

1°) SLURRY TREATMENT PLANTS :

Name and Place	Year	Customer	Type of tunnel	Supplier of the TBM	Bored Ø (meters)	Total Length (meters)	Geological Composition of Terrains	Brief Description of the plant	Feed Pulp m ³ /h
Shieldhall Tunnel (Scotland)	2015	Costain/Vinci JV	Sewage	Herrenknecht	5.51	4,850	Bedrock, glacial till & alluviums	Complete STP with pressing	1,400
Nice (France)	2015	Bouygues Colas/Snaf, Soletanche Bachy - CSM BESSAC	Tramway	Herrenknecht	9.68	2,900	Alluvial clayey sand with gypsum inclusions	Complete STP with pressing	1,950
Hong Kong MTR 1128	2015	Dragages	Subway	Herrenknecht	Ø 7.45	2 x 530 2 x 540	CDG Alluvium marine deposits	Complete STP with pressing	1,800
Cairo (Egypt)	2015	Egyptian French JV	Subway	Herrenknecht	Ø 9.455	4,600m	Fine Sand	STP without FP	2,200
Hong Kong TMCLK	2014	Dragages	Road tunnel	Herrenknecht	2 x 13.95 (1 x 17.6 approach)	2 x 4794	CDG Alluvium marine deposits	Complete STP with pressing	3,000
Hong Kong MTR 1103	2013	VINCI Construction	Subway tunnel	Herrenknecht	7.4	1,600 + 1,930m	CDG, Mixed face, bedrock	Complete STP with pressing	1,600
Hong Kong MTR 1109	2013	Samsung Hsing Chong JV	Subway tunnel	Herrenknecht	7.45	1,600 + 1,934m	CDG, Mixed face, bedrock	Complete STP with pressing	1,300
Eurasia Tunnel Istanbul	2012	YM + SK E&C JV	Road Tunnel	Herrenknecht	13.82	3,340m	Bedrock & softground	Complete STP with pressing	2,800
CROSSRAIL C 310 - UK	2011	Hochief-Murphy JV	Railway Tunnel	Herrenknecht	7.14	2 x 2,650m	Chalk and Thanet sand	Complete STP with pressing	1,600
Port Of Miami Florida - USA	2011	BCWF (Bouygues Civil Works Florida)	Road Tunnel	EPB with Hydraulic mode	12.89	2,570 m of which 1,450 in hydraulic mode	Limestone, and sand	Specific STP	1,000
MTRC EXPRESS RAIL LINK Hong Kong-PRC	2010	Dragages-Bouygues JV	Subway tunnel	Herrenknecht	9.32	2 x 4,444m	CDG	Complete STP with pressing	2 x 1800
MTR West Island Line Hong Kong-PRC	2010	Dragages-Maeda-BSG JV	Subway tunnel	Herrenknecht	6.35	780 m	CDG	Complete STP with pressing	1,300
Lee Tunnel London UK	2010	MVB JV	Sewage tunnel	Herrenknecht	8.88	6,904 m	Chalk and thanet sand	Complete STP with pressing and WTP	2,000
Queens Tunnel NY USA	2010	Granite/Traylor/Frontier-Kemper JV	Railway Tunnel	Herrenknecht	6.86	1,346m 1,851m	Shale and clay	Complete STP with pressing	2 x 1,200
OULLINS France	2010	SPIE BATIGNOLLES CHANTIERS MODERNES	Subway tunnel	Herrenknecht	9.46	1,317 m	Alluvials, Glacial till, Molasses and Granite	Complete STP with pressing	1,800

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Diabolo Bruxelles (Belgium)	2010	BAM	Road Tunnel	Herrenknecht	8,27	2 147 m	clayey sand	2 Filter-Presses compact type	20 T/h of dry solids
ANTWERP LIEFKENSHOEK (Belgium)	2009	VINCI Construction	Railway tunnel	Herrenknecht	8,4	2 x 6,000	Fine & clayey sand	Complete STP with sand re-washing & sludge pressing	2 x 1650
Flamanville France	2009	VINCI Construction	Tunnel	Herrenknecht	6,2	670 m	Quartzite more or less fractured	STP with pressing section	1,200
CAIRO SUBWAY EGYPT	2008	Bouygues Vinci	Subway	Herrenknecht	9,45	Cairo 3 : 3,500 m	Fine sand, fairly clean	STP without FP	1,500
REN MIN LU Shanghai-PRC	2007	SMCC SFEC	Highway tunnel	Komatsu	2 x 11,58	2 x 1,740m	Sand + silts	S.T.P with hydraulic transport of spoils	2 x 1,200
CHONGMING Shanghai - PRC	2006	JV with BTP Shanghai & STEC	Highway tunnel	Herrenknecht	2x 15,44	2 x 7150m	Sand + silts	S.T.P with hydraulic transport of spoils	2 x 3,000
HUBERTUS the Netherlands	2006	H.T.C (BAM & VHB)	Road tunnel	Herrenknecht	10,52	2 x 1,490m	Fine sands with silts & clay	2 Filter-Presses compact type	20 T/h of dry solids
STROGINO tunnel Moscow	2006	Herrenknecht	Subway	Herrenknecht	6,28	2990 m	Sand + clay	Complete & modular S.T.P	1000
Hallandsås Båstad - Sweden	2005	Skanska / Vinci	Railway Tunnel	Herrenknecht	10,60	2 x 5500m	Gneiss	STP with water treatment & 2 Filter-presses	1,800
Silberwald tunnel Moscow	2004	Herrenknecht	Highway tunnel	Herrenknecht	14,20	2 x 1750m	Sand + clay	Addition of 6 Filter-Presses + equipment	2,800 + 2,000 T/day of dry solids
TOULOUSE Line B lot n°4	2002	GIE MT B4	Subway	FCB	7,82	2 x 3731 m	Molasses & Graves crues de la Garonne	STP with 2 filter-presses	1,200
A86 tunnel Paris	2001-2002	SOCATOP	Highway tunnel	Herrenknecht	11,56	3100 m	Fine sands with clay Fontainebleau type	STP with water treatment & 2 Filter-Presses compact type	20 T/h of excess dry matter
LEFORTOVO tunnel Moscow	2001	Herrenknecht	Highway tunnel	Herrenknecht	14,20	2 x 2200m	Limestone + clay	STP with auxil. water treatment & 6 Filter-Presses	2,800
Pannerdensch Kanaal Netherlands	2001	COMOL vof	Railway tunnel	Herrenknecht	9,80	2 x 1425m	90% fine sand 10% clay	complete STP with 2 FP	1,600
GROENE HART Netherlands	2001	Bouygues KOOP	Highway tunnel	NFM	14,87	7 160m	Fine sand	complete STP with 2 FP	2,500

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SOPHIA Netherlands	2000	TUBECON	Railway Tunnel	Herrenknecht	9,82	2 x 4 200m	Pleistocene & Holocene sand	complete STP with 2 FP	2,500
RU de Marivel SIAVRM	1999	Campeon Bernard Dumez	Sewage Tunnel	Herrenknecht	5,14	1 330m	Chalk sand & gravel	complete STP with 1 FP	900
I.G.C.N. Gennevilliers	1998	Borie SAE GTM Constr. Chantiers Mod. Chagnaud	Sewage Tunnel	Herrenknecht	4,85	1288m + 2047m	Marl, limestone & sand from Soissonnais	STP with auxil. water treatment & 2 FP	600
LEWISHAM Londres	1997	Nishimatsu Kawasaki F.C.B.	Subway	Kawasaki	5,90	2 x 1044m	Gravel, sand, clay & silt	complete STP, with 1 FP	600
Airport Link SYDNEY	1997	Transfield Bouygues Joint Venture	Subway	Herrenknecht	10,80	5475m	Marl, sandstone, shale fine to medium, clay & sand, clay	complete STP with. water treatment & 10 FP	
CAIRO SUBWAY	1994 1995	Campeon B. Bouygues Dumez Arab Fougerolles Spie Batign.	Subway	Herrenknecht	9,45	Cairo 1 : 3229m Cairo 2 : 2703m	Fine sand, fairly clean	STP without FP	1,500
Line F LILLE	1994 1995	Soletanche Bouygues	Subway-Val	FCB	7,85	2131m	Hard clay, tufa & sand silt	STP without FP	1,000
METEOR Paris	1993 1994	Bouygues Dumez Arab Chantiers Mod Perforex	Subway	HDW	8,65	4293m	Coarse-grained limestone, marl & rocks	complete STP, with 3 FP	1 200
CLICHY la BRICHE	1993 1994	Bouygues GTM BTP Chantiers Mod.	Sewage Tunnel	Herrenknecht	4,07	2334m	Fine sand, marl, coarse-grained limestone	complete STP, with 2 FP	450
Strasbourg (*)	1993	Kesser	Tramway	Herrenknecht	8,20	1200m	Clean alluvial deposit	STP without FP	
TOULOUSE (*)	1990	GTM	Subway-Val	FCB	7,70	almost 3500m	Sand clay & molasse	STP without FP	500
SEVRES ACHÈRES (*)	1989	GTM BTP Bouygues Chantiers Mod.	Sewage Tunnel	Herrenknecht	4,00	3500m	Clay, fine sand, marl & limestone	STP without FP	450

N.B. (*) the first three references concern contracts taken under the name of FOREM, but with MS design.

2°) SEEPAGE WATER TREATMENT & SITE WORKS TREATMENT PLANTS :

Name and Place	Year	Customer	Type of tunnel	Supplier of the TBM	Bored Ø (meters)	Total Length (meters)	Geological Composition of Terrains	Brief Description of the plant	Feed Pulp m ³ /h
RLS DOHA Qatar	2015	QDVC JV	Subway					Seepage & site water treatment plant with pH treatment	60 m ³ /h
LTF / La Praz	2015	Eiffage	Railway tunnel					Flocculation + FP	-
LTF / St Martin de la Porte	2015	Eiffage	Railway tunnel					Seepage & site water treatment plant with FP	360 m ³ /h
Liantang Hong Kong	2014	Dragages	Road tunnel					Seepage & site water treatment plant with pH treatment	250 m ³ /h
Paris ligne 14	2014	Eiffage Razel	subway					2 x Seepage & site water treatment plants with pH treatment	2 x 60 m ³ /h
Hydro-demolition Worksite	2014	Nouvetra						Decantation skid	10 m ³ /h
Tunnel de la borne Romaine	2014	Vinci GTM Sud	Highway tunnel					Seepage & site water treatment plant, includ. FP and pH treatment	60 m ³ and 100m ³ /h desanding
RATP prolongement ligne 12 Aubervilliers	2014	Vinci Dodin Campenon Bernard	Subway					Settling skid	10 m ³ /h
RLS DOHA Qatar	2014	QDVC JV	Subway					Seepage & site water treatment plant and pH treatment	60 m ³ /h and 100 m ³ /h desanding
RLS DOHA Qatar	2014	QDVC JV	Subway					Seepage & site water treatment plant and pH treatment	80m ³ /h and 200 m ³ /h desanding
Méto de Rennes Lot 1	2014	Spie Batignolles TPCI VINCI Construction	Subway					Seepage & site water treatment plant, includ. FP and pH treatment	100 m ³ /h
Tunnel de Saint B�at	2013	Soletanche Bachy Tunnels	Highway tunnel					Seepage & site water treatment plant, includ. FP and pH treatment	60 m ³ /h and desanding

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Barrage d'Assiut Egypte	2013	EFNAB	dam					Seepage & site water treatment plant and pH treatment	60 m ³ /h
Tunnel du Fréjus	2013	RAZEL BEC	Highway tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	60 m ³ /h and 100 m ³ /h desanding
SITREN 3^{ème} poste source Monaco	2012	SITREN Eiffage	Highway tunnel					Seepage & site water treatment plant, includ. FP and pH treatment	20 m ³ /h and 40 m ³ /h desanding
Vinci Tour Odeon, Monaco	2012	Vinci	-	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	60 m ³ /h and 100 m ³ /h desanding
Pudding Mill Lane, Royaume-Uni	2012	Dragados	Sewage Tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	60 m ³ /h and 100 m ³ /h desanding
Chatham Docks	2012	Dragados	Sewage Tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	20 m ³ /h and 40 m ³ /h desanding
Limmo, Royaume-Uni	2012	Dragados	Sewage Tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	100 m ³ /h and 200 m ³ /h desanding
Mine Codelco, Chili	2012	SCM, Société centrale de Matériel / VINCI Construction	Tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	132 m ³ /h and 475 m ³ /h desanding
Mine Codelco, Chili	2012	SCM, Société centrale de Matériel / VINCI Construction	Tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	1,000 m ³ /h and 2x900 m ³ /h desanding
BCWF, Miami	2010	Bouygues Civil Works Florida	Tunnel					Seepage & site water treatment plant, includ. FP	120 m ³ /h and 200 m ³ /h desanding
Tunnel de Savergne, France	2011	Spie Batignolles						Seepage & site water treatment plant, includ. FP and pH treatment	100 m ³ /h and 130 m ³ /h desanding
-	2009	Bouygues DTMP	-	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatmt.	50 m ³ /h and 100 m ³ /h desanding

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OULLINS	2009	SPIE BATIGNOLLES CHANTIERS MODERNES	Subway	Herrenknecht	9.46	1 317 m	Alluvials, Moraines, Molasses and Granite	Seepage & site water treatment plant, includ. FP and pH treatment	50 m ³ /h and 100 m ³ /h desanding
MODANE	2009	Razel	Safety gallery for Frejus tunnel	-	-	-	-	Seepage & site water treatment plant, includ. FP and pH treatment	50 m ³ /h and 100 m ³ /h desanding
A 89	2009	Vinci Construction Terrassement	Highway	-	-	-	-	2 surface drainage water treatment plants with FP	2 x 300 m ³ /h
West/East TOULON crossing	2008	Bouygues Soletanche- Bachy Colas Scred	Railway Tunnel	fraise	~90 m ²	1 500m	Hard rock	Seepage water treatment plant including FP	60 m ³ /h 100 m ³ /h
PERTHUS TUNNELS	2007	TUNEL DEL PERTHUS, AEIE	Railway Tunnel	Herrenknecht	2 x 9,9	2 x 8171 m	Granite Gneiss Schiste	Seepage water treatment plant	25 m ³ /h with peak up to 60 m ³ /h
BAMCO Budapest	2007	JV includ. Vinci, Strabag & Hidépitó Rt	Subway tunnel	Herrenknecht	2 x 6,2	2 x 5400 m	Clay, silt and sand/gravel	Seepage & site water treatment plant	180m ³ /h desanding 50 m ³ /h water treatment
A41 France	2006	Bouygues Eiffage	Highway tunnel	Herrenknecht	12, 0	2 x 2 800 m	Hard rock molasse	Seepage & site water treatment plant	150 m ³ /h water treatment
TIMA	2006	BOUYGUES RAZEL	Railway Tunnel	Herrenknecht	8,0 (E.P.B type)	1870 m	Auteuil sand + plastic clay & chalk	Seepage & site water treatment plant	50 m ³ /h water treatment
MODANE France	2006	JV with RAZEL	Railway Tunnel	explosive	80 m ²	3000m	Hard rock	2 x desanders	2 x 720 m ³ /h
LA PRAZ L.T.F - France	2006	JV with Spie Batignolles	Railway Tunnel	explosive	80 m ²	3000m	Hard rock	2 desanders + Water treatment + Filter-press	2 x 270 m ³ /h
Tunnel Maurice Lemaire	2004	Bouygues / Eiffage	Service Tunnel	Herrenknecht	6 ,0	6,900m	Granite + other rocks	site water treatment plant	150
LOK MA CHAU Hong-Kong	2003	D.J.V (Bouygues)	Railway Tunnel	N.F.M.	8,75	-	Granit & alluvial deposit	STP for hyperbaric job with water treatment & 1FP	150
VL10 Choisy Paris	2002	SADE / EIFFAGE	Sewage Tunnel	Herrenknecht	4,0	2300 m	Sand + clay	Compact drainage waters treatment plant	60
Soumagne Tunnel Belgium	2001	Vinci / Bouygues / Eiffage / W&Freitag	Railway Tunnel	explosive	11,8	5940 m	Granite	Compact drainage waters treatment plant	50

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Lötschberg Tunnel Switzerland	2001	ARGE FERDEN	Railway Tunnel	Robbins/Atlas Copco	5,03	34600 m	Granite	Drainage waters treatment plant	200
KCR 320 HONG-KONG	2000	D.Z.J.V (Bouygues)	Railway Tunnel	N.F.M.	8,75	2 x 1840m	Granit & alluvial deposit	STP for hyperbaric work with water treatment & FP	120
B.P.N.L. Lyon	1997	Bouygues Dumez GTM	Road Tunnel	N.F.M.	11	3 200m	Alluvial deposit	STP for hyperbaric maintenance	300 to 500

- FP : Filter Press
- STP : Slurry treatment plant