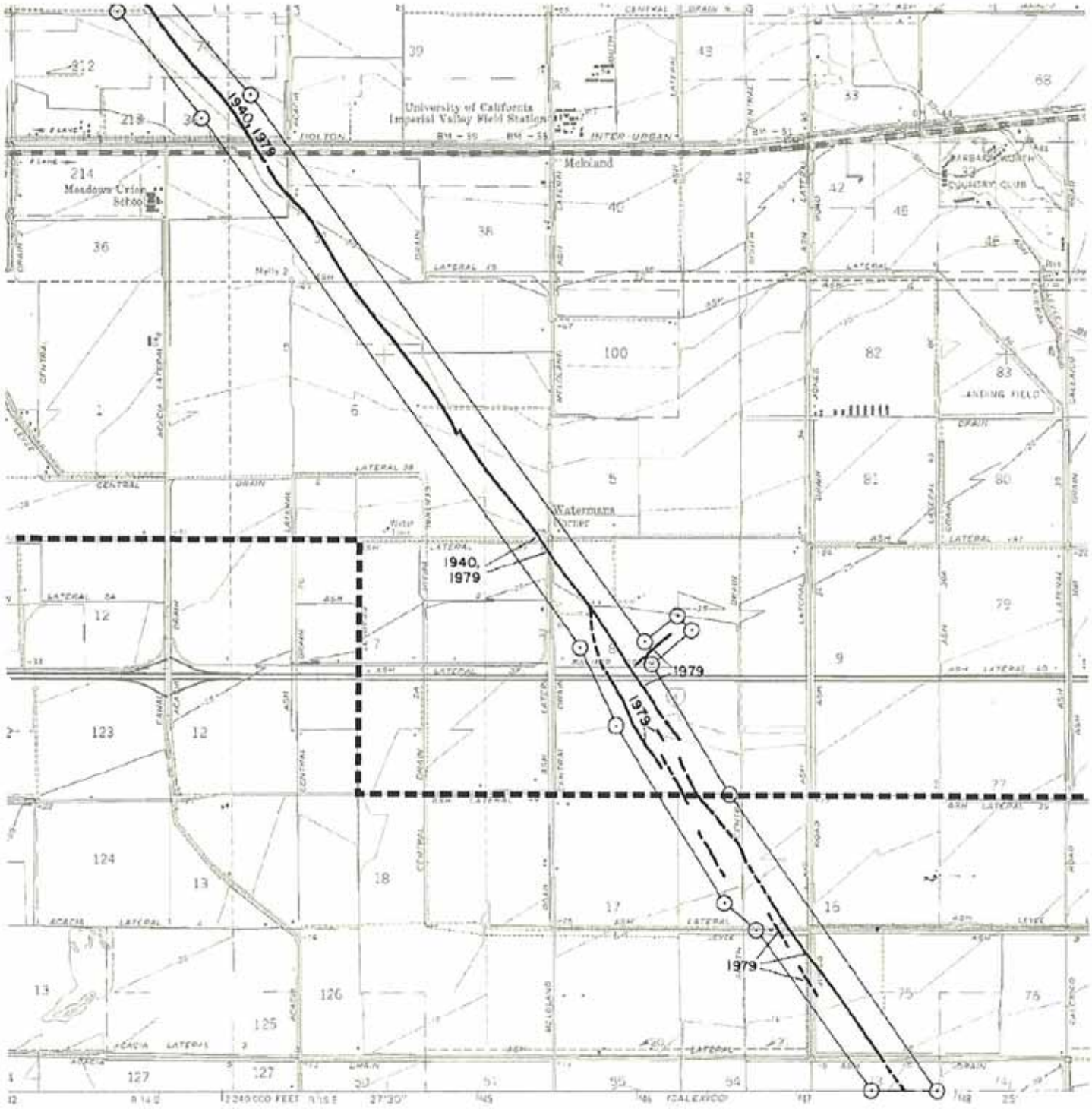
Non-Internet Public



Reference:

IID Lateral (preferred route)

Scale: 1" = 3,000'

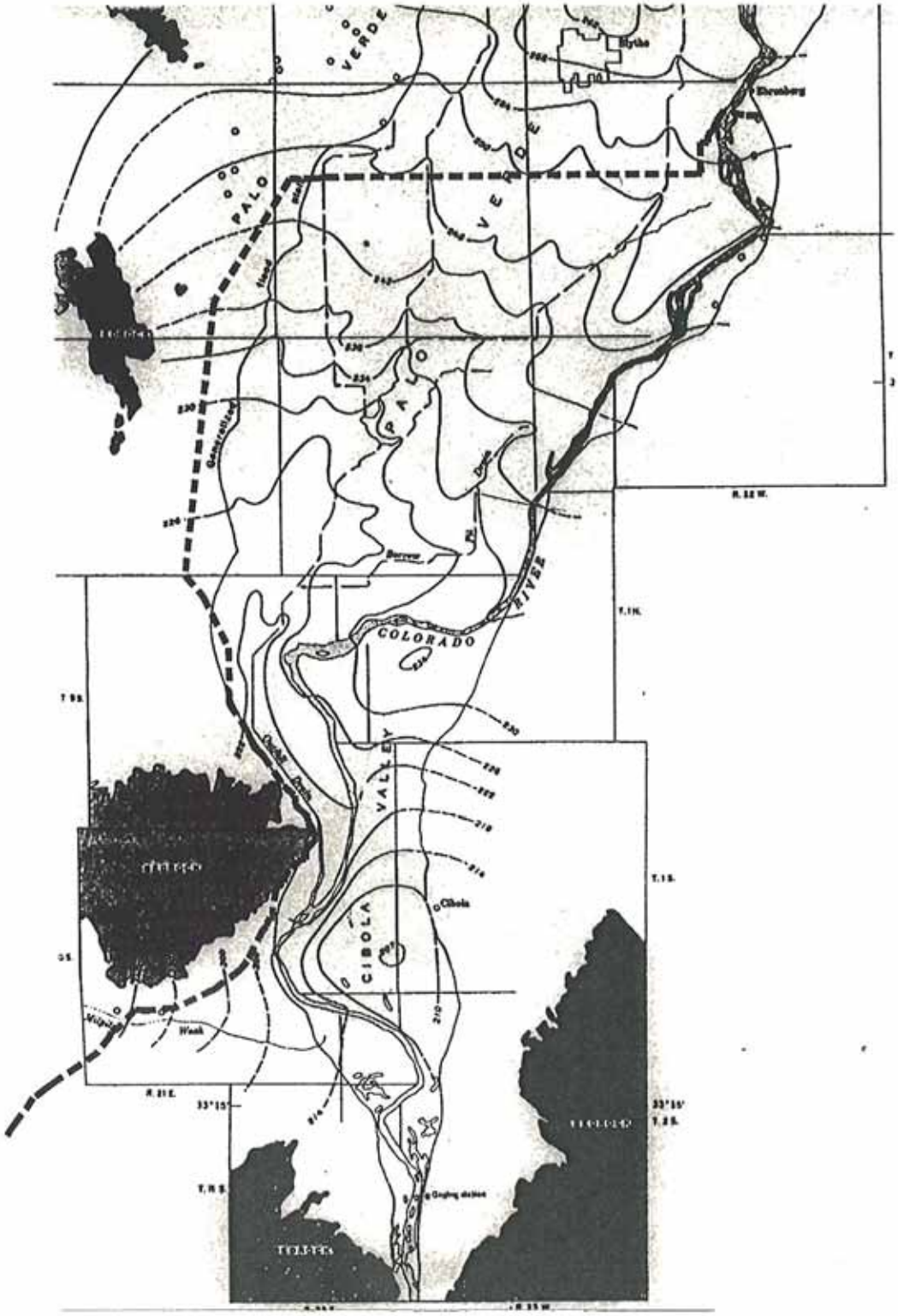
0 3,000 6,000

Figure 8 - Excerpt of A-P Fault Map at Imperial Fault

North Baja Pipeline Project
File No.: 08312-03

Earth Systems Southwest

Non-Internet Public



Reference: USGS Professional Paper 486G

North Baja Pipeline Route

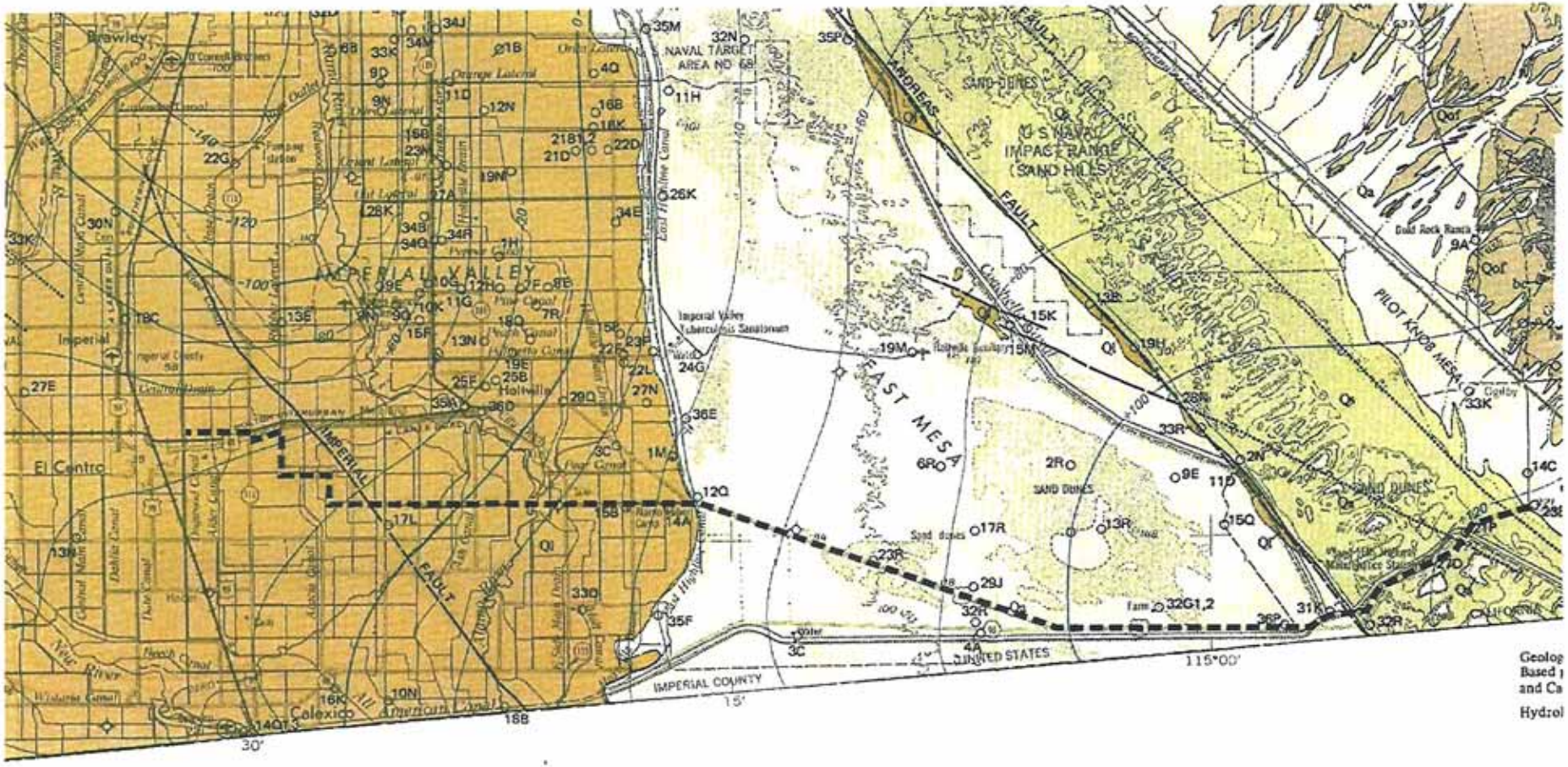
Scale: 1" = 4 miles (1:250,000)

0 4 8

Figure 9 - Groundwater Levels, Palo Verde Valley Area

North Baja Pipeline Project
File No.: 08312-03

Earth Systems Southwest



Reference: USGS Professional Paper 486-K
1965 Groundwater Level Contours in Blue

IID Lateral (preferred route)

Scale: 1" = 5 miles

Figure 10 - Groundwater Levels, IID Lateral

North Baja Pipeline Project
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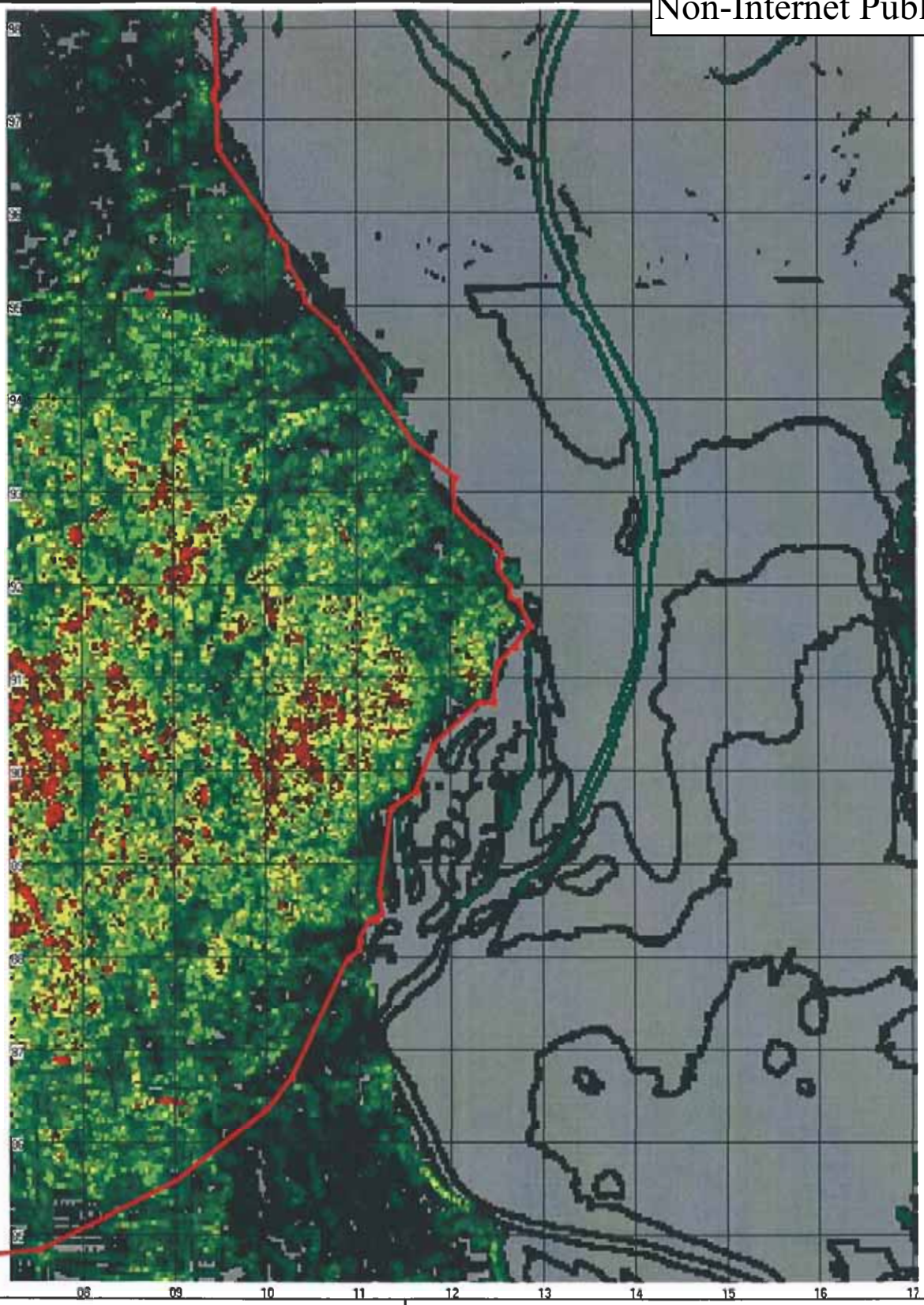
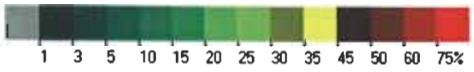
Earth Systems Southwest

Non-Internet Public

Non-Internet Public





Percent Slope

North Baja Pipeline Route

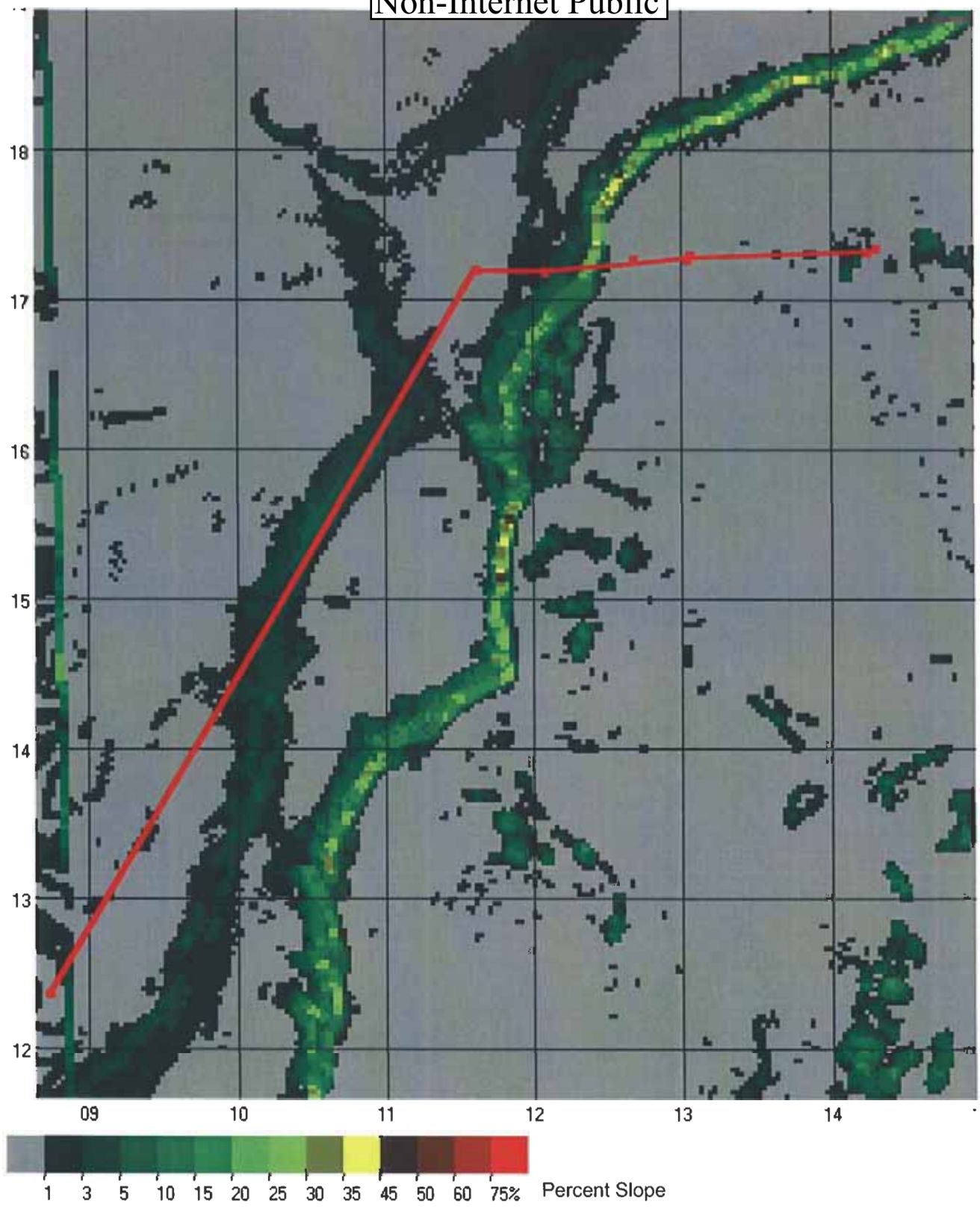
Created from 7.5-min.USGS DEM using MicroDEM, 1000-m UTM Grid shown

Figure 11 - Slope Terrain Analysis, Palo Verde Peak Area

North Baja Pipeline Project
File No.: 08312-03

Earth Systems Southwest

Non-Internet Public



North Baja Pipeline Route

Created from 7.5-min.USGS DEM using MicroDEM, 1000-m UTM Grid shown

Figure 12 - Slope Terrain Analysis, Ripley Area

North Baja Pipeline Project
File No.: 08312-03

Earth Systems Southwest

Table 1
Fault Parameters at Ehrenberg Station
& Deterministic Estimates of Mean Peak Ground Acceleration (PGA)

Fault Name or Seismic Zone	Distance from Site (mi)	Distance from Site (km)	Fault Type		Maximum Magnitude Mmax (Mw)	Avg Slip Rate (mm/yr)	Avg Return Period (yrs)	Fault Length (km)	Mean Site PGA (g)
Reference Notes: (1)			(2)	(3)	(4)	(2)	(2)	(2)	(5)
Elmore Ranch	**69.5**	111.9	SS	B	**6.6**	1	225	29	**0.03**
Brawley Seismic Zone	**69.8**	112.4	SS	B	**6.4**	25	24	42	**0.03**
San Andreas - Southern	**70.1**	112.8	SS	A	**7.7**	24	220	199	**0.07**
Brawley	**70.9**	114.1	SS	A	**7.0**	20	79	62	**0.04**
Imperial	**77.3**	124.4	SS	A	**7.0**	20	79	62	**0.04**
Superstition Hills (San Jacinto)	**80.5**	129.5	SS	B	**6.6**	4	250	23	**0.03**
Weinert (Superstition Hills)	**81.0**	130.3	SS	C	**6.6**	4	250	22	**0.03**
Superstition Mtn. (San Jacinto)	**83.4**	134.2	SS	B	**6.6**	5	500	24	**0.03**
Blue Cut	**84.6**	136.2	SS	C	**6.8**	1	760	30	**0.03**
Pinto Mountain	**89.6**	144.1	SS	B	**7.2**	2.5	499	74	**0.04**
Pisgah-Bullion Mtn.-Mesquite Lk	**92.4**	148.7	SS	B	**7.3**	0.6	5000	89	**0.04**
San Jacinto - Borrego	**92.6**	149.0	SS	B	**6.6**	4	175	29	**0.02**
Cerro Prieto	**93.2**	149.9	SS	A	**7.2**	34	50	116	**0.04**

Notes:

1. Jennings (1994) and California Geologic Survey (CGS) (2003)
2. CGS (2003), SS = Strike-Slip, RV = Reverse, DS = Dip Slip (normal), BT = Blind Thrust
3. 2001 CBC, where Type A faults: Mmax > 7 & slip rate >5 mm/yr & Type C faults: Mmax <6.5 & slip rate < 2 mm/yr
4. CGS (2003)
5. The estimates of the mean Site PGA are based on the following attenuation relationships:
   Average of: (1) 1997 Boore, Joyner & Fumal; (2) 1997 Sadigh et al; (3) 1997 Campbell , (4) 1997 Abrahamson & Silva (mean plus sigma values are about 1.5 to 1.6 times higher)
   Based on Site Coordinates: 33.595 N Latitude, 114.531 W Longtude and Site Soil Type D

Table 2
Fault Parameters @ Ogilby Meter Station
& Deterministic Estimates of Mean Peak Ground Acceleration (PGA)

Fault Name or Seismic Zone	Distance from Site (mi)	Distance from Site (km)	Fault Type		Maximum Magnitude Mmax (Mw)	Avg Slip Rate (mm/yr)	Avg Return Period (yrs)	Fault Length (km)	Mean Site PGA (g)
Reference Notes: (1)			(2)	(3)	(4)	(2)	(2)	(2)	(5)
Imperial	**28.0**	45.1	SS	A	**7.0**	20	79	62	**0.10**
Cerro Prieto	**36.8**	59.3	SS	A	**7.2**	34	50	116	**0.09**
Brawley	**37.6**	60.6	SS	A	**7.0**	20	79	62	**0.08**
Brawley Seismic Zone	**41.8**	67.3	SS	B	**6.4**	25	24	42	**0.05**
Laguna Salada	**46.5**	74.8	SS	B	**7.0**	3.5	336	67	**0.06**
Weinert (Superstition Hills)	**45.1**	72.6	SS	C	**6.6**	4	250	22	**0.05**
Superstition Hills (San Jacinto)	**48.1**	77.3	SS	B	**6.6**	4	250	23	**0.05**
Superstition Mtn. (San Jacinto)	**51.4**	82.7	SS	B	**6.6**	5	500	24	**0.04**
Elmore Ranch	**57.8**	93.0	SS	B	**6.6**	1	225	29	**0.04**
San Andreas - Southern	**65.3**	105.1	SS	A	**7.7**	24	220	199	**0.07**
Elsinore-Coyote Mountain	**68.3**	109.9	SS	B	**6.8**	4	625	39	**0.04**
San Jacinto - Borrego	**68.6**	110.4	SS	B	**6.6**	4	175	29	**0.03**
San Jacinto-Anza	**82.5**	132.7	SS	A	**7.2**	12	250	91	**0.04**
San Jacinto-Coyote Creek	**84.6**	136.2	SS	B	**6.8**	4	175	41	**0.03**
Elsinore-Julian	**90.0**	144.8	SS	A	**7.1**	5	340	76	**0.03**

Notes:

1. Jennings (1994) and California Geologic Survey (CGS) (2003)
2. CGS (2003), SS = Strike-Slip, RV = Reverse, DS = Dip Slip (normal), BT = Blind Thrust
3. 2001 CBC, where Type A faults: Mmax > 7 & slip rate >5 mm/yr & Type C faults: Mmax <6.5 & slip rate < 2 mm/yr
4. CGS (2003)
5. The estimates of the mean Site PGA are based on the following attenuation relationships:
   Average of: (1) 1997 Boore, Joyner & Fumal; (2) 1997 Sadigh et al; (3) 1997 Campbell , (4) 1997 Abrahamson & Silva (mean plus sigma values are about 1.5 to 1.6 times higher)
   Based on Site Coordinates: 32.761 N Latitude, 114.830 W Longtude and Site Soil Type D

Table 3
Fault Parameters @ IID Lateral at Imperial Fault
& Deterministic Estimates of Mean Peak Ground Acceleration (PGA)

Fault Name or Seismic Zone	Distance from Site (mi)	Distance from Site (km)	Fault Type		Maximum Magnitude Mmax (Mw)	Avg Slip Rate (mm/yr)	Avg Return Period (yrs)	Fault Length (km)	Mean Site PGA (g)
Reference Notes: (1)			(2)	(3)	(4)	(2)	(2)	(2)	(5)
Imperial	**0.0**	0.0	SS	A	**7.0**	20	79	62	**0.56**
Brawley	**4.2**	6.8	SS	A	**7.0**	20	79	62	**0.40**
Weinert (Superstition Hills)	**9.9**	15.9	SS	C	**6.6**	4	250	22	**0.20**
Brawley Seismic Zone	**13.6**	21.9	SS	B	**6.4**	25	24	42	**0.14**
Superstition Hills (San Jacinto)	**14.2**	22.8	SS	B	**6.6**	4	250	23	**0.15**
Superstition Mtn. (San Jacinto)	**17.0**	27.3	SS	B	**6.6**	5	500	24	**0.13**
Cerro Prieto	**18.5**	29.7	SS	A	**7.2**	34	50	116	**0.16**
Laguna Salada	**23.5**	37.9	SS	B	**7.0**	3.5	336	67	**0.12**
Elmore Ranch	**30.1**	48.4	SS	B	**6.6**	1	225	29	**0.07**
Elsinore-Coyote Mountain	**32.7**	52.6	SS	B	**6.8**	4	625	39	**0.08**
San Jacinto - Borrego	**34.9**	56.2	SS	B	**6.6**	4	175	29	**0.06**
San Andreas - Southern	**42.7**	68.8	SS	A	**7.7**	24	220	199	**0.11**
San Jacinto-Anza	**51.8**	83.4	SS	A	**7.2**	12	250	91	**0.06**
San Jacinto-Coyote Creek	**52.5**	84.5	SS	B	**6.8**	4	175	41	**0.05**
Elsinore-Julian	**54.9**	88.4	SS	A	**7.1**	5	340	76	**0.06**
Earthquake Valley	**59.8**	96.3	SS	B	**6.5**	2	351	20	**0.04**
San Jacinto (Hot Spgs - Buck Ridge)	**66.9**	107.6	SS	C	**6.5**	2	354	70	**0.03**
San Andreas - Mission Crk. Branch	**83.7**	134.6	SS	A	**7.2**	25	220	95	**0.04**
San Andreas - Banning Branch	**83.7**	134.6	SS	A	**7.2**	10	220	98	**0.04**
Blue Cut	**84.4**	135.9	SS	C	**6.8**	1	760	30	**0.03**

Notes:

1. Jennings (1994) and California Geologic Survey (CGS) (2003)
2. CGS (2003), SS = Strike-Slip, RV = Reverse, DS = Dip Slip (normal), BT = Blind Thrust
3. 2001 CBC, where Type A faults: Mmax > 7 & slip rate >5 mm/yr & Type C faults: Mmax <6.5 & slip rate < 2 mm/yr
4. CGS (2003)
5. The estimates of the mean Site PGA are based on the following attenuation relationships:
   Average of: (1) 1997 Boore, Joyner & Fumal; (2) 1997 Sadigh et al; (3) 1997 Campbell , (4) 1997 Abrahamson & Silva
   (mean plus sigma values are about 1.5 to 1.6 times higher)
   Based on Site Coordinates: 32.774 N Latitude, 115.443 W Longtude and Site Soil Type D