

Project name: EM&A for Permanent Aviation Fuel Facility (PAFF)

Activity: Dolphin Impact Monitoring - Field Log Sheet

*Remark: Record the number of dolphin occurrence within the 500m exclusion (A) prior to dredging and (B) during dredging

** Sighting recorded when there is no dredging

Week	Date		Dredger 1		Observers' Names	
			No. of Dolphin Occurrence*	Sighting No.		
1	Mon	01-Sep	No Dredging	-	Richard Huang	
	Tue	02-Sep	15	1-7	Anton Tsang	
	Wed	03-Sep	2	8	Anton Tsang	
	Thu	04-Sep	2	9	Richard Huang	
	Fri	05-Sep	1	10	Anton Tsang	
	Sat	06-Sep	No Dredging			
	Sun	07-Sep	No Dredging			
2	Mon	08-Sep	No Dredging		Richard Huang	
	Tue	09-Sep	0	-	Anton Tsang	
	Wed	10-Sep	0	-	Anton Tsang	
	Thu	11-Sep	0	-	Richard Huang	
	Fri	12-Sep	0	-	Anton Tsang	
	Sat	13-Sep	No Dredging			
	Sun	14-Sep	No Dredging			
3	Mon	15-Sep	No Dredging			
	Tue	16-Sep	0	-	Richard Huang	
	Wed	17-Sep	0	-	Anton Tsang	
	Thu	18-Sep	0	-	Richard Huang	
	Fri	19-Sep	0	-	Anton Tsang	
	Sat	20-Sep	No Dredging			
	Sun	21-Sep	No Dredging			
4	Mon	22-Sep	No Dredging	-	Ivy So	
	Tue	23-Sep	No Dredging	-	Anton Tsang	
	Wed	24-Sep	Typhoon			No Monitoring
	Thu	25-Sep	0	-	Richard Huang	
	Fri	26-Sep	0	-	Ivy So	
	Sat	27-Sep	No Dredging			
	Sun	28-Sep	No Dredging			

5	Mon	29-Sep	0	-	Ivy So
	Tue	30-Sep	4	11	Ivy So
	Wed	01-Oct	0	-	Richard Huang
	Thu	02-Oct	0	-	Ivy So
	Fri	03-Oct	0	-	Ivy So
	Sat	04-Oct	0	-	Ivy So
	Sun	05-Oct	0	-	Richard Huang
6	Mon	06-Oct	0	-	Ivy So
	Tue	07-Oct	0	-	Richard Huang
	Wed	08-Oct	0	-	Ivy So
	Thu	09-Oct	4	12-13	Ivy So
	Fri	10-Oct	0	-	Ivy So
	Sat	11-Oct	3	14	Ivy So
	Sun	12-Oct	1	15	Richard Huang
7	Mon	13-Oct	3	16	Ivy So
	Tue	14-Oct	0	-	Ivy So
	Wed	15-Oct	No Dredging	-	Ivy So
	Thu	16-Oct	0	-	Chung
	Fri	17-Oct	0	-	Ivy So
	Sat	18-Oct	0	-	Ivy So
	Sun	19-Oct	2	17	Richard Huang
8	Mon	20-Oct	0	-	Ivy So
	Tue	21-Oct	0	-	Ivy So
	Wed	22-Oct	5	18-20	Ivy So
	Thu	23-Oct	0	-	Richard Huang
	Fri	24-Oct	0	-	Ivy So
	Sat	25-Oct	0	-	Ivy So
	Sun	26-Oct	0	-	Richard Huang

9	Mon	27-Oct	No Dredging	-	No Monitoring
	Tue	28-Oct	No Dredging	-	Ivy So
	Wed	29-Oct	No Dredging	-	No Monitoring
	Thu	30-Oct	No Dredging	-	No Monitoring
	Fri	31-Oct	No Dredging	-	Ivy So
	Sat	01-Nov	No Dredging	-	No Monitoring
	Sun	02-Nov	No Dredging	-	No Monitoring
10	Mon	03-Nov	No Dredging	-	No Monitoring
	Tue	04-Nov	No Dredging	-	No Monitoring
	Wed	05-Nov	No Dredging	-	Anton Tsang
	Thu	06-Nov	0	-	Richard Huang
	Fri	07-Nov	1	21-22	Anton Tsang
	Sat	08-Nov	No Dredging	-	Ivy So
	Sun	09-Nov	0	-	Richard Huang
11	Mon	10-Nov	1	23	Anton Tsang
	Tue	11-Nov	1	24	Anton Tsang
	Wed	12-Nov	0	-	Anton Tsang
	Thu	13-Nov	No Dredging	-	No Monitoring
	Fri	14-Nov	No Dredging	-	No Monitoring
	Sat	15-Nov	0	-	Ivy So
	Sun	16-Nov	1	25	Richard Huang
12	Mon	17-Nov	0	-	Anton Tsang
	Tue	18-Nov	0	-	Anton Tsang
	Wed	19-Nov	0	-	Anton Tsang
	Thu	20-Nov	0	-	Richard Huang
	Fri	21-Nov	11	26	Anton Tsang
	Sat	22-Nov	1	27	Ivy So
	Sun	23-Nov	0	-	Richard Huang

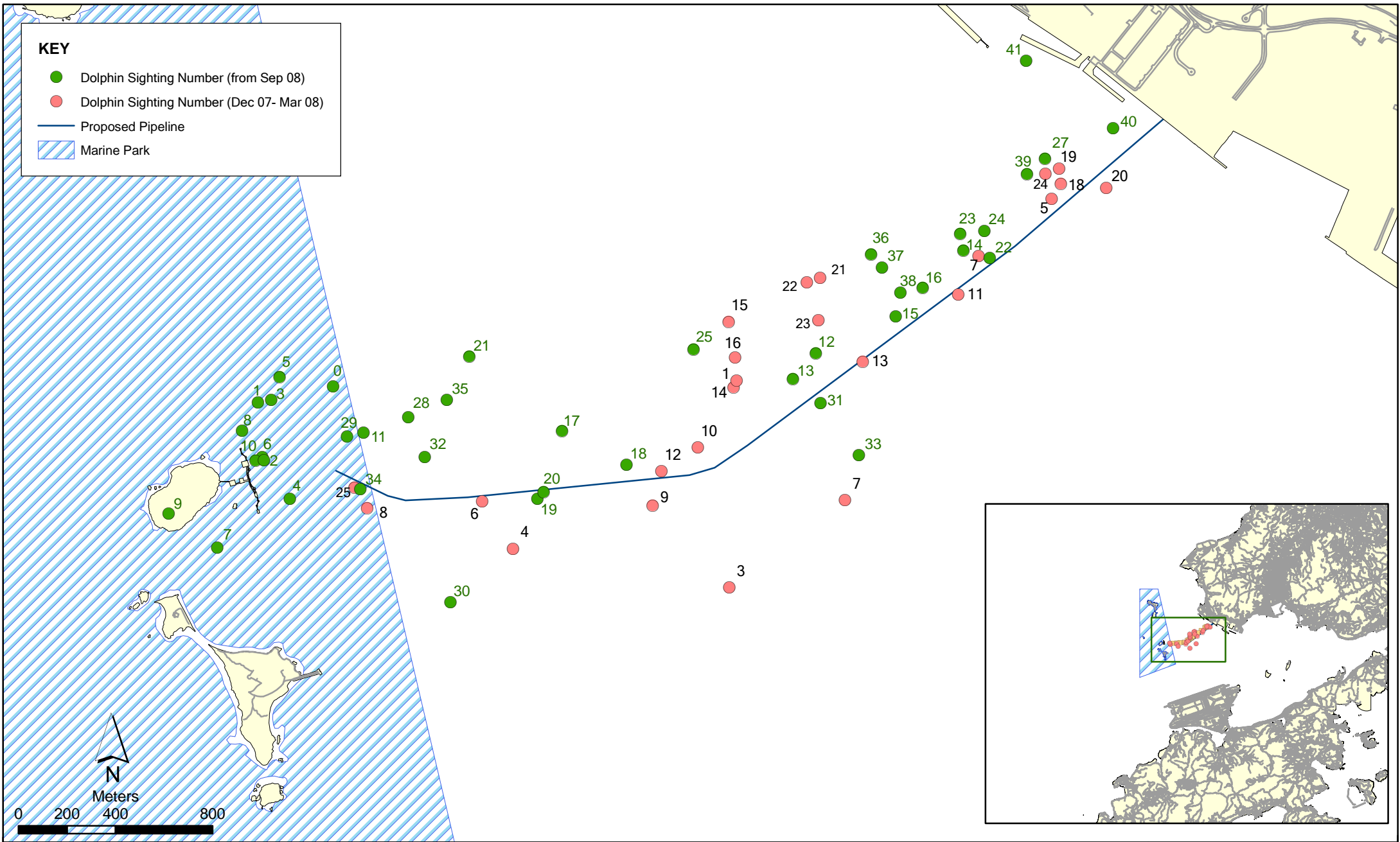
13	Mon	24-Nov	4	28-29	Anton Tsang
	Tue	25-Nov	0	-	Anton Tsang
	Wed	26-Nov	0	-	Anton Tsang
	Thu	27-Nov	0	-	Richard Huang
	Fri	28-Nov	0	-	Anton Tsang
	Sat	29-Nov	0	-	Ivy So
	Sun	30-Nov	0	-	Richard Huang
14	Mon	01-Dec	0	-	Anton Tsang
	Tue	02-Dec	No Dredging	-	No Monitoring
	Wed	03-Dec	No Dredging	-	No Monitoring
	Thu	04-Dec	3	30	Ivy So
	Fri	05-Dec	2	31	Ivy So
	Sat	06-Dec	0	-	Ivy So
	Sun	07-Dec	3	32	Ivy So
15	Mon	08-Dec	2	33	Anton Tsang
	Tue	09-Dec	0	-	Anton Tsang
	Wed	10-Dec	0	-	Richard Huang
	Thu	11-Dec	0	-	Ivy So
	Fri	12-Dec	1	34	Anton Tsang
	Sat	13-Dec	1	35	Ivy So
	Sun	14-Dec	0	-	Ivy So
16	Mon	15-Dec	2	36-37	Ivy So
	Tue	16-Dec	0	-	Anton Tsang
	Wed	17-Dec	1	38	Richard Huang
	Thu	18-Dec	0	-	Ivy So
	Fri	19-Dec	0	-	Anton Tsang
	Sat	20-Dec	0	-	Ivy So
	Sun	21-Dec	0	-	Richard Huang
17	Mon	22-Dec	0	-	Anton Tsang
	Tue	23-Dec	0	-	Anton Tsang
	Wed	24-Dec	0	-	Richard Huang
	Thu	25-Dec	0	-	Ivy So

	Fri	26-Dec	0	-	Ivy So
	Sat	27-Dec	0	-	Ivy So
	Sun	28-Dec	0	-	Richard Huang
18	Mon	29-Dec	0	-	Anton Tsang
	Tue	30-Dec	0	-	Anton Tsang
	Wed	31-Dec	0	-	Richard Huang
	Thu	01-Jan	1	39	Richard Huang
	Fri	02-Jan	0	-	Anton Tsang
	Sat	03-Jan	0	-	Richard Huang
	Sun	04-Jan	0	-	Richard Huang
19	Mon	05-Jan	0	-	Anton Tsang
	Tue	06-Jan	0	-	Anton Tsang
	Wed	07-Jan	0	-	Richard Huang
	Thu	08-Jan	0	-	Ivy So
	Fri	09-Jan	0	-	Ivy So
	Sat	10-Jan	0	-	Richard Huang
	Sun	11-Jan	0	-	Richard Huang
20	Mon	12-Jan	0	-	Ivy So
	Tue	13-Jan	0	-	Ivy So
	Wed	14-Jan	1	40	Richard Huang
	Thu	15-Jan	2	41	Anton Tsang
	Fri	16-Jan	0	-	Anton Tsang
	Sat	17-Jan	0	-	Richard Huang
	Sun	18-Jan	0	-	Richard Huang
21	Mon	19-Jan	0	-	Anton Tsang
	Tue	20-Jan	0	-	Richard Huang
	Wed	21-Jan	0	-	Richard Huang
	Thu	22-Jan	0	-	Anton Tsang
	Fri	23-Jan	0	-	Anton Tsang

* Dolphin monitoring was not conducted from 24 Jan to 31 Jan 09 since there was no dredging operation

KEY

- Dolphin Sighting Number (from Sep 08)
- Dolphin Sighting Number (Dec 07- Mar 08)
- Proposed Pipeline
- ▨ Marine Park



Dolphin Sighting Locations (as of 31 January 2009)

Permanent Aviation Fuel Facility (PAFF) - Dolphin Sighting Records

Sighting No.	Date	Time	Chainage	Dredger Coordinates (N-Lat)	Dredger Coordinates (E-Long)	Sighting Distance (m)	#Sighting Angle from Dredging Machine (o)	Group size	Group Composition*	Beaufort	Boat Association	Behaviour	Other comments
1	2/9/2008	1000	4315	823838.545	806678.150	275	320	4	2UA, 1 SA, 1 SJ	1	None	Feeding, Travelling	Before Dredging
			4321	823840.556	806672.460								
2	2/9/2008	1024	4315	823838.545	806678.150	80	5	2	2UA	1	None	Breaching, Spy-hopping	Before Dredging
			4321	823840.556	806672.460								
3	2/9/2008	1035	4315	823838.545	806678.150	300	330	2	1UA, 1SA	1	None	Travelling	Before Dredging
			4321	823840.556	806672.460								
4	2/9/2008	1045	4315	823838.545	806678.150	220	75	3	1UA, 1SA, 1UJ	1	None	Travelling	Before Dredging
			4321	823840.556	806672.460								
5	2/9/2008	1108	4315	823838.546	806678.151	400	330	1	1SA	1	None	Travelling	Before Dredging
			4321	823840.557	806672.461								
6	2/9/2008	1411	4315	823838.547	806678.152	50	0	1	1UA	2	None	Travelling	During Dredging
			4321	823840.558	806672.462								
7	2/9/2008	1530	4315	823838.548	806678.153	350	150	2	2UA	2	None	Travelling	During Dredging
			4321	823840.559	806672.463								
8	3/9/2008	1535	4306	823841.180	806687.338	155	300	2	2UA	1	None	Travelling	During Dredging
			4300	823842.903	806693.345								
9	4/9/2008	1336	4306	823841.181	806687.339	380	190	2	2UA	2	None	Travelling	During Dredging
			4300	823842.904	806693.346								
10	5/9/2008	1711	4315	823838.546	806678.151	80	15	1	1UA	2	None	Travelling	Dredging Stopped
			4321	823840.557	806672.461								
11	30/9/2008	1050	3925	823794.421	807000.841	250	350	4	4UA	2	None	Travelling	Before Dredging
			4015	823867.660	806948.534								
12	9/10/2008	1001	1900	824212.899	808853.818	200	10	3	3UA	2	None	Travelling	During Dredging
			1925	824198.037	808833.716								
13	9/10/2008	1427	1925	824198.037	808833.716	100	35	1	1UA	3	None	Travelling	Before Dredging
			1970	824171.284	808797.532								
14	11/10/2008	0839	1175	824643.917	809436.783	220	15	3	3 UA	2	None	Travelling	Before Dredging
			1160	824652.835	809448.845								
15	12/10/2008	0839	1125	824673.643	809476.988	240	160	1	1UA	2	None	Travelling	During Dredging
			1170	824646.890	809440.804								
16	13/10/2008	0818	1030	824730.121	809553.376	170	160	3	1SS, 1 SA, 1 UA	2	None	Breaching, Feeding	Before Dredging
			1025	824733.094	809557.397								
17	19/10/2008	11:04	2730	823785.196	808154.203	270	270	2	2UA	2	None	Travelling	Dredger was moving
			2680	823792.332	808203.670								
18	22/10/2008	1420	3180	823757.391	807705.065	550	30	3	3 UA	2	None	Travelling	During Dredging
			3220	823754.942	807665.140								
19	22/10/2008	1528	3180	823757.392	807705.066	180	55	2	2 UA	2	None	Travelling	During Dredging
			3220	823754.943	807665.141								
20	22/10/2008	1625	3180	823757.393	807705.067	200	45	3	3UA	2	Hang	Feeding	Dredging Stopped
			3220	823754.944	807665.142								
21	7/11/2008	1210	3690	82376.168	807196.022	700	345	5	3UA, 2SA	2	Hang	Travelling, Feeding	Dredging Stopped
			3760	823721.882	807126.153								
22	7/11/2008	1618	1040	824724.176	809545.335	200	45	1	1UA	1	None	Travelling	During Dredging
			1015	824739.039	809565.468								
23	10/11/2008	1249	930	824789.572	809633.785	20	275	1	1UA	3	None	Travelling	Dredging Stopped
			905	824804.435	809653.888								
24	11/11/2008	1605	840	824843.078	809706.153	30	97	1	1UA	3	None	Travelling	During Dredging
			820	824854.968	809722.235								
25	16/11/2008	0843	2080	824105.888	808709.082	290	270	1	1UA	2	None	Travelling	During Dredging
26a*	21/11/2008	1430	4074	823904.923	806909.628	50	70	5	2UA, 2SS, 1UJ	2	None	Travelling, Breaching, Porpoising, Feeding	During Dredging
			4059	823904.280	806922.380								
26b*	21/11/2008	1430	4074	823904.923	806909.628	300	335	6	2UA, 2SA, 1SJ, 1UC	2	None	Travelling, Breaching, Feeding	During Dredging
			4059	823904.280	806922.380								
* = Sighting no 26a & 26b the 2 groups very soon joined together to form one large group, thus a total of 11 dolphins													
27	22/11/2008	1558	545	825018.457	809946.360	100	325	1	1UA	3	None	Travelling	During Dredging
			490	825051.155	809987.585								
28	24/11/2008	1220	3770	823721.270	807116.172	400	345	1	1UA	4	None	Travelling	Dredging Stopped
			4030	823879.867	806939.816								
29	24/11/2008	1233	3770	823721.270	807116.172	250	305	3	2UA, 1SS	4	None	ong the side of dredging machine and the nearest	Dredging Stopped

Permanent Aviation Fuel Facility (PAFF) - Dolphin Sighting Records

Sighting No.	Date	Time	Chainage	Dredger Coordinates (N-Lat)	Dredger Coordinates (E-Long)	Sighting Distance (m)	#Sighting Angle from Dredging Machine (o)	Group size	Group Composition*	Beaufort	Boat Association	Behaviour	Other comments
			4030	823879.867	806939.816								
30	4/12/2008	1130	3530	823735.963	807355.722	480	110	3	3UA	3	None	Travelling	During Dredging
			3470	823739.636	807415.609								
31	5/12/2008	0851	1785	824281.268	808946.289	200	100	2	2UA	4	None	Travelling	Dredger was moving
			1770	824290.185	808958.350								
32	7/12/2008	1056	3600	823731.678	807285.853	200	350	3	2UA, 1SA	3	None	Travelling	Before Dredging
			3550	823734.739	807335.759								
33	8/12/2008	1619	1625	824376.389	809074.943	500	115	2	2UA	4	None	Travelling, Breaching	During Dredging
			1590	824397.197	809103.086								
34	12/12/2008	1204	3980	823839.178	806968.875	200	66	1	1UA	2	None	Travelling	Dredging Stopped
			3970	823831.041	806974.687								
35	13/12/2008	1440	3600	827373.678	807285.853	450	340	1	1UA	3	None	Travelling	Dredger was moving
			3605	823731.372	807280.863								
36	15/12/2008	0845	1265	824590.412	809364.415	170	270	1	1SA	2	None	Travelling	Dredger was moving
37	15/12/2008	0855	1265	824590.412	809364.415	100 - 300	from 330 to 270	2	1UA, 1SS	2	None	stayed at about 100m at 270 degree	Dredger was moving and before dredging
38	17/12/2008	1105	1155	824655.808	809452.865	120	170	3	1UA, 2SJ	2	None	Travelling	During Dredging
			1145	824661.753	809460.906								
39	1/1/2009	1045	95	825286.472	810304.839	470	190	1	1UA	2	None	Traveling	During Dredging
40	14/1/2009	0936	0	825343.390	810380.900	80	200	1	1UA	2	None	Milling	During Dredging
			5	825340.394	810376.897								
41	15/1/2009	1129	0	825343.390	810380.900	500#	300#	2	2UA	2	None	Breaching	Distance and sighting angle were recorded from the place where there was underwater operation going
			5	825340.394	810376.897								

*Key: # Compass bearing is used (North = 0 degree)
 UC = Unspotted Calf
 UJ = Unspotted Juvenile
 SJ = Spotted Juvenile
 SS = Spotted Sub-adult
 SA = Spotted Adult
 UA = Unspotted Adult