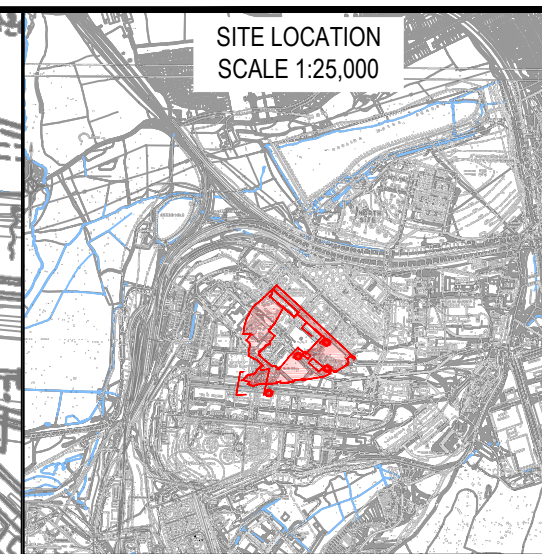
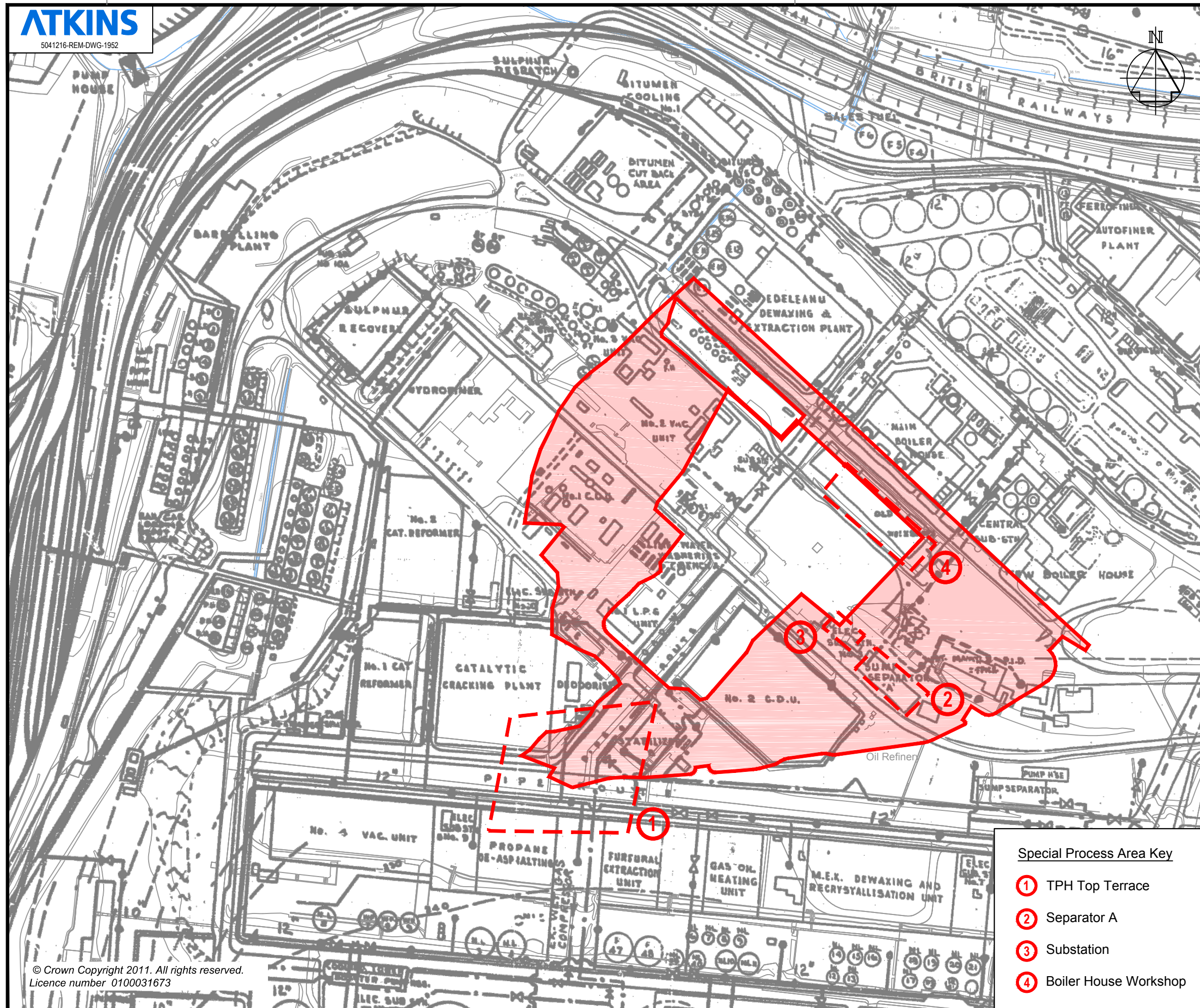




SITE LOCATION
SCALE 1:25,000

KEY

MONITOR BOUNDARY PHASE 70

REVISIONS	Drawn By	Checked By	Date

PURPOSE OF ISSUE	Rev.	Authorised for issue	Date

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ST.MODWEN

PROJECT

COED DARCY

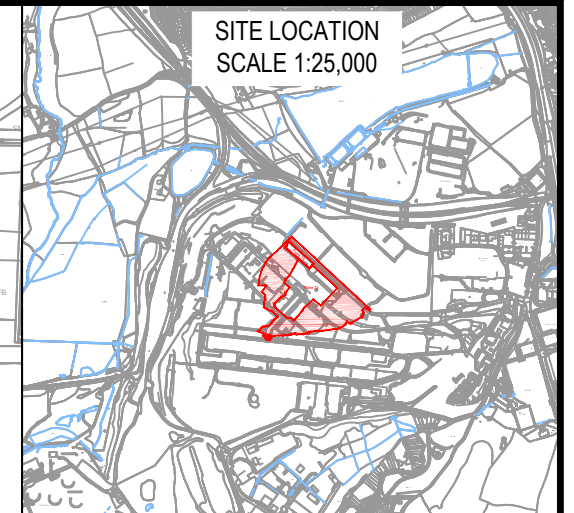
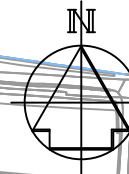
DRAWING TITLE

MONITOR BOUNDARY PHASE 70
HISTORICAL LAYOUT PLAN

SCALES	DRAWN	CHECKED	CO-ORD CHECK
1:2500	JSD	CS	
	DATE	DATE	DATE
	05.05.15	05.05.15	
DRAWING NO		SHEET A3	PLOT DATE 30.10.15
5041216-REM-DWG-1952			REV -

Special Process Area Key

- ① TPH Top Terrace
- ② Separator A
- ③ Substation
- ④ Boiler House Workshop



SITE LOCATION
SCALE 1:25,000

KEY

MONITOR BOUNDARY PHASE 70

REVISIONS	Drawn By	Checked By	Date

PURPOSE OF ISSUE	Rev.	Authorised for issue	Date

Atkins Limited

Telford Office Cornerstone House Stafford Park 13 Telford TF3 3AZ Tel 01952 201234 Fax 01952 200981	Birmingham Office The Axis, 10 Holliday Street Birmingham West Midlands B1 1TF Tel 0121 483 5000 Fax 0121 483 5252
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DRAWING TITLE
MONITOR BOUNDARY PHASE 70

SCALES	DRAWN	CHECKED	CO-ORD CHECK
1:2500	JSD	CS	
	DATE	DATE	DATE
	05.05.15	05.05.15	

DRAWING NO	SHEET	PLOT DATE	REV
5041216-REM-DWG-1951	A3	30.10.15	-

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Millimetres

10
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DO NOT SCALE

Levels Table

Number	Minimum Level	Maximum Level	Color
1	-5.978	-4.000	
2	-4.000	-3.000	
3	-3.000	-1.000	
4	-1.000	0.000	
5	0.000	2.000	
6	2.000	3.000	
7	3.000	5.000	
8	5.000	6.316	

NOTES:

- THIS ISOPACHYTE COMPARES MP70 PRE-WORKS & MP70 POST-WORKS SURVEY.

KEY:

MONITOR PHASE BOUNDARY

CUT/FILL VOLUME MINUS TWO
INTERNAL AREAS:

CUT: 62,406m³

FILL: 6,544m³

NET: 55,861m³

Rev.	Date	Description	By	Chkd	App'd
FOR INFORMATION					SO
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Client ST.MODWEN					
Project Title COED DARCY					
Drawing Title MONITOR PHASE 70 PRE-WORKS & POST-WORKS ISOPACHYTE					
Scale 1:1250	Designed DH	Drawn JSD	Checked CS	Authorised	
Original Size A3	Date 29/10/15	Date 29/10/15	Date 29/10/15	Date	
Drawing Number 5041216-ATK-DR-C-REM-2128					Revision P 1

DO NOT SCALE

- KEY:
- MONITOR PHASE BOUNDARY
 - MAJOR CONTOUR
 - MINOR CONTOUR
 - SAMPLING LOCATION
 - RECENT SAMPLING LOCATION
 - AREA LOWERED TO REMOVE MODERATE SURFACE STAINING V-02-3
 - REMOVAL AREA OF HIGHLY ODEROUS TAR LIKE MATERIAL

P1	29/10/15	FIRST ISSUE	MJ	CS	MP
Rev.	Date	Description	By	Chkd	App'd

Drawing Status	S2
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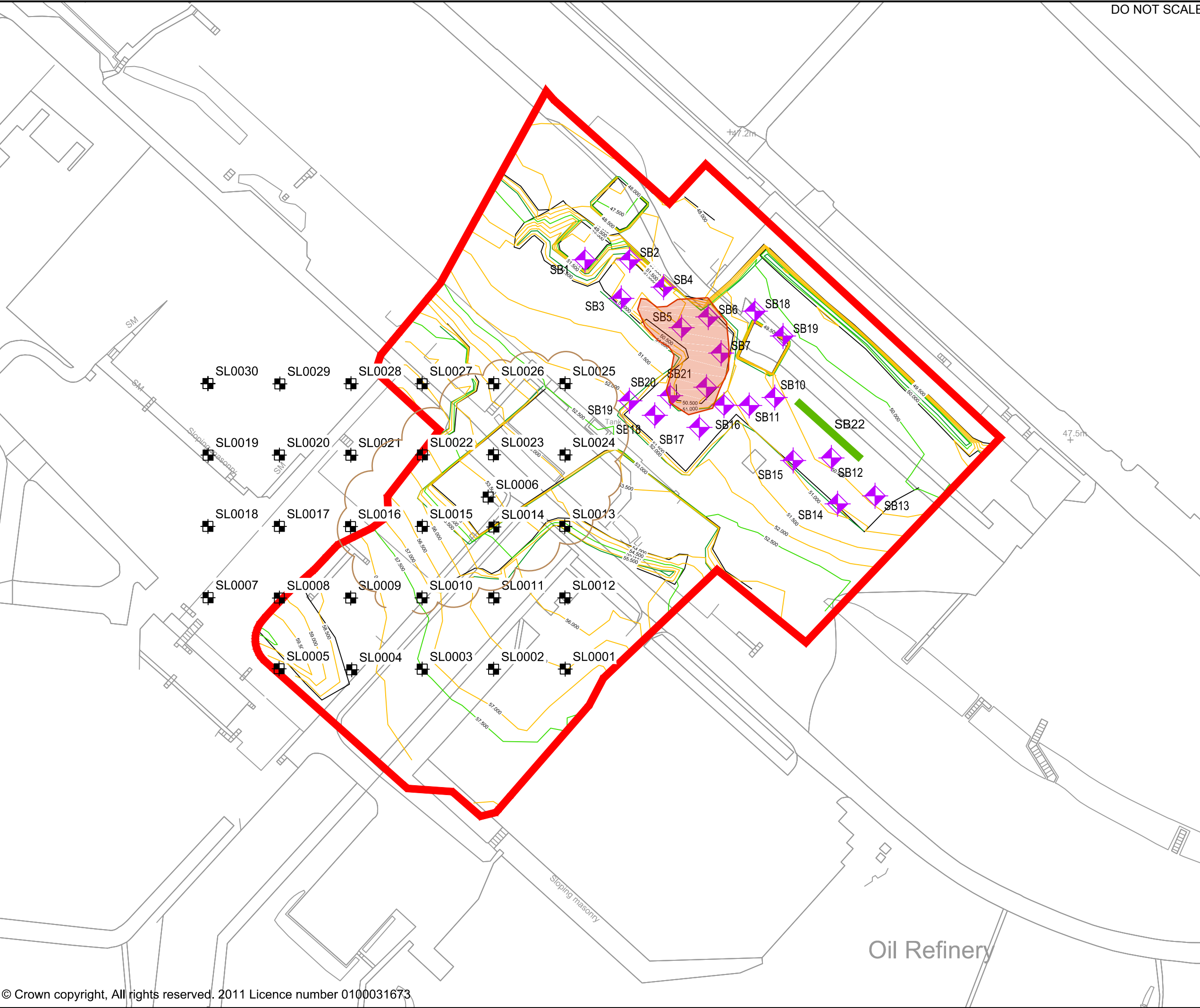
Project Title

COED DARCY

Drawing Title

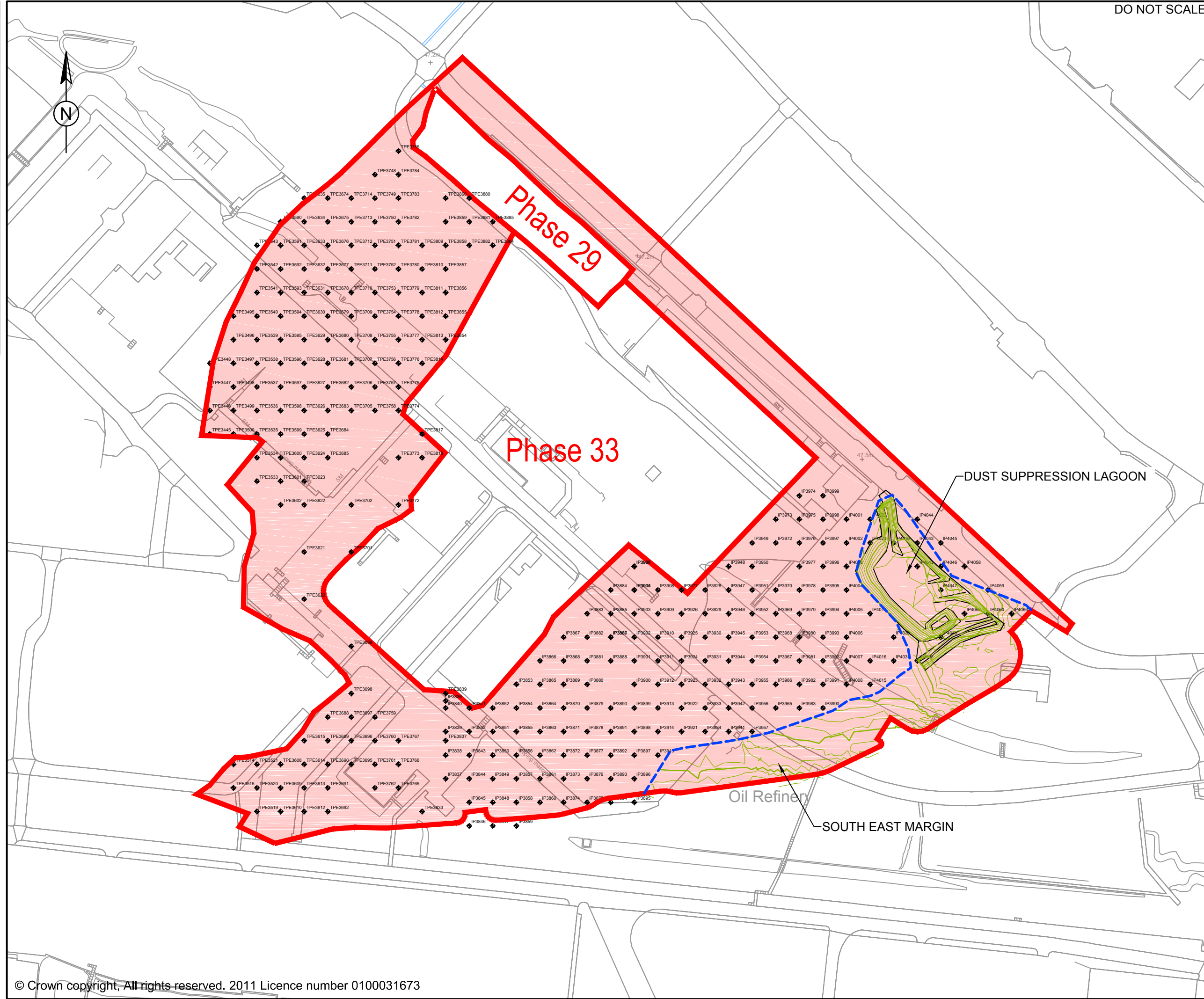
MONITOR PHASE 33
ADDITIONAL SAMPLING LOCATIONS

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
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Drawing Number	Revision			
5041216-ATK-DR-C-REM-DWG-2118	P 1			



Millimetres

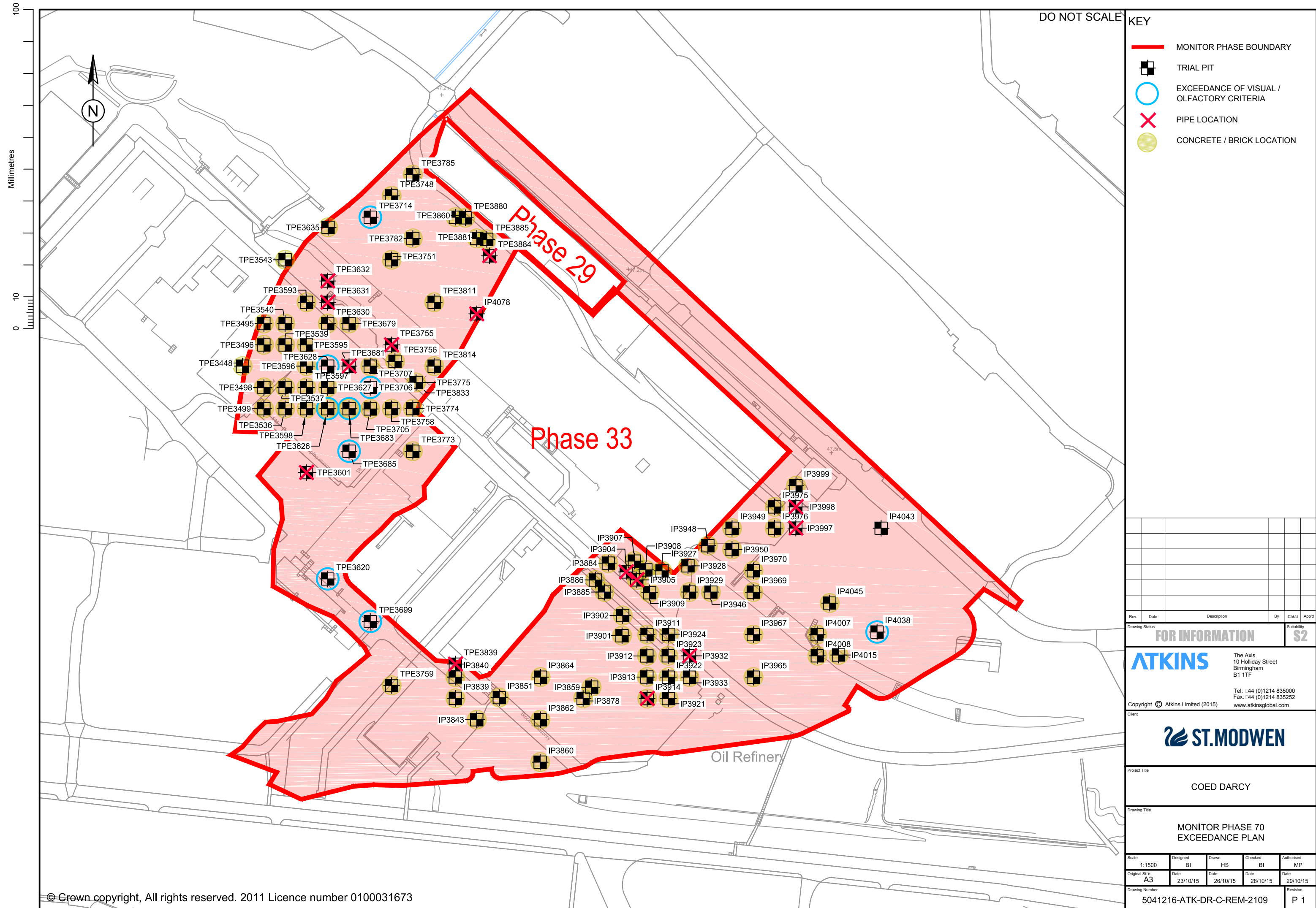
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DO NOT SCALE

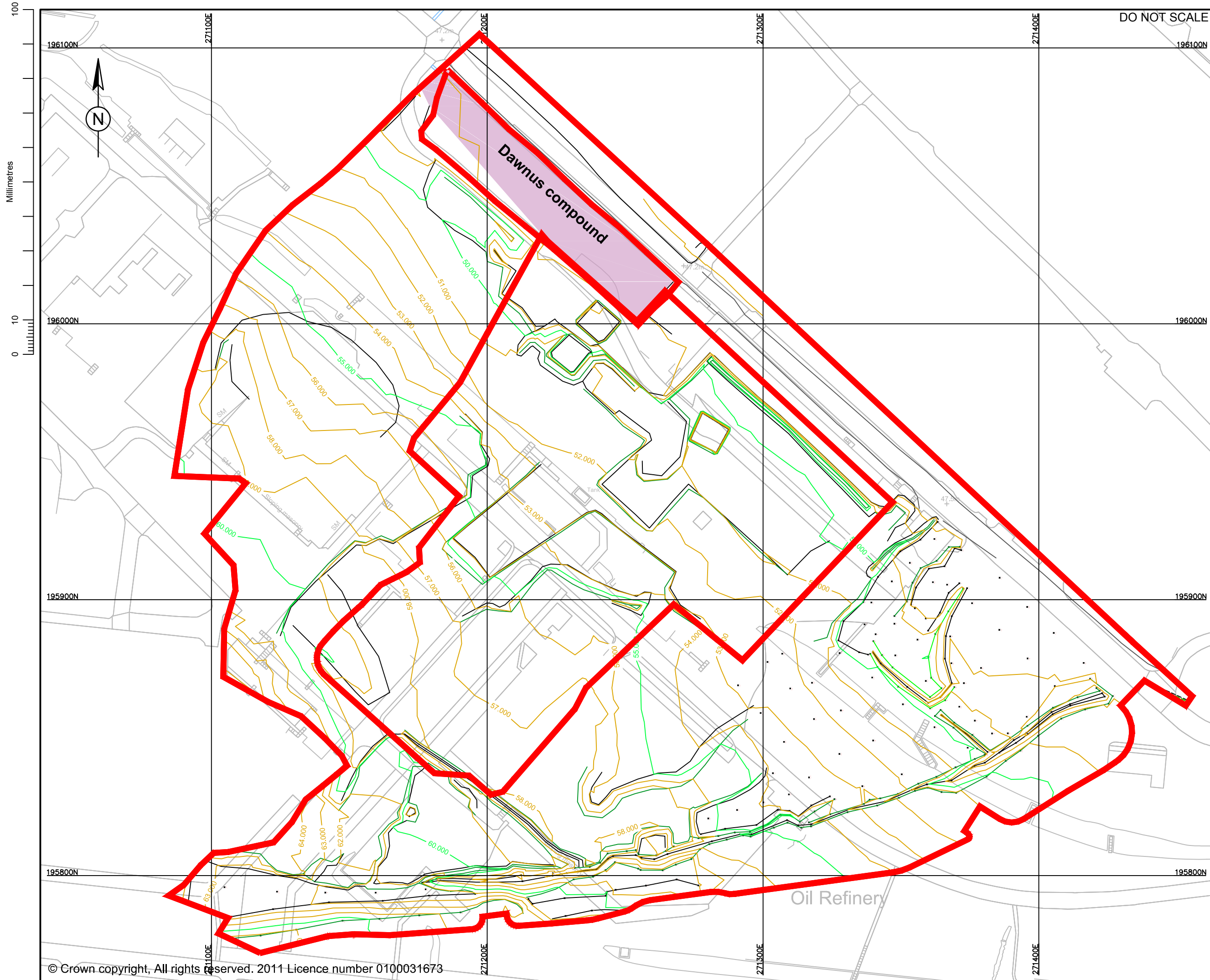
- KEY
- MONITOR BOUNDARY PHASE 70
 - DUST SUPPRESSION LAGOON AND SOUTH EAST MARGIN BOUNDARY

Rev.	Date	Description	By	Chk'd	App'd
FOR INFORMATION					S2
ATKINS					
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Client					
ST.MODWEN					
Project Title					
COED DARCY					
Drawing Title					
MONITOR PHASE 70 DUST SUPPRESSION LAGOON AND SOUTH EAST MARGIN					
Scale	Designed	Drawn	Checked	Authorised	
1:1500	BI	HS	BI	MP	
Original Site	Date	Date	Date	Date	
A3	28/10/15	28/10/15	28/10/15	29/10/15	
Drawing Number	Revision				
5041216-ATK-DR-C-REM-2112	P 1				



100
Millimetres

10
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DO NOT SCALE

KEY:

- MONITOR PHASE BOUNDARY
- MAJOR CONTOUR
- MINOR CONTOUR

P1	13/10/15	FIRST ISSUE	MJ	MM	ML
Rev.	Date	Description	By	Chkd	App'd

Drawing Status	S2
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Client
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Project Title
COED DARCY

Drawing Title
MONITOR PHASE 70
POST-WORKS TOPOGRAPHIC SURVEY

Scale	Designed	Drawn	Checked	Authorised
1:1250	DH	MJ	BI	MP
Original Size	Date	Date	Date	Date
A3	13/10/15	13/10/15	13/10/15	13/10/15

Drawing Number	Revision
5041216-ATK-DR-C-REM-DWG-2076	P 1

Appendices

Appendix A. Summary of Adopted Thresholds

Lowest of the Remedial Target Criterion/Risk Based Screening Level for Commercial land use, Deep Soil (>1m)

Contaminant	Minimum RBSL/ RTC 1% (mg/kg)	Minimum of RBSL/ RTC 3% (mg/kg)
Benzo(a)pyrene	>sat	>sat
Benzene	5	5
Toluene	389	389
Ethylbenzene	>sat	>sat
Xylene	>sat	>sat
TPH aromatic C7-C8	617	617
TPH aromatic C8-C10	547	547
TPH aromatic C10-C12	>sat	>sat
TPH aromatic C12-C16	>sat	>sat
TPH aliphatic C6-C8	>sat	>sat
TPH aliphatic C8-C10	>sat	>sat
TPH aliphatic C10-C12	>sat	>sat
TPH aliphatic C12-C16	>sat	>sat
TPH aliphatic C16-C21	None	None
TPH aliphatic C21-C35	None	None
TPH aromatic C16-C21	None	None
TPH aromatic C21-C35	None	None
Total TPH (Phase 1)	81956	81956
Total TPH (Process Area)	35014	35014
Total TPH (North Tank Farm)	13974	13974
Total TPH (South Tank Farm)	34797	34797
1,2-Dichloroethane	0.65	0.65
1,1,1-Trichloroethane	3250	3250
Tetrachloroethene	368	368
Trichloroethene	28	28
Vinyl chloride	0.154	0.214
Dichloromethane	665	665
Cis-1,2-Dichloroethene	35.1	67
Trans-1,2 Dichloroethene	53.4	91
Acenaphthene	>sat	>sat
Anthracene	>sat	>sat
Benzo(a)anthracene	>sat	>sat
Benzo(b)fluoranthene	>sat	>sat
Benzo(g,h,i)perylene	>sat	>sat
Benzo(k)fluoranthene	>sat	>sat
Chrysene	>sat	>sat
Dibenz(a,h)anthracene	>sat	>sat
Fluoranthene	>sat	>sat
Fluorene	>sat	>sat
Indeno(1,2,3-cd)pyrene	>sat	>sat
Pyrene	>sat	>sat
Phenol	>sat	>sat
Mercury, methyl	>sat	>sat
Mercury, elemental	>sat	>sat
Naphthalene	>sat	>sat
1,1,1,2-Tetrachloroethane	278	768
1,1,2,2-Tetrachloroethane	718	1720
Carbon tetrachloride	7.34	19
Chlorobenzene (mono)	>sat	>sat
TPH aliphatic C5-C6	>sat	>sat
TPH aromatic C5-C7	71	152

Notes
1. Where the lower of the vapour or aqueous saturation limits have been exceeded by the RTC calculated, the hazard quotient is considered to be less than 1 and as such >sat has been presented
2. Xylene - the lowest RTC of the three isomers has been presented. Users must consider total exposure from all xylene isomers and not consider them in isolation
3. TPH >C16 are not considered to be volatile according to TPHCWG. Consequently the inhalation of vapour pathways have not been considered and therefore no RTC value has been presented here
4. "None" indicates theoretical RBSL greater than solubility limit
5. In the S106 only one value was presented for 1,2-dichloroethene of 91 mg/kg
6. 'Total' TPH RBSL derived for an area of development, based on individual RBSL and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach
7. Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach
8. TPH aromatic C7-C8 is considered to comprise toluene only by Atkins
9. No RTC was produced for total TPH as this will be considered further at validation stage
10. Asbestos has not been considered here as it is being considered in a separate report
11. Additivity for TPHs and PAHs to be undertaken in line with guidance in Atkins report 5041216-REM-RPT-000476
12. The potential presence of free product should be assessed in accordance with information in the S106
13. TPH aromatic C5-C7 is considered to comprise benzene only by Atkins
14. Values for phenol are calculated to be protective of dermal effects in line with the approach used by the Environment Agency to derive the commercial phenol SGV

Appendix B. Exploratory Hole Logs

Trial Pit Log



Logged JH Checked AP		Start 31/03/2015 End 31/03/2015		Equipment, Methods and Remarks Komatsu PC210 Machine excavated trial pit from GL to 4.70m. Terminated at maximum reach of excavator.		Dimensions and Orientation Width 1.60 m Length 3.50 m A B C D 214 (Deg)		Ground Level Coordinates National Grid Chainage	
Samples and Tests			Strata						
Depth	Type & No.	Date Records	Description			Depth, Level (Thickness)	Legend	Backfill/ Instruments	
0.50	ES 1		1 Soft light brownish grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of sandstone. (VO = 0,0)			(1.00)			
1.50	ES 2		2 Firm dark greyish brown slightly sandy gravelly SILT with medium cobble content. Gravel is subangular to subrounded, fine to coarse of sandstone. Cobbles are subrounded to well rounded of sandstone. (VO = 0,0)			1.00			
2.50	ES 3								
3.50	ES 4					(3.70)			
4.50	ES 5								
			EXPLORATORY HOLE ENDS AT 4.70 m			4.70			
Depth	Type & No.	Records Date							
Groundwater Entries No. Struck Post Strike Behaviour (m) None observed (see Key Sheet)			Depth Related Remarks * From to (m)			Stability Stable Shoring None Weather Sunny			
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. Scale 1:25			Project Coed Darcy Sitewide Trial Pitting Project No. H4039-14 Carried out for St Modwen Developments Limited			Trial Pit IP3836 Sheet 1 of 1			



Trial Pit Log



Logged JH Checked AP		Start 30/03/2015 End 30/03/2015		Equipment, Methods and Remarks Komatsu PC210 Machine excavated trial pit from GL to 5.30m. Terminated on bedrock.		Dimensions and Orientation Width 1.50 m Length 3.60 m A D C B 035 (Deg)		Ground Level Coordinates National Grid Chainage	
Samples and Tests			Strata						
Depth	Type & No.	Date Records	Description			Depth, Level/ (Thickness)	Legend	Backfill/ Instruments	
0.50	ES 1		1 (MADE GROUND) Soft grey slightly sandy gravelly SILT with medium cobble content. Gravel is subangular to subrounded, fine to coarse of sandstone and brick. Cobbles are subangular of brick and sandstone. Frequent black oil staining. (VO = 2,2)			(2.20)			
1.50	ES 2								
2.50	ES 3		2 Firm greyish brown slightly sandy gravelly SILT with medium cobble content. Gravel is subangular to subrounded, fine to coarse of sandstone. Cobbles are subrounded to well rounded of sandstone. (VO = 0,0)			2.20			
3.50	ES 4					(3.10)			
4.50	ES 5								
Depth	Type & No.	Records Date	Stratum continues to 5.30 m						
Groundwater Entries No. Struck Post Strike Behaviour (m) None observed (see Key Sheet)			Depth Related Remarks * From to (m)			Stability Stable Shoring None Weather Windy			
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. Scale 1:25 (c) ESG www.esg.co.uk 426.4814/04/2015 11:49:37			Project Coed Darcy Sitewide Trial Pitting Project No. H4039-14 Carried out for St Modwen Developments Limited			Trial Pit IP3837 Sheet 1 of 2			

Trial Pit Log

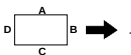
[illegible]

Scale 1:25

Trial Pit Log



Logged JH Checked AP		Start 11/03/2015 End 11/03/2015	Equipment, Methods and Remarks Komatsu PC 210 Machine excavated trial pit from GL to 3.50m. Terminated on possible bedrock.	Dimensions and Orientation Width 1.60 m Length 3.50 m A B C D B →		Ground Level Coordinates National Grid Chainage		- - -
Samples and Tests			Strata					
Depth	Type & No.	Date Records	Description	Depth, Level/ (Thickness)	Legend	Backfill/ Instruments		
0.50	ES 1		1 (MADE GROUND) Orangish brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone and brick. (VO = 0,0)	(0.90)				
1.10	ES 2		2 Firm grey slightly sandy SILT. Sand is fine to coarse. (VO = 0,0)	0.90 (0.90)				
2.10	ES 3		3 Soft grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone with low cobble content of subangular to subrounded of sandstone. (VO = 1,2)	1.80 (1.70)				
			EXPLORATORY HOLE ENDS AT 3.50 m	3.50				
			3.50 m Possible bedrock.					
Depth	Type & No.	Records Date						
Groundwater Entries No. Struck Post Strike Behaviour (m) None observed (see Key Sheet)			Depth Related Remarks * From to (m)			Stability Stable Shoring None Weather Windy		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. (c) ESG www.esg.co.uk 426.4908/04/2015 13:17:49			Project Coed Darcy Sitewide Trial Pitting Project No. H4039-14 Carried out for St Modwen Developments Limited			Trial Pit IP3839 Sheet 1 of 1		

Logged JH Checked AP		Start 11/03/2015 End 11/03/2015	Equipment, Methods and Remarks Komatsu PC210 Machine excavated trial pit from GL to 0.40m. Terminated on concrete.		Dimensions and Orientation Width 1.60 m Length 3.50 m 		Ground Level Coordinates National Grid Chainage	
Samples and Tests			Strata					
Depth	Type & No.	Date Records	Description			Depth, Level/ (Thickness)	Legend	Backfill/ Instruments
		*	1 (MADE GROUND) Soft brown sandy slightly gravelly SILT with moderate cobble content. Gravel is subangular to subrounded fine to coarse of sandstone and brick. Cobbles are aungular to subangular of brick and breeze block. (VO = 1,2) 0.00-0.20 m Metal fragments.			(0.40)		
			EXPLORATORY HOLE ENDS AT 0.40 m 0.40 m Concrete.			0.40		
Depth	Type & No.	Records Date						
Groundwater Entries No. Struck Post Strike Behaviour (m) None observed (see Key Sheet)			Depth Related Remarks * From to (m) 0.00 0.40 No samples obtained.			Stability Stable Shoring None Weather Rain		
Notes: For explanation of symbols and abbreviations see key sheet. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. Scale 1:25 (c) ESG www.esg.co.uk 426.4808/04/2015 13:17:53 			Project Coed Darcy Sitewide Trial Pitting Project No. H4039-14 Carried out for St Modwen Developments Limited			Trial Pit IP3840 Sheet 1 of 1		

[illegible]