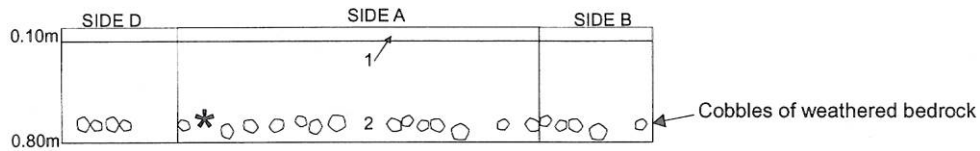
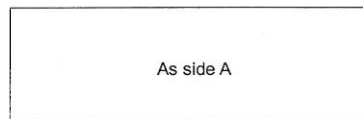


TRIAL PIT NUMBER: MSTP131
GROUND ELEVATION: -
DATE OF EXCAVATION: 2/6/98
WATER LEVEL: DRY
LOGGED BY: RC
APPROVED BY:

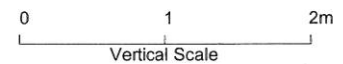
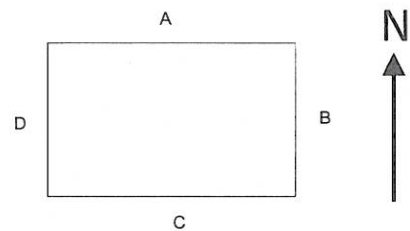
SIDE ELEVATIONS



SIDE C



PLAN



Key:

- * Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- ➔ Water Ingress

STRATA DESCRIPTIONS	COMMENTS	SAMPLES
- Loose brown silty sandy CLAY with rootlets (MADE GROUND) - Loose, light brown sandy GRAVEL with angular cobbles of weathered bedrock Trial pit terminated at 0.80 mbgl on refusal		<u>PID RESULTS</u> 0.5m - 5.8 ppm <u>SOIL SAMPLES</u> MSTP131-0.5m

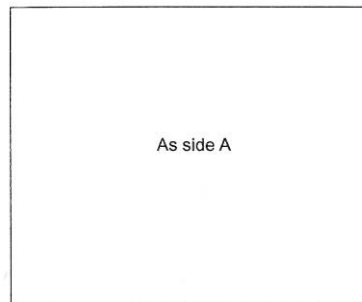
Job Title:	SOIL & GROUNDWATER INVESTIGATION	
Location:	LLANDARCY REFINERY	
Client:	BP LLANDARCY	
Job No:	39991-001-401	DRAFT
 DAMES & MOORE		

TRIAL PIT NUMBER: MSTP132
 GROUND ELEVATION: -
 DATE OF EXCAVATION: 03/6/98
 WATER LEVEL: DRY
 LOGGED BY: RC
 APPROVED BY:

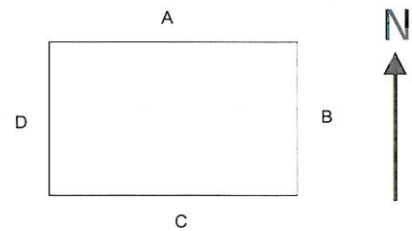
SIDE ELEVATIONS

	SIDE D	SIDE A	SIDE B
0.1m		1	
		2	

SIDE C



PLAN



0 1 2m
 Vertical Scale

Key:

- * Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- Water Ingress

STRATA DESCRIPTIONS	COMMENTS	SAMPLES
1. SURFACE - broken concrete, grassy clumps, loose brown earth and rootlets to 0.1mbgl 2. Underlain by CONCRETE and RE-BAR. Trial pit abandoned and alternative locations attempted 10m E, S, and W to no greater success. Concrete and re-bar likely a result of former land use as a cooling tower	a. Dry b. No visual or olfactory evidence of contamination	No PID readings. No samples taken

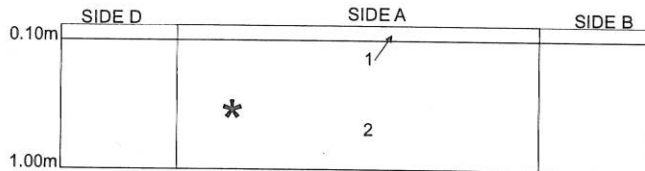
Job Title:	SOIL & GROUNDWATER INVESTIGATION	
Location:	LLANDARCY REFINERY	
Client:	BP LLANDARCY	
Job No:	39991-001-401	DRAFT



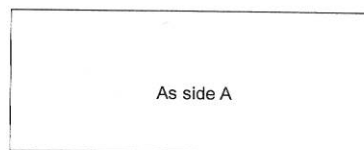
DAMES & MOORE

TRIAL PIT NUMBER: MSTP133
 GROUND ELEVATION: -
 DATE OF EXCAVATION: 3/6/98
 WATER LEVEL: DRY
 LOGGED BY: RC
 APPROVED BY:

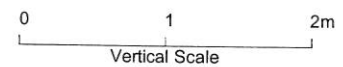
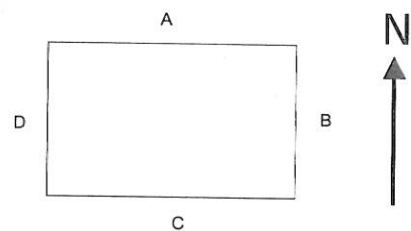
SIDE ELEVATIONS



SIDE C



PLAN



Key:

- * Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- ➔ Water Ingress

STRATA DESCRIPTIONS	COMMENTS	SAMPLES
1. Compacted GRAVEL (MADE GROUND) 2. Black GRAVEL (MADE GROUND) large blocks of weathered bedrock at 0.7m Trial pit terminated at 1.00 mbgl	a. Black staining b. Very slightly damp at 1.0m c. Trial pit terminated at 1m due to continual collapse of pit walls	<u>PID RESULTS</u> 0.5m - 0.7 ppm 1.0m - 0.3 ppm <u>SOIL SAMPLES</u>

Job Title: SOIL & GROUNDWATER INVESTIGATION

Location: LLANDARCY REFINERY

Client: BP LLANDARCY

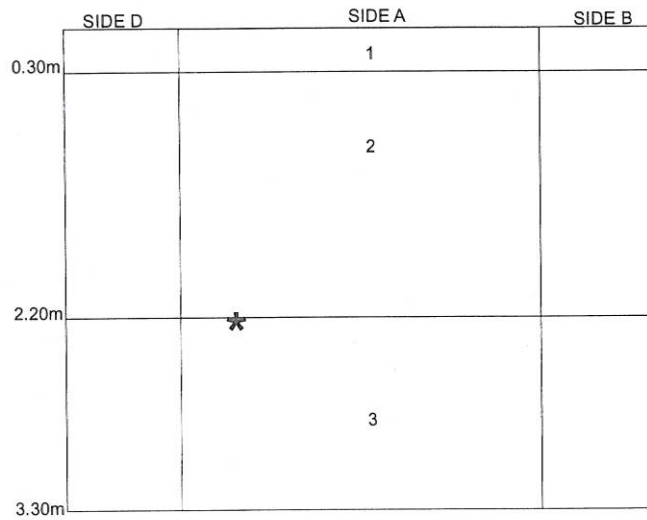
Job No: 39991-001-401

DRAFT

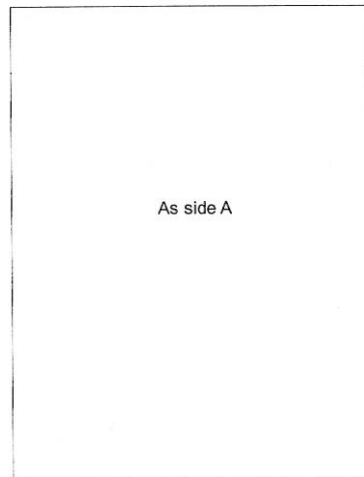


DAMES & MOORE

SIDE ELEVATIONS

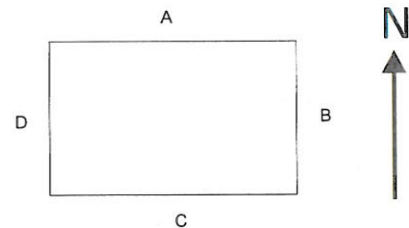


SIDE C



TRIAL PIT NUMBER: MSTP138
GROUND ELEVATION: -
DATE OF EXCAVATION: 3/6/98
WATER LEVEL: DRY
LOGGED BY: RC
APPROVED BY:

PLAN



0 1 2m
Vertical Scale

Key:

- * Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- ➔ Water Ingress

STRATA DESCRIPTIONS	COMMENTS	SAMPLES
1. Loose silty clayey SAND with rootlets and grass at surface (TOPSOIL) 2. Loose gravelly SAND with metal sign at 0.6m (MADE GROUND) 3. Soft very sandy SILT with some fine to medium sub-angular gravel becoming very sandy with clayey lenses from 3.2m Trial pit terminated at 3.30 mbgl	a. No odour or staining evident b. Side D beginning to collapse c. Trial pit terminated due to collapse of sides B and D at 3.3m	<u>PID RESULTS</u> 0.5m - 0.6 ppm 1.0m - 0.8 ppm 1.5m - 0 ppm 2.0m - 3.7 ppm 2.5m - 0.8 ppm 3.0m - 0.4 ppm 3.2m - 0.3 ppm <u>SOIL SAMPLES</u> MSTP138-2.0m

Job Title: **SOIL & GROUNDWATER INVESTIGATION**

Location: **LLANDARCY REFINERY**

Client: **BP LLANDARCY**

Job No: **39991-001-401**

DRAFT



DAMES & MOORE

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW031		PAGE 1 of 2	
	NUMBER	TYPE					DRILLING DATES: 08/12/2003		DRILLING METHODS : Beretta - Various	
							DRILLER : APEX - Rhymal		BOREHOLE DIAMETER : 100-115mm	
							LOGGED BY : SS		SCREEN TYPE & DIAM: 50mm HDPE	
							CHECKED BY : SG		SCREEN SLOT SIZE: 1mm	
							DESCRIPTION	COMMENTS	S,V	
				0.0	Medium dense, dark brown, slightly silty SAND with abundant weathered sandstone cobbles.	Slight hydrocarbon odour. No staining	1,0			
				0.5	Strong to very strong, moderately closely fractured, grey, fine to medium SANDSTONE with sub-horizontal, rough planar fractures with red-brown staining.	Rock coring from 0.5m				
				1.0						
				1.5						
				2.0						
				2.5						
				3.0						
				3.5						
				4.0						
				4.5						
				5.0						

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA	
			App'd: _____ Date: December 2003 Drawn: SS Ref: _____ Scale: As scale Job No: 39991-044-785 Drg. Size: A4 BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW031		PAGE 2 of 2										
	NUMBER	TYPE					DRILLING DATES: 08/12/2003		DRILLING METHODS: Beretta - Various										
							DRILLER: APEX - Rhymal		BOREHOLE DIAMETER: 100-115mm										
							LOGGED BY: SS		SCREEN TYPE & DIAM: 50mm HDPE										
							CHECKED BY: SG		SCREEN SLOT SIZE: 1mm										
									COMMENTS	S,V									
					5.5														
					6.0														
					6.5														
					7.0														
					7.5														
					8.0														
					8.5														
					9.0														
					9.5														
					10.0														
LOCATION / NOTES: NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)						LEGEND  Disturbed Sample  Undisturbed Sample  Headspace Analysis  Down Borehole Analysis  Groundwater Table  Perched Water Table		BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA  <table border="1"> <tr> <td>App'd:</td> <td>Date: December 2003</td> </tr> <tr> <td>Drawn: SS</td> <td>Ref:</td> </tr> <tr> <td>Scale: As scale</td> <td>Job No: 39991-044-785</td> </tr> <tr> <td>Drg. Size: A4</td> <td>BOREHOLE LOG</td> </tr> </table>				App'd:	Date: December 2003	Drawn: SS	Ref:	Scale: As scale	Job No: 39991-044-785	Drg. Size: A4	BOREHOLE LOG
App'd:	Date: December 2003																		
Drawn: SS	Ref:																		
Scale: As scale	Job No: 39991-044-785																		
Drg. Size: A4	BOREHOLE LOG																		

Wet from 8.0m

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW032		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 10/12/2003		DRILLING METHODS : Beretta - Various	
							DRILLER : APEX - Rhymal		BOREHOLE DIAMETER : 100-115mm	
							LOGGED BY : SS		SCREEN TYPE & DIAM: 50mm HDPE	
							CHECKED BY : SG		SCREEN SLOT SIZE: 1mm	
					0.0	Loose, dark brown, sandy silt with abundant reinforced concrete cobbles and boulders. (MADE GROUND)	Dry. NVO	0,0		
					0.5					
					1.0	Poor recovery due to air hammer. Reinforced concrete and rubble. (MADE GROUND)	Dry. NVO	0,0		
					1.5					
					2.0					
				2.5			Damp. NVO			
				3.0	Strong, closely fractured, grey, fine to medium grained SANDSTONE with frequent, sub-horizontal, rough undulating to planar fractures with red-brown staining.	Dry. NVO				
				3.5						
				4.0						
				4.5	Borehole Terminated at 4.5m					
				5.0						

LOCATION / NOTES:

NVO = No visual or olfactory evidence of contamination
S,V = Contamination Observations
S - Odour score (0-5)
V - Visual score (0-5)

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title: BP Llandarcy Whole Site Investigation
Location: BP Llandarcy Refinery
Client: BP/WDA

App'd:	Date: December 2003
Drawn : SS	Ref:
Scale: As scale	Job No: 39991-044-785
Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW033		PAGE 1 of 2	
	NUMBER	TYPE					DRILLING DATES: 09/12/2003		DRILLING METHODS : Beretta - Various	
							DRILLER : APEX - Rhymal		BOREHOLE DIAMETER : 100-115mm	
							LOGGED BY : SS		SCREEN TYPE & DIAM: 50mm HDPE	
							CHECKED BY : SG		SCREEN SLOT SIZE: 1mm	
							DESCRIPTION	COMMENTS	S,V	
			*1.9		0.0		Loose, dark brown, sandy SILT with abundant sandstone cobbles.	Dry-damp. NVO	0,0	
	SPT - 0.5m 7,10,9,12,11 (N=42)		*2.2		0.5					
					1.0		With increasing fine-coarse gravel.	Dry. NVO	0,0	
	SPT - 1.5m 2,4/5,3,4,4 (N=16)		*1.4		1.5		With increasing sand becoming: loose, dark brown, silty, fine to medium sand with occasional gravels and sandstone cobbles.		0,0	
			*2.4		2.0				0,0	
	SPT - 2.5m 3,3/6,8,5,6 (N=25)		*2.3		2.5				0,0	
			*2.1		3.0			Dry-damp. NVO	0,0	
	SPT - 3.5m 0,1/3,2,3,3 (N=11)		*2.5		3.5			Damp. NVO	0,0	
	WSMW033 - 4.0m (S,L)				4.0		Becoming medium dense, brown with yellow brown mottling, slightly gravelly, silty sand with cobbles.	Wet in gravelly patches, slight non-hydrocarbon odour	0,0	
	SPT - 4.5m 8,5/3,3,7,12 (N=25)				4.5			Damp-wet. NVO	0,0	
					5.0					
LOCATION / NOTES:						LEGEND		BOREHOLE LOG		
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)						Disturbed Sample		Job Title: BP Llandarcy Whole Site Investigation		
						Undisturbed Sample		Location: BP Llandarcy Refinery		
						Headspace Analysis		Client: BP/WDA		
						Down Borehole Analysis				
Groundwater Table										
Perched Water Table										
								App'd:	Date: December 2003	
								Drawn : SS	Ref:	
								Scale: As scale	Job No: 39991-044-785	
								Drg. Size: A4	BOREHOLE LOG	

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW033		PAGE 2 of 2				
	NUMBER	TYPE					DRILLING DATES: 09/12/2003		DRILLING METHODS : Beretta - Various				
							DRILLER : APEX - Rhymal		BOREHOLE DIAMETER : 100-115mm				
							LOGGED BY : SS		SCREEN TYPE & DIAM: 50mm HDPE				
							CHECKED BY : SG		SCREEN SLOT SIZE: 1mm				
									COMMENTS	S.V			
					5.5		Terminated at 8.0m due to refusal						
					6.0								
					6.5								
					7.0								
					7.5								
					8.0								
					8.5								
					9.0								
					9.5								
					10.0								
LOCATION / NOTES: NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)						LEGEND  Disturbed Sample  Undisturbed Sample  Headspace Analysis  Down Borehole Analysis  Groundwater Table  Perched Water Table		BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA 				App'd: Drawn : SS Scale: As scale Drg. Size: A4	Date: December 2003 Ref: Job No: 39991-044-785 BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW034		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 7/1/2004		DRILLING METHODS: Beretta -Various	
							DRILLER: APEX - Richard		BOREHOLE DIAMETER: 100-115mm	
							LOGGED BY: CM		SCREEN TYPE & DIAM: 50mm HDPE	
							CHECKED BY: SG		SCREEN SLOT SIZE: 1mm	
							DESCRIPTION	COMMENTS	S,V	
							0.0	Compact brown, fine sandy SILT	Dry	0,0
							0.5	Moderately weak grey SANDSTONE. Closely to medium spaced discontinuities, subhorizontal, planar, rough with black discolouration.	Dry	0,0
							1.0		Dry	0,0
							1.5		Dry-damp	0,0
							2.0		Damp	0,0
							2.5	Damp	0,0	
							3.0	Wet	0,0	
							3.5	Wet	0,0	
							4.0	Wet	0,0	
						4.5	Wet	0,0		
						Borehole terminate at 4.7m				
						5.0				

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA	
			App'd: _____ Date: February 2004 Drawn: CM Ref: _____ Scale: As scale Job No: 39991-044-785 Drg. Size: A4 BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW036		PAGE 1 of 2		
	NUMBER	TYPE					DRILLING DATES: 6/1/2004		DRILLING METHODS : RAF		
							DRILLER : APEX - Richard		BOREHOLE DIAMETER : 100-115mm		
							LOGGED BY : CM		SCREEN TYPE & DIAM: 50mm HDPE		
							CHECKED BY : SG		SCREEN SLOT SIZE: 1mm		
						DESCRIPTION	COMMENTS	S,V			
						0.0 Soft to firm, dark brown, gravelly silt with rare metal fragments. Gravel is angular to subrounded fine to coarse of sandstone. (MADE GROUND)	Dry	0,0			
						0.5 Soft to firm, orange brown slightly gravelly SILT. Gravel is subangular to rounded fine to coarse of sandstone.					
						1.0 Soft to firm, light brown fine sandy SILT.					
						1.5 Becoming brown in colour from 1.5m	Dry	0,0			
						2.0 Becoming dark brown with frequent cobbles and boulders from 2.0m.					
						2.5 With occasional fragments of purple mudstone from 2.5m.					
						3.0 Becoming black brown in colour from 3.0m	Dry	0,0			
						3.5 (Empty description box)					
						4.0 Well cemented light grey SANDSTONE.					
						4.5 (Empty description box)	Dry	0,0			
							Damp. Slight hydrocarbon odour.	1,0			
LOCATION / NOTES: NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)						LEGEND Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table			BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA App'd: _____ Date: February 2004 Drawn : CM Ref: _____ Scale: As scale Job No: 39991-044-785 Drg. Size: A4 BOREHOLE LOG		

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW036		PAGE 2 of 2	
	NUMBER	TYPE					DRILLING DATES: 6/1/2004		DRILLING METHODS : RAF	
							DRILLER : APEX - Richard		BOREHOLE DIAMETER : 100-115mm	
							LOGGED BY : CM		SCREEN TYPE & DIAM: 50mm HDPE	
CHECKED BY : SG		SCREEN SLOT SIZE: 1mm								
					5.5	Becoming brown grey in colour from 5.0m Becomig dark brown grey from 5.5m	COMMENTS Damp-wet.	S,V 2,0 1,0 1,0		
					6.0					
					6.5					
					7.0					
					7.5					
					8.0					
					8.5					
					9.0					
					9.5					
					10.0					
LOCATION / NOTES: NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)						LEGEND Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table		BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA URS App'd: _____ Date: February 2004 Drawn : CM Ref: _____ Scale: As scale Job No: 39991-044-785 Drg. Size: A4 BOREHOLE LOG		

Shallow Borehole Construction	Deep Borehole Construction	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW049		PAGE 1 of 2	
		NUMBER	TYPE					DRILLING DATES: 08/12/2003		DRILLING METHODS: Beretta - Various	
								DRILLER: APEX - Rhymal		BOREHOLE DIAMETER: 100-115mm	
								LOGGED BY: SS		SCREEN TYPE & DIAM: 50mm HDPE	
								CHECKED BY: SG		SCREEN SLOT SIZE: 1mm	
								DESCRIPTION	COMMENTS	S,V	
						0.0		Air flushed to 2.7m (base of Trial Pit). See trial pit log for details.			
						0.5			Damp		
						1.0					
						1.5					
						2.0			Damp		
						2.5					
						3.0		Poor returns as window sampler not used: Weathered sandstone bedrock with silt and sand matrix.			
						3.5					
						4.0			Damp		
						4.5		Grey, fine-medium SANDSTONE.	Dry		
						5.0					
									Wet from 5.0m		

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BPWDA 	
		App'd:	Date: December 2003
		Drawn: SS	Ref:
		Scale: As scale	Job No: 39991-044-785
		Drg. Size: A4	BOREHOLE LOG

Shallow Borehole Construction	Deep Borehole Construction	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW049		PAGE 2 of 2													
		NUMBER	TYPE					DRILLING DATES: 08/12/2003		DRILLING METHODS: Beretta - Various													
								DRILLER: APEX - Rhymal		BOREHOLE DIAMETER: 100-115mm													
								LOGGED BY: SS		SCREEN TYPE & DIAM: 50mm HDPE													
								CHECKED BY: SG		SCREEN SLOT SIZE: 1mm													
										COMMENTS	S,V												
						5.5																	
						6.0																	
						6.5																	
						7.0																	
						7.5																	
						8.0																	
						8.5																	
						9.0																	
						9.5																	
						10.0																	
LOCATION / NOTES: NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)								LEGEND Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table				BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA URS <table border="1"> <tr> <td>App'd:</td> <td>Date: December 2003</td> </tr> <tr> <td>Drawn: SS</td> <td>Ref:</td> </tr> <tr> <td>Scale: As scale</td> <td>Job No: 39991-044-785</td> </tr> <tr> <td>Drg. Size: A4</td> <td>BOREHOLE LOG</td> </tr> </table>				App'd:	Date: December 2003	Drawn: SS	Ref:	Scale: As scale	Job No: 39991-044-785	Drg. Size: A4	BOREHOLE LOG
App'd:	Date: December 2003																						
Drawn: SS	Ref:																						
Scale: As scale	Job No: 39991-044-785																						
Drg. Size: A4	BOREHOLE LOG																						

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSMW050		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 08/12/2003-09/12/2003		DRILLING METHODS: Beretta - Various	
							DRILLER: APEX - Rhymal		BOREHOLE DIAMETER: 100-115mm	
							LOGGED BY: SS		SCREEN TYPE & DIAM: 50mm HDPE	
							CHECKED BY: SG		SCREEN SLOT SIZE: 1mm	
					0.0	Loose, golden brown to brown, slightly silty sand with abundant rootlets in top 0.1m. (MADE GROUND)	Dry-damp. NVO	0,0		
					0.5					
					1.0	Concrete and concrete rubble. (MADE GROUND) Poor returns as window sampling could not be used.	Dry. NVO	0,0		
					2.0		Dry. NVO	0,0		
					3.0	Strong, closely fractured, grey, fine to medium SANDSTONE with frequent, sub-horizontal, planar fractures with red-brown staining and rare sub-vertical fractures.	Dry. NVO			
				3.5		Dry. NVO				
				4.0						
				4.5		Borehole terminated at 4.5m.	Slight black staining and very faint hydrocarbon odour in fractures.	1,1		
				5.0						

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA 	
		App'd:	Date: December 2003
		Drawn: SS	Ref:
		Scale: As scale	Job No: 39991-044-785
		Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW149		PAGE 1 of 1	
	NUMBER	TYPE					START DATE: 16/3/99	DRILLING METHOD: ROTARY AIR FLUSH		
							FINISH DATE: 16/3/99		BOREHOLE DIAMETER: 165/150 mm	
							DRILLER: R2		SCREEN TYPE & DIAMETER: 50 mm ID UPVC	
							LOGGED BY: DB APPR'D BY:		SCREEN SLOT SIZE: 0.5 mm	
							DESCRIPTION		COMMENTS	
					0		Dark grey silty sandy GRAVEL with some tar (MADE GROUND)		Strong hydrocarbon odour	0
					1.0		ROCKHEAD - Hard dark grey crystalline SANDSTONE (BEDROCK)		Strong hydrocarbon odour	1.0
					2.0		Hard light grey crystalline SANDSTONE (BEDROCK)		Slight to moderate hydrocarbon odour	2.0
			0.0		3.0					3.0
					4.0					4.0
					5.0		Unconsolidated dark grey silty SANDSTONE (BEDROCK)		Oily sheen on water	5.0
					6.0		Hard grey crystalline SANDSTONE (BEDROCK)		Strong hydrocarbon odour	6.0
			15.0		7.0					7.0
					8.0					8.0
					9.0					9.0
					10					10

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
1. All measurements in m below ground level (mbgl)	Disturbed Sample	Job Title	SOIL & GROUNDWATER INVESTIGATION
2. ODEX to 2.4m, Rotary to 9m	Undisturbed Sample	Location	LLANDARCY REFINERY
3. Free product in hole during installation	* Headspace Analysis	Client	BP LLANDARCY LTD
	† Down Borehole Analysis	App'd	DRAFT
	Groundwater Table	Ref.	CR/MC/BRS
	Perched Water Table	Date	MAY 99
		Job No.	39991-004-401
		DAMES & MOORE	

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW186		PAGE 1 of 3	
	NUMBER	TYPE					START DATE: 15/3/99	DRILLING METHOD: ROTARY AIR FLUSH	FINISH DATE: 15/3/99	BOREHOLE DIAMETER: 150/115 mm
							DESCRIPTION	COMMENTS		
			*0.0		0		Loose dark brown very gravelly SILT with some clay (MADE GROUND)	No odour		
					1.0					
					2.0					
					3.0		becoming siltier at 3m	No odour		
					4.0					
			*0.0		5.0		Loose grey GRAVEL with rounded cobbles and some boulders (MADE GROUND)	No odour		
					6.0					
					7.0		ROCKHEAD: Hard light grey crystalline SANDSTONE (BEDROCK)	No odour		
					8.0					
					9.0					
			*0.0		10			Drilling stopped for 15 mins at 10m, but no water ingress - drilling resumed.		

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
1. All measurements in m below ground level (mbgl)	☒ Disturbed Sample ☐ Undisturbed Sample * Headspace Analysis † Down Borehole Analysis ▽ Groundwater Table ▽ Perched Water Table	Job Title	SOIL & GROUNDWATER INVESTIGATION
		Location	LLANDARCY REFINERY
		Client	BP LLANDARCY LTD
		App'd	DRAFT
		Ref.	CR/MC/BRS
		Date	MAY 99
		Job No.	39991-004-401
		 DAMES & MOORE	

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW186		PAGE 2 of 3	
	NUMBER	TYPE					START DATE: 15/3/99	DRILLING METHOD: ROTARY AIR FLUSH		
							FINISH DATE: 15/3/99		BOREHOLE DIAMETER: 150/115 mm	
							DRILLER: R1		SCREEN TYPE & DIAMETER: 50 mm ID UPVC	
							LOGGED BY: DB APPR'D BY:		SCREEN SLOT SIZE: 1 mm	
							DESCRIPTION		COMMENTS	
					10		Hard light grey crystalline SANDSTONE (BEDROCK)		No odour	10
					11					11
			*0.0		12					12
					13		Hard brown-grey crystalline SANDSTONE (BEDROCK)		No odour	13
			*0.0		14		Hard grey-light grey SANDSTONE (BEDROCK)		No odour	14
			*0.0		15					15
					16		thin (0.3m thick) band of darker sandstone at 16.5m		No odour	16
			*0.0		17					17
					18		sandstone becoming darker in colour		No odour	18
			*0.0		19					19
					20				Water strike at 20m, rising to 19.7m after 15	20

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
1. All measurements in m below ground level (mbgl)	☒ Disturbed Sample ☐ Undisturbed Sample * Headspace Analysis † Down Borehole Analysis ▼ Groundwater Table ▼ Perched Water Table	Job Title	SOIL & GROUNDWATER INVESTIGATION
		Location	LLANDARCY REFINERY
		Client	BP LLANDARCY LTD
		App'd	DRAFT
		Ref.	CR/MC/BRS
		Date	MAY 99
		Job No.	39991-004-401
		 DAMES & MOORE	

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW186		PAGE 3 of 3	
	NUMBER	TYPE					START DATE: 15/3/99	DRILLING METHOD: ROTARY AIR FLUSH		
							FINISH DATE: 15/3/99		BOREHOLE DIAMETER: 150/115 mm	
							DRILLER: R1		SCREEN TYPE & DIAMETER: 50 mm ID UPVC	
							LOGGED BY: DB APPR'D BY:		SCREEN SLOT SIZE: 1 mm	
						DESCRIPTION		COMMENTS		
						Hard grey crystalline SANDSTONE (BEDROCK)		No odour Damp Water strike at 23m, rising to 21.4m after 15		20
										21
										22
										23
										24
										25
										26
										27
										28
										29
										30

LOCATION / NOTES:		LEGEND		BOREHOLE LOG	
1. All measurements in m below ground level (mbgl)			Disturbed Sample	Job Title SOIL & GROUNDWATER INVESTIGATION	
			Undisturbed Sample	Location LLANDARCY REFINERY	
			Headspace Analysis	Client BP LLANDARCY LTD	
			Down Borehole Analysis	App'd DRAFT	
			Groundwater Table	Ref. CR/MC/BRS	
			Perched Water Table	Date MAY 99	
				DAMES & MOORE GROUP	
				Job No. 39991-004-401	

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW43		PAGE 1 of 2		
	NUMBER	TYPE					START DATE: 24/06/98		DRILLING METHOD: Cable Percussion/Rotary		
							FINISH DATE: 25/06/98		BOREHOLE DIAMETER: 200/165/115mm		
							DRILLER: CP1/R2		SCREEN TYPE & DIAMETER: UPVC 50mm		
						LOGGED BY: SG		APPR'D BY:		SCREEN SLOT SIZE: 0.5mm	
							DESCRIPTION	COMMENTS			
						0	Soft brown sandy SILT with some clay	No odour		0	
							Soft light brown and orange SAND with silty clay and occasional sub-angular gravel	No odour			
							Loose brown-orange very silty and clayey fine SAND	No odour			
						1.0	Soft brown gravelly CLAY with some sand and silt and occasional cobbles	No odour		1.0	
							Rotary drilling from 1.3 mbgl				
						2.0				2.0	
						3.0				3.0	
							ROCKHEAD: Hard blue-grey coarse grained SANDSTONE (BEDROCK)	Slight to strong hydrocarbon odour - No staining			
						4.0				4.0	
						5.0				5.0	
						6.0				6.0	
						7.0				7.0	
						8.0				8.0	
						9.0				9.0	
						10				10	

LOCATION / NOTES: 1. All measurements in m below ground level (mbgl) 2. Cable Percussion to 1.3 mbgl, Rotary to 13 mbgl with odex to 4.2 mbgl		LEGEND Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table		BOREHOLE LOG Job Title SOIL & GROUNDWATER INVESTIGATION Location LLANDARCY REFINERY Client BP LLANDARCY App'd DRAFT Ref. MC/CR/BRS Date JUL 98 Job No. 39991-001-401		DAMES & MOORE	
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BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW43		PAGE 2 of 2				
	NUMBER	TYPE					START DATE: 24/06/98		DRILLING METHOD: Cable Percussion/Rotary				
							FINISH DATE: 25/06/98		BOREHOLE DIAMETER: 200/165/115mm				
							DRILLER: CP1/R2		SCREEN TYPE & DIAMETER: UPVC 50mm				
						LOGGED BY: SG		APPR'D BY:		SCREEN SLOT SIZE: 0.5mm			
						DESCRIPTION						COMMENTS	
						10						10	
						Hard blue-grey coarse grained SANDSTONE (BEDROCK)							
						11						11	
						12						12	
						13						13	
						14						14	
						15						15	
						16						16	
						17						17	
						18						18	
						19						19	
						20						20	
						Borehole terminated at 13 mbgl							

LOCATION / NOTES:

- All measurements in m below ground level (mbgl)
- Cable Percussion to 1.3 mbgl, Rotary to 13 mbgl with odex to 4.2 mbgl

LEGEND

- Disturbed Sample
- Undisturbed Sample
- Headspace Analysis
- Down Borehole Analysis
- Groundwater Table
- Perched Water Table

BOREHOLE LOG

Job Title **SOIL & GROUNDWATER INVESTIGATION**

Location **LLANDARCY REFINERY**

Client **BP LLANDARCY**

App'd **DRAFT**

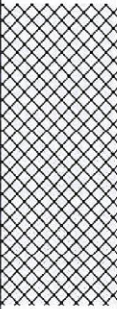
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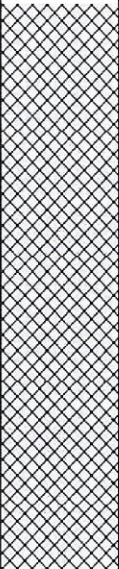
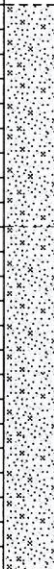
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Job No. **39991-001-401**

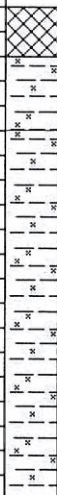
DAMES & MOORE

GROUP

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP053		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 4/11/03		DRILLING METHODS: JCB	
							DRILLER: JCB		BOREHOLE DIAMETER: -	
							LOGGED BY: SS		SCREEN TYPE & DIAM: -	
							CHECKED BY: SG		SCREEN SLOT SIZE: -	
DESCRIPTION		COMMENTS	S,V							
	WSTP053 - 0.1m (S,L)	☒	*3.5	0.0		Loose, brown, silty sand with frequent large cobbles of broken concrete with reinforcing bar. Some rootlets in top 0.1m (MADE GROUND)	Dry-damp. NVO	0,0		
			*5.4	0.5		Loose, brown, silty, fine sand with frequent gravel and cobbles of concrete, brick and sandstone fragments. (MADE GROUND)	Dry-damp. NVO	0,0		
				1.0						
				1.5						
				2.0						
				2.5						
				3.0						
				3.5						
				4.0						
				4.5						
				5.0						
LOCATION / NOTES: NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)						LEGEND  Disturbed Sample  Undisturbed Sample  Headspace Analysis  Down Borehole Analysis  Groundwater Table  Perched Water Table		BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA  App'd: _____ Date: November 2003 Drawn: SS Ref: _____ Scale: As scale Job No: 39991-044-785 Drg. Size: A4 BOREHOLE LOG		

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP054		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 4/11/03		DRILLING METHODS: JCB	
							DRILLER: JCB		BOREHOLE DIAMETER: -	
							LOGGED BY: EM		SCREEN TYPE & DIAM: -	
							CHECKED BY: SG		SCREEN SLOT SIZE: -	
							DESCRIPTION	COMMENTS	S,V	
			*1.3		0.0		Loose dark brown silty fine SAND with fine to coarse gravels, frequent subangular cobbles and boulders.			
					0.5			Dry	0,0	
	WSTP054 - 1.0m (S,L)		*0.9		1.0		Becoming slightly lighter brown in colour from 0.9m.	Dry to damp	0,0	
			*1.1		1.5		With frequent large tabular cobbles and boulders from 1.5m.	Damp	0,0	
	WSTP054 - 2.0m (S,L,2xP)		*1.3		2.0		Becoming darker brown in colour from 1.75m.	Damp	0,0	
					2.5		Trial pit terminated at 2.3m due to refusal on bedrock.			
					3.0					
					3.5					
					4.0					
					4.5					
					5.0					

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	 Disturbed Sample  Undisturbed Sample  Headspace Analysis  Down Borehole Analysis  Groundwater Table  Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA 	
		App'd:	Date: November 2003
		Drawn: EM	Ref:
		Scale: As scale	Job No: 39991-044-785
		Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP055		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 4/12/03		DRILLING METHODS: JCB	
							DRILLER: JCB - JOHN		BOREHOLE DIAMETER: -	
							LOGGED BY: J.G		SCREEN TYPE & DIAM: -	
							CHECKED BY: LT		SCREEN SLOT SIZE: -	
	WSMW055		*245		0.0		DESCRIPTION		COMMENTS	S,V
	0.5m (S,L)				0.5		Concrete hardstanding. (MADE GROUND)	Soil wet with product. Strong hydrocarbon smell.	5,4	
					1.0		Loose, light grey to black clayey and silty fine SAND with frequent gravels to large cobbles.			
					1.5		Becoming light grey with increase in clay content from 0.5m. Gravel and cobble size increasing with depth.			
					2.0					
WSMW055		*575		2.0		Trial pit terminated at 2.0m due to refusal on bedrock.			3,4	
					2.5					
					3.0					
					3.5					
					4.0					
					4.5					
					5.0					

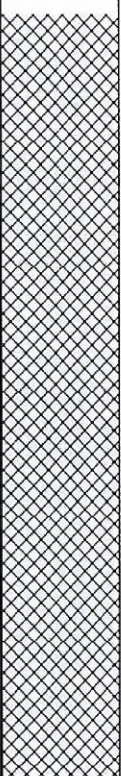
LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	 Disturbed Sample  Undisturbed Sample  Headspace Analysis  Down Borehole Analysis  Groundwater Table  Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA 	
		App'd:	Date: January 2004
		Drawn: JG	Ref:
		Scale: As scale	Job No: 39991-044-785
		Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP065		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 10/12/03		DRILLING METHODS: JCB	
							DRILLER: JCB		BOREHOLE DIAMETER: -	
							LOGGED BY: HM		SCREEN TYPE & DIAM: -	
							CHECKED BY: SG		SCREEN SLOT SIZE: -	
							DESCRIPTION	COMMENTS	S,V	
	WSTP065 - 0.1 - 0.2m (2XP)				0.0		Soft to firm, dark brown to black slightly sandy silt with occasional fine to coarse gravel and rootlets. (MADE GROUND)	NVO, damp.	0,0	
			*0.2		0.5		Soft to firm, orange to brown slightly sandy silt with occasional fine to coarse gravel and occasional subangular to subrounded sandstone cobbles. (MADE GROUND)	NVO, damp.	0,0	
	WSTP065 - 0.9m (S,L)				1.0		Loose, light brown slightly silty sand with frequent fine to coarse gravel, with frequent subangular to subrounded sandstone cobbles. (MADE GROUND)	NVO, damp.	0,0	
			*0.2		1.5		Abundant angular to subangular sandstone cobbles and occasional sandstone boulders from 1.5m.	NVO, damp.	0,0	
			*1.1		2.0			NVO, damp.	0,0	
			*0.2		2.5			NVO, damp.	0,0	
			*0.2		3.0			NVO, damp.	0,0	
	WSTP065 - 3.0m (S,L)		*0.4		3.5		Loose to medium dense, brown sand, with abundant black gravel (bitumen and ash) with abundant subangular sandstone cobbles. (MADE GROUND)	NVO, damp.	0,0	
			*0.1		4.0		Trial pit terminated at 4.0m due to refusal.			
					4.5					
					5.0					

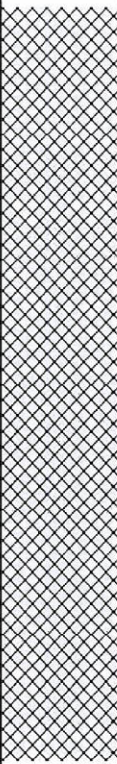
LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	BOREHOLE LOG Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA 	
		App'd:	Date: December 2003
		Drawn: HM	Ref:
		Scale: As scale	Job No: 39991-044-785
		Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP066		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 10/12/03		DRILLING METHODS : JCB	
							DRILLER : JCB		BOREHOLE DIAMETER : -	
							LOGGED BY : HM		SCREEN TYPE & DIAM: -	
							CHECKED BY : SG		SCREEN SLOT SIZE: -	
DESCRIPTION							COMMENTS	S,V		
					0.0	Soft, dark brown slightly sandy silt with occasional fine to coarse gravel, and rootlets. (MADE GROUND).	nvo, damp	0,0		
					0.5	Soft to firm, orange to brown clayey silt with occasional fine to coarse gravel, and occasional subangular sandstone cobbles. (MADE GROUND)	nvo, damp	0,0		
	WSTP066 - 0.5m (2xP)		*0.2							
	WSTP066 - 0.85m (S,L)		*0.2		1.0		Electricity cable at 0.7m - pit extended	0,0		
					1.5	Soft to firm, brown silty SAND with frequent much fine to coarse gravel, frequent angular to subangular sandstone cobbles.	nvo, damp	0,0		
					2.0	Soft to firm, black slightly silty SAND with frequent fine to coarse gravel, and frequent angular to subangular sandstone cobbles.		1,0		
					2.5		Slight hydrocarbon odour, minimal black hydrocarbon staining			
					3.0	Occasional subangular to angular boulders from 2.8m.		1,0		
					3.5	Trial pit terminated at 3.1m due to refusal.				
					4.0					
					4.5					
					5.0					

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BP/WDA 	
		App'd:	Date: December 2003
		Drawn : HM	Ref:
		Scale: As scale	Job No: 39991-044-785
		Org. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP110		PAGE 1 of 1	
	NUMBER	TYPE					DRILLING DATES: 6/11/2003		DRILLING METHODS : JCB	
							DRILLER : JCB		BOREHOLE DIAMETER : -	
							LOGGED BY : OG		SCREEN TYPE & DIAM: -	
							CHECKED BY : SG		SCREEN SLOT SIZE: -	
							DESCRIPTION	COMMENTS	S,V	
	WSTP110-0.6m (S,L)		*0.7		0.0		Very loose, brown silty fine to coarse sand with abundant subangular gravel, cobbles, occasional sandstone boulders and rare ash. (MADE GROUND)	Dry	0,0	
					0.5		Becoming light grey with cobble size concrete fragments, metal fragments, brick fragments and wood from 0.5m.	Copper strip at 0.45m Dry	0,0	
					1.0				0,0	
					1.5				0,0	
					2.0		Becoming black with soft silty clay pockets, occasional concrete fragments and brick fragments from 1.8m.	Damp.		
		2.5			2,3					
	WSTP110-3.0m (S,L)		*1.6		3.0		With patches of mottled black and brown silty clay, and occasional angular sandstone boulders from 2.8m.	Damp	2,3	
			*2.1		3.5		Trial pit terminated at 3.1m.			
					4.0					
					4.5					
					5.0					

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
NVO = No visual or olfactory evidence of contamination S,V = Contamination Observations S - Odour score (0-5) V - Visual score (0-5)	 Disturbed Sample  Undisturbed Sample  Headspace Analysis  Down Borehole Analysis  Groundwater Table  Perched Water Table	Job Title: BP Llandarcy Whole Site Investigation Location: BP Llandarcy Refinery Client: BPWDA 	
		App'd:	Date: February 2004
		Drawn: CM	Ref:
		Scale: As scale	Job No: 39991-044-785
		Drg. Size: A4	BOREHOLE LOG

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: WSTP111		PAGE 1 of 1		
	NUMBER	TYPE					DRILLING DATES: 6/11/03		DRILLING METHODS : JCB		
							DRILLER : JCB		BOREHOLE DIAMETER : -		
							LOGGED BY : CM		SCREEN TYPE & DIAM: -		
CHECKED BY : SG		SCREEN SLOT SIZE: -									
					0.0		DESCRIPTION		COMMENTS	S,V	
	WSTP111 - 0.5m (S,L)	☒	*0.4		0.5	Loose light brown slightly gravelly fine to medium sand with frequent rootlets to 0.2m. Gravel is angular to subrounded fine to coarse comprising of brick, concrete and sandstone fragments. (MADE GROUND)	Dry, NVO	0,0			
			*0.5		1.0				With occasional cobbles from 1.0m.	Dry, NVO	0,0
			*0.2		1.5				With rare boulders of reinforced concrete from 1.3m.	Dry, NVO	0,0
			*0.1		2.0				Becoming mottled black with frequent concrete boulders from 1.6m.	Major collapse from surface Dry, NVO	0,0
			*0.5		2.5				Becoming dark brown with occasional metal fragments and pieces of brick wall from 2.7m.	Dry, NVO	0,0
	WSTP111 - 3.0m (S,L)	☒	*0.9		3.0	Terminated at 3.0m due to refusal on concrete.	Dry, NVO	0,0			
					3.5						
					4.0						
					4.5						
					5.0						

LOCATION / NOTES:

NVO = No visual or olfactory evidence of contamination

S,V = Contamination Observations

S - Odour score (0-5)

V - Visual score (0-5)

LEGEND

-  Disturbed Sample
-  Undisturbed Sample
-  Headspace Analysis
-  Down Borehole Analysis
-  Groundwater Table
-  Perched Water Table

BOREHOLE LOG

Job Title: BP Llandarcy Whole Site Investigation

Location: BP Llandarcy Refinery

Client: BPWDA



App'd:	Date: November 2003
Drawn: CM	Ref:
Scale: As scale	Job No: 39991-044-785
Drg. Size: A4	BOREHOLE LOG