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Dow Corning Barry Site Flood Emergency Response Plan

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1. Scope:

The procedure applies to the Dow Corning Barry facility and would be activated in the event of a flood scenario being realised.

Key Roles

- The site Emergency Management Team (EMT) i.e. MOC, SHE & CI.
- Shift Manager (A1)
- Plant Engineers
- Site Operational Personnel (Particularly engineering group, material handlers & area 5 Operators)
- Fire Team Leader (E3)
- Barry Emergency Response Team (BERT)
- Resident contract company

2. Purpose

The purpose of the plan is to minimize the exposure and damage to the site from a flood scenario.

3. Introduction / The flood hazard

The Dow Corning site is situated within an area that has a 1:500 (0.2%) chance of flooding each year from the adjacent river Cadoxton. At points, the site is located approximately 2-3 metres from the Cadoxton River (ie along the North and East Sides of the site) and 100 metres from the Barry Docks. Sections of the site, therefore, lie within the floodplain of the river and docks and are potentially at risk from flooding.

In the event flooding, specific process plants and buildings on site will at least be partly affected, in particular W115, W407 and W422, which will be worst affected. Generally the old site areas would be worst affected in the event of a fluvial and tidal flooding event of more than 1 in 200years. This is because the new expansion (Genesis Area) was built approximately 1 metre above the rest of the site. Further details on the flood levels anticipated at each site building can be found in Appendix 2.

4. Flooding from the Cadoxton River

The river has a tidal flap which prevents the upstream flow of salt water back into the Cadoxton, which could lead to brackish water being taken out of the river and fed to the distillation columns. This event will result in the shutting down of the distillation columns. The tidal flaps are maintained, on behalf of Dow Corning, by Diving and Marine. The flap is checked weekly by a member of Dow Corning Area 5 team and if there are any debris blocking the flap, Ace services are invited to clean it out. It should

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be noted that this flap is not owned by Dow Corning even though we paid for the installation and maintain it.

Flooding from the river could occur in the event of extreme rain, spring tides and tidal flap failure causing the water to back up and spill over into Dow coming land. The pump house is not in use anymore.

5. Flooding from the Docks:

The Port of Barry is located on the north shore of the Severn Estuary, nine miles to the west of Cardiff on the north side of the Bristol Channel. The docks consist of three docks known as Dock No. 1, No. 2 and No. 3 (Basin). These docks are protected by the Lady Windsor lock. The lock is based on lock gates (mitre type), which consists of a hollow steel buoyancy chamber/ water ballasted structure operated by horizontal hydraulic cylinders. The function being to close off the inner and outer sections of the lock as required when there is a differential water level between the dock and the Bristol Channel. The water is transferred between the different sections of the lock by the use of culverts and sluice paddles controlled by vertical hydraulic cylinders, in order to achieve compatible water levels for the vessel to pass through. The internal dock water level is not constant, and varies with the tide height in the Channel and losses due to the locking of vessels. There are losses due to leakages, the mitre gates act similar to a "one-way" valve i.e. they will allow water into the dock from a high tide but will prevent the loss of water from the dock at low tide levels Even in the event of fluvial flood, the lack of internal feeders from rivers or streams into the dock area makes the water level unlikely to rise more than the highest level that the locks can cope with, which is about 7.80m coping level for all the docks above O.S. Datum, assuming that there are no other extraordinary circumstances. The highest predicted tide heights this year have been in March and September 2007i.e. 6.40m. above O.S.Datum.

7. Flood Preparation

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8. Flood Warning

The site would receive flood warnings through general media reports, the Environmental flood warning line or by site operational reports (Plant Operators and in particular Area 5 operators).

The Barry site is at risk of flooding if the level in the River Cadoxton exceeds approx 6-7 M AOD. It is expected that the river bank will be breached and plant and buildings would begin to flood at river levels of greater than 6-7 m AOD.

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The site flood response plan would be initiated when the river reached a level of 6 m AOD and a number of other events need to happen simultaneously e.g. high spring tides, tidal flap blockage and high rain fall.

Flood warning information can also be obtained from the EA web page on www.environment-agency.gov.uk/subjects/flood/floodwarning

9. Off site area at risk

The off site areas that would be affected and impact on Dow Corning are;

- Sully moors Power station
- Docks if the tidal flood level exceeds 7.8 MAOD.

10. On Site areas & buildings at risk

The main areas / buildings at risk are at the North East of the site / Plant North (finishing end of the plant)

Details of buildings and areas that will be affected in the event of a 100, 200, 500 & 1000 year flood event are given in Table 1 in Appendix 2 of this procedure.

11. Flood Response Equipment

When a flood scenario is realised the following equipment can be used to mitigate or minimize the damage from flood waters. Equipment can be sourced from site resources, hired / brought-in or purchased in preparation for dealing with a site flood risk.

Equipment	Supplier
Flood protection bags	The site currently has an inventory of 1,000 self inflating flood protection bags (Equal to sand bags) stored at W317 fire garage.
Diggers and dumper trucks	There are several diggers and dumper trucks held on the site, which are owned by resident contract companies, but can be employed by the company in the event of a site flood scenario.
Portable water pump	There are a number of portable pumps held by one of the resident contract company's and by the emergency response teams which could be utilised to clear water from low lying areas.

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12. Manning

On the activation of the flood plan the main response would come from the on site Emergency Response Teams, the site Emergency Management and BERT, with additional support coming from the operator and contractor groups if required.

13. Response Plan (Off Site)

14. Western Power Sully Moors Substation:

The sully moors substation where our power is supplied from, itself has all its switchgear stored and operated in individual cells which are separated from one another by a 3ft wall and each cell has a dedicated pumping line to pump out any flood waters accumulated in any of the cells in the event of a flood. There is no expectation that the water in any cell will rise above the separating wall and overflow into adjacent cells.

Note: Dow Corning would have little or no control over the substation response and in the event of us losing power the site would need to consider using CHP power supply and load sharing to ensure that the critical areas of the plant are kept running.

15. Response Plan (On site)

- Once a flood threat has been realized through one of the methods identified in **Section 6** of this procedure, the Duty Shift Manager (A1) will be responsible for initiating the flood response plan.
- Once a flood response has been initiated the site emergency response procedures would be activated and the Emergency Response Management and BERT teams will be mobilized.
- **The Emergency Management Team (This Team consists of personnel from both administrative and operational areas of the site)** who will be responsible for the development of an action plan that identifies the plants and areas at risk and any necessary response needed to mitigate or minimize the risks flood water. To assist with assessing what areas and what the impact of the flood will be the team can use the information given in Appendix 1 and 2 of this procedure. In addition they would use local eyewitness information from operational personnel.
- Additional area to consider during a flood scenario can be found in appendix 3 of this document.

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- The **BERT** along with any other site resource e.g. Engineers, Operators, Contractor personnel will be responsible for carrying out the action plan.
- The site EA flood defence team will be contacted on EA Telephone number **0845 9881188** often as necessary and dependant on the flood scenario the site is faced with.

Flood hazards

As indicated in the EA flood report the main area and building at risk from flood are at the North East end of the site (Site North) and the EMT should specifically consider installing flood protection at

Process Plants

1. W115
2. W274
3. W303 (Warehouse)
4. W306 / 307
5. W406
6. W410

Sub Stations and Switch Rooms

1. W201
2. W213
3. W323
4. W710
5. W907

- The Emergency Management Team should also consider storage areas and will include warehouses, plant portable container storage areas, tanker loading bays and storage tank farms.
- The Emergency Management Team should use the flood action checksheet to assist with decision making. The checksheet can be found in Appendix 1 of this procedure and in the main gatehouse EMT incident aid files.

Note; Protection may consist of anything from sand bags or large quantities sand and earth to prevent the ingress of water to the risk area, to the use of water pumps to pump out the effected areas.

The Emergency Management Team should also consider relocating portable storage container from areas that maybe or would be affected by flood waters.

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Additional information on electrical supplies and sub station
With regards to flood protection the situation varies depending on the substation:

- CHP switchgear is all on the first floor of their buildings and their generator sets would need a flood level of 1 to 2 metres above the ground level to cause them problems.
- W923 with generator & W943 are on the Genesis higher level plot.

All other sub stations are situated on the old site:

- W213 with generator are on the old site and ground level. Although we have a pumping facility to pump out from the cable basement this pumps into the sewer system which would probably be flooded. 11kV & 3.3kV switchgear connections are about 1 meter above the floor position but 415V switchgear connections are only just above floor level.
- W201 substation is built on a concrete base 1 meter above ground level.
- W323 substation is at ground level. 11kV equipment connections are about 1 meter off the floor but 415V switchgear is only just above floor level.
- W710 and W907 are basically the same as W323.
- In the event of flood water coming into contact with the switchgear we have, earth fault protection which will trip the individual supplies that have affected so that damage would be limited. However when the water level dropped we would have to ensure that affected switchgear would be dried and tested before we were able to re-energize.
- In this case we have Uninterrupted Power Supplies (UPS's) which provide control supplies for around 30 to 40 minutes to enable us to shut down under controlled conditions. We have two emergency generators, one in the Genesis area which maintains supplies to the W923, W910, W943 and W806 UPS supplies and W910 control room. Another generator supplies the main gate. We also have emergency lighting which will last between 1 and 4 hours.

Note: Where possible and depending on the impact on the process, the main power supplies would be powered down / turned off and any substation switch rooms or

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analyzer houses at risk from the ingress of flood water would be protected by sand bags.

16. Communication

All communications internal or external would be through the Emergency Management Team (Communications group)

17. Training

Details of this procedure will be added to the site emergency response procedures for which training is given annually. See also Appendix 3.

18. Review

This procedure will be reviewed annually by the site Emergency Response coordinator.

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Action Checksheet

Flood

Review Weather report, forecast

Contact relevant Emergency management groups
e.g. MOC, SHE & COMMS

Using predicted flood data and eyewitness
accounts confirm where the flood risk is

Contact EA flood line

Work with IC and FTL to identify the
most suitable mean of flood protection

Consider removing portable storage container from
Vulnerable areas to a safer areas.

Consider powering down or switching off none
essential electrical equipment / plant

Evacuate none essential personnel

Ensure internal and external communications

Ensure that regular flood
level checks are carried out

Once flood level start to reseed
develop a recovery action plan.

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As soon as possible after the flood the flood EMT and other personnel should begin recovery procedures.

Consider the following:

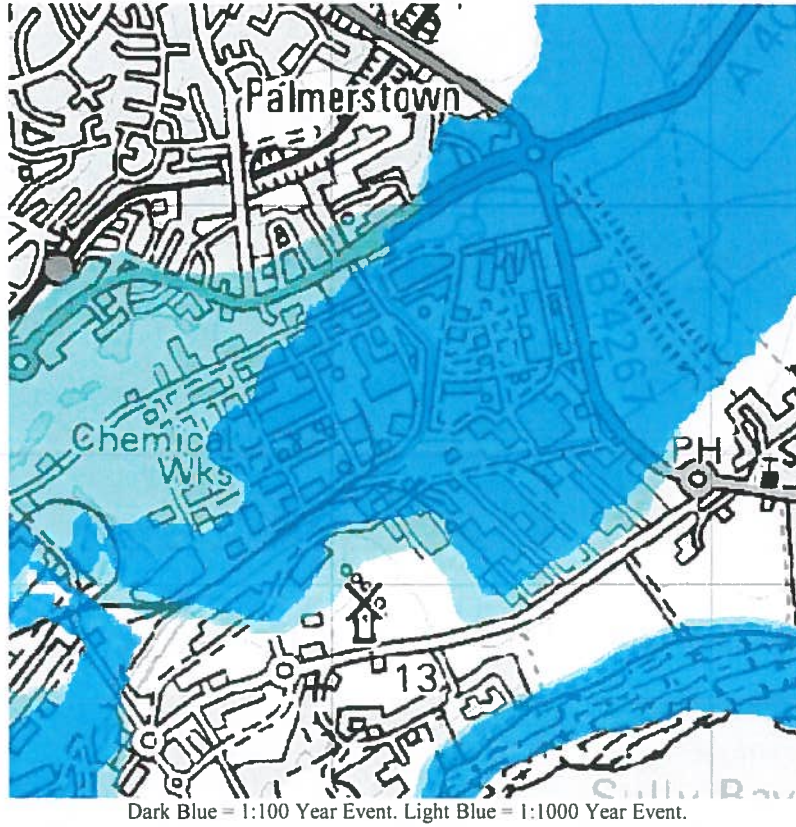
- Assess the actual impact, determine needs and initiate planned cleanup, repair and business resumption activities.
- Check flooded building for structural stability and safety before starting cleanup.
- Check for spilled flammable liquids, contaminants etc.... and eliminate them before other work begins.
- Clean and dry equipment, giving attention to most vital or susceptible pieces first.
- Where possible remove standing water.
- Check, clean and test all electrical distribution equipment and system components exposed to floor water or humidity.
- Dehumidify damp areas and dry wet insulation and building materials.
- Remove flood debris and segregate wet materials.
- Keep fire protection systems in service. This is vital since cleanup can result in the buildup of large piles of combustible.
- Return any impaired fire protection systems into service.
- Check on site and local bridges, culverts, drain inlets, etc to be sure they are cleared and free of debris.
- Carryout a de-brief of the incident and capture all positive responses and areas for improvement.

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Appendix 2 – Extent of Flood Events

Figure 1 – Environment Agency Flood Map of Area



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Figure 2 – FM Global Flood Study : 1:100 Year Event.



Dark Blue = 1:100 Year Event.

Figure 3 – FM Global Flood Study : 1:500 Year Event.



Dark Blue = 1:100 Year Event. Pink = 1:5000 Year Event

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Table 1
Anticipated flood depths in each Building

Bldg No.	AOD(N) Levels	Cadaxton River 100 Year Event Flood Depth	Cadaxton River 500 Year Event Flood Depth	Cadaxton River and Barry Dock 200 Year Event Flood Depth	Cadaxton River and Barry Dock 1000 Year Event Flood Depth
	(m)	(m)	(m)	(m)	(m)
W101	6.264	0.00	0.38	1.59	1.84
W1011	7.373	0.00	0.00	0.48	0.73
W102	6.314	0.00	0.33	1.54	1.79
W102	6.314	0.00	0.33	1.54	1.79
W103	6.301	0.00	0.34	1.55	1.80
W103	6.301	0.00	0.34	1.55	1.80
W104	6.182	0.00	0.46	1.67	1.92
W104	6.182	0.00	0.46	1.67	1.92
W105	6.026	0.13	0.62	1.82	2.07
W106	6.084	0.07	0.56	1.77	2.02
W108	6.540	0.00	0.10	1.31	1.56
W109	7.004	0.00	0.00	0.85	1.10
W109	7.004	0.00	0.00	0.85	1.10
W109	7.004	0.00	0.00	0.85	1.10
W110	7.118	0.00	0.00	0.73	0.98
W1101	7.331	0.00	0.00	0.52	0.77
W1103	7.167	0.00	0.00	0.68	0.93
W111	7.004	0.00	0.00	0.85	1.10
W112	6.305	0.00	0.34	1.55	1.80
W113	6.305	0.00	0.34	1.55	1.80
W114	6.305	0.00	0.34	1.55	1.80
W115	6.320	0.00	0.32	1.53	1.78
W115	6.320	0.00	0.32	1.53	1.78
W115	6.320	0.00	0.32	1.53	1.78
W115	6.320	0.00	0.32	1.53	1.78
W116	6.345	0.00	0.30	1.51	1.76
W117	6.305	0.00	0.34	1.55	1.80
W1205	7.575	0.00	0.00	0.28	0.53
W1205	7.575	0.00	0.00	0.28	0.53
W1206	7.575	0.00	0.00	0.28	0.53
W1206	7.575	0.00	0.00	0.28	0.53
W1206	7.575	0.00	0.00	0.28	0.53
W200	7.101	0.00	0.00	0.75	1.00
W201	6.101	0.06	0.54	1.75	2.00
W203	6.456	0.00	0.19	1.39	1.64
W203	6.456	0.00	0.19	1.39	1.64
W204	7.205	0.00	0.00	0.65	0.90
W204	7.205	0.00	0.00	0.65	0.90
W204	7.205	0.00	0.00	0.65	0.90

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Bldg No.	AOD(N) Levels	Cadaxton River 100 Year Event Flood Depth	Cadaxton River 500 Year Event Flood Depth	Cadaxton River and Barry Dock 200 Year Event Flood Depth	Cadaxton River and Barry Dock 1000 Year Event Flood Depth
W204	7.205	0.00	0.00	0.65	0.90
W208	6.576	0.00	0.07	1.27	1.52
W209	7.389	0.00	0.00	0.46	0.71
W210	7.389	0.00	0.00	0.46	0.71
W211	6.572	0.00	0.07	1.28	1.53
W212	6.572	0.00	0.07	1.28	1.53
W213	7.389	0.00	0.00	0.46	0.71
W214	7.389	0.00	0.00	0.46	0.71
W274	7.213	0.00	0.00	0.64	0.89
W274	7.213	0.00	0.00	0.64	0.89
W274	7.213	0.00	0.00	0.64	0.89
W303	6.641	0.00	0.00	1.21	1.46
W304	6.298	0.00	0.35	1.55	1.80
W304	6.298	0.00	0.35	1.55	1.80
W306	7.333	0.00	0.00	0.52	0.77
W306	7.333	0.00	0.00	0.52	0.77
W306	7.333	0.00	0.00	0.52	0.77
W306	7.333	0.00	0.00	0.52	0.77
W307	7.333	0.00	0.00	0.52	0.77
W307	7.333	0.00	0.00	0.52	0.77
W308	7.333	0.00	0.00	0.52	0.77
W309	7.381	0.00	0.00	0.47	0.72
W310	6.453	0.00	0.19	1.40	1.65
W312	6.641	0.00	0.00	1.21	1.46
W314	6.453	0.00	0.19	1.40	1.65
W315	6.453	0.00	0.19	1.40	1.65
W316	6.453	0.00	0.19	1.40	1.65
W317	6.453	0.00	0.19	1.40	1.65
W321	7.333	0.00	0.00	0.52	0.77
W322	7.333	0.00	0.00	0.52	0.77
W323	7.333	0.00	0.00	0.52	0.77
W329	7.333	0.00	0.00	0.52	0.77
W330	6.790	0.00	0.00	1.06	1.31
W331	6.790	0.00	0.00	1.06	1.31
W332	6.790	0.00	0.00	1.06	1.31
W333	7.393	0.00	0.00	0.46	0.71
W334	7.393	0.00	0.00	0.46	0.71
W335	7.253	0.00	0.00	0.60	0.85
W335	7.253	0.00	0.00	0.60	0.85
W336	7.393	0.00	0.00	0.46	0.71
W337	7.370	0.00	0.00	0.48	0.73
W338	6.790	0.00	0.00	1.06	1.31
W339	7.393	0.00	0.00	0.46	0.71
W340	7.393	0.00	0.00	0.46	0.71
W343	7.413	0.00	0.00	0.44	0.69
W344	7.370	0.00	0.00	0.48	0.73
W345	7.573	0.00	0.00	0.28	0.53

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Bldg No.	AOD(N) Levels	Cadaxton River 100 Year Event Flood Depth	Cadaxton River 500 Year Event Flood Depth	Cadaxton River and Barry Dock 200 Year Event Flood Depth	Cadaxton River and Barry Dock 1000 Year Event Flood Depth
W346	6.790	0.00	0.00	1.06	1.31
W347	7.381	0.00	0.00	0.47	0.72
W348	7.370	0.00	0.00	0.48	0.73
W349	7.370	0.00	0.00	0.48	0.73
W403	6.709	0.00	0.00	1.14	1.39
W403	6.709	0.00	0.00	1.14	1.39
W404	7.410	0.00	0.00	0.44	0.69
W404	7.410	0.00	0.00	0.44	0.69
W406	7.203	0.00	0.00	0.65	0.90
W406	7.203	0.00	0.00	0.65	0.90
W406	7.203	0.00	0.00	0.65	0.90
W407	6.550	0.00	0.09	1.30	1.55
W408	7.691	0.00	0.00	0.16	0.41
W408	7.691	0.00	0.00	0.16	0.41
W408	7.691	0.00	0.00	0.16	0.41
W409	6.550	0.00	0.09	1.30	1.55
W410	7.118	0.00	0.00	0.73	0.98
W410	7.118	0.00	0.00	0.73	0.98
W410	7.118	0.00	0.00	0.73	0.98
W411	7.608	0.00	0.00	0.24	0.49
W412	7.118	0.00	0.00	0.73	0.98
W413	6.550	0.00	0.09	1.30	1.55
W413	6.550	0.00	0.09	1.30	1.55
W414	6.550	0.00	0.09	1.30	1.55
W414	6.550	0.00	0.09	1.30	1.55
W416	6.970	0.00	0.00	0.88	1.13
W417	7.608	0.00	0.00	0.24	0.49
W419	7.608	0.00	0.00	0.24	0.49
W420	7.253	0.00	0.00	0.60	0.85
W420	7.253	0.00	0.00	0.60	0.85
W422	6.550	0.00	0.09	1.30	1.55
W422	6.550	0.00	0.09	1.30	1.55
W423	7.589	0.00	0.00	0.26	0.51
W424	6.911	0.00	0.00	0.94	1.19
W425	7.270	0.00	0.00	0.58	0.83
W426	6.444	0.00	0.20	1.41	1.66
W427	7.334	0.00	0.00	0.52	0.77
W428	6.444	0.00	0.20	1.41	1.66
W429	7.334	0.00	0.00	0.52	0.77
W430	7.042	0.00	0.00	0.81	1.06
W440	7.042	0.00	0.00	0.81	1.06
W501	7.355	0.00	0.00	0.50	0.75
W502	7.005	0.00	0.00	0.85	1.10
W503	7.005	0.00	0.00	0.85	1.10
W504	6.985	0.00	0.00	0.87	1.12
W601	7.393	0.00	0.00	0.46	0.71
W601	7.393	0.00	0.00	0.46	0.71

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W601	7.393	0.00	0.00	0.46	0.71
W601	7.393	0.00	0.00	0.46	0.71
W601	7.393	0.00	0.00	0.46	0.71
W602	7.264	0.00	0.00	0.59	0.84
W603	7.367	0.00	0.00	0.48	0.73
W604	7.346	0.00	0.00	0.50	0.75
W605	7.346	0.00	0.00	0.50	0.75
W701	7.173	0.00	0.00	0.68	0.93
W702	7.390	0.00	0.00	0.46	0.71
W703	17.390	0.00	0.00	0.00	0.00
W704	17.390	0.00	0.00	0.00	0.00
W705	7.401	0.00	0.00	0.45	0.70
W706	7.395	0.00	0.00	0.46	0.71
W707	7.387	0.00	0.00	0.46	0.71
W707	7.387	0.00	0.00	0.46	0.71
W707	7.387	0.00	0.00	0.46	0.71
W708	7.344	0.00	0.00	0.51	0.76
W709	7.424	0.00	0.00	0.43	0.68
W709	7.424	0.00	0.00	0.43	0.68
W709	7.424	0.00	0.00	0.43	0.68
W709	7.424	0.00	0.00	0.43	0.68
W710	7.387	0.00	0.00	0.46	0.71
W710	7.387	0.00	0.00	0.46	0.71
W711	7.321	0.00	0.00	0.53	0.78
W712	7.311	0.00	0.00	0.54	0.79
W713	7.374	0.00	0.00	0.48	0.73
W714	7.403	0.00	0.00	0.45	0.70
W714	7.403	0.00	0.00	0.45	0.70
W714	7.403	0.00	0.00	0.45	0.70
W714	7.403	0.00	0.00	0.45	0.70
W714	7.403	0.00	0.00	0.45	0.70
W715	7.391	0.00	0.00	0.46	0.71
W715	7.391	0.00	0.00	0.46	0.71
W716	7.367	0.00	0.00	0.48	0.73
W717	7.415	0.00	0.00	0.44	0.69
W717	7.415	0.00	0.00	0.44	0.69
W718	7.405	0.00	0.00	0.45	0.70
W718	7.405	0.00	0.00	0.45	0.70
W718	7.405	0.00	0.00	0.45	0.70
W718	7.405	0.00	0.00	0.45	0.70
W719	7.341	0.00	0.00	0.51	0.76
W720	7.735	0.00	0.00	0.12	0.37
W721	7.374	0.00	0.00	0.48	0.73
W722	7.248	0.00	0.00	0.60	0.85
W723	7.920	0.00	0.00	0.00	0.18
W724	7.920	0.00	0.00	0.00	0.18
W726	7.724	0.00	0.00	0.13	0.38

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Bldg No.	AOD(N) Levels	Cadaxton River 100 Year Event Flood Depth	Cadaxton River 500 Year Event Flood Depth	Cadaxton River and Barry Dock 200 Year Event Flood Depth	Cadaxton River and Barry Dock 1000 Year Event Flood Depth
W801	8.075	0.00	0.00	0.00	0.03
W802	7.249	0.00	0.00	0.60	0.85
W802	7.249	0.00	0.00	0.60	0.85
W802	7.249	0.00	0.00	0.60	0.85
W803	7.249	0.00	0.00	0.60	0.85
W804	7.354	0.00	0.00	0.50	0.75
W805	7.354	0.00	0.00	0.50	0.75
W806	7.558	0.00	0.00	0.29	0.54
W806	7.558	0.00	0.00	0.29	0.54
W806	7.558	0.00	0.00	0.29	0.54
W807	7.558	0.00	0.00	0.29	0.54
W808	7.354	0.00	0.00	0.50	0.75
W809	7.354	0.00	0.00	0.50	0.75
W810	7.354	0.00	0.00	0.50	0.75
W810	7.354	0.00	0.00	0.50	0.75
W811	7.249	0.00	0.00	0.60	0.85
W812	7.354	0.00	0.00	0.50	0.75
W813	8.075	0.00	0.00	0.00	0.03
W814	7.495	0.00	0.00	0.36	0.61
W815	7.495	0.00	0.00	0.36	0.61
W816	7.495	0.00	0.00	0.36	0.61
W820	7.495	0.00	0.00	0.36	0.61
W821	7.558	0.00	0.00	0.29	0.54
W822	7.558	0.00	0.00	0.29	0.54
W823	7.395	0.00	0.00	0.46	0.71
W900	8.755	0.00	0.00	0.00	0.00
W901	8.755	0.00	0.00	0.00	0.00
W902	8.755	0.00	0.00	0.00	0.00
W903	8.755	0.00	0.00	0.00	0.00
W907	8.755	0.00	0.00	0.00	0.00
W908	8.755	0.00	0.00	0.00	0.00
W909	8.755	0.00	0.00	0.00	0.00
W910	8.755	0.00	0.00	0.00	0.00
W911	8.755	0.00	0.00	0.00	0.00
W912	8.755	0.00	0.00	0.00	0.00
W913	8.755	0.00	0.00	0.00	0.00
W914	8.755	0.00	0.00	0.00	0.00
W915	8.755	0.00	0.00	0.00	0.00
W916	8.755	0.00	0.00	0.00	0.00
W917 A	8.755	0.00	0.00	0.00	0.00
W919	8.755	0.00	0.00	0.00	0.00
W920	8.755	0.00	0.00	0.00	0.00
W920	8.755	0.00	0.00	0.00	0.00
W921	8.755	0.00	0.00	0.00	0.00
W922	8.755	0.00	0.00	0.00	0.00
W923	8.755	0.00	0.00	0.00	0.00

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W926	8.755	0.00	0.00	0.00	0.00
W927	8.755	0.00	0.00	0.00	0.00
W928	8.755	0.00	0.00	0.00	0.00
W930	8.755	0.00	0.00	0.00	0.00
W931	8.755	0.00	0.00	0.00	0.00
W932	8.755	0.00	0.00	0.00	0.00
W933	8.755	0.00	0.00	0.00	0.00
W934	8.755	0.00	0.00	0.00	0.00
W939	8.755	0.00	0.00	0.00	0.00
W940	8.755	0.00	0.00	0.00	0.00
W941	8.755	0.00	0.00	0.00	0.00
W941	8.755	0.00	0.00	0.00	0.00
W942	8.755	0.00	0.00	0.00	0.00
W943	8.755	0.00	0.00	0.00	0.00
W944	8.755	0.00	0.00	0.00	0.00
W945	8.755	0.00	0.00	0.00	0.00
W946	8.755	0.00	0.00	0.00	0.00
W947	8.755	0.00	0.00	0.00	0.00
W948	8.755	0.00	0.00	0.00	0.00
W948	8.755	0.00	0.00	0.00	0.00
W949	8.755	0.00	0.00	0.00	0.00
W951	8.755	0.00	0.00	0.00	0.00
W952	8.755	0.00	0.00	0.00	0.00
W953	8.755	0.00	0.00	0.00	0.00
W954	8.755	0.00	0.00	0.00	0.00
W955	8.755	0.00	0.00	0.00	0.00
W957	8.755	0.00	0.00	0.00	0.00
W960 - W980	8.755	0.00	0.00	0.00	0.00
W999	8.755	0.00	0.00	0.00	0.00
Social Club	8.755	0.00	0.00	0.00	0.00
	8.755	0.00	0.00	0.00	0.00

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Appendix 3

General guidance and other areas to consider whilst dealing with a flood scenario

Procedures to accomplish the following, if applicable:

- * Raise and relocate highly valuable and easily moved equipment, contents and vital records.
- * Close emergency valves to the sewer drains.
- * Check sump pumps to ensure they are in operation or ready for operation.
- * Shut down flammable liquid and flammable gas systems.
- * Cover large stationary machines with water-displacing, rust-preventive compound.
- * Fill empty storage tanks to prevent them from floating.
- * Set up emergency communication equipment.
- * Monitor access to property and outside utilities during flooding.
- * Keep fire protection equipment operational for as long as possible.

A recovery plan for the rapid restoration of operations:

- * Prioritize cleanup actions.
- * Prioritize the rebuilding or replacement of vital pieces of equipment that are most critical.
- * Set up temporary or skeleton operation at remote locations.
- * Document procedures on how production will be made up at other facilities.
- * Establish agreements with vital sub-contractors to respond in the event of flooding.
- * Make arrangements with contractors who can help clean up and assist in post-flood repairs.

A plan to minimize the fire hazard during and after the flood:

- * Ensure the integrity of the electrical system and then restore the electrical services on an item-by-item basis.
- * Only perform hot work if necessary and in a safe manner using the FM Global Hot Work Permit System, and only after fire protection systems are restored and combustibles are removed from the hot work area.
- * Check all flammable liquid storage and flammable gas piping systems for leaks before returning to operation.
- * Check all tanks for leaks.
- * Remove combustible debris as it accumulates.

A plan to return fire protection systems into service promptly by taking the following actions:

- * Run or test fire pump, fire pump driver, and controller. Repair if flood damaged.

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- * Examine the fire pump water source (particularly for open bodies of water) to ensure debris will not enter the pump suction line and the sprinkler system.
- * Check the yard main fire protection system and water tanks for washouts.
- * Remove water and mud from fire protection valve pits.
- * Inspect sprinkler system piping for damage and repair as needed.
- * Test all sprinkler control valves to ensure they are in the full open position, operable, and undamaged.
- * Check all fire protection alarm systems and make necessary repairs.