will drill one boring from the ground surface to the Mt. Simon formation at the Bay Harbor location identified in its Part 625 and UIC permit applications and will construct a well in that boring. CMS will conduct the work that is reasonable and necessary to determine whether the injection well will be able to meet the Objective identified in this Agreement.

8. ***Injection Well Performance Standards.*** The Parties understand and agree that whether the proposed injection well at Bay Harbor may be operated as a prudent and feasible long-term option for the complete and reliable disposal of Bay Harbor leachate includes factors not expressly addressed in the federal and state law requirements for injection well permits. While the Well Evaluation may produce the data required to be submitted to the Supervisor of Mineral Wells (MDNRE) or EPA for final approval of the injection well's operation under the Part 625 and UIC permit programs, the purpose of the Well Evaluation required in this Agreement is to gather the data and other information necessary to determine whether an injection well drilled and constructed at Bay Harbor meets the Objective.

9. ***Timing of the Well Evaluation.*** The work for the Well Evaluation shall commence within thirty days of when CMS receives the last permit or authorization required to conduct the work for the Well Evaluation if the equipment and contractors necessary to conduct the Well Evaluation are available at that time, or as soon as practicable after the equipment and contractors become available.

10. ***Completion of Construction Report.*** CMS will prepare a Completion of Construction Report that will describe the activities it has performed for the Well Evaluation and will address whether CMS finds that the injection well will meet the Objective described in this Agreement. CMS will identify results of the Well Evaluation, if any, that indicate the Objective cannot be met. CMS will provide any supporting information it believes necessary to support or explain its findings in the Report.

11. **Submission of the Report to MDNRE.** CMS will submit the Report to the MDNRE Office of Geological Survey within sixty days of completing the Well Evaluation.

12. **One Well Obligation.** CMS is obligated to drill and test only one well at the location described in its applications for the Part 625 Permit and UIC Permit, to conduct only one Well Evaluation concerning that well, and to prepare only one Report concerning that well. Nothing in this Agreement obligates CMS to conduct any other activities, including but not limited to additional exploratory drilling or technical work, drilling a deeper well, applying for permits for or drilling any additional injection wells at this or any other location, or preparing any additional or supplemental studies, reports, or data.

OTHER TERMS AND CONDITIONS

13. **Other Entities.** The Parties understand and agree that CMS may use related corporate entities, contractors, and consultants to engage in the activities required under this Agreement, including but not limited to having the Beeland Group, LLC, obtain the permits needed to conduct the Well Evaluation, which shall satisfy this Agreement as if CMS had conducted those activities itself.

14. **Consideration.** The Parties acknowledged that good and valuable consideration has been exchanged in the execution of this Agreement and the performance of its terms.

15. **No Limitation on CMS.** Nothing in this Agreement shall limit CMS's right or ability to evaluate, pursue, or use any other options for disposal of leachate collected at Bay Harbor. Nor shall this Agreement preclude CMS from seeking to obtain or renew any other permits. This Agreement shall not be interpreted as a promise by or obligation on the part of CMS to own or operate an injection well for the disposal of leachate at Bay Harbor or any other location.

16. **Enforcement and Remedy for Breach of Agreement.** The sole remedy for breach of this Agreement shall be its specific performance. Nothing in this Agreement shall give rise to or allow a claim, demand, or cause of action for damages, fees, penalties or costs of any kind by either Party.

17. **No Third-Party Reliance or Enforcement of Agreement.** This Agreement was executed solely for the benefit of the Parties. No third party may rely on or enforce this Agreement in any forum or in any manner.

18. **No Verbal Amendment or Assignment.** This Agreement shall not be amended or assigned without the express, written agreement of both Parties as further described in paragraph 19.

19. **Subsequent Consideration, Reference, or Incorporation.** The Parties may consider, reference, or incorporate this Agreement, the Well Evaluation, and the Report in a subsequent agreement, order, or other document. However, considering, referencing, or incorporating this Agreement, the Well Evaluation, or the Report shall not alter this Agreement in any way, including but not limited to provisions concerning the One Well Obligation, the Objective, conditions precedent to performance, enforcement and breach, duration, and third party reliance. Nor shall considering, referencing, or incorporating this Agreement, the Well Evaluation, or the

Report in a subsequent agreement, order, or other document add new or additional requirements to this Agreement, nor extend provisions that would have expired or concluded on their own terms. The Parties agree that the only manner in which the provisions of this Agreement may be altered in any manner is in a writing in which they identify the provisions of this Agreement that they intend to alter, add, or extend in exchange for additional consideration.

20. **Counterparts and Copies** This Agreement may be executed in any number of counterparts, each of which when executed and delivered shall be deemed an original, but all such counterparts together shall constitute one and the same instrument. Copies of this Agreement are enforceable by the Parties to it as if they were originals.

21. **Effective Date**. This Agreement shall be effective upon signing by both CMS and MDNRE with approval as to form by the Michigan Department of Attorney General.

22. **Duration of Agreement**. This Agreement shall remain in effect until CMS submits the Completion of Construction Report to MDNRE or CMS is unable to obtain one or more of the necessary permits or authorizations to conduct or complete the Well Evaluation and sends written or electronic notice to MDNRE of such.

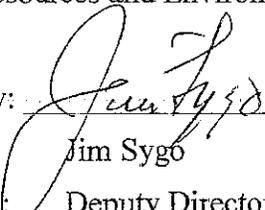
23. **Entire Agreement**. This Agreement contains the entire agreement between the Parties with respect to this subject matter and supersedes any and all previous agreements and contemporaneous oral agreements with respect to the same subject matter.

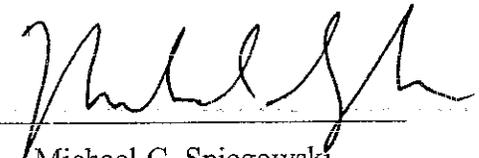
24. **Authority to Enter Agreement**. The Parties represent that they have authority to enter into make binding this Agreement and that their representatives signing this Agreement have been authorized to do so

AGREED BY:

Michigan Department of Natural Resources and Environment

CMS Land Company

By:  _____
Jim Sygo

By:  _____
Michael C. Sniegowski

Its: Deputy Director

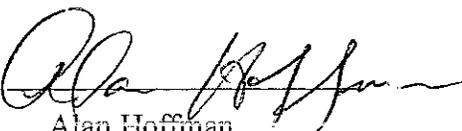
Its: Vice President

Dated: 11/3/2010

Dated: 10/28/2010

APPROVED AS TO FORM BY:

Michigan Department of Attorney General

By:  _____
Alan Hoffman

Its: Special Assistant Attorney General

Dated: 11/1/10

18,385,303 7018544-00055



APPLICATION FOR PERMIT TO:
[] DRILL [] DEEPEN [] CONVERT
AND OPERATE A WELL

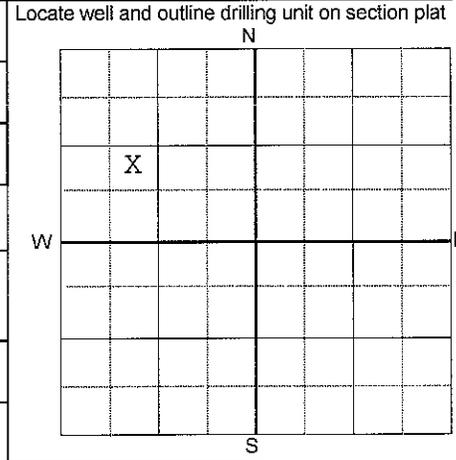
By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended
Non-submission and/or falsification of this information
may result in fines and/or imprisonment.

- 1a. Part 615 Supervisor of Wells
[] Oil and Gas
[] Brine Disposal
[] Hydrocarbon Storage
[] Injection for Secondary Recovery

- 1b. Part 625 Mineral Wells
[X] Waste Disposal
[] Brine Production
[] Processed brine disposal
[] Storage
[] Test, fee sched. on rev.

- 1c. Fee enclosed
[] Yes
[X] No, revision of application
[] No, leg of horz drainhole

2. List all previous permit numbers: NA
3. Fed. ID No. (do not use SSN): 20-5321543
4. Conformance bond: [] Blanket [X] Single well
5. [X] Attached [] On file
6. Bond number: Letter of credit
7. Bond amount: 60,000
8. Applicant: Beeland Group, LLC
9. Address: 5548 US 32, Petoskey MI 10577
Phone: 517 778 9045
I authorize DEQ 4 additional days to process this application: [X] Yes [] No
10. Lease or well name: Bay Harbor Disposal Well
Well number: No. 1
11. Surface owner: Bay Harbor Company



12. Surface location: NE 1/4 of SW 1/4 of NW 1/4 of Sec 9 T 34N R 6W
Township: Resort County: Emmett
13. If directional bottom hole location: 1/4 of 1/4 of 1/4 of Sec T R
Township: County:
14. The surface location for this well is: 1630 feet from nearest (N/S) N section line AND 969 feet from nearest (E/W) W section line
15. Is this a directional well? [X] No [] Yes
16. The bottom hole location (whether straight or directional) of this well is:
feet from nearest (N/S) drilling unit line AND feet from nearest (E/W) drilling unit line
17. Kind of tools: [X] Rotary [] Cable [] Combination
18. Is sour oil or gas expected? [X] No [] Yes [X] H2S Cont. plan enclosed
19. Base of lowest known fresh water aquifer: Formation Traverse Depth 540'

24. PROPOSED DRILLING, CASING AND CEMENTING AND SEALING PROGRAM
Table with columns: HOLE (Depth, Geol. Formation, Bit Dia.), CASING (O.D. Size, Wt/Ft, Grade, Condition, Depth), CEMENT (Sacks, T.O.C., W.O.C.), MUD (Wt., Vls.).

25. DETAIL CEMENTING PROGRAM IDENTIFY ALL CEMENT CLASSES, ADDITIVES AND VOLUMES (IN CU FT) FOR EACH CASING STRING
Surface 208 ft3 Class A equivalent w/additives per hole conditions to surface
Intermediate 552 ft3 Class A equivalent w/additives per hole conditions to surface
Production/Injection 797 ft3 w/additives per hole conditions, dv tool, tail Class A equivalent w/additives

26. Send correspondence and permit to:
Name: Michael C. Sniegowski, Vice President
Address: One Energy Plaza, Jackson, MI 49201
E-mail: mcsniego@cmsenergy.com
Phone: 517-768-7330

CERTIFICATION "I state that I am authorized by said applicant. This application was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

27. Application prepared by (print or type): Michael C. Sniegowski
Phone: 517-768-7330
28. Signature:
Date: 8-06-2010

Enclose permit fee of \$300 for all Part 615 wells; \$2,500 for a Part 625 waste disposal well; or \$500 for a brine production, processed brine disposal, or storage well. Make checks payable to State of Michigan.
DEQ Cashier use only.

Office of Geological Survey Use Only
Table with columns: Permit number, API number, Date issued, Owner number

BEELAND GROUP LLC

*Michael Sniegowski
Vice President*

November 16, 2010

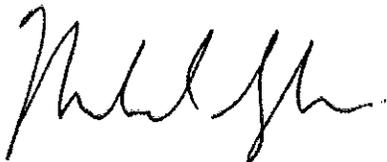
Mr. Rex Tefertiller
Permit Coordinator
Michigan Department of Natural Resources and Environment
Office of Geological Survey
Permits and Bonding Unit
525 West Allegan Street
Lansing, Michigan 48909-7756

RE: Emmet County, Michigan Disposal Well #MW 090882 M DNRE Permit
Application - Well Name Change

Dear Mr. Tefertiller:

Please be advised that Beeland Group, LLC is changing the disposal well name of the subject well from Bay Harbor Disposal Well No. 1 to Little Traverse Bay Environmental Project Disposal Well No. 1.

Sincerely,



cc: Jim Duszynski, Michigan Department of Environmental Quality

Beeland - Bay Harbor Disp.

needs wetland evaluation determination / delineation.

App.: - needs accurate delineation of wetland. Reg or nonreg.
Pad 200' x 300'

Access & Flowline to Facility.

Part II Drilling issues:

7200-1 drill/csg needs conductor + clarification

Needs H₂S Contingency Plan

Top TL 180' - BZ 1607 A2 carb 2285'

int med csg c shale?

Contingency String for pass High Press in A2 carb.

EIBC log from TD → base of Int csg.

if well successful - facility plans must be approved by OGS

MW 09082) Bay Harbor Disposal Well No. 1

Σ&P 7200-1:

- # 12 - County - not named
- # 23 - ~~yes, it does apply for disposal fm.~~
- # 24 - Geol fm. needs to be named for 13 3/8" string
 - Sacks - need # of sx not "surface"
 - T.O.C. - left blank (in wrong column)
- ① ✓ - WOC - blank
- ② ✓ - mud - ~~is~~ blank
 - strings - All to start at surface?
- ③ ✓ - 7" string - name
 - NEW 2.56?
- # 25 - additives per well conditions? acceptable?
- ④ ✓ volume
- ⑤ Need revised 7200-2 well survey to reflect new location.