

# APPENDIX F – COLLECTION FORMS AND FIELD NOTES

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## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 6/21/05 Crew: JF, KH, BD  
 Weather: partially cloudy, low wind Filled out by: Kathleen Hurdley

Location ID: <u>LDW-PW-B-PZ-12</u>		Latitude: <u>47 31.612</u>		Longitude: <u>122 18.578</u>		Time: <u>8856</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer EPA (MHE) <input type="checkbox"/> other:		sampler depth: <u>1 ft</u>					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>16.39</u>	<u>44539</u>	<u>1.27</u>	<u>7.27</u>			<u>57.2</u>	
Comments:				<u>N/A</u>	<u>N/A</u>	<u>15.5</u>	
<u>14.89</u>	<u>42717</u>	<u>6.13</u>	<u>7.61</u>				
<u>17.39</u>	<u>428971</u>	<u>7.60</u>	<u>7.4</u>			<u>N/A</u>	

*bottom surface water*  
*SW top*

Location ID: <u>LDW-PW-B-PZ-09</u>		Latitude: <u>47 31.621</u>		Longitude: <u>122 18.587</u>		Time: <u>1005</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer EPA (MHE) <input type="checkbox"/> other:		sampler depth: <u>1 ft</u>					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>17.28</u>	<u>44268</u>	<u>0.50</u>	<u>7.28</u>	<u>↑</u>	<u>↑</u>	<u>81.7</u>	
Comments:				<u>N/A</u>	<u>NA</u>	<u>7.67</u>	
<u>17.99</u>	<u>3998</u>	<u>7.20</u>	<u>7.76</u>		<u>↓</u>		
<u>17.2</u>	<u>35676</u>	<u>5.91</u>	<u>7.58</u>	<u>↓</u>		<u>13.6</u>	

*surface water top*  
*SW bottom*

Location ID: <u>LDW-PW-B-PZ-08</u>		Latitude: <u>47 31.622</u>		Longitude: <u>122 18.581</u>		Time: <u>1101</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer EPA (MHE) <input type="checkbox"/> other:		sampler depth: <u>1 ft</u>					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>17.19</u>	<u>43792</u>	<u>0.49</u>	<u>7.45</u>	<u>↑</u>	<u>NA</u>	<u>8.03</u>	
Comments:				<u>N/A</u>		<u>5.68</u>	
<u>17.74</u>	<u>2558</u>	<u>7.25</u>	<u>7.58</u>	<u>↓</u>			
<u>16.91</u>	<u>11184</u>	<u>6.91</u>	<u>7.64</u>			<u>X</u>	

*surface water top*  
*SW bottom*

\* Due to time constraints, did not get two turbidity readings.

**FORM 2. POREWATER COLLECTION FORM**

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 06/22/05 Crew: JF, KH, BD, ME, EP, CS  
 Weather: CLOUDY + COOL Filled out by: KH

Location ID: <u>LDW-PW-B-PZ-11</u>		Latitude: <u>47 31.616</u>		Longitude: <u>122 18.571</u>		Time: <u>0820</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer		EPA <input checked="" type="checkbox"/> MHE		other: _____		sampler depth: <u>1 ft</u>	
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>15.01</u>	<u>43269</u>	<u>1.08</u>	<u>7.40</u>	<u>↑</u>	<u>↑</u>	<u>106</u>	
Comments:				<u>N/A</u>	<u>N/A</u>	<u>3.47</u>	
<u>15.76</u>	<u>13382</u>	<u>7.16</u>	<u>7.12</u>	<u>↓</u>	<u>↓</u>	<u>11.1</u>	
<u>13.81</u>	<u>40317</u>	<u>6.41</u>	<u>7.73</u>	<u>↓</u>	<u>↓</u>	<u>11.1</u>	

Surface H<sub>2</sub>O

Bottom H<sub>2</sub>O

Location ID: <u>LDW-PW-B-PZ-10</u>		Latitude: <u>47 31.618</u>		Longitude: <u>122 18.566</u>		Time: <u>0916</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer		EPA <input checked="" type="checkbox"/> MHE		other: _____		sampler depth: <u>1 ft</u>	
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>14.54</u>	<u>19943</u>	<u>0.73</u>	<u>8.01</u>	<u>N/A</u>	<u>NA</u>	<u>6.07</u>	
Comments:				<u>↓</u>	<u>↓</u>	<u>4.84</u>	
<u>15.39</u>	<u>15867</u>	<u>6.96</u>	<u>7.55</u>	<u>↓</u>	<u>↓</u>	<u>5.59</u>	
<u>15.31</u>	<u>15737</u>	<u>6.62</u>	<u>7.52</u>	<u>↓</u>	<u>↓</u>	<u>5.59</u>	

Surface H<sub>2</sub>O

Bottom H<sub>2</sub>O

Location ID: <u>LDW-PW-B-PZ-07</u>		Latitude: <u>47 31.623</u>		Longitude: <u>122 18.576</u>		Time: <u>1020</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer		EPA <input checked="" type="checkbox"/> MHE		other: _____		sampler depth: <u>1 ft</u>	
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>14.28</u>	<u>40369</u>	<u>0.26</u>	<u>7.36</u>	<u>N/A</u>	<u>N/A</u>	<u>16.9</u>	
Comments:				<u>↓</u>	<u>↓</u>	<u>6.98</u>	
<u>15.50</u>	<u>4200</u>	<u>7.36</u>	<u>7.9</u>	<u>↓</u>	<u>↓</u>	<u>7.26</u>	
<u>15.32</u>	<u>3981</u>	<u>7.12</u>	<u>7.71</u>	<u>↓</u>	<u>↓</u>	<u>7.26</u>	

Surface H<sub>2</sub>O

Bottom H<sub>2</sub>O

**FORM 2. POREWATER COLLECTION FORM**

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 6/22/05 Crew: KH, JF, BD, ME, EP, CS  
 Weather: Cloudy P RAINY Filled out by: KH

Location ID: <u>LDW-PW-G-PZ-01</u>		Latitude: <u>47 32.359</u>		Longitude: <u>122 19.681</u>		Time: <u>1106</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer <u>(EPA)</u> MHE <input type="checkbox"/> other:		sampler depth: <u>1.5 ft.</u>					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>13.03</u>	<u>41537</u>	<u>0.18</u>	<u>7.38</u>	<u>N/A</u>	<u>N/A</u>	<u>83.3</u>	
Comments:							
<u>15.07</u>	<u>15838</u>	<u>6.68</u>	<u>7.37</u>	↓	↓	<u>58.7</u>	
<u>15.03</u>	<u>15764</u>	<u>6.52</u>	<u>7.37</u>	↓	↓	<u>83.5</u>	

surface H<sub>2</sub>O  
bottom H<sub>2</sub>O

Location ID: <u>LDW-PW-G-PZ-01</u>		Latitude: <u>47 32.367</u>		Longitude: <u>122 19.699</u>		Time: <u>1140</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer <u>(EPA)</u> MHE <input type="checkbox"/> other:		sampler depth: <u>1 ft</u>					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>14.32</u>	<u>9857</u>	<u>0.05</u>	<u>8.13</u>	<u>N/A</u>	<u>N/A</u>	<u>&gt;1000</u>	
Comments:							
<u>15.85</u>	<u>10549</u>	<u>6.68</u>	<u>7.55</u>	↓	↓	<u>7.48</u>	
<u>15.29</u>	<u>10991</u>	<u>6.58</u>	<u>7.65</u>			<u>13.6</u>	

surface H<sub>2</sub>O  
bottom H<sub>2</sub>O

→ sediment in PW sample was high + was out of instrument's range

Location ID:		Latitude:		Longitude:		Time:	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer <u>(EPA)</u> MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
Comments:							

FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 0/23/05 Crew: JF, KH, BD, ME, HO, EP, CS  
 Weather: partially cloudy; light breeze Filled out by: KH

Location ID: LDW-PW-G-P2-05		Latitude: 47° 32' 20.39462		Longitude: 122 19 43.31350		Time: 0850	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer (EPA) MHE <input type="checkbox"/> other:		sampler depth: 1ft					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
13.37	44833	0.47	7.28	N/A	N/A	9.71	
Comments:							
14.81	14737	7.13	7.51	↓	↓	2.61	
13.69	39462	6.82	7.87	↓	↓	2.48	

\* Coordinates did due to sample taken 25' away from actual station.

Location ID: LDW-PW-G-P2-03		Latitude: 47 32.343		Longitude: 122 19.756		Time: 0940	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer (EPA) MHE <input type="checkbox"/> other:		sampler depth: 1ft					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
13.73	44397	1.16	7.52	N/A	N/A	2.94	
Comments:							
14.66	15349	7.23	7.67	↓	↓	2.73	
13.57	40317	6.58	7.84	↓	↓	13.1	

Location ID: LDW-PW-G-P2-06		Latitude: 47 32.327		Longitude: 122 19.725		Time: 1415	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer (EPA) MHE <input type="checkbox"/> other:		sampler depth: 2ft					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
16.25	36442	0.13	7.50	N/A	N/A	>1000	
Comments:							
15.55	8311	7.82	7.72	↓	↓	5.54	
14.81	21879	6.62	7.67	↓	↓	9.11	

\* NOTE: Any ~~that~~ turbidity >1000 exceeded expectations and was out of the range of the turbidimeter



## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 06/23/05 Crew: JF, KH, BD, ME, HD, EP, CS  
 Weather: partially cloudy Filled out by: KH

Location ID: <u>LDW-PW-G-PZ-02</u>		Latitude: <u>47 32.354</u>		Longitude: <u>122 19.737</u>		Time: <u>1115</u>	
Sample collection method: <input type="checkbox"/> peeper <input checked="" type="checkbox"/> piezometer <input type="checkbox"/> EPA <input type="checkbox"/> MHE <input type="checkbox"/> other:		sampler depth: <u>2 ft</u>					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>16.63</u>	<u>42727</u>	<u>0.25</u>	<u>7.28</u>	<u>N/A</u>	<u>N/A</u>	<u>&gt;1000</u>	
Comments:		<u>16465</u>	<u>7.19</u>	<u>7.7</u>	<u>↓</u>	<u>↓</u>	<u>4.02</u>
<u>Surface H2O</u>		<u>14.95</u>	<u>19526</u>	<u>6.93</u>	<u>7.63</u>		<u>6.28</u>
<u>bottom H2O</u>							

Location ID:		Latitude:		Longitude:		Time:	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer <input type="checkbox"/> EPA <input type="checkbox"/> MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
Comments:							

Location ID:		Latitude:		Longitude:		Time:	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer <input type="checkbox"/> EPA <input type="checkbox"/> MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
Comments:							

**FORM 1. PEEPER DEPLOYMENT FORM**

Project Name: LDW- Project Task: Porewater sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, DL, AB  
 Weather: Partly cloudy, light wind  
 (Joanna Flower, Eric Parker, Bruce Duncan, Ben Bergquist, Dennis Lucia, Allen Burton)

Location ID: <u>PE-09</u>	Latitude: <u>47 31.628</u>	Longitude: <u>122 18.566</u>	Time: <u>8:27</u>
<b>Comments:</b> will need to dig hole - substrate too hard to push in by hand. Hole dug w/ trowel to 10 cm and peeper was inserted just west of seep			
<b>Substrate description</b> (e.g., rock, soil, cobble, gravel, sand, silt, clay) gravel mixed w/ fine silt			
<b>Collection location description</b> (e.g., relative to bank or other objects subtidal or intertidal) approx. 25 ft from bank w/ rip rap and rotted wooden structure. (toward low)			

Location ID: <u>PE-15</u>	Latitude: <u>47 31.618</u>	Longitude: <u>122 18.556</u>	Time: <u>8:44</u>
<b>Comments:</b> peeper placed 10 cm from surface by digging hole w/ trowel			
<b>Substrate description</b> (e.g., rock, soil, cobble, gravel, sand, silt, clay) silt/clay mixed with rocks			
<b>Collection location description</b> (e.g., relative to bank or other objects subtidal or intertidal) approx 50 ft from riprap bank toward low			

**FORM 1. PEEPER DEPLOYMENT FORM**

Project Name: LDW Project Task: Porewater Sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, DL, AB  
 Weather: cloudy, light wind

Location ID: <u>PE-11</u>	Latitude: <u>47 31.625</u>	Longitude: <u>122 18.561</u>	Time: <u>8:49</u>
Comments: right at seep, very soft substrate, so peeper was pushed in by hand			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) soft substrate - mud/clay			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) approx 10 ft from rip rap bank toward LDW			

Location ID: <u>PE-13</u>	Latitude: <u>47 31.621</u>	Longitude: <u>122-18.558</u>	Time: <u>8:51</u>
Comments: right next to rotted piling "stump", soft substrate, so peeper was pushed in by hand.			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) mud/clay - soft substrate			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) approx 25 ft from rip rap bank toward LDW			



FORM 1. PEEPER DEPLOYMENT FORM

Project Name: LDW Project Task: Porewater Sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, DL, AB  
 Weather: partly cloudy, light wind

Location ID: <u>PE-01</u>	Latitude: <u>47 32 22.33629</u>	Longitude: <u>122 49 04.64617</u>	Time: <u>10:22</u>
Comments: placed on foot. location moved slightly east because of rip rap.			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) muck/clay			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) just at base of rip rap line tied to piling			

Location ID: <u>PE-05</u>	Latitude: <u>47 32 22.00045</u>	Longitude: <u>122 49 40.86087</u>	Time: <u>10:36</u>
Comments: coordinates off, so peeper placed visually in relation to seep, on foot. Seep appears to be upwelling just below tideline. peeper placed about 3 ft from upwelling area.			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) Muck			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) old metal brace - just at the base of brace and rip rap (NW corner of brace). Line tied to brace.			

FORM 1. PEEPER DEPLOYMENT FORM

Project Name: LDW Project Task: Porewater Sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, PL, AB  
 Weather: Sunny

Location ID: <u>PE-06</u>	Latitude: <u>47 32 21.96</u>	Longitude: <u>122 19 40.68</u>	Time: <u>10:47</u>
Comments: GPS reading on target bnr will re-record coordinates. Line tied to stake, then brace.			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) muck on top of rip rap			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) SE corner of brace/rip rap. Line run from stake to corner of brace			

Location ID: <u>PE-07</u>	Latitude: <u>47 32 21.66</u>	Longitude: <u>122 19 40.26</u>	Time: <u>10:54</u>
Comments: Visually placed peeper because coordinates appear off from intended location. 15 ft NW of sleep peeper placed			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) Muck			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) Stake between offshore pile and inshore batter pile			

FORM 1. PEEPER DEPLOYMENT FORM

Project Name: LDW Project Task: Porewater Sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, DL, AB  
 Weather: Sunny

Location ID: <u>PE-08</u>	Latitude: <u>47 32 21.7008</u>	Longitude: <u>122 19 40.30652</u>	Time: <u>11:09</u>
Comments: <u>Replicate station. used site water to fill peepers because DI water gone. Visually located station approx 2 ft NW of S-1 because coordinates slightly off.</u>			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>Muck</u>			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) <u>~ 5 ft offshore from piling. ~ 10 ft from rip rap bank. Right at water line at time of sampling</u>			

Location ID: <u>PE-10</u>	Latitude: <u>47 31.625</u>	Longitude: <u>122 18.574</u>	Time: <u>12:21</u>
Comments: <u>Replicate station. Dug hole to place peepers. 12:32 - 3rd rep. At first Eric placed only 2 peepers because he wasn't aware there was a third rep, so he returned to place the 3rd peeper.</u>			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>Sandy/silt no cobble/gravel little bit of gravel</u>			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) <u>na (trail of line will be used to relocate peepers underwater)</u>			

**FORM 1. PEEPER DEPLOYMENT FORM**

Project Name: LDW Project Task: Porewater sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, DL, AB  
 Weather: \_\_\_\_\_

Location ID: <u>PE-12</u>	Latitude: <u>47 31.623</u>	Longitude: <u>122 18.567</u>	Time: <u>12:30</u>
Comments: <u>Dug hole to place peeper</u>			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>sandy/silty with some gravel</u>			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) <u>na (line trail will be used to relocate peeper underwater)</u>			

Location ID: <u>PE-14</u>	Latitude: <u>47 31.620</u>	Longitude: <u>122 18.562</u>	Time: <u>12:35</u>
Comments: <u>Dug hole to place peeper</u>			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>Sandy silt with wood debris</u>			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) <u>na (line trail will be used to relocate peeper underwater)</u>			

FORM 1. PEEPER DEPLOYMENT FORM

Project Name: LDW Project Task: Porewater Sampling  
 Date: 7/19/05 Crew: JF, EP, BO, BB, DL, AB  
 Weather: Sunny

Location ID: <u>PE-16</u>	Latitude: <u>47 31.616</u>	Longitude: <u>122 18.560</u>	Time: <u>12:41</u>
Comments: <u>Dug hole to place peeper</u>			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>very silty, very soft with a bit of sand</u>			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) <u>na (line trail will be used to relocate peepers underwater)</u>			

Location ID: <u>PE-04</u>	Latitude: <u>47 32.863</u>	Longitude: <u>122 19.685</u>	Time: <u>14:14</u>
Comments:			
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>Sandy silt with some debris and gravel</u>			
Collection location description (e.g., relative to bank or other objects subtidal or intertidal) <u>na (trail line will be used to relocate peepers underwater)                  (line tied to piling to the west)</u>			

**FORM 1. PEEPER DEPLOYMENT FORM**

Project Name: LDW Project Task: porewater sampling  
 Date: 7/19/05 Crew: JF, EP, BD, BB, DL, AB  
 Weather: Sunny

Location ID: <u>PE-03</u>	Latitude: <u>47 32 21.93801</u>	Longitude: <u>122 19 41.16759</u>	Time: <u>14:15</u>
Comments:			
<b>Substrate description</b> (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>sand and silt with some debris/gravel</u>			
<b>Collection location description</b> (e.g., relative to bank or other objects subtidal or intertidal) <u>na (trawl line will be used to relocate peeper underwater)</u> <u>(line tied to piling to the west)</u>			

Location ID: <u>PE-02</u>	Latitude: <u>47 32.370</u>	Longitude: <u>122 19.698</u>	Time: <u>14:32</u>
Comments:			
<b>Substrate description</b> (e.g., rock, soil, cobble, gravel, sand, silt, clay) <u>sandy silt with shell debris</u>			
<b>Collection location description</b> (e.g., relative to bank or other objects subtidal or intertidal) <u>na (trawl line will be used to relocate peeper underwater)</u>			



## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task/#: Porewater/04-08-06-26  
 Date: 8/1/05 Crew: JF BB ED  
 Weather: cloudy Filled out by: ED

Location ID: <u>LDW-PW-B-PE-10</u>		Latitude:		Longitude:		Time: <u>9:05</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer <input type="checkbox"/> EPA <input type="checkbox"/> MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC <u>17630</u>	DO <u>4.04</u>	pH <u>3.7</u>	ORP	Salinity	Turbidity	
<u>18.84</u>	<del>17707</del>		<del>4.77</del>	<u>219</u>			
Comments:							

Location ID: <u>LDW-PW-B-PE-14</u>		Latitude:		Longitude:		Time: <u>9:07</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer <input type="checkbox"/> EPA <input type="checkbox"/> MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>18.6</u>	<u>18845</u>	<u>2.79</u>	<u>5.58</u>	<u>191</u>			
Comments:							

Location ID: <u>LDW-PW-B-PE-12</u>		Latitude:		Longitude:		Time: <u>9:15</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer <input type="checkbox"/> EPA <input type="checkbox"/> MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>18.77</u>	<u>19407</u>	<u>3.01</u>	<u>5.67</u>	<u>158</u>			
Comments:							



## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task/ #: Porewater/04-08-06-26  
 Date: 8/11/05 Crew: SF, RB, ED  
 Weather: clearly Filled out by: ED

Location ID: <u>LDW.PW.B.PE10</u>		Latitude:		Longitude:		Time: <u>9:20</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>19.27</u>	<u>22370</u>	<u>3.30</u>	<u>5.35</u>	<u>170</u>			
Comments:							

Location ID: <u>LDW.PW.B.PE-201</u>		Latitude:		Longitude:		Time: <u>9:26</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>19.03</u>	<u>22769</u>	<u>3.28</u>	<u>6.05</u>	<u>173</u>			
Comments: <u>Field Rep. #1</u>							

Location ID: <u>LDW.PW.B.PE-202</u>		Latitude:		Longitude:		Time: <u>9:31</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>19.14</u>	<u>19373</u>	<u>3.12</u>	<u>6.34</u>	<u>169</u>			
Comments: <u>Field rep. #2</u>							

Bottom water from site PE10/202 @ 9:34  
 Temp SpC DO pH ORP  
19.84 8552 7.50 6.97 175





## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task/#: Porewater/04-08-06-26  
 Date: 8/1/05 Crew: SF BB ED  
 Weather: cloudy Filled out by: ED

10/13/05 ED

Location ID: <u>LDW-PW-G-PE-04</u> <del>LDW-PW-B-PE-04</del>		Latitude:		Longitude:		Time: <u>10:25</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>17.10</u>	<u>2962</u>	<u>3.13</u>	<u>6.32</u>	<u>155</u>			
Comments:							

ED 10/13/05

Location ID: <u>LDW-PW-G-PE-03</u> <del>LDW-PW-B-PE-03</del>		Latitude:		Longitude:		Time: <u>10:30</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>16.76</u>	<u>20578</u>	<u>2.06</u>	<u>6.23</u>	<u>118</u>			
Comments:							

10/13/05 ED

Location ID: <u>LDW-PW-G-PE-02</u> <del>LDW-PW-B-PE-02</del>		Latitude:		Longitude:		Time: <u>10:44</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>16.72</u>	<u>14848</u>	<u>3.66</u>	<u>6.09</u>	<u>111</u>			
Comments:							

Bottom water: from PE. 04 location

Temp	SpC	DO	pH	orp
<u>18.07</u>	<u>21047</u>	<u>7.55</u>	<u>7.13</u>	<u>159</u>

FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 8/1/05 Crew: JF BB ET  
 Weather: Cloudy Filled out by: LTD

9m7 10/12/05

Location ID: LDW-PW-G-PE-010 <del>LDW-PW-B-PE-01</del>		Latitude:	Longitude:	Time: 10:50		
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:				
Temp	SpC	DO	pH	ORP	Salinity	Turbidity
16.6	14817	3.42	6.20	99		
Comments:						

EAD 10/13/05

Location ID: LDW-PW-G-PE-05 <del>LDW-PW-B-PE-05</del>		Latitude:	Longitude:	Time: 11:10		
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:				
Temp	SpC	DO	pH	ORP	Salinity	Turbidity
17.07	17979	3.83	5.74	181		
Comments: picture taken (#16) Hydrolab ran out of power Bottom water → had to recharge <del>17.13</del> <del>19207</del>						

LDW-PW-G-PE-06 EAD 10/13/05

Location ID: LDW-PW-B-PE-06		Latitude:	Longitude:	Time: 12:30		
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:				
Temp	SpC	DO	pH	ORP	Salinity	Turbidity
16.59	15401	3.08	5.99	155		
Comments: picture 17 taken Bottom water 17.74 23058 4.93 6.91 107						

Bottom water from location PE 01  
 Temp SpC DO pH ORP  
 17.97 19396 6.58 6.95 107

FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task/#: Porewater/04-08-06-26  
 Date: 8/1/05 Crew: SF BB ED  
 Weather: cloudy Filled out by: ED

10/13/05 ED

Location ID: <del>LDW-PW-G-PE-07</del> LDW-PW-B-PE-07		Latitude:		Longitude:		Time: 12:37	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
16.46	21292	3.04	6.33	50			
Comments:							

10/13/05 ED

Location ID: <del>LDW-PW-G-PE-08</del> LDW-PW-B-PE-08		Latitude:		Longitude:		Time: 12:55	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
17.43	18775	3.73	6.22	37			
Comments: Picture taken (# 18) Bottom water							
17.75	23910	5.39	6.92	47			

10/13/05 ED

Location ID: <del>LDW-PW-G-PE-203</del> LDW-PW-B-PE-203		Latitude:		Longitude:		Time: 1:00	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
17.61	14506	3.18	6.32	41			
Comments: Field rep of PE08							



## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task#: Porewater/04-08-06-26  
 Date: 8/1/05 Crew: ED SF BB  
 Weather: Cloudy Filled out by: ED

10/18/05 ED

Location ID: <u>LDW-PW-G-PE-204</u> <u>LDW-PW-B-PE-204</u>		Latitude:		Longitude:		Time: <u>1:03</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>16.69</u>	<u>20651</u>	<u>2.33</u>	<u>5.94</u>	<u>72</u>			
Comments:  <u>field rep of PE08</u>							

10/13/05 ED

Location ID: <u>LDW-PW-G-PE-09</u> <u>LDW-PW-B-PE-09</u>		Latitude:		Longitude:		Time: <u>14:30</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>17.85</u>	<u>31741</u>	<u>2.32</u>	<u>6.10</u>	<u>88</u>			
Comments:  <u>Bottom thro 16.86 32753 6.54 7.0 88</u>							

10/18/05 ED

Location ID: <u>LDW-PW-G-PE-11</u> <u>LDW-PW-B-PE-11</u>		Latitude:		Longitude:		Time: <u>14:35</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>18.62</u>	<u>24173</u>	<u>2.62</u>	<u>6.02</u>	<u>94</u>			
Comments:							



## FORM 2. POREWATER COLLECTION FORM

Project Name: LDW RI Project Task/#: Porewater/04-08-06-26  
 Date: 8/11/05 Crew: SF BB ED  
 Weather: cloudy Filled out by: ED

Location ID: <u>LDWPWBPE 13</u>		Latitude:		Longitude:		Time: <u>14:40</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>17.75</u>	<u>28243</u>	<u>2.52</u>	<u>5.74</u>	<u>111</u>			
Comments:							

Location ID: <u>LDW PW B PE 15</u>		Latitude:		Longitude:		Time: <u>14:45</u>	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
<u>17.19</u>	<u>34467</u>	<u>3.28</u>	<u>5.88</u>	<u>116</u>			
Comments:  <u>Bottom thd</u> <u>15.78 37198 5.90 6.69 109</u>							

Location ID:		Latitude:		Longitude:		Time:	
Sample collection method: <input type="checkbox"/> peeper <input type="checkbox"/> piezometer EPA MHE <input type="checkbox"/> other:		sampler depth:					
Temp	SpC	DO	pH	ORP	Salinity	Turbidity	
Comments:							

Shorter MH Piezometer placed  
at PZ-12

Cond = 42,000 → 43,800

DO = 3.0 → 1.6

PH = 7.2

Temp = 15.1

Surface water at bottom

Cond = 40,990

DO = 4.7 → 5.0

PH = 7.5

Temp = 13.0

2:40

PZ09 on station soft sed → 5 ft

3:07

Return to 1<sup>st</sup> Ave Ramp  
Done for day

BB

4/21/05 - Porewater sampling  
Boeing site

Crew: Joanna Florer, Kathleen Hurley

Eric Parker, Cindy

Mick Easterly, Bruce Duncan, ~~Mustafa~~

0715 - Arrive 1st Ave boat ramp

0745 - Leave 1st Ave boat ramp

w/ 2 boats + crew

0810 - Arrive Boeing + began setup  
for PZ-12

0850 Diver in water

0850 ~~B~~ Begin surface H<sub>2</sub>O sampling

0906 Porewater sampling

0907 Diver to surface

0936 Arrive PZ-09

0939 begin surface H<sub>2</sub>O sampling

0950 Diver down.

0957 bottom water sampling begins

1001 finish bottom H<sub>2</sub>O sampling

1005 begin PW sampling

1010 finish PW sampling

1052 on station PZ-08

begin SW sampling (surface H<sub>2</sub>O)

1055 Diver down

12:37 Sample PE 07 on boat

12:44 PE 07 completed

12:55 Sample PE 08 on boat

1:00 sample 203 on boat

1:05 sample 204 on boat

203 + 204 ore field reps

from site PE 08

1:15 Moved boat back to the Boeing site

stopped to get extra vials from the lab at PFCV at South side Marina.

Driver got lost so had to wait a bit for vials

1:55 Arrive at Boeing

2:01 Eric in the water

2:25 PE-09 on boat

2:29 PE-09 completed

2:30 PE-11 on boat

2:35 PE-13 on boat

2:39 PE-13 completed

2:40 PE-15 on boat

2:43 PE-15 completed

2:52 leave Boeing site for

1st Ave boat launch

3:05 stop at Great Western to retrieve line.

→ unsuccessful retrieval attempt  
water too deep

3:12 - leave Grw site for boat ramp.

3:15 - return to 1st Ave boat ramp

- end of day - ED

- 1101 Piez sampling begins  
 1108 ended piez sample, begin bottom water sample  
 1113 Finish sampling of Bottom H<sub>2</sub>O  
 KA

JUNE 22, 2005

- 0747 Left 1st St. Bridge boat launch  
 Porewater sampling - Boeing  
 Crew: Joanna Florer, Kathleen Hurley,  
 Mick Easterly, Bruce Duncan,  
 Eric Parker, Cindy  
 0805 Arrive on station PZ-11  
 0817 begin surface water sampling  
 0822 Diver down  
 0840 Finish PW + bottom water sampling  
 Diver up.  
 0855 Line wrapped around prop on way to PZ-10. Diver in water to release line.  
 0910 on station PZ-10  
 0915 SW sampling begins  
 0918 Diver down  
 0931 Finish all sampling at PZ-10  
 Diver up  
 1000 Met Angelita @ South Park Marina to pick up large piezometer

- 1015 At PZ-07 station  
 1044 finish all water sampling  
 leave station PZ-07  
 en route to GWI sites  
 1105 on station G-PZ-04  
 turbidity may be due to disturbance by prop in A  
 1118 Finish all sampling at G-PZ-04  
 1122 on station G-PZ-01  
 1138 Piezometers checked out of H<sub>2</sub>O before getting samples (PW)  
 so repeating PW  
 1200 Finished all water sampling  
 1205 Running ~~to~~ equipment blanks EPA + MHE Piezometers  
 1230 Back at boat ramp - done for day KA

JUNE 23, 2005

- GWI Porewater sampling  
 Crew: Joanna Florer, Kathleen Hurley,  
 Bruce Duncan, Mick Easterly, Howard O'Leary, Eric Parker, Cindy S  
 0818 left 1st Ave boat ramp  
 0836 on station G-PZ-05  
 0848 Diver down  
 0910 Sampled #25' off of site PZ-05



0910 decided to record coordinates for where station/samples were taken, Decision made after consulting with JF, BD, HD, + ME.

0934 ARRIVE station PZ-03  
Strong current

1057 On station PZ-02 - had to wait for Manson to move the barge that was sitting over PZ-02.

1103 begin SW sampling

1139 Finish sampling @ PZ-02  
we had problems maintaining flow through the HydroLab to fill the Porewater sample bottles. BD, HD, and JF concluded there was enough porewater in the tubing to fill our vials. KH + ME monitored H<sub>2</sub>O parameters to ensure we were using porewater to fill vials as we flushed bottom water through.

1241 finished sampling  
divers up - finished for the day

KH

7/19/05 Peeper Deployment

7:30 Leave 1st Ave bridge for Boeing Plant 2

crew: Joanna Floren, Eric Parker, Bruce Duncan, Bent Bergquist, Dennis Allen, Burton

7:40 arrive at Boeing Plant 2 Lucia

7:51 Set buoy @ PE-15

7:53 set buoy @ PE-13

7:56 " @ PE-11

8:05 " @ PE-09

8:20 set up @ PE-09 to deploy peeper

8:27 deploy peeper @ PE-09

8:44 deploy peeper @ PE-15

8:49 " @ PE-11

8:51 " @ PE-13

9:05 Start setting buoys @ PE 10, 12, 14 & 16

9:15 end setting buoys @ " 10-16

9:40 Head to GWT

9:47 Arrive GWT

10:22 Placed peeper at PE-01, slightly east of target, because rip rap present at target coordinates. Placed on foot-shoreline exposed.

10:36 PE-05 <sup>deployed</sup> Target coordinates apparently off, so peep placed visually according to QAPP description - at end of steep face S-13.

10:47 PE-06 deployed

Location exposed, so peeper deployed on foot.

10:54 PE-07 deployed. Target coordinates off from location, so placed visually according to QAPP description. Peeper placed ~ 5 ft NW of S-1

11:09 PE-08 deployed. Again, target coordinates off, so placed visually according to QAPP ~ 2 ft NW of seep S-1

11:15 Head back to Boeing Plant 2 to deploy at 4 offshore locations

11:31 Arrive at Boeing Plant 2 and divers geared up for diving.

11:53 Eric in water to set line to track peeper placement

12:15 Eric done placing line

12:21 Two replicates placed at PE-10

12:30 Peeper placed at PE-12

12:32 Third replicate placed at PE-10

(Eric thought only 2 should be placed at first, so he returned to place the 3rd)

12:35 Peeper placed at PE-14

12:41 Peeper placed at PE-16

12:45 Eric done and out of water

13:07 Head back to OWI

13:18 Arrive at OWI

13:24 <sup>start to</sup> set anchors at PE-02, 03 and 04

13:30 set anchor at PE-04, but target coordinates appeared off at PE-03, so anchor was placed visually about 15 ft to the N-NW of PE-04.

13:35 anchor dropped at PE-02, but Eric will check location underwater to make sure it is ~ 20 ft SW of PE-01

13:59 Eric in the water to set trail line

14:14 PE-04 peeper placed

14:15 PE-03 peeper placed

Knot on peeper fail underwater - Eric is re-tying.

14:19 Eric out of water for new tank

14:23 Eric back in water

14:31 At PE-01, 8 ft water depth

At PE-02, 10 ft water depth

14:32 Place peeper at PE-02

Eric set a test peeper into the sediment and placed into outer container to test withdrawing the sample w/syringe.

15:14 Return to 1st Ave boat launch done for day BB

8/1 Peepery/porewater sampling  
 crew: Eric Parker Dennis Lucia  
 Lindsay Lucia, Berit Beiggotst  
 Soanna Floyer Emily Duffield  
 km Takasaki

8:05 left 1st Ave boat ramp heading  
 to ~~Great Western~~ Boeing

8:25 arrived at Boeing site

8:50 - Eric went into water

9:00 - sample PE 16 back on boat

9:05 - sample completed.

9:07 - sample PE 14 back on boat

9:10 sample PE 16 completed

9:15 sample PE 12 on boat

9:18 " PE 12 completed

9:20 sample PE 10 on boat

field reps will be PE 201 +  
 PE 202 from the location  
 of PE 10

9:24 sample PE 10 completed

9:26 sample PE 201 on boat

9:30 sample completed

9:31 sample 202 on boat

9:35 sample 202 completed.

9:34 - took bottom water info

~~10:20 Eric in~~

9:40 - diver back in boat

9:50 - moved to Boeing site

10:20 - diver in water at Boeing

10:23 - sample PE 04 on boat

10:29 sample PE 04 finished.

10:30 sample PE 03 on boat

10:34 PE 03 finished.

10:44 sample PE 02 on boat

10:49 sample PE 02 completed.

10:50 sample PE 01 on boat

10:55 ERIC out of water to

change tanks

11:05 Picture taken at PE 05

of Eric in the water

# 16 photo

11:10 sample PE 05 back on boat.

11:15 Hydrolab ran out of battery

power, stopped to get inverter  
 from Eric's truck

12:25 ERIC back in water

12:30 Sample PE 06 back on boat

sample PE 06 completed