



SEE SITE PLAN

ALISTO PROJECT NO: 10-320-08 DATE DRILLED: 04/22-28/98
 CLIENT: Pacific Gas and Electric Co.
 LOCATION: Topock Compressor Station
 DRILLING METHOD: Ingersol Rand STRATEX/Air rotary
 DRILLING COMPANY: THF Drilling CASING ELEVATION:
 LOGGED BY: Ted Moise APPROVED BY: Dan Salasces

WELL DIAGRAM		DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>		0	SP SM		Gravelly silty SAND: light gray; ~50% sand, fine- to coarse-grained; ~40% gravel, subrounded to subangular, to 40 mm; ~10% fines.
		5	GP		sandy GRAVEL: light gray; ~50% gravel, subrounded to subangular, to 70 mm; ~45% sand, fine- to coarse-grained; ~5% fines.
		10	GM		sandy silty GRAVEL: light gray; ~50% gravel; ~35% sand, fine- to coarse-grained; ~15% fines. At 11.5 and 12.5 feet, cobble, to 85 mm.
		15	GP		sandy GRAVEL: reddish-gray; ~50% gravel, subrounded to subangular, to 50 mm; ~45% sand, fine- to coarse-grained; ~5% fines. Changes at 18 feet of, ~85% gravel; ~35% sand.
		25	SP		gravelly SAND: pale red; ~55% sand, fine- to medium-grained; ~40% gravel, subrounded to subangular, to 40 mm; ~5% fines. At 25 feet cobble, 95 mm. Changes at 28 feet of, ~85% sand, fine- to coarse-grained; ~30% gravel, to 50 mm.



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WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>	35	SP		gravelly SAND continued.
	40	GP		sandy GRAVEL: light gray to pale red; ~50% gravel, subrounded to subangular, to 80 mm; ~35% sand, fine- to coarse-grained; ~5% fines.
	45	SP		gravelly SAND: pale yellowish-brown; ~55% sand, fine- to coarse-grained; ~40% gravel, subrounded to subangular, to 50 mm; ~5% fines.
	50	GM GP		silty GRAVEL: light gray; ~80% gravel, to 70 mm; ~40% fines (rock flour). sandy GRAVEL: light gray to light olive-gray; ~50% gravel, subrounded to subangular, to 50 mm; ~45% sand, fine- to coarse-grained; ~5% fines.
	60			Changes at 61 feet are, ~65% gravel; ~30% sand.



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WALNUT CREEK, CALIFORNIA

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DRILLING METHOD: Ingersol Rand STRATEX/Air rotary

DRILLING COMPANY: THF Drilling

CASING ELEVATION:

LOGGED BY: Ted Moise

APPROVED BY: Dan Salices

WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>	75	GP		
	80	SP	gravelly SAND: light gray; ~50% sand, fine- to medium-grained; ~45% gravel, subrounded to subangular, to 80 mm; ~5% fines. Changes at 78 feet of, color to light brownish-gray; ~80% sand; ~35% gravel. gravelly SAND continued.	
	85	GP	sandy GRAVEL: light gray to light brownish-gray; ~50% gravel, subrounded to subangular, to 80 mm; ~45% sand, fine- to coarse-grained; ~5% fines. Changes at 86 feet of, ~75% gravel; ~20% sand; cobble, to 80 mm. Changes at 88 feet of, ~80% gravel; ~35% sand.	
	100	GP	Changes at 103 feet of, color to pale brown; ~50% gravel, to 50 mm; ~45% sand. Wet at 104 feet.	



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WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>	<p>110</p> <p>115</p> <p>120</p> <p>125</p> <p>130</p> <p>135</p>		<p>GP</p> <p>GP GM</p> <p>GP</p> <p>SP</p>	<p>sandy silty GRAVEL: dark yellowish-brown; ~50% gravel, subrounded to subangular, to 85 mm; ~40% sand, fine- to coarse-grained; ~10% fines;</p> <p>sandy GRAVEL: pale brown; ~50% gravel, subrounded to subangular, to 85 mm; ~45% sand, fine- to coarse-grained; ~5% fines.</p> <p>gravelly SAND: pale yellowish-brown; ~50% sand, fine- to coarse-grained; ~45% gravel, subrounded to subangular, to 85 mm; ~5% fines.</p>



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WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>	45		SP	
	150		GP	sandy GRAVEL: pale yellowish-brown to light gray; ~75% gravel, subrounded to angular, to 70 mm; ~20% sand, fine- to coarse-grained; ~5% fines.
	160		SP	gravelly SAND: pale brown to grayish-red; ~50% sand, fine- to coarse-grained; ~45% gravel, subrounded to subangular, to 55 mm; ~5% fines.
	170		GP/GM	sandy silty GRAVEL: grayish-red; ~55% gravel, subrounded to subangular, to 80 mm; ~40% sand, fine- to coarse-grained; ~10% fines; wet. sandy silty GRAVEL continued.

GP



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 DRILLING COMPANY: THF Drilling CASING ELEVATION:
 LOGGED BY: Ted Moise APPROVED BY: Dan Salices

WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>	<p>80</p> <p>85</p> <p>90</p> <p>95</p> <p>200</p> <p>205</p>		<p>GP</p> <p>SP</p> <p>GP</p> <p>SP</p> <p>GP</p>	<p>sandy GRAVEL: grayish-red; ~50% gravel, subrounded to angular, to 85 mm; ~45% sand, fine- to coarse-grained; ~5% fines.</p> <p>gravelly SAND: pale brown to pale yellowish-brown; ~55% sand, fine- to coarse-grained; ~40% gravel, subrounded to angular, to 70 mm; ~5% fines.</p> <p>sandy GRAVEL: pale red to pale reddish-brown; ~55% gravel, subrounded to angular, to 70 mm; ~45% sand, fine- to coarse-grained.</p> <p>gravelly SAND: pale brown to pale yellowish-brown; ~55% sand, fine- to coarse-grained; ~40% gravel, subrounded to angular, to 70 mm; ~5% fines.</p> <p>sandy GRAVEL: grayish red to pale red; ~60% gravel, subrounded to angular, to 70 mm; ~35% sand, fine- to coarse-grained; ~5% fines.</p> <p>Color change at 209.5 feet to grayish-red to dark reddish-brown; ~70% gravel, ~25% sand.</p>



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LOCATION: Topock Compressor Station

DRILLING METHOD: Ingersol Rand STRATEX/Air rotary

DRILLING COMPANY: THF Drilling

CASING ELEVATION:

LOGGED BY: Ted Moise

APPROVED BY: Dan Salaires

WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p>	<p>215</p> <p>220</p> <p>225</p> <p>230</p> <p>235</p> <p>240</p>		<p>GP</p> <p>SP</p>	<p>At 214.5 feet cobble, angular, 100 mm sandy GRAVEL continued.</p> <p>gravelly SAND: grayish-red; ~85% sand, fine- to coarse-grained; ~35% gravel, subrounded to subangular.</p> <p>RED FANGLOMERATE (rock): grayish-red; comprised of sands and gravels, very hard.</p>



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CASING ELEVATION:

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APPROVED BY: Dan Salalces

WELL DIAGRAM

DEPTH
feet

GRAPHIC LOG

SOIL CLASS

GEOLOGIC DESCRIPTION

4" Sch. 80 PVC Casing

Cement/Bent Grout

250
255
260
265
270
275

RED FANGOLMERATE continued.



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WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
	<p>285</p> <p>290</p> <p>295</p> <p>300</p> <p>305</p> <p>310</p>			<p>RED FANGOLMERATE continued.</p>



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WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
				<p>SANDSTONE: pale yellowish-brown.</p> <p>RED FANGLOMERATE (rock): grayish-red.</p>



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<p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p> <p>Bentonite</p> <p>Colorado 10x20 Sand</p>	<p>355</p> <p>360</p> <p>365</p> <p>370</p> <p>375</p> <p>380</p>			<p>RED FANGOLMERATE continued.</p> <p>SANDSTONE: pale yellowish-brown.</p>



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WELL DIAGRAM	DEPTH feet	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
	<p>390 395 400 405 410 415</p>			<p>SANDSTONE continued.</p> <p>RED FANGLOMERATE (rock): grayish-red.</p>



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WELL DIAGRAM

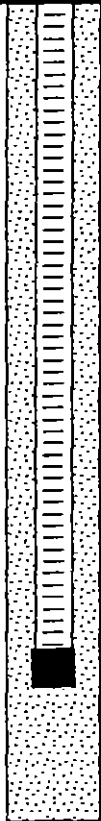
DEPTH
feet

GRAPHIC LOG

SOIL CLASS

GEOLOGIC DESCRIPTION

4" PVC Screen 0.020-inch slot



Colorado 10x20 Sand

25

30

35

40

45

50

RED FANGOLMERATE continued.

Total depth of borehole is 441.5 feet.