

# NOTICE TO MARINERS

**Issue Date: 13<sup>th</sup> April, 2016**

## **Western Link Project**

### **Deep water cable installation in the Liverpool Bay**

Mariners are advised that the second deep water ploughing campaign of the Western Link HVDC cable is now planned to commence at the end of April 2016. This next phase of cable installation will take place in Liverpool Bay, from a point 37km from the Wirral, and northwest for around 120km. The location and timescale for this work was announced in March 2016. This notice provides an update on progress and confirmation of the activities that are due to be carried out during April-June 2016.

The laying operations work is being carried out by **Prysmian** using **Giulio Verne** (IMO 8302014; Call Sign IBPU) cable lay vessel and the burial works is being completed with a plough by **Deep Ocean 1 UK** using **Go Pegasus** (IMO 9495210, Call Sign V7CE4) support vessel following the cable laying vessel at a short distance.

**During such times the vessels will have restricted ability to manoeuvre and other vessels are requested to pass at a safe speed and distance.**

**The vessels will monitor VHF Channel 16 at all times.**



***Cable Laying vessel - Giulio Verne***



***Plough Support vessel - Go Pegasus***

## **Project Description**

The Western Link Project consists of installing two 600 kV DC submarine cables in the Irish Sea from Ardnail (Scotland) to Wirral (England) for a total route length of about 387 km (Figure 3). The cables will usually be laid as two separate cables approximately 30 metres apart. The installation sequence detailed in previous Notice to Mariners has changed and the second campaign of about 120km is being installed parallel to the first campaign from Liverpool Bay progressing North (highlighted in Red in Figure 3) with the following sequence of operations.

## **Pre- Lay Survey**

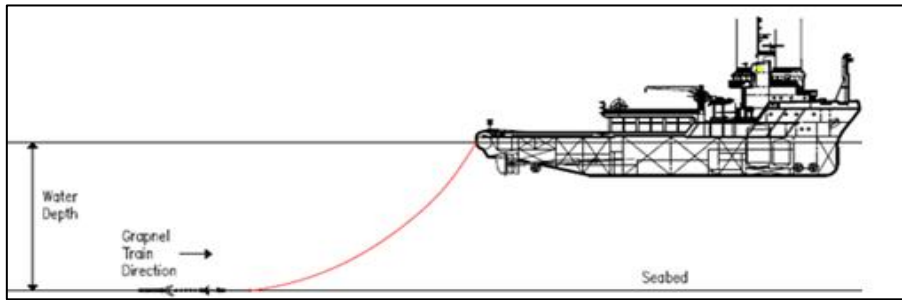
In advance of the lay and burial operations, the cable burial vessel Go Pegasus has performed a Pre-Lay survey along the installation route of the second campaign using an ROV. This survey was carried out in March.

## **PLGR (Pre Lay Grapnel Run)**

Go Pegasus also executed a PLGR operation, along the planned installation route in advance of the cable installation operations.

The PLGR used a series of grapnel hooks which were towed along the proposed route to clear any seabed debris or obstructions prior to the cable being laid. Figure 1 illustrates a typical PLGR arrangement.

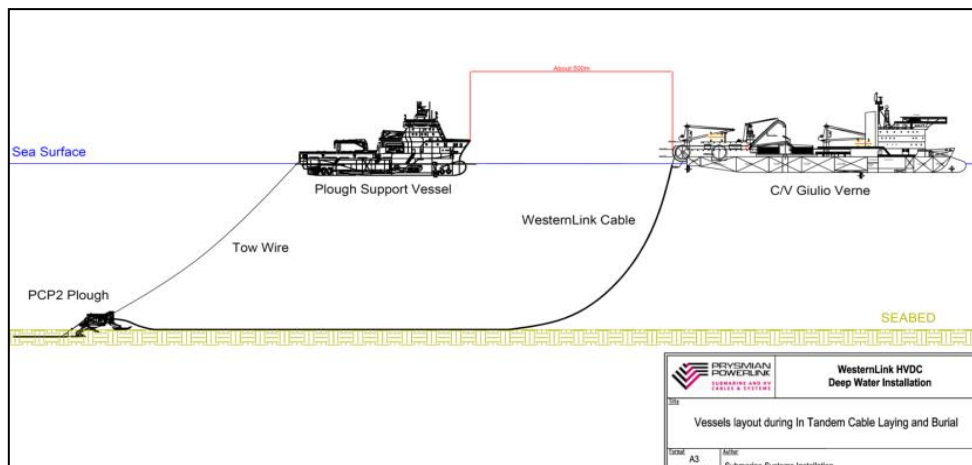
During the PLGR operation sonar markers were installed at crossings where required as homing for the burial spread while approaching the crossing locations.



**Figure 1 – Typical PLGR arrangement**

### Cable Laying & Burial

In this campaign the Western Link HVDC cable is being installed by using a laying and burial “in tandem” technique, in which the Cable Laying vessel *Giulio Verne* will surface lay the cable on the seabed, while a plough towed by its support vessel *Go Pegasus* will bury them at a short distance behind (approximately 500m), see Figure 2. Where cable burial is not possible (due to service crossings and / or where seabed conditions are unfavourable), guard vessels will be stationed to monitor the cable and provide advice to mariners.



**Figure 2 – Laying and Burial “In Tandem” arrangement**

### Service crossing

As part of this second campaign the Western Link HVDC cable will cross six existing services (3 pipelines (2 of which are bundled) all in close proximity so essentially one pipelines crossing and three telecommunications cables crossings).

Plough operations will be stopped at a distance agreed in the crossing agreements with the asset owners and in these locations the cable will be free laid over the crossing and protected using post protection methods (concrete mattresses or rock placement) at the end of the second campaign. While awaiting the post lay protection operation, Guard vessels will be in place to monitor the exposed cable.

ID (Position Name / Event)	WGS84 - UTM 30 N		WGS84		Water Depth referred to LAT (m)	Number of Mattresses to be installed	KP (km) from Ardneil (North)
	Easting	Northing	Latitude	Longitude			
Hibernia_C_Cable_IS	446311	5956122	53° 45.058'N	003° 48.853'W	37	N.A. (Urduct)	318,394
Sirius_South_Cable_IS	446411	5953369	53° 43.574'N	003° 48.733'W	38	N.A. (Urduct)	321,149
ESAT2_Cable_IS	446485	5951362	53° 42.492'N	003° 48.646'W	39	5	323,159
PL_1030_Pipeline_IS	461493	5930815	53° 31.491'N	003° 34.852'W	30	11	350,058
PL_1032/1033_Pipeline_IS	461506	5930814	53° 31.490'N	003° 34.840'W	30		350,071

**Table 1 – Campaign 1 & 2 Crossings**

**Vessels are requested to pass at a safe speed and distance and fishing vessels are advised to remain a safe distance (approximately 1.5 nautical miles) from the free laid sections and the crossing sections. Deployed Guard Vessels will monitor the exposed areas and advise of safe distances locally.**

### **Post Lay Survey**

At the completion of the campaign a Post-lay survey will be carried out along the cable route using the Go Pegasus vessel. The survey will consist of a visual and instrumental ROV survey of the installed Western Link cable.



**Figure 3** – Western Link cable route and highlighted second Deep Water installation section (in Red)

### **Deep Water North Channel Update & middle section**

The Go Pegasus has recently completed the pre-lay survey and PLGR works for the north deep water campaign within the North Channel ranging from KP 175 in Northern Irish waters to KP58 in Scottish waters. In addition to this the Go Pegasus has completed the Out-Of-Service (OOS) cable route clearance works in preparation for the campaigns further north.

The Go Pegasus is scheduled to complete the pre lay survey for the middle campaign of the route, campaign 5, before starting the campaign 2 ploughing operations. This is from KP 178.0 to KP 231.5.

**APPENDIX 1**

**Table 2 – Campaign 1 & 2 installation section route**

ID (Position Name / Event)	WGS84 - UTM 30 N		WGS84		Water Depth referred to LAT (m)	Geodetic				Turning Angle (deg)
	Easting	Northing	Latitude	Longitude		Partial Distance (km)	KP (km) from Ardneil	RKP (km) from Wirral	Bearing (deg)	
AC_323	367185	5975958	53° 54.900'N	005° 01.332'W	62	0,422	232,637	154,581	96,8	8,6
AC_324	367466	5975963	53° 54.906'N	005° 01.075'W	62	0,282	232,918	154,300	88,2	3,0
AC_325	367817	5975988	53° 54.925'N	005° 00.755'W	66	0,352	233,270	153,948	85,2	4,8
AC_326	368688	5975965	53° 54.926'N	004° 59.959'W	68	0,872	234,142	153,076	90,0	20,7
AC_327	369780	5975539	53° 54.713'N	004° 58.952'W	66	1,172	235,314	151,904	110,6	15,6
AC_328	370527	5975458	53° 54.680'N	004° 58.268'W	63	0,751	236,065	151,152	95,0	8,1
AC_329	370990	5975476	53° 54.697'N	004° 57.846'W	61	0,464	236,529	150,689	86,9	13,8
AC_330	371423	5975598	53° 54.770'N	004° 57.453'W	55	0,451	236,979	150,238	73,2	0,9
AC_331	371749	5975698	53° 54.829'N	004° 57.158'W	62	0,341	237,320	149,897	72,3	18,9
AC_332	372001	5975690	53° 54.828'N	004° 56.928'W	66	0,252	237,572	149,646	91,2	7,3
AC_333	372558	5975596	53° 54.785'N	004° 56.417'W	66	0,565	238,137	149,080	98,4	4,9
AC_334	373074	5975551	53° 54.769'N	004° 55.945'W	71	0,518	238,656	148,562	93,5	1,5
AC_335	374089	5975491	53° 54.751'N	004° 55.017'W	70	1,017	239,672	147,546	92,0	5,1
AC_336	374754	5975510	53° 54.771'N	004° 54.410'W	68	0,666	240,338	146,880	86,9	4,0
AC_337	375644	5975474	53° 54.765'N	004° 53.596'W	75	0,891	241,229	145,988	90,9	7,5
AC_338	376123	5975394	53° 54.729'N	004° 53.158'W	79	0,485	241,714	145,503	98,4	1,5
AC_339	376885	5975289	53° 54.682'N	004° 52.460'W	79	0,769	242,484	144,734	96,9	7,1
AC_340	377550	5975282	53° 54.688'N	004° 51.852'W	77	0,666	243,149	144,068	89,8	4,0
AC_341	377899	5975251	53° 54.676'N	004° 51.532'W	77	0,351	243,500	143,718	93,8	8,1

AC_342	378302	5975160	53° 54.633'N	004° 51.163'W	77	0,413	243,913	143,305	101,9	8,5
AC_343	378849	5975117	53° 54.617'N	004° 50.662'W	75	0,549	244,462	142,756	93,4	5,3
AC_344	379102	5975121	53° 54.623'N	004° 50.431'W	75	0,253	244,715	142,503	88,1	10,2
AC_345	380053	5974969	53° 54.555'N	004° 49.560'W	80	0,963	245,678	141,540	98,4	3,7
AC_346	380396	5974937	53° 54.542'N	004° 49.246'W	81	0,345	246,023	141,195	94,7	3,0
AC_347	380846	5974914	53° 54.536'N	004° 48.835'W	77	0,450	246,473	140,745	91,6	2,8
AC_348	381107	5974892	53° 54.528'N	004° 48.596'W	75	0,262	246,735	140,482	94,4	5,0
AC_349	381307	5974855	53° 54.511'N	004° 48.412'W	73	0,204	246,939	140,278	99,4	10,2
AC_350	381568	5974854	53° 54.513'N	004° 48.174'W	71	0,261	247,200	140,018	89,2	7,3
AC_351	382674	5974703	53° 54.447'N	004° 47.161'W	68	1,116	248,316	138,901	96,5	12,2
AC_352	383209	5974513	53° 54.352'N	004° 46.668'W	65	0,567	248,884	138,334	108,7	10,1
AC_353	384514	5973764	53° 53.966'N	004° 45.460'W	70	1,505	250,389	136,829	118,8	17,8
AC_354	384894	5973682	53° 53.927'N	004° 45.111'W	68	0,389	250,778	136,440	101,1	5,8
AC_355	386028	5973311	53° 53.742'N	004° 44.068'W	74	1,194	251,972	135,246	106,9	18,0
AC_356	386824	5973313	53° 53.753'N	004° 43.342'W	71	0,796	252,768	134,450	88,9	10,9
AC_357	387239	5973393	53° 53.802'N	004° 42.964'W	70	0,423	253,191	134,027	78,0	6,2
AC_358	387564	5973495	53° 53.861'N	004° 42.670'W	72	0,340	253,531	133,687	71,8	6,1
AC_359	388326	5973646	53° 53.952'N	004° 41.978'W	77	0,778	254,308	132,909	77,9	9,5
AC_360	389189	5973964	53° 54.135'N	004° 41.197'W	79	0,920	255,228	131,989	68,5	12,2
AC_361	389581	5974021	53° 54.171'N	004° 40.840'W	78	0,397	255,625	131,593	80,6	12,5
AC_362	390430	5973959	53° 54.148'N	004° 40.064'W	74	0,851	256,476	130,742	93,1	14,2
AC_363	391394	5974135	53° 54.255'N	004° 39.188'W	74	0,980	257,456	129,761	78,9	17,2
AC_364	391883	5974072	53° 54.228'N	004° 38.740'W	73	0,493	257,949	129,269	96,1	0,1
AC_365	392387	5974009	53° 54.200'N	004° 38.278'W	71	0,509	258,458	128,760	96,0	13,9
AC_366	392575	5973937	53° 54.163'N	004° 38.106'W	67	0,201	258,659	128,559	110,0	14,5
AC_367	392828	5973756	53° 54.069'N	004° 37.871'W	62	0,311	258,970	128,248	124,4	12,1
AC_368	393153	5973616	53° 53.997'N	004° 37.571'W	62	0,354	259,324	127,894	112,3	16,9
AC_369	393616	5973567	53° 53.977'N	004° 37.148'W	50	0,465	259,789	127,428	95,4	3,1
AC_370	393820	5973556	53° 53.973'N	004° 36.962'W	51	0,204	259,994	127,224	92,3	19,4
AC_371	394114	5973645	53° 54.025'N	004° 36.695'W	55	0,308	260,301	126,916	72,9	14,2

AC_372	394378	5973656	53° 54.034'N	004° 36.454'W	51	0,264	260,566	126,652	87,1	17,2
AC_373	395271	5973410	53° 53.912'N	004° 35.634'W	45	0,926	261,492	125,726	104,3	6,0
AC_374	395705	5973339	53° 53.879'N	004° 35.236'W	43	0,440	261,932	125,286	98,2	5,3
AC_375	396304	5973300	53° 53.865'N	004° 34.689'W	49	0,600	262,532	124,686	92,9	3,0
AC_376	396510	5973277	53° 53.856'N	004° 34.500'W	49	0,207	262,739	124,478	95,9	7,3
AC_377	396751	5973216	53° 53.825'N	004° 34.279'W	49	0,249	262,988	124,229	103,2	18,4
AC_378	397021	5973239	53° 53.841'N	004° 34.033'W	49	0,272	263,260	123,958	84,8	4,1
AC_379	397405	5973299	53° 53.878'N	004° 33.684'W	50	0,388	263,648	123,570	80,7	14,5
AC_380	398277	5973202	53° 53.836'N	004° 32.886'W	53	0,878	264,526	122,692	95,3	2,4
AC_381	398615	5973181	53° 53.828'N	004° 32.577'W	56	0,339	264,865	122,353	92,9	3,6
AC_382	398999	5973181	53° 53.833'N	004° 32.227'W	57	0,384	265,248	121,969	89,3	1,4
AC_383	399676	5973199	53° 53.851'N	004° 31.609'W	63	0,678	265,926	121,292	87,9	7,0
AC_384	400028	5973168	53° 53.838'N	004° 31.287'W	62	0,354	266,280	120,938	94,9	8,7
AC_385	400392	5973189	53° 53.853'N	004° 30.955'W	63	0,364	266,644	120,574	86,2	14,2
AC_386	400589	5973149	53° 53.834'N	004° 30.775'W	57	0,201	266,845	120,372	100,3	12,2
AC_387	401282	5972848	53° 53.680'N	004° 30.136'W	57	0,756	267,601	119,617	112,5	20,1
AC_388	401617	5972828	53° 53.673'N	004° 29.830'W	65	0,335	267,936	119,281	92,4	4,9
AC_389	402190	5972849	53° 53.691'N	004° 29.308'W	64	0,574	268,510	118,708	87,5	2,2
AC_390	402616	5972880	53° 53.713'N	004° 28.919'W	57	0,428	268,938	118,280	85,3	3,2
AC_391	403045	5972885	53° 53.720'N	004° 28.528'W	61	0,429	269,367	117,851	88,4	14,9
AC_392	403461	5972783	53° 53.670'N	004° 28.146'W	45	0,428	269,795	117,423	103,3	4,2
AC_393	403833	5972659	53° 53.607'N	004° 27.804'W	49	0,393	270,188	117,030	107,5	0,9
AC_394	404172	5972542	53° 53.547'N	004° 27.492'W	53	0,359	270,546	116,671	108,3	5,2
AC_395	404383	5972490	53° 53.522'N	004° 27.299'W	53	0,217	270,764	116,454	103,2	1,2
AC_396	404946	5972366	53° 53.461'N	004° 26.783'W	47	0,576	271,340	115,878	101,9	12,9
AC_397	405137	5972277	53° 53.415'N	004° 26.607'W	52	0,211	271,551	115,667	114,8	2,0
AC_398	405351	5972183	53° 53.367'N	004° 26.410'W	55	0,234	271,785	115,433	112,8	2,9
AC_399	405552	5972084	53° 53.316'N	004° 26.225'W	58	0,223	272,009	115,209	115,7	7,5
Isle of Man/International waters	405900	5971967	53° 53.257'N	004° 25.905'W	57	0,368	272,376	114,842	108,2	0,0
AC_400	406050	5971916	53° 53.231'N	004° 25.767'W	57	0,158	272,534	114,684	108,2	8,7



AC_401	406346	5971861	53° 53.204'N	004° 25.496'W	55	0,301	272,836	114,382	99,5	7,7
AC_402	406558	5971792	53° 53.169'N	004° 25.301'W	54	0,224	273,059	114,159	107,3	0,1
AC_403	406816	5971711	53° 53.129'N	004° 25.064'W	53	0,270	273,330	113,888	107,1	16,6
AC_404	407082	5971704	53° 53.128'N	004° 24.822'W	58	0,265	273,595	113,623	90,6	5,2
AC_405	407518	5971734	53° 53.148'N	004° 24.424'W	49	0,437	274,032	113,186	85,3	16,6
AC_406	407880	5971650	53° 53.107'N	004° 24.093'W	51	0,372	274,404	112,814	101,9	3,3
AC_407	408153	5971573	53° 53.068'N	004° 23.842'W	53	0,284	274,688	112,530	105,2	13,2
AC_408	408361	5971565	53° 53.066'N	004° 23.652'W	56	0,208	274,896	112,322	92,0	3,0
AC_409	408608	5971566	53° 53.069'N	004° 23.426'W	55	0,247	275,143	112,074	89,0	17,7
AC_410	408953	5971456	53° 53.014'N	004° 23.110'W	50	0,362	275,505	111,713	106,7	3,1
AC_411	409576	5971300	53° 52.936'N	004° 22.539'W	51	0,642	276,147	111,070	103,6	1,8
AC_412	409802	5971236	53° 52.904'N	004° 22.330'W	50	0,236	276,383	110,835	105,4	2,9
AC_413	410037	5971180	53° 52.876'N	004° 22.116'W	53	0,241	276,624	110,593	102,5	4,3
AC_414	410483	5971043	53° 52.807'N	004° 21.707'W	50	0,466	277,091	110,127	106,8	4,9
AC_415	410682	5970963	53° 52.766'N	004° 21.523'W	49	0,215	277,306	109,912	111,7	6,6
AC_416	411015	5970776	53° 52.669'N	004° 21.216'W	52	0,382	277,687	109,530	118,3	6,1
AC_417	411282	5970661	53° 52.609'N	004° 20.971'W	52	0,291	277,978	109,240	112,2	16,8
AC_418	411660	5970622	53° 52.592'N	004° 20.625'W	51	0,380	278,359	108,859	95,4	11,9
AC_419	412092	5970478	53° 52.519'N	004° 20.228'W	48	0,456	278,815	108,403	107,3	16,9
AC_420	412432	5970473	53° 52.519'N	004° 19.918'W	45	0,339	279,154	108,064	90,5	8,6
AC_421	412631	5970438	53° 52.503'N	004° 19.736'W	44	0,202	279,356	107,862	99,0	6,1
AC_422	413010	5970332	53° 52.450'N	004° 19.388'W	45	0,394	279,750	107,468	105,1	4,5
AC_423	413235	5970288	53° 52.428'N	004° 19.182'W	44	0,229	279,979	107,238	100,7	4,3
AC_424	413744	5970221	53° 52.397'N	004° 18.717'W	44	0,513	280,492	106,725	96,4	7,1
AC_425	414180	5970109	53° 52.341'N	004° 18.317'W	43	0,451	280,943	106,274	103,6	7,3
AC_426	414499	5970069	53° 52.323'N	004° 18.026'W	46	0,321	281,264	105,953	96,3	4,3
AC_427	414746	5970019	53° 52.298'N	004° 17.799'W	47	0,253	281,517	105,701	100,6	11,9
AC_428	414932	5969940	53° 52.257'N	004° 17.628'W	47	0,202	281,719	105,499	112,5	3,9
AC_429	415125	5969872	53° 52.223'N	004° 17.451'W	47	0,205	281,924	105,294	108,6	16,1
AC_430	415298	5969749	53° 52.158'N	004° 17.291'W	48	0,213	282,136	105,081	124,7	0,1

AC_431	415477	5969623	53° 52.092'N	004° 17.126'W	49	0,219	282,355	104,863	124,6	4,0
AC_432	415764	5969451	53° 52.002'N	004° 16.861'W	50	0,335	282,690	104,528	120,6	16,0
AC_433	416277	5969310	53° 51.931'N	004° 16.391'W	50	0,532	283,222	103,996	104,6	0,6
AC_434	416854	5969157	53° 51.854'N	004° 15.862'W	49	0,597	283,818	103,399	104,0	10,5
AC_435	417747	5969090	53° 51.826'N	004° 15.047'W	52	0,896	284,714	102,503	93,5	9,4
AC_436	419675	5968612	53° 51.586'N	004° 13.281'W	48	1,987	286,701	100,516	102,9	3,6
AC_437	420113	5968477	53° 51.518'N	004° 12.878'W	48	0,459	287,160	100,058	106,5	9,0
AC_438	420573	5968416	53° 51.489'N	004° 12.458'W	49	0,464	287,624	99,594	97,6	4,5
AC_439	420838	5968357	53° 51.460'N	004° 12.215'W	49	0,272	287,896	99,322	102,0	8,5
AC_440	421094	5968259	53° 51.409'N	004° 11.981'W	49	0,274	288,170	99,048	110,5	11,7
AC_441	421479	5968014	53° 51.281'N	004° 11.626'W	45	0,457	288,626	98,591	122,2	9,8
AC_442	421864	5967849	53° 51.195'N	004° 11.272'W	47	0,419	289,045	98,172	112,5	9,7
AC_443	422077	5967799	53° 51.170'N	004° 11.077'W	47	0,219	289,265	97,953	102,8	18,1
AC_444	422443	5967831	53° 51.191'N	004° 10.744'W	46	0,367	289,631	97,586	84,6	7,4
AC_445	422677	5967822	53° 51.188'N	004° 10.530'W	45	0,235	289,866	97,352	92,0	1,7
AC_446	422890	5967820	53° 51.189'N	004° 10.336'W	47	0,213	290,079	97,139	90,3	10,0
AC_447	423156	5967771	53° 51.165'N	004° 10.093'W	47	0,270	290,349	96,868	100,3	3,8
AC_448	423703	5967628	53° 51.093'N	004° 09.592'W	48	0,566	290,915	96,303	104,1	4,9
AC_449	424244	5967434	53° 50.993'N	004° 09.096'W	47	0,575	291,490	95,728	109,0	10,1
AC_450	424968	5967026	53° 50.779'N	004° 08.429'W	48	0,832	292,321	94,896	119,1	12,6
AC_451	425164	5966965	53° 50.748'N	004° 08.249'W	48	0,205	292,527	94,691	106,5	17,5
AC_452	425421	5966967	53° 50.751'N	004° 08.016'W	47	0,256	292,783	94,434	89,1	2,2
AC_453	425742	5966956	53° 50.748'N	004° 07.722'W	45	0,322	293,105	94,112	91,2	18,0
AC_454	426536	5966679	53° 50.605'N	004° 06.995'W	48	0,841	293,946	93,272	109,3	16,4
AC_455	426757	5966665	53° 50.600'N	004° 06.793'W	46	0,221	294,167	93,050	92,9	8,8
AC_456	427269	5966715	53° 50.631'N	004° 06.326'W	45	0,515	294,683	92,535	84,1	9,7
AC_457	427588	5966690	53° 50.620'N	004° 06.035'W	43	0,320	295,003	92,215	93,8	18,8
AC_458	427784	5966608	53° 50.577'N	004° 05.855'W	42	0,213	295,215	92,002	112,6	0,9
AC_459	428092	5966473	53° 50.507'N	004° 05.573'W	43	0,336	295,551	91,666	113,6	9,7
AC_460	428266	5966355	53° 50.445'N	004° 05.412'W	45	0,211	295,762	91,456	123,3	8,0

AC_461	428459	5966261	53° 50.396'N	004° 05.235'W	44	0,214	295,976	91,241	115,3	19,0
AC_462	428665	5966237	53° 50.385'N	004° 05.047'W	42	0,208	296,184	91,034	96,3	12,3
AC_463	428908	5966260	53° 50.399'N	004° 04.826'W	43	0,244	296,428	90,789	84,1	12,5
AC_464	429117	5966234	53° 50.387'N	004° 04.635'W	42	0,210	296,639	90,579	96,6	12,8
AC_465	429425	5966125	53° 50.331'N	004° 04.353'W	40	0,327	296,965	90,252	109,5	9,9
AC_466	429711	5966074	53° 50.305'N	004° 04.092'W	43	0,290	297,256	89,962	99,6	4,9
AC_467	429995	5966051	53° 50.295'N	004° 03.832'W	42	0,285	297,541	89,677	94,7	13,8
AC_468	430524	5965868	53° 50.201'N	004° 03.348'W	42	0,560	298,101	89,117	108,5	9,1
AC_469	430948	5965797	53° 50.166'N	004° 02.960'W	45	0,431	298,531	88,686	99,3	8,0
AC_470	431464	5965778	53° 50.160'N	004° 02.490'W	43	0,516	299,047	88,171	91,3	4,5
AC_471	431713	5965749	53° 50.146'N	004° 02.261'W	43	0,252	299,299	87,919	95,8	13,2
AC_472	432022	5965640	53° 50.090'N	004° 01.979'W	44	0,327	299,626	87,592	109,1	2,6
AC_473	432275	5965563	53° 50.050'N	004° 01.747'W	43	0,265	299,890	87,327	106,5	16,5
AC_474	432511	5965407	53° 49.968'N	004° 01.530'W	42	0,283	300,173	87,045	123,0	1,5
AC_475	432794	5965229	53° 49.875'N	004° 01.270'W	42	0,334	300,507	86,710	121,5	13,1
AC_476	433055	5965143	53° 49.830'N	004° 01.030'W	41	0,276	300,783	86,435	108,3	13,2
AC_477	433298	5965118	53° 49.819'N	004° 00.809'W	41	0,244	301,027	86,191	95,1	5,4
AC_478	433507	5965079	53° 49.799'N	004° 00.618'W	41	0,213	301,240	85,978	100,5	13,0
AC_479	434295	5964734	53° 49.619'N	003° 59.895'W	41	0,860	302,101	85,117	113,6	15,7
AC_480	435608	5964546	53° 49.527'N	003° 58.696'W	40	1,327	303,428	83,790	97,8	5,5
AC_481	436121	5964418	53° 49.462'N	003° 58.227'W	40	0,529	303,957	83,261	103,3	3,4
AC_482	436782	5964215	53° 49.358'N	003° 57.622'W	39	0,691	304,648	82,570	106,8	3,4
AC_483	437201	5964113	53° 49.305'N	003° 57.239'W	38	0,432	305,079	82,138	103,3	4,9
AC_484	437545	5963999	53° 49.247'N	003° 56.924'W	38	0,363	305,442	81,776	108,2	3,5
AC_485	438545	5963734	53° 49.111'N	003° 56.010'W	39	1,034	306,476	80,741	104,7	13,4
AC_486	439125	5963423	53° 48.947'N	003° 55.478'W	39	0,658	307,135	80,083	118,1	6,7
AC_487	439940	5962841	53° 48.639'N	003° 54.728'W	39	1,002	308,136	79,081	124,8	9,6
AC_488	441105	5962276	53° 48.343'N	003° 53.660'W	38	1,296	309,432	77,786	115,2	13,5
AC_489	441448	5962003	53° 48.198'N	003° 53.345'W	37	0,438	309,870	77,348	128,6	5,7
AC_490	441732	5961723	53° 48.048'N	003° 53.083'W	37	0,399	310,269	76,948	134,4	13,7

AC_491	442355	5961345	53° 47.849'N	003° 52.511'W	34	0,729	310,999	76,219	120,6	11,5
AC_492	442574	5961267	53° 47.809'N	003° 52.311'W	37	0,232	311,231	75,987	109,2	3,7
AC_493	442945	5961109	53° 47.725'N	003° 51.970'W	37	0,404	311,635	75,583	112,9	16,5
AC_494	443182	5960910	53° 47.620'N	003° 51.753'W	37	0,309	311,944	75,274	129,4	14,8
AC_495	443450	5960538	53° 47.421'N	003° 51.505'W	37	0,458	312,402	74,815	144,2	9,1
AC_496	444035	5959948	53° 47.107'N	003° 50.965'W	36	0,831	313,234	73,984	135,0	2,0
AC_497	444343	5959661	53° 46.954'N	003° 50.681'W	37	0,422	313,656	73,562	133,0	12,4
AC_498	444733	5959432	53° 46.833'N	003° 50.324'W	37	0,452	314,108	73,110	120,7	18,0
AC_499	445312	5959301	53° 46.766'N	003° 49.796'W	36	0,594	314,701	72,517	102,7	10,5
AC_500	445837	5959077	53° 46.648'N	003° 49.315'W	36	0,572	315,273	71,945	113,2	11,3
AC_501	446043	5958934	53° 46.573'N	003° 49.126'W	37	0,250	315,523	71,695	124,5	21,0
AC_502	446186	5958729	53° 46.463'N	003° 48.994'W	37	0,250	315,773	71,444	145,5	17,4
AC_503	446260	5958485	53° 46.332'N	003° 48.924'W	36	0,255	316,028	71,189	162,9	18,0
AC_504	446246	5957897	53° 46.015'N	003° 48.930'W	36	0,588	316,617	70,601	180,8	3,5
Hibernia_C_Cable_IS	446311	5956122	53° 45.058'N	003° 48.853'W	37	1,777	318,394	68,824	177,4	0,0
Sirius_South_Cable_IS	446411	5953369	53° 43.574'N	003° 48.733'W	38	2,756	321,149	66,068	177,4	0,0
ESAT2_Cable_IS	446485	5951362	53° 42.492'N	003° 48.646'W	39	2,009	323,159	64,059	177,4	0,0
AC_505	446513	5950592	53° 42.077'N	003° 48.612'W	36	0,770	323,929	63,289	177,4	1,3
AC_506	446533	5949777	53° 41.638'N	003° 48.585'W	37	0,816	324,745	62,473	178,6	4,9
AC_507	446631	5948851	53° 41.139'N	003° 48.486'W	35	0,932	325,677	61,541	173,7	9,2
AC_508	446796	5948235	53° 40.808'N	003° 48.331'W	38	0,638	326,315	60,903	164,5	16,9
AC_509	447182	5947613	53° 40.474'N	003° 47.974'W	39	0,732	327,047	60,171	147,6	1,4
AC_510	447596	5947001	53° 40.147'N	003° 47.592'W	39	0,739	327,786	59,432	146,2	15,9
AC_511	447784	5946412	53° 39.831'N	003° 47.415'W	41	0,618	328,404	58,814	162,2	1,0
AC_512	447952	5945904	53° 39.557'N	003° 47.257'W	40	0,536	328,940	58,278	161,1	12,4
AC_513	448329	5945292	53° 39.230'N	003° 46.909'W	39	0,719	329,659	57,559	148,7	17,2
AC_514	448734	5944934	53° 39.039'N	003° 46.537'W	39	0,541	330,199	57,018	131,6	9,0
AC_515	448894	5944737	53° 38.934'N	003° 46.390'W	38	0,254	330,454	56,764	140,6	4,6
AC_516	449091	5944535	53° 38.826'N	003° 46.209'W	37	0,282	330,736	56,482	136,0	12,6
AC_517	450254	5942641	53° 37.811'N	003° 45.136'W	35	2,223	332,959	54,258	148,5	0,3

AC_518	451296	5940932	53° 36.896'N	003° 44.174'W	35	2,002	334,962	52,256	148,2	16,5
AC_519	451668	5940603	53° 36.720'N	003° 43.834'W	37	0,497	335,459	51,759	131,6	17,6
AC_520	455950	5938697	53° 35.715'N	003° 39.935'W	36	4,688	340,147	47,071	114,0	17,1
AC_521	456274	5938412	53° 35.563'N	003° 39.638'W	36	0,432	340,579	46,639	131,2	17,0
AC_522	456817	5937525	53° 35.087'N	003° 39.139'W	37	1,040	341,619	45,598	148,2	17,2
AC_523	457331	5937071	53° 34.846'N	003° 38.669'W	37	0,686	342,305	44,913	131,0	19,4
AC_524	457832	5936186	53° 34.371'N	003° 38.209'W	34	1,017	343,322	43,896	150,4	8,1
AC_525	458075	5935563	53° 34.036'N	003° 37.983'W	31	0,670	343,992	43,226	158,4	12,6
AC_526	458367	5935137	53° 33.807'N	003° 37.715'W	30	0,516	344,508	42,709	145,8	3,1
AC_527	458866	5934323	53° 33.371'N	003° 37.257'W	30	0,955	345,463	41,755	148,9	1,0
AC_528	459734	5932848	53° 32.579'N	003° 36.459'W	29	1,712	347,175	40,042	149,9	11,5
International/Wales waters	459816	5932756	53° 32.530'N	003° 36.384'W	30	0,123	347,299	39,919	138,4	0,0
AC_529	460206	5932320	53° 32.297'N	003° 36.028'W	29	0,585	347,884	39,334	138,4	9,1
AC_530	460340	5932109	53° 32.183'N	003° 35.905'W	29	0,250	348,134	39,084	147,6	20,9
AC_531	460405	5931800	53° 32.017'N	003° 35.843'W	29	0,316	348,450	38,768	168,4	7,0
AC_532	460555	5931363	53° 31.782'N	003° 35.704'W	29	0,462	348,912	38,306	161,4	12,9
AC_533	460691	5931142	53° 31.663'N	003° 35.580'W	29	0,260	349,172	38,046	148,5	19,7
AC_534	460890	5930981	53° 31.578'N	003° 35.399'W	30	0,255	349,427	37,791	128,8	16,7
AC_535	461222	5930850	53° 31.508'N	003° 35.097'W	30	0,358	349,785	37,433	112,1	15,0
PL_1030_Pipeline_IS	461493	5930815	53° 31.491'N	003° 34.852'W	30	0,273	350,058	37,160	97,1	0,0
PL_1032/1033_Pipeline_IS	461506	5930814	53° 31.490'N	003° 34.840'W	30	0,013	350,071	37,147	97,1	0,0
AC_536	462055	5930744	53° 31.455'N	003° 34.342'W	29	0,554	350,625	36,593	97,1	18,0
AC_541	462386	5930806	53° 31.490'N	003° 34.043'W	29	0,336	350,962	36,256	79,0	1,2
AC_542A	462561	5930835	53° 31.506'N	003° 33.885'W	29	0,177	351,139	36,079	80,2	18,5
AC_542B	463028	5931091	53° 31.646'N	003° 33.464'W	29	0,533	351,672	35,546	61,7	11,3

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