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BINDER 1

Annual Ground Water Monitoring Report: Gallup Refinery – 2012

Western Refining

Gallup, New Mexico

April 17, 2012

SECTION 9
WELL DATA SUMMARY TABLE

The 2012 Well Data DTB/DTW Measurements Summary Table has been updated with information submitted to and approved by NMED per notification received "Approval with Modifications, Requirement to Resurvey Ground Water Monitoring Wells and Recovery Wells issued on September 26, 2012. Western was required to resurvey the monitoring wells due to discrepancies found in reporting ground level elevation, well casing elevation, well casing bottom elevation and stick up lengths. All monitoring wells were surveyed by a licensed professional surveyor, DePauli Engineering on June 7, 2011. The Well Data Summary Table is attached as Section 9.1.

2012 WELL DATA DTB/DTW MEASUREMENTS ANNUAL/QUARTERLY

Date of Installation	Well ID Number	Inspection or Sample Date	Casing Diameter[2] (Inch)	A Ground Level Elevations (ft)	Well Casing Rim Elevations[1] (ft)	Ground Elevation Inside Steel Sleeve[1] (ft)	Stick-up length (ft)	Well Casing Bottom Elevations [1] (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness [2] (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation	Screened Interval Depth Top to Bottom (ft)	Stratigraphic unit in which screen exists	Purge Volume = 3 Well Vol (gal)
11/10/2003	BW-1A	8/23/2012	2.00	6,874.10	6,876.68	6,872.30	4.38	6,839.06	37.62	N/A	N/A	0.00	DRY	N/A	30 - 35	Upper Sand	N/A
10/28/2003	BW-1B	8/23/2012	2.00	6,874.13	6,876.94	6,876.26	0.68	6,809.49	67.45	N/A	N/A	0.00	DRY	N/A	54.6 - 64.6	Chinle/Alluvium Interface	N/A
11/10/2003	BW-1C	8/24/2012	2.00	6,873.95	6,876.78	6,872.28	4.50	6,740.39	136.39	N/A	N/A	7.30	6,866.65	N/A	125 -135	Sonsela	63.11
11/10/2003	BW-2A	8/24/2012	2.00	6,871.88	6,874.69	6,870.45	4.24	6,807.12	67.57	N/A	N/A	32.26	6,839.62	N/A	55 - 65	Upper Sand	17.27
10/28/2003	BW-2B	8/24/2012	2.00	6,871.66	6,874.50	6,870.06	4.44	6,782.24	92.26	N/A	N/A	27.83	6,843.83	N/A	80 - 90	Chinle/Alluvium Interface	3151
10/28/2003	BW-2C	8/24/2012	2.00	6,872.90	6,875.30	6,872.02	3.28	6,722.46	152.84	N/A	N/A	20.35	6,852.55	N/A	139.5 - 149.5	Sonsela	64.79
6/15/2004	BW-3A	8/23/2012	2.00	6,875.94	6,878.39	6,875.08	3.31	6,826.04	52.35	N/A	N/A	0.00	DRY	N/A	39.5 - 49.5	Upper Sand	N/A
10/15/2003	BW-3B	8/23/2012	2.00	6,876.16	6,878.59	6,875.41	3.18	6,809.19	69.40	N/A	N/A	33.13	6,843.03	N/A	63 - 73	Chinle/Alluvium Interface	17.74
7/20/2004	BW-3C	8/23/2012	2.00	6,875.72	6,877.95	6,875.27	2.68	6,723.40	154.55	N/A	N/A	7.77	6,867.95	N/A	144.5 - 154.5	Sonsela	71.78
9/25/1981	OW-11	8/22/2012	4.00	6,922.05	6,923.51	6,921.80	1.71	6,857.72	65.79	N/A	N/A	21.05	6,901.00	N/A	43 - 65	Sonsela	99.32
12/15/1980	OW-12	8/22/2012	4.00	6,939.57	6,940.69	6,939.04	1.65	6,811.84	128.85	N/A	N/A	48.13	6,891.44	N/A	117.8 - 137.8	Sonsela	179.2
10/14/1981	MW-1	8/23/2012	5.00	6,876.63	6,878.12	6,876.79	1.33	6,747.29	130.83	N/A	N/A	7.70	6,868.93	N/A	117.72 - 127.72	Sonsela	376.78
10/15/1981	MW-2	8/23/2012	5.00	6,878.39	6,880.30	6,878.41	1.89	6,742.82	137.48	N/A	N/A	9.97	6,868.42	N/A	112 - 122	Sonsela	390.18
10/16/1981	MW-4	8/20/2012	5.00	6,879.89	6,881.63	6,879.34	2.29	6,759.91	121.72	N/A	N/A	7.76	6,872.13	N/A	101 - 121	Sonsela	348.74
7/21/1986	MW-5	8/22/2012	4.00	6,880.20	6,882.83	6,881.77	1.06	6,752.00	130.83	N/A	N/A	11.40	6,868.80	N/A	115 - 125	Sonsela	265.13
9/26/1985	SMW-2	8/23/2012	2.00	6,881.63	6,883.97	6,879.07	4.90	6,831.17	52.80	N/A	N/A	25.20	6,856.43	N/A	34.31 - 54.31	Chinle/Alluvium and Upper Sand	13.5
9/25/1985	SMW-4	8/24/2012	2.00	6,877.63	6,879.52	6,875.72	3.80	6,809.84	69.68	N/A	N/A	29.16	6,848.47	N/A	51.7 - 71.7	Chinle/Alluvium Interface	19.8
1/5/1981	OW-1	3/22/2012	4.00	6,866.32	6,866.62	6,866.44	0.18	6,772.07	94.55	N/A	N/A	3.40	6,862.92	N/A	89.3 - 99.3	Sonsela	177.7
		6/13/2012	4.00	6,866.32	6,866.62	6,866.44	0.18	6,772.07	94.55	N/A	N/A	3.38	6,862.94	N/A	89.3 - 99.3	Sonsela	177
		8/22/2012	4.00	6,866.32	6,866.62	6,866.44	0.18	6,772.07	94.55	N/A	N/A	0.00	6,866.32	N/A	89.3 - 99.3	Sonsela	209.9
		11/27/2012	4.00	6,866.32	6,866.62	6,866.44	0.18	6,772.07	94.55	N/A	N/A	0.12	6,866.20	N/A	89.3 - 99.3	Sonsela	210
11/25/1980	OW-10	3/22/2012	4.00	6,873.67	6,874.91	6,872.59	2.32	6,814.58	60.33	N/A	N/A	0.50	6,873.17	N/A	40 - 60	Sonslea	132.82
		6/13/2012	4.00	6,873.67	6,874.91	6,872.59	2.32	6,814.58	60.33	N/A	N/A	1.67	6,872.00	N/A	40 - 60	Sonsela	114
		8/22/2012	4.00	6,873.67	6,874.91	6,872.59	2.32	6,814.58	60.33	N/A	N/A	2.45	6,871.22	N/A	40 - 60	Sonsela	128.49
		11/27/2012	4.00	6,873.67	6,874.91	6,872.59	2.32	6,814.58	60.33	N/A	N/A	3.25	6,870.42	N/A	40 - 60	Sonsela	126.72

2012 WELL DATA DTB/DTW MEASUREMENTS ANNUAL/QUARTERLY

Date of Installation	Well ID Number	Inspection or Sample Date	Casing Diameter[1] (Inch)	A Ground Level Elevations (ft)	Well Casing Rim Elevations[1] (ft)	Ground Elevation Inside Steel Sleeve[1] (ft)	Stick-up length (ft)	Well Casing Bottom Elevations [1] (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness [2] (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation	Screened Interval Depth Top to Bottom (ft)	Stratigraphic unit in which screen exists	Purge Volume = 3 Well Vol (gal)
12/10/1980	OW-13	3/21/2012	4.00	6,918.95	6,920.07	6,915.33	4.74	6,820.92	99.15	N/A	N/A	22.50	6,896.45	N/A	78.2 - 98.2	Sonsela	170
		6/14/2012	4.00	6,918.95	6,920.07	6,915.33	4.74	6,820.92	99.15	N/A	N/A	22.64	6,896.31	N/A	78.2 - 98.2	Sonsela	150
		8/23/2012	4.00	6,918.95	6,920.07	6,915.33	4.74	6,820.92	99.15	N/A	N/A	23.10	6,895.85	N/A	78.2 - 98.2	Sonsela	168.83
		11/27/2012	4.00	6,918.95	6,920.07	6,915.33	4.74	6,820.92	99.15	N/A	N/A	22.90	6,896.05	N/A	78.2 - 98.2	Sonsela	169.28
12/17/1980	OW-14	3/21/2012	4.00	6,924.55	6,926.65	6,924.40	2.25	6,880.13	46.52	N/A	N/A	24.92	6,899.63	N/A	35 - 45	Chinle/Alluvium Interface	48
		6/14/2012	4.00	6,924.55	6,926.65	6,924.40	2.25	6,880.13	46.52	N/A	N/A	24.93	6,899.62	N/A	35 - 45	Chinle/Alluvium Interface	42
		8/23/2012	4.00	6,924.55	6,926.65	6,924.40	2.25	6,880.13	46.52	N/A	N/A	25.11	6,899.44	N/A	35 - 45	Chinle/Alluvium Interface	47.53
		11/27/2012	4.00	6,924.55	6,926.65	6,924.40	2.25	6,880.13	46.52	N/A	N/A	25.05	6,899.50	N/A	35 - 45	Chinle/Alluvium Interface	47.66
8/23/1996	OW-29	3/21/2012	4.00	6,913.89	6,917.00	6,912.09	4.91	6,865.92	51.08	N/A	N/A	19.80	6,894.09	N/A	37.5 - 47.5	Chinle/Alluvium Interface	61
		6/13/2012	4.00	6,913.89	6,917.00	6,912.09	4.91	6,865.92	51.08	N/A	N/A	19.88	6,894.01	N/A	37.5 - 47.5	Chinle/Alluvium Interface	61
		8/23/2012	4.00	6,913.89	6,917.00	6,912.09	4.91	6,865.92	51.08	N/A	N/A	20.04	6,893.85	N/A	37.5 - 47.5	Chinle/Alluvium Interface	68.91
		11/27/2012	4.00	6,913.89	6,917.00	6,912.09	4.91	6,865.92	51.08	N/A	N/A	19.85	6,894.04	N/A	37.5 - 47.5	Chinle/Alluvium Interface	69.33
8/28/1996	OW-30	3/21/2012	4.00	6,921.81	6,924.69	6,919.84	4.85	6,874.79	49.90	N/A	N/A	24.23	6,897.58	N/A	37.9 - 47.9	Chinle/Alluvium Interface	50
		6/14/2012	4.00	6,921.81	6,924.69	6,919.84	4.85	6,874.79	49.90	N/A	N/A	24.28	6,897.53	N/A	37.9 - 47.9	Chinle/Alluvium Interface	50
		8/23/2012	4.00	6,921.81	6,924.69	6,919.84	4.85	6,874.79	49.90	N/A	N/A	24.48	6,897.33	N/A	37.9 - 47.9	Chinle/Alluvium Interface	56.43
		11/27/2012	4.00	6,921.81	6,924.69	6,919.84	4.85	6,874.79	49.90	N/A	N/A	24.39	6,897.42	N/A	37.9 - 47.9	Chinle/Alluvium Interface	56.63
10/5/2009	OW-50	3/22/2012	2.00	6,912.63	6,914.21	6,911.46	2.75	6,850.21	64.00	N/A	N/A	16.88	6,895.75	N/A	48 - 63	Chinle/Alluvium Interface	23
		6/13/2012	2.00	6,912.63	6,914.21	6,911.46	2.75	6,850.21	64.00	N/A	N/A	17.02	6,895.61	N/A	48 - 63	Chinle/Alluvium Interface	22.5
		8/23/2012	2.00	6,912.63	6,914.21	6,911.46	2.75	6,850.21	64.00	N/A	N/A	17.44	6,895.19	N/A	48 - 63	Chinle/Alluvium Interface	22.77
		11/27/2012	2.00	6,912.63	6,914.21	6,911.46	2.75	6,850.21	64.00	N/A	N/A	17.28	6,895.35	N/A	48 - 63	Chinle/Alluvium Interface	22.85
		12/5/2012	2.00	6,912.63	6,914.21	6,911.46	2.75	6,850.21	64.00	N/A	N/A	17.28	6,895.35	N/A	48 - 63	Chinle/Alluvium Interface	22.85
10/5/2009	OW-52	3/22/2012	2.00	6,906.53	6,907.68	6,905.31	2.37	6,829.94	77.74	N/A	N/A	15.65	6,890.88	N/A	64 - 79	Chinle/Alluvium Interface	30
		6/13/2012	2.00	6,906.53	6,907.68	6,905.31	2.37	6,829.94	77.74	N/A	N/A	15.79	6,890.74	N/A	64 - 79	Chinle/Alluvium Interface	30
		8/23/2012	2.00	6,906.53	6,907.68	6,905.31	2.37	6,829.94	77.74	N/A	N/A	16.16	6,890.37	N/A	64 - 79	Chinle/Alluvium Interface	30.11
		11/27/2012	2.00	6,906.53	6,907.68	6,905.31	2.37	6,829.94	77.74	N/A	N/A	16.13	6,890.40	N/A	64 - 79	Chinle/Alluvium Interface	30.13

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Date of Installation	Well ID Number	Inspection or Sample Date	Casing Diameter[1] (Inch)	A Ground Level Elevations (ft)	Well Casing Rim Elevations[1] (ft)	Ground Elevation Inside Steel Sleeve[1] (ft)	Stick-up length (ft)	Well Casing Bottom Elevations [1] (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness [2] (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation	Screened Interval Depth Top to Bottom (ft)	Stratigraphic unit in which screen exists	Purge Volume = 3 Well Vol (gal)
	OW-52	12/5/2012	2.00	6,906.53	6,907.68	6,905.31	2.37	6,829.94	77.74	N/A	N/A	16.26	6,890.27	N/A	64 - 79	Chinle/Alluvium Interface	30.06
7/8/2004	GWM-1	3/20/2012	2.00	6,910.22	6,912.61	6,908.36	4.25	6,886.41	26.20	N/A	N/A	14.49	6,895.73	N/A	17.5 - 23.5	Chinle/Alluvium Interface	5.6
		6/12/2012	2.00	6,910.22	6,912.61	6,908.36	4.25	6,886.41	26.20	N/A	N/A	15.56	6,894.66	N/A	17.5 - 23.5	Chinle/Alluvium Interface	5.1
		8/21/2012	2.00	6,910.22	6,912.61	6,908.36	4.25	6,886.41	26.20	N/A	N/A	16.29	6,893.93	N/A	17.5 - 23.5	Chinle/Alluvium Interface	4.85
		11/28/2012	2.00	6,910.22	6,912.61	6,908.36	4.25	6,886.41	26.20	N/A	N/A	14.50	6,895.72	N/A	17.5 - 23.5	Chinle/Alluvium Interface	5.72
9/25/2005	GWM-2	3/20/2012	2.00	6,910.32	6,913.09	6,908.05	5.04	6,894.28	18.81	N/A	N/A	13.58	6,896.74	N/A	3.2 - 16.2	Chinle/Alluvium Interface	2.5
		6/12/2012	2.00	6,910.32	6,913.09	6,908.05	5.04	6,894.28	18.81	N/A	N/A	14.96	6,895.36	N/A	3.2 - 16.2	Chinle/Alluvium Interface	1.8
		8/21/2012	2.00	6,910.32	6,913.09	6,908.05	5.04	6,894.28	18.81	N/A	N/A	15.79	6,894.53	N/A	3.2 - 16.2	Chinle/Alluvium Interface	1.48
		11/28/2012	2.00	6,910.32	6,913.09	6,908.05	5.04	6,894.28	18.81	N/A	N/A	13.83	6,896.49	N/A	3.2 - 16.2	Chinle/Alluvium Interface	2.44
9/25/2005	GWM-3	3/20/2012	2.00	6,907.35	6,910.25	6,905.48	4.77	6,892.45	17.80	N/A	N/A	12.95	6,894.40	N/A	3 - 15	Chinle/Alluvium Interface	2.4
		6/12/2012	2.00	6,907.35	6,910.25	6,905.48	4.77	6,892.45	17.80	N/A	N/A	14.70	6,892.65	N/A	3 - 15	Chinle/Alluvium Interface	1.5
		8/21/2012	2.00	6,907.35	6,910.25	6,905.48	4.77	6,892.45	17.80	N/A	N/A	15.45	6,891.90	N/A	3 - 15	Chinle/Alluvium Interface	1.15
		11/28/2012	2.00	6,907.35	6,910.25	6,905.48	4.77	6,892.45	17.80	N/A	N/A	13.60	6,893.75	N/A	3 - 15	Chinle/Alluvium Interface	2.35
3/14/2008	NAPIS-1	3/20/2012	2.00	6,913.62	6,913.86	6,913.56	0.30	6,900.33	13.53	N/A	N/A	7.24	6,906.38	N/A	3.7 - 13.7	Chinle/Alluvium Interface	3.02
		6/12/2012	2.00	6,913.62	6,913.86	6,913.56	0.30	6,900.33	13.53	N/A	N/A	7.39	6,906.23	N/A	3.7 - 13.7	Chinle/Alluvium Interface	2.95
		8/21/2012	2.00	6,913.62	6,913.86	6,913.56	0.30	6,900.33	13.53	N/A	N/A	7.07	6,906.55	N/A	3.7 - 13.7	Chinle/Alluvium Interface	3.16
		11/28/2012	2.00	6,913.62	6,913.86	6,913.56	0.30	6,900.33	13.53	N/A	N/A	8.04	6,905.58	N/A	3.7 - 13.7	Chinle/Alluvium Interface	2.68
		12/5/2012	2.00	6,913.62	6,913.86	6,913.56	0.30	6,900.33	13.53	N/A	N/A	8.41	6,905.21	N/A	3.7 - 13.7	Chinle/Alluvium Interface	2.5
3/14/2008	NAPIS-2	3/20/2012	2.00	6,913.40	6,912.65	6,912.54	0.11	6,899.04	13.61	N/A	N/A	7.97	6,905.43	N/A	4.2 - 14.2	Chinle/Alluvium Interface	2.7
		6/12/2012	2.00	6,913.40	6,912.65	6,912.54	0.11	6,899.04	13.61	N/A	N/A	8.09	6,905.31	N/A	4.2 - 14.2	Chinle/Alluvium Interface	2.7
		8/21/2012	2.00	6,913.40	6,912.65	6,912.54	0.11	6,899.04	13.61	N/A	N/A	7.95	6,905.45	N/A	4.2 - 14.2	Chinle/Alluvium Interface	2.77
		11/28/2012	2.00	6,913.40	6,912.65	6,912.54	0.11	6,899.04	13.61	N/A	N/A	9.40	6,904.00	N/A	4.2 - 14.2	Chinle/Alluvium Interface	2.06
		12/5/2012	2.00	6,913.40	6,912.65	6,912.54	0.11	6,899.04	13.61	N/A	N/A	9.47	6,903.93	N/A	4.2 - 14.2	Chinle/Alluvium Interface	2.02
3/14/2008	NAPIS-3	3/20/2012	2.00	6,913.38	6,912.76	6,912.53	0.23	6,882.34	30.42	N/A	N/A	7.51	6,905.87	N/A	25.4 - 30-4	Chinle/Alluvium Interface	11.2
		6/12/2012	2.00	6,913.38	6,912.76	6,912.53	0.23	6,882.34	30.42	N/A	N/A	7.70	6,905.68	N/A	25.4 - 30-4	Chinle/Alluvium Interface	10.9

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	NAPIS-3	10/2/2012	2.00	6,913.38	6,912.76	6,912.53	0.23	6,882.34	30.42	N/A	N/A	8.56	6,904.82	N/A	25.4 - 30-4	Chinle/Alluvium Interface	10.49
		11/28/2012	2.00	6,913.38	6,912.76	6,912.53	0.23	6,882.34	30.42	N/A	N/A	8.30	6,905.08	N/A	25.4 - 30-4	Chinle/Alluvium Interface	10.8/2
		12/5/2012	2.00	6,913.38	6,912.76	6,912.53	0.23	6,882.34	30.42	N/A	N/A	8.42	6,904.96	N/A	25.4 - 30-4	Chinle/Alluvium Interface	10.76
6/11/2007	KA-3	3/20/2012	2.00	6,913.29	6,912.52	6,912.20	0.32	6,889.32	23.20	N/A	N/A	7.93	6,905.36	N/A	15 - 25	Chinle/Alluvium Interface	7.5
		6/12/2012	2.00	6,913.29	6,912.52	6,912.20	0.32	6,889.32	23.20	N/A	N/A	7.97	6,905.32	N/A	15 - 25	Chinle/Alluvium Interface	7.3
		8/21/2012	2.00	6,913.29	6,912.52	6,912.20	0.32	6,889.32	23.20	N/A	N/A	7.98	6,905.31	N/A	15 - 25	Chinle/Alluvium Interface	7.44
		11/28/2012	2.00	6,913.29	6,912.52	6,912.20	0.32	6,889.32	23.20	N/A	N/A	9.25	6,904.04	N/A	15 - 25	Chinle/Alluvium Interface	6.82
		12/5/2012	2.00	6,913.29	6,912.52	6,912.20	0.32	6,889.32	23.20	N/A	N/A	9.38	6,903.91	N/A	15 - 25	Chinle/Alluvium Interface	6.76
3/28/1995	RW-1	3/15/2012	4.00	6,942.86	6,946.06	6,941.25	4.81	6,903.02	43.04	29.31	0.03	29.34	6,913.52	6913.544	25 - 40	Chinle/Alluvium Interface	NA
		6/4/2012	4.00	6,942.86	6,946.06	6,941.25	4.81	6,903.02	43.04	29.39	0.00	29.41	6,913.45	6913.45	25 - 40	Chinle/Alluvium Interface	NA
		8/13/2012	4.00	6,942.86	6,946.06	6,941.25	4.81	6,903.02	43.04	29.54	0.59	30.13	6,912.73	6913.202	25 - 40	Chinle/Alluvium Interface	NA
		8/23/2012[3]	4.00	6,942.86	6,946.06	6,941.25	4.81	6,903.02	43.04	0.00	0.00	32.51	6,910.35	6910.35	25 - 40	Chinle/Alluvium Interface	23.38
		10/8/2012	4.00	6,942.86	6,946.06	6,941.25	4.81	6,903.02	43.04	29.28	0.90	30.18	6,912.68	6913.4	25 - 40	Chinle/Alluvium Interface	NA
3/29/1995	RW-2	3/15/2012	4.00	6,926.40	6,928.53	6,925.02	3.51	6,888.73	39.80	0.00	0.00	24.54	6,901.86	6901.86	26.1 - 36.1	Chinle/Alluvium Interface	NA
		6/4/2012	4.00	6,926.40	6,928.53	6,925.02	3.51	6,888.73	39.80	0.00	0.00	24.66	6,901.74	6901.74	26.1 - 36.1	Chinle/Alluvium Interface	NA
		8/13/2012	4.00	6,926.40	6,928.53	6,925.02	3.51	6,888.73	39.80	0.00	0.00	24.71	6,901.69	6901.69	26.1 - 36.1	Chinle/Alluvium Interface	NA
		8/24/2012[3]	4.00	6,926.40	6,928.53	6,925.02	3.51	6,888.73	39.80	0.00	0.00	27.89	6,898.51	6898.51	26.1 - 36.1	Chinle/Alluvium Interface	26.44
		10/8/2012	4.00	6,926.40	6,928.53	6,925.02	3.51	6,888.73	39.80	0.00	0.00	24.87	6,901.53	6901.53	26.1 - 36.1	Chinle/Alluvium Interface	NA
8/27/1997	RW-5	3/15/2012	4.00	6,941.53	6,943.57	6,940.82	2.75	6,903.98	39.59	0.00	0.00	29.32	6,912.21	6912.21	29.5 - 39.5	Chinle/Alluvium Interface	NA
		6/4/2012	4.00	6,941.53	6,943.57	6,940.82	2.75	6,903.98	39.59	0.00	0.00	29.37	6,912.16	6912.16	29.5 - 39.5	Chinle/Alluvium Interface	NA
		8/13/2012	4.00	6,941.53	6,943.57	6,940.82	2.75	6,903.98	39.59	0.00	0.00	29.49	6,912.04	6912.04	29.5 - 39.5	Chinle/Alluvium Interface	NA
		8/23/2012[3]	4.00	6,941.53	6,943.57	6,940.82	2.75	6,903.98	39.59	0.00	0.00	29.46	6,912.07	6912.07	29.5 - 39.5	Chinle/Alluvium Interface	22.49
		10/8/2012	4.00	6,941.53	6,943.57	6,940.82	2.75	6,903.98	39.59	0.00	0.00	29.58	6,911.95	6911.95	29.5 - 39.5	Chinle/Alluvium Interface	NA

2012 WELL DATA DTB/DTW MEASUREMENTS ANNUAL/QUARTERLY

Date of Installation	Well ID Number	Inspection or Sample Date	Casing Diameter[1] (Inch)	A Ground Level Elevations (ft)	Well Casing Rim Elevations[1] (ft)	Ground Elevation Inside Steel Sleeve[1] (ft)	Stick-up length (ft)	Well Casing Bottom Elevations [1] (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness [2] (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation	Screened Interval Depth Top to Bottom (ft)	Stratigraphic unit in which screen exists	Purge Volume = 3 Well Vol (gal)
8/27/1997	RW-6	3/15/2012	4.00	6,941.96	6,944.01	6,941.49	2.52	6,903.11	40.90	0.00	0.00	29.46	6,912.50	6912.5	28.5 - 38.5	Chinle/Alluvium Interface	NA
		6/4/2012	4.00	6,941.96	6,944.01	6,941.49	2.52	6,903.11	40.90	0.00	0.00	29.54	6,912.42	6912.42	28.5 - 38.5	Chinle/Alluvium Interface	NA
		8/13/2012	4.00	6,941.96	6,944.01	6,941.49	2.52	6,903.11	40.90	0.00	0.00	29.57	6,912.39	6912.39	28.5 - 38.5	Chinle/Alluvium Interface	NA
		8/23/2012[3]	4.00	6,941.96	6,944.01	6,941.49	2.52	6,903.11	40.90	0.00	0.00	29.56	6,912.40	6912.4	28.5 - 38.5	Chinle/Alluvium Interface	25.17
		10/8/2012	4.00	6,941.96	6,944.01	6,941.49	2.52	6,903.11	40.90	0.00	0.00	29.62	6,912.34	6912.34	28.5 - 38.5	Chinle/Alluvium Interface	NA

DEFINITIONS
DTB - Depth to Bottom
DTW - Depth to Water
SPH = Separate Phase Hydrocarbons
NOTES:
1. Elevation data from NMED's "Approval with Modifications, Requirement to Resurvey Ground Water Monitoring Wells and Recovery Wells", dated 9/26/12.
2. Corrected water table elevations are only provided if SPH was detected.
3. Annual sampling of wells. Depth to product not measured.

SECTION 10

Monitoring Schedule

Table 1 - MONITORING SCHEDULE 2012

Sampling Location ID	Frequency	Sample Date(s)	Inspection Date(s)	General Monitoring and Sampling Comments.	Analytical Data
Pilot Effluent (Pilot Eff)	Quarterly (Q)	3/20/12, 6/12/12, 8/21/12, 12/5/12	11/28/12 - No flow. Diverted to Pond 9. No Samples taken.	VOC, DRO extended/GRO, BOD, COD, WQCC Metals	Appendix K, Section 8.1
NAPIS Effluent (NAPIS Eff)	Q	3/21/12, 6/12/12,	8/21/12, 11/28/12 - No samples taken, flow routed to new WWTP	Gen Chem, VOC, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.1
AL-2 to EP-1	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12, 12/5/12[1]		Major Cations/Anions, VOC, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.1
Influent to AL-1 (Infl to AL-1)	Q	3/21/12, 6/14/12,	8/21/12, 11/28/12 - No samples taken, flow routed to new WWTP	VOC, BOD, COD, Chlorides, DRO extended/GRO, pH, Phenol	Appendix K, Section 8.2
Influent to AL-2 (Infl to AL-2)	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12, 12/5/12[1]		VOC, BOD, COD, Chlorides, DRO extended/GRO, pH, Phenol	Appendix K , Section 8.2
Influent to EP-1 (Infl to EP-1)	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12, 12/5/12[1]		Major Cations/Anions, pH, BOD, COD, Chlorides, VOC, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.2
NAPI Secondary Containment (LDU) East LDU, West LDU, Oil Sump LDU	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12		BTEX, DRO extended/GRO, WQCC Metals or check for fluids	Appendix K, Section 8.3
RW-1	Q	8/23/12	3/15/12, 6/4/12, 8/13/12, 10/8/12	Measure depth to water (DTW), depth to product (DTP)	Appendix K, Section 8.17
RW-2	Q	8/24/12	3/15/12, 6/4/12, 8/13/12, 10/8/12	Measure DTW, DTP	Appendix K, Section 8.17
RW-5	Q	8/23/12	3/15/12, 6/4/12, 8/13/12, 10/8/12	Measure DTW, DTP	Appendix K, Section 8.17
RW-6	Q	8/23/12	3/15/12, 6/4/12, 8/13/12, 10/8/12	Measure DTW, DTP	Appendix K, Section 8.17
OW-1	Q	3/22/12, 6/13/12, 8/22/12, 11/27/12		Visual Check for Artesian flow conditions; Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.4
OW-10	Q	3/22/12, 6/13/12, 8/22/12, 11/27/12		Visual Check for Artesian flow conditions; Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.4
OW-13	Q	3/21/12, 6/14/12, 8/23/12, 11/27/12		VOC	Appendix K, Section 8.5
OW-14	Q	3/21/12, 6/14/12, 8/23/12, 11/27/12		VOC	Appendix K, Section 8.5
OW-29	Q	3/21/12, 6/13/12, 8/23/12, 11/27/12		VOC	Appendix K, Section 8.5
OW-30	Q	3/21/12, 6/14/12, 8/23/12, 11/27/12		VOC	Appendix K, Section 8.5
OW-50	Q	3/22/12, 6/13/12, 8/23/12, 11/27/12, 12/5/12[1]		VOC, SVOC, WQCC Metals, DRO extended/GRO, General Chemistry	Appendix K, Section 8.6
OW-52	Q	3/22/12, 6/13/12, 8/23/12, 11/27/12, 12/5/12[1]		VOC, SVOC, WQCC Metals, DRO extended/GRO, General Chemistry	Appendix K, Section 8.6
GWM-1	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.7
GWM-2	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12		Check for water. If water is detected report to OCD & NMED within 24 hours. Sample for BTEX, DRO extended/GRO, Major Cations/Anions.	Appendix K, Section 8.7
GWM-3	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12		Check for water. If water is detected report to OCD & NMED within 24 hours. Sample for BTEX, DRO extended/GRO, Major Cations/Anions.	Appendix K, Section 8.7
NAPIS-1	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12, 12/5/12[1]		Major Cations/Anions, BTEX, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.8
NAPIS-2	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12, 12/5/12[1]		Major Cations/Anions, BTEX, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.8
NAPIS-3	Q	3/20/12, 6/12/12, 10/2/12[2], 11/28/12, 12/5/12[1]	8/21/12 - Purged dry - slow recharge not enough water to collect samples.	Major Cations/Anions, BTEX, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.8
KA-3	Q	3/20/12, 6/12/12, 8/21/12, 11/28/12, 12/5/12[1]		Major Cations/Anions, BTEX, SVOC, DRO extended/GRO, WQCC Metals	Appendix K, Section 8.8

Table 1 - MONITORING SCHEDULE 2012

Sampling Location ID	Frequency	Sample Date(s)	Inspection Date(s)	General Monitoring and Sampling Comments.	Analytical Data
BW to EP-2	Semi-Annual (SA)	5/29/2012, 11/6/12		Major Cations/Anions	Appendix K, Section 8.9
Evaporation Pond 1 (EP-1)	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		General Chemistry, VOC, SVOC, BOD, COD, E-Coli Bacteria, WQCC Metals	Appendix K, Section 8.10
EP-2	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-3	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-4	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-5	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-6	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-7	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-8	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-9a	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-11	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-12A	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
EP-12B	SA	5/29/12, 5/30/12, 11/6/12, 11/7/12		Same as EP-1	Appendix K, Section 8.10
BW-1A	Annual (A)		8/23/12 - DRY	Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-1B	A		8/23/12 - DRY	Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-1C	A	8/24/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-2A	A	8/24/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-2B	A	8/24/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-2C	A	8/24/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-3A	A		8/23/12 - DRY	Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-3B	A	8/23/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
BW-3C	A	8/23/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.11
EP-2 Inlet	A	8/21/12		VOC, DRO extended/GRO, BOD, COD, TDS	Appendix K, Section 8.12
MW-1	Annual and every 10 years beginning 2009 per RCRA Post Closure Permit	8/24/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals. For RCRA 10 year requirements: Gen Chem, Modified Skinner List Metals (total and dissolved) including mercury and cyanide, Modified Skinner List VOC, SVOC, TPH	Appendix K, Section 8.13
MW-2	Annual and every 10 years beginning 2009 per RCRA Post Closure Permit	8/24/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals. For RCRA 10 year requirements: Gen Chem, Modified Skinner List Metals (total and dissolved) including mercury and cyanide, Modified Skinner List VOC, SVOC, TPH	Appendix K, Section 8.13
MW-4	Annual and every 10 years beginning 2009 per RCRA Post Closure Permit	8/21/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals. For RCRA 10 year requirements: Gen Chem, Modified Skinner List Metals (total and dissolved) including mercury and cyanide, Modified Skinner List VOC, SVOC, TPH	Appendix K, Section 8.13
MW-5	Annual and every 10 years beginning 2009 per RCRA Post Closure Permit	8/23/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals. For RCRA 10 year requirements: Gen Chem, Modified Skinner List Metals (total and dissolved) including mercury and cyanide, Modified Skinner List VOC, SVOC, TPH	Appendix K, Section 8.13

Table 1 - MONITORING SCHEDULE 2012

Sampling Location ID	Frequency	Sample Date(s)	Inspection Date(s)	General Monitoring and Sampling Comments.	Analytical Data
OW-11	A	8/22/12		Major Cations/Anions, VOC, SVOC, WQCC Metals	Appendix K, Section 8.14
OW-12	A	8/22/12		VOC	Appendix K, Section 8.14
SMW-2	A	8/23/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals.	Appendix K, Section 8.15
SMW-4	Annual and every 10 years beginning 2009 per RCRA Post Closure Permit	8/24/12		Major Cations/Anions, VOC, DRO extended/GRO, WQCC Metals. For RCRA 10 year requirements: Gen Chem, Modified Skinner List Metals (total and dissolved) including mercury and cyanide, Modified Skinner List VOC, SVOC, TPH	Appendix K, Section 8.15
PW-2	Every 3 years. Start 2008	10/26/11, 12/15/2011		VOC, SVOC, WQCC Metals, Cyanide, Nitrates	Appendix K, Section 8.16
PW-3[3]	Annual starting with 2009	8/24/12		VOC, SVOC, WQCC Metals, Cyanide, Nitrates	Appendix K, Section 8.16
PW-4	Every 3 years. Start 2007	Last sampled 7/28/10		VOC, SVOC, WQCC Metals, Cyanide, Nitrates	Appendix K, Section 8.16

DEFINITIONS:

WWTP - Waste water treatment plant: OCD - Oil Conservation Division: NMED - New Mexico Environment Department.

BTEX - Benzene, toluene, ethylbenzene, xylene; MTBE - Methyl tert butyl ether

VOC - Method 8260+MTBE; SVOC - Method 8270; BTEX+MTBE - Method 8021B+MTBE; WQCC Metals - Total & Dissolved; General Chemistry - Cations, anions, pH, specific conductivity; DRO/GRO - Method 8015B.

NOTES:

1) Sampled for SVOCs only - missed during the November sampling event.

2) On 8/21/12 well purged dry - slow recharge rate. Samples taken on 10/2/12.

3) Sampling changed to annual per NMED directive, Comment 8, Notice of Disapproval (NOD) dated 3/26/09 due to detection of 2-Methylnaphthalene in annual sampling for 2007 conducted in January 2008.

SECTION 11

Figures

Figure 1: Regional map showing the location of the Gallup Refinery (red star along Interstate-40, 20 miles east of the City of Gallup).

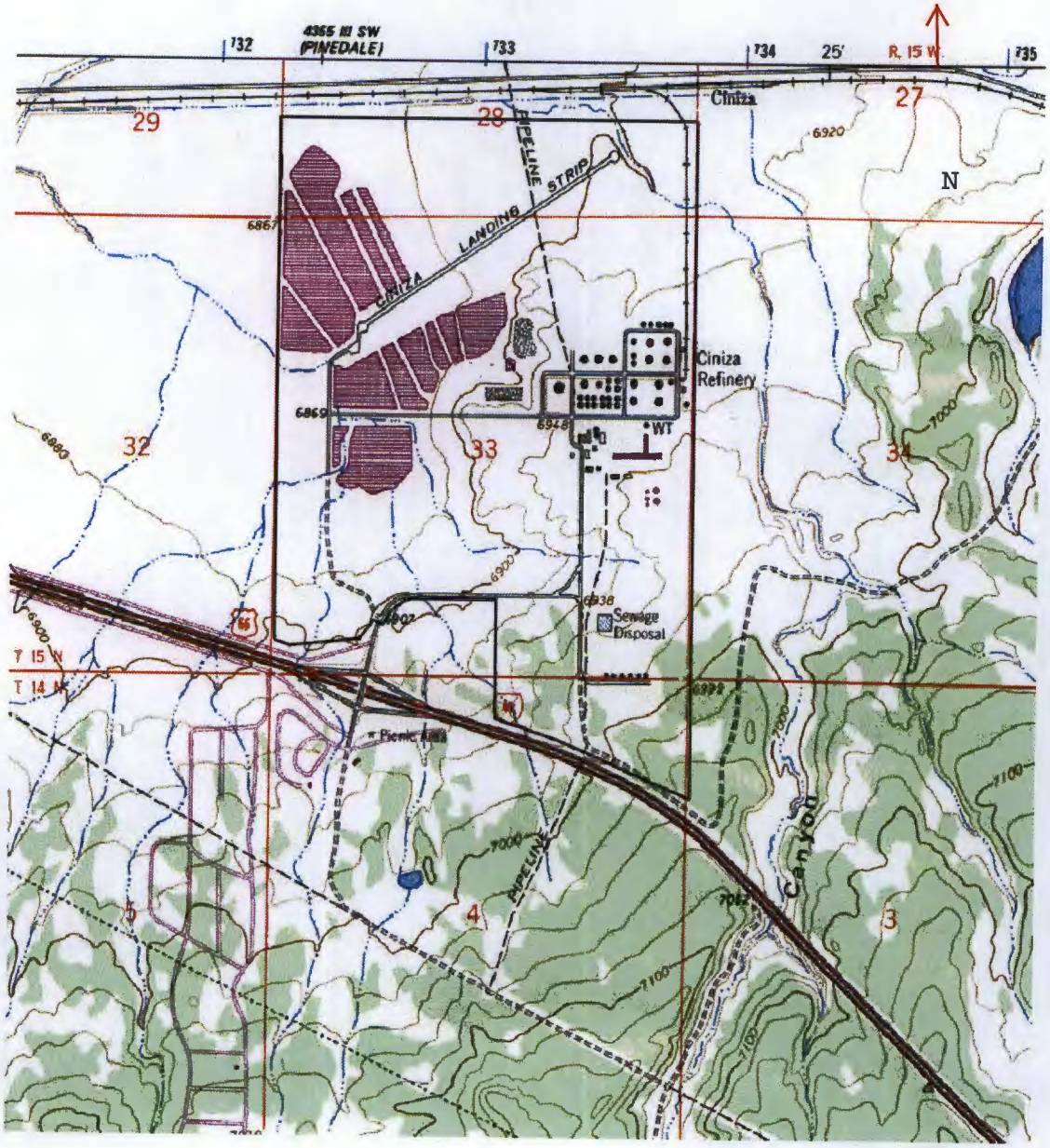
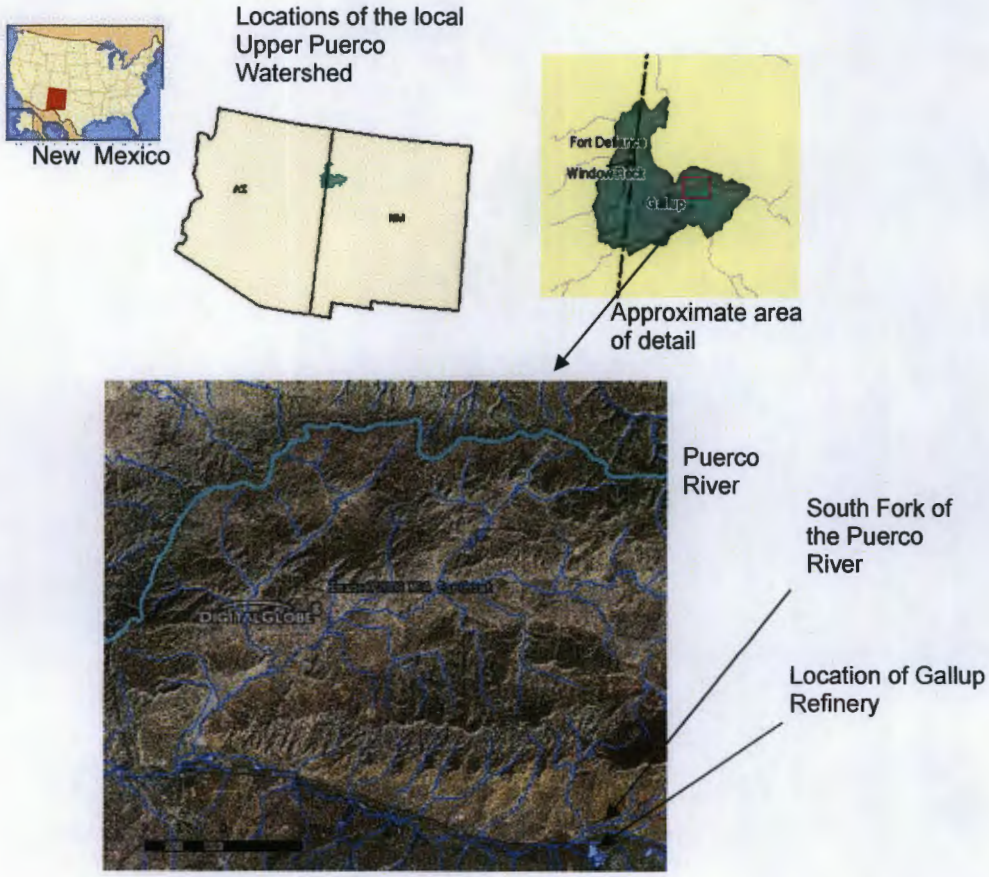


Figure 2: Topographic Map of the Gallup Refinery Site - USGS Topographical Map - Gallup Quadrangle (Revised 1980)

Figure 3: Aerial photograph of the Gallup Refinery

Figure 4: **Regional scale**: Flow lines and major surface water bodies (from: EPA Enviromapper - http://map24.epa.gov/EMR/?ZoomToWatershed=15020006) North is towards the top of the page.



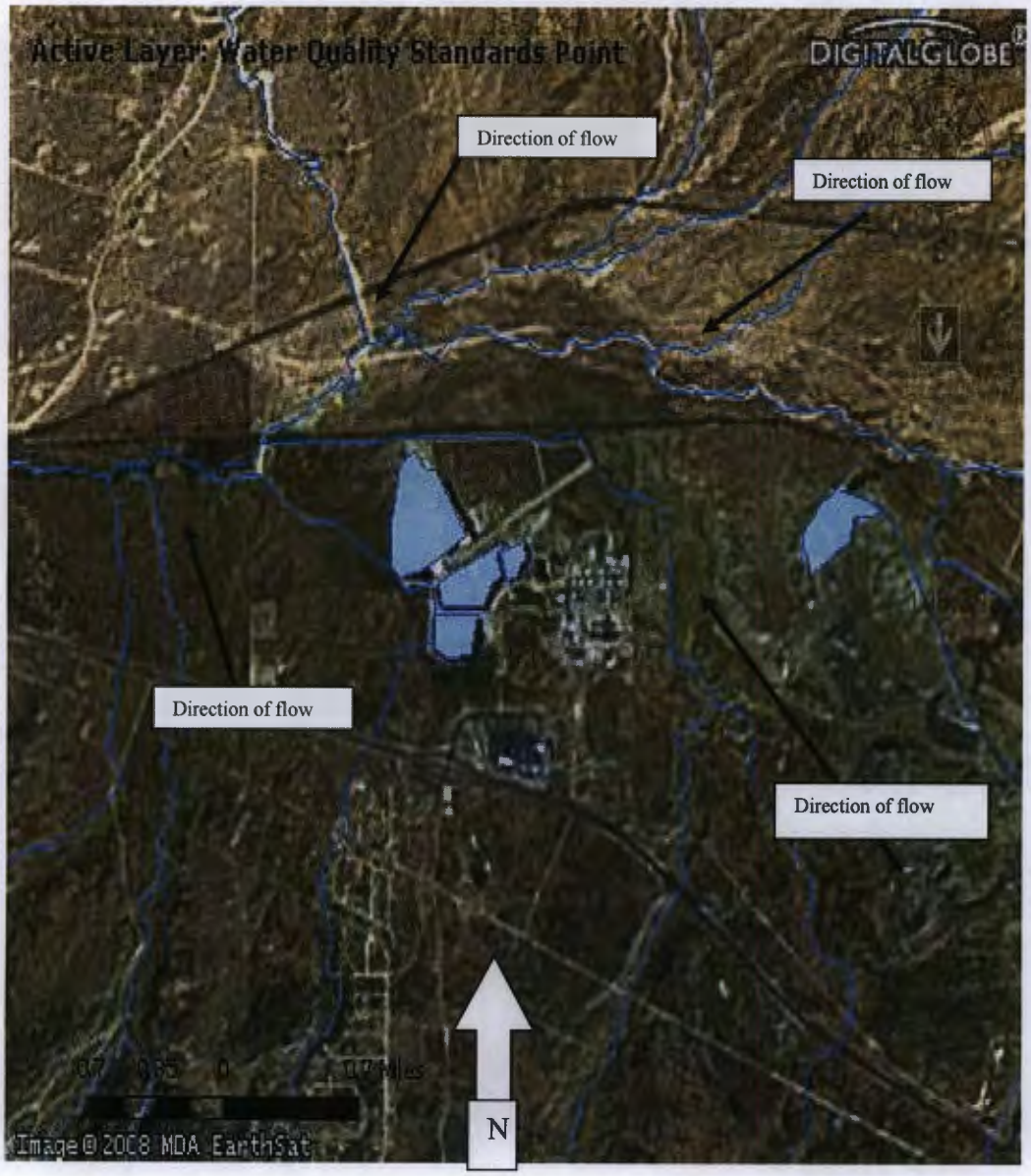
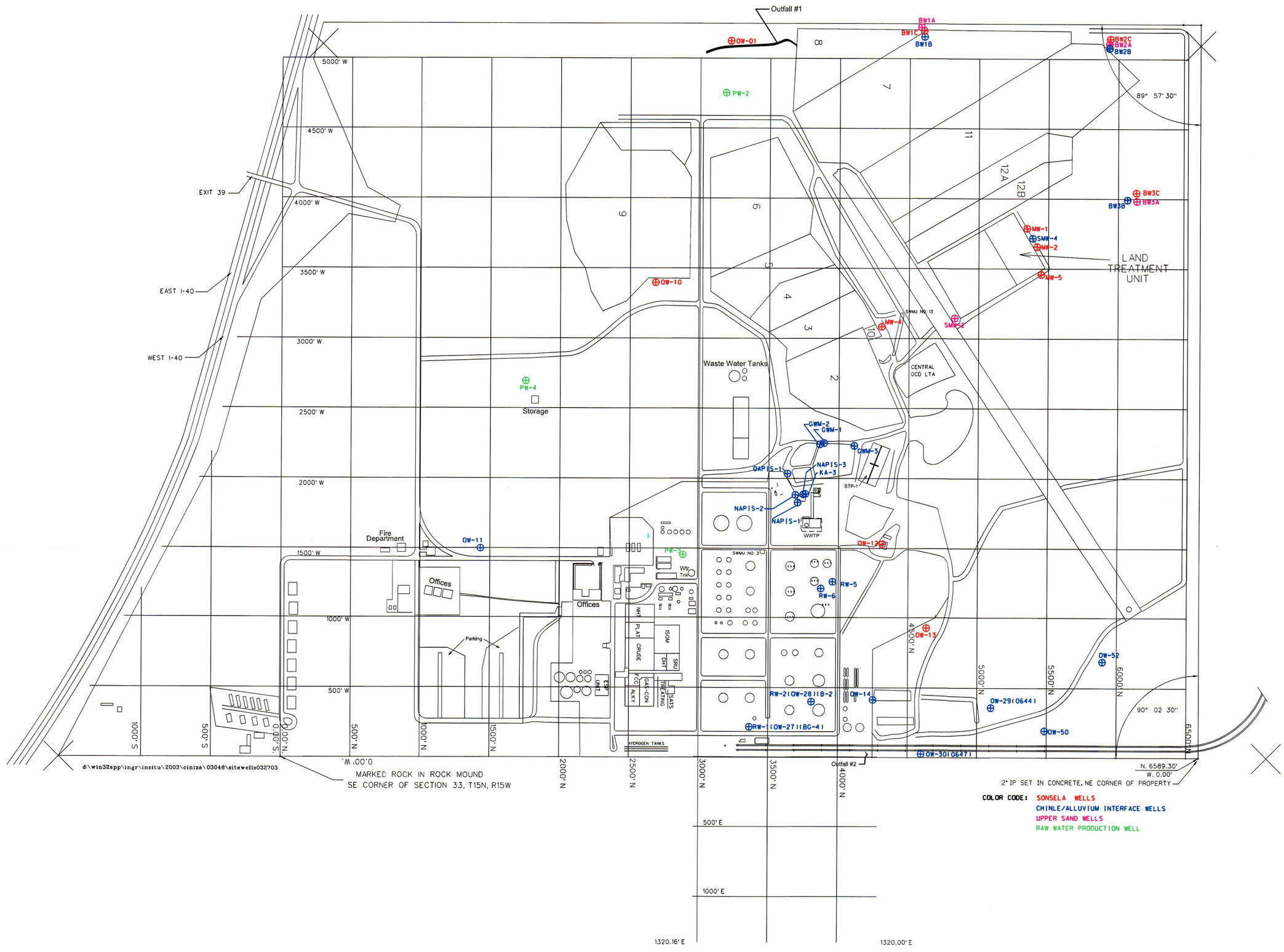


Figure 5: Localized scale: Flow lines and major surface water bodies (from: EPA Enviromapper - http://map24.epa.gov/EMR/?ZoomToWatershed=15020006) North is towards the top of the page. The pond to the east is Jon Myers' Livestock Pond.



psi

4601 Ripley
El Paso, Texas
79922
915-584-1317

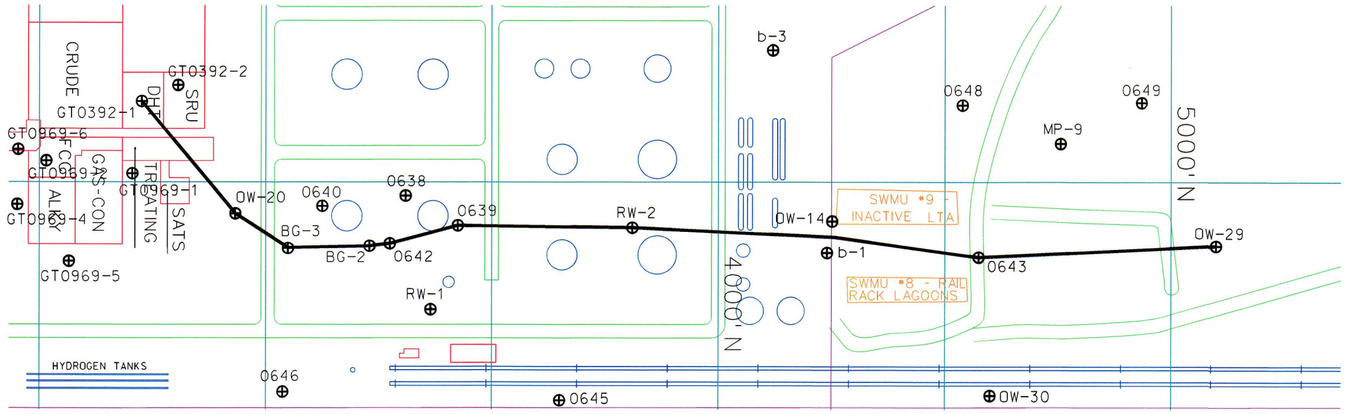
1"=500'

Project #: 0625557

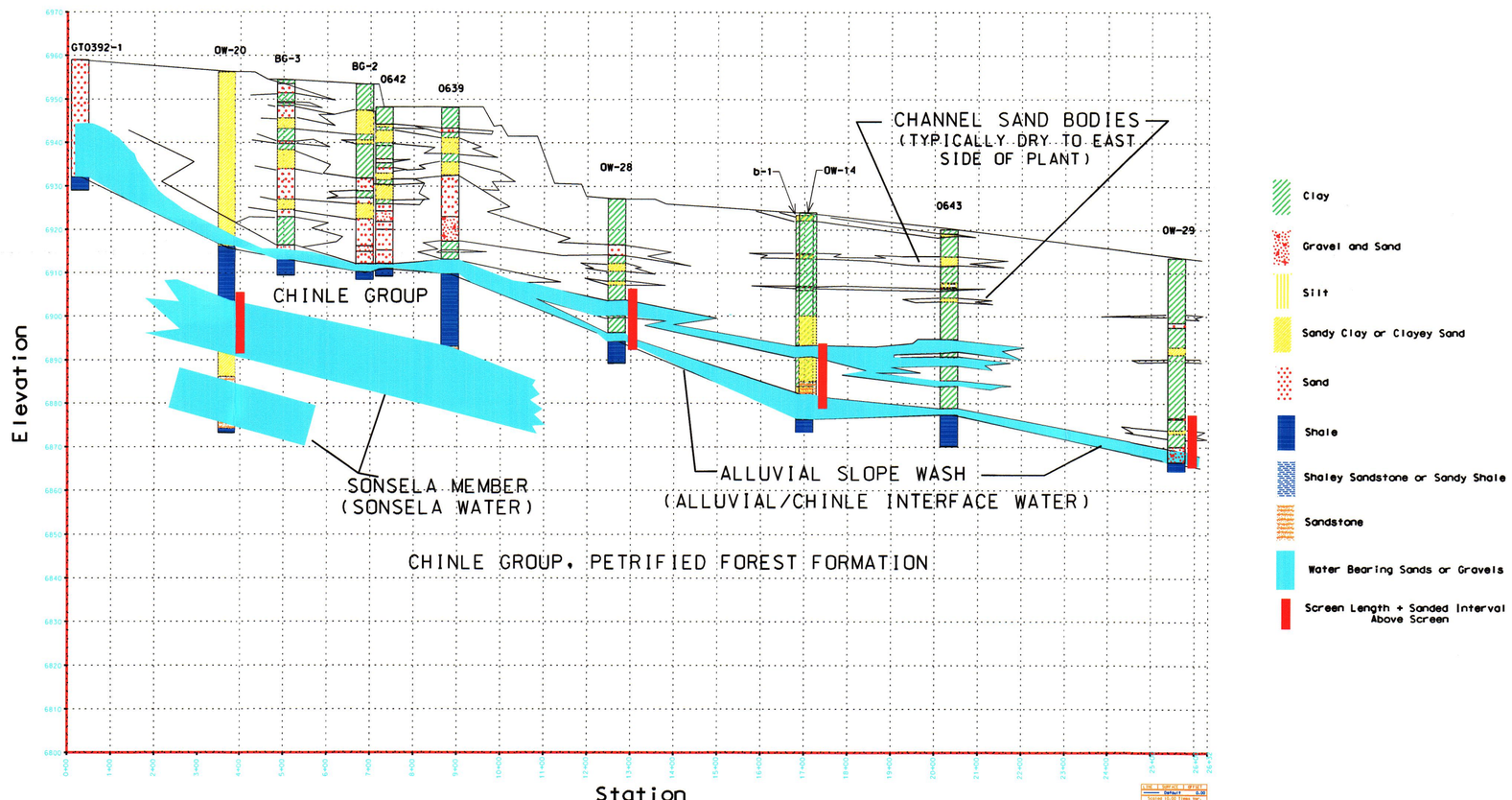
Figure 6
FACILITIES AND WELLS
WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



Profile East



psi
4601 Ripley
El Paso, Texas
79922
915-584-1317

Project #: 0625557

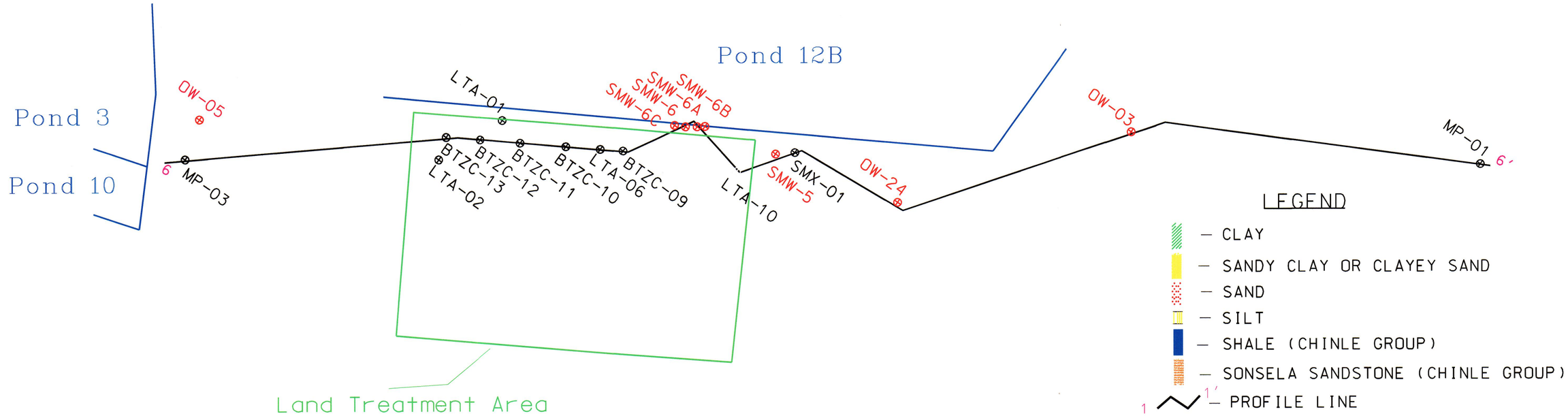
Figure 7

TYPICAL SOUTH-NORTH GEOLOGIC PROFILE (E. PLANT)

WESTERN REFINING - GALLUP REFINERY

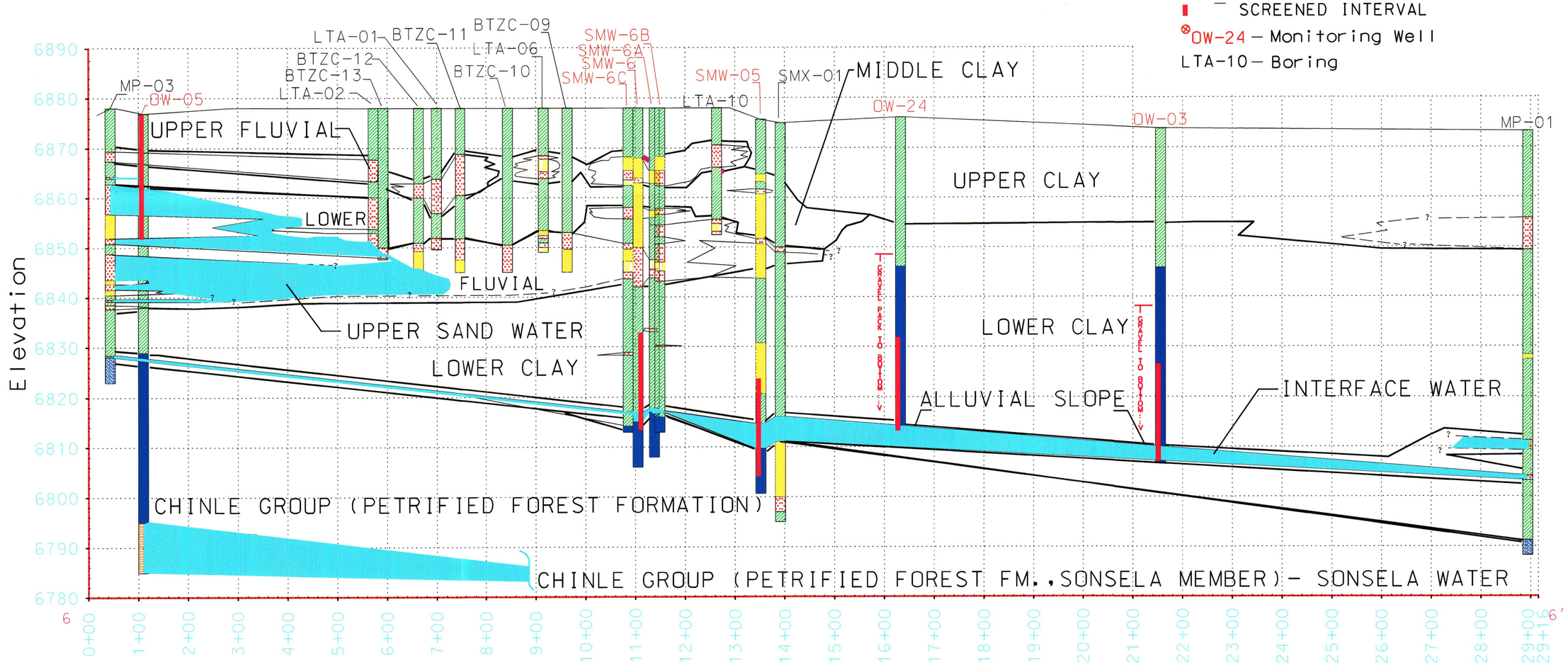
Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



LEGEND

- CLAY
- SANDY CLAY OR CLAYEY SAND
- SAND
- SILT
- SHALE (CHINLE GROUP)
- SONSELA SANDSTONE (CHINLE GROUP)
- 1 — 1' PROFILE LINE
- WATER BEARING ZONE
- SCREENED INTERVAL
- OW-24 — Monitoring Well
- LTA-10 — Boring



Profile 6-6'

Vertical Exaggeration 10:1

psi
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79922
915-584-1317

N

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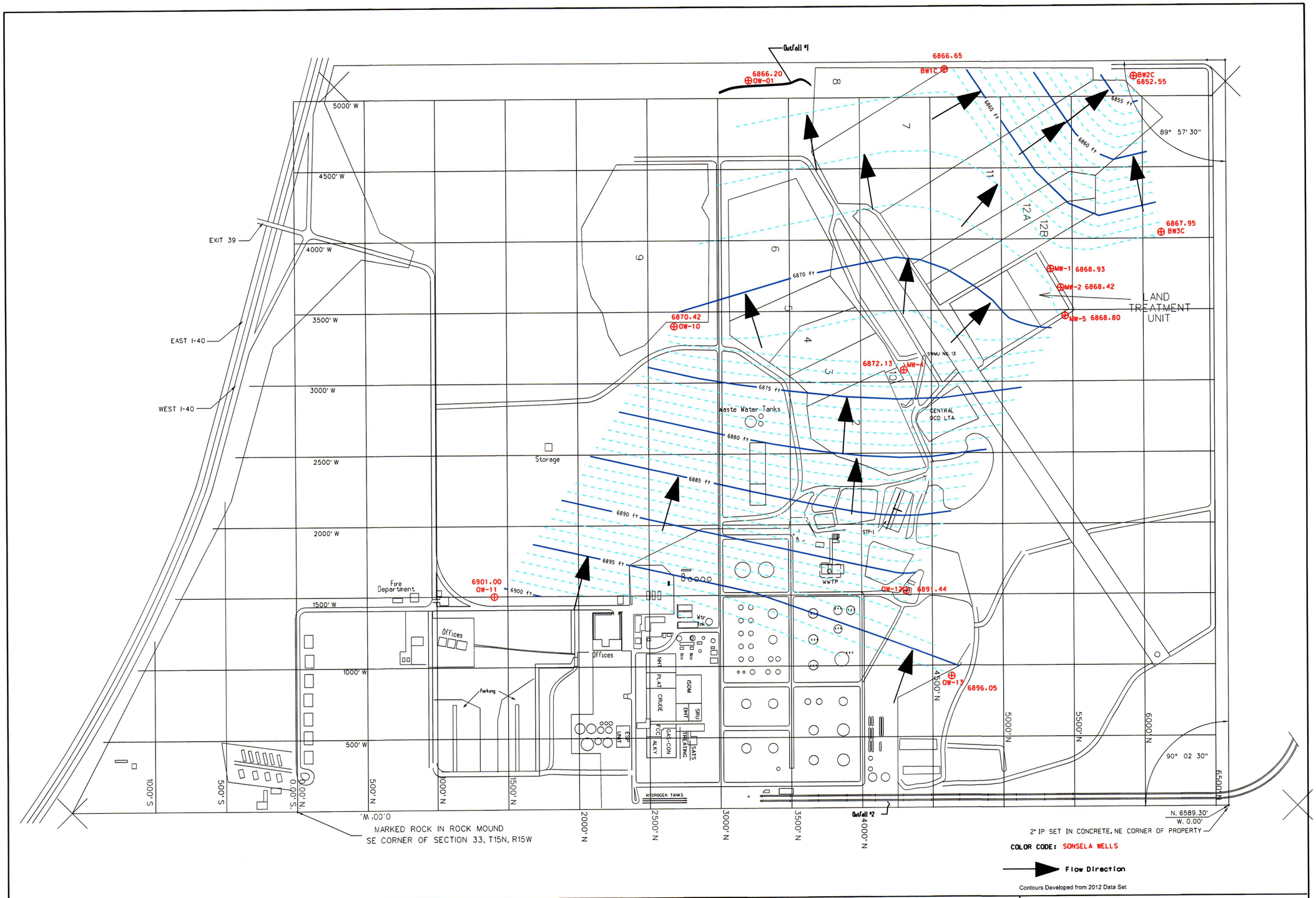
Figure 8

S - N Section. Westerly Plant Area

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



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915-584-1317

1"=500'

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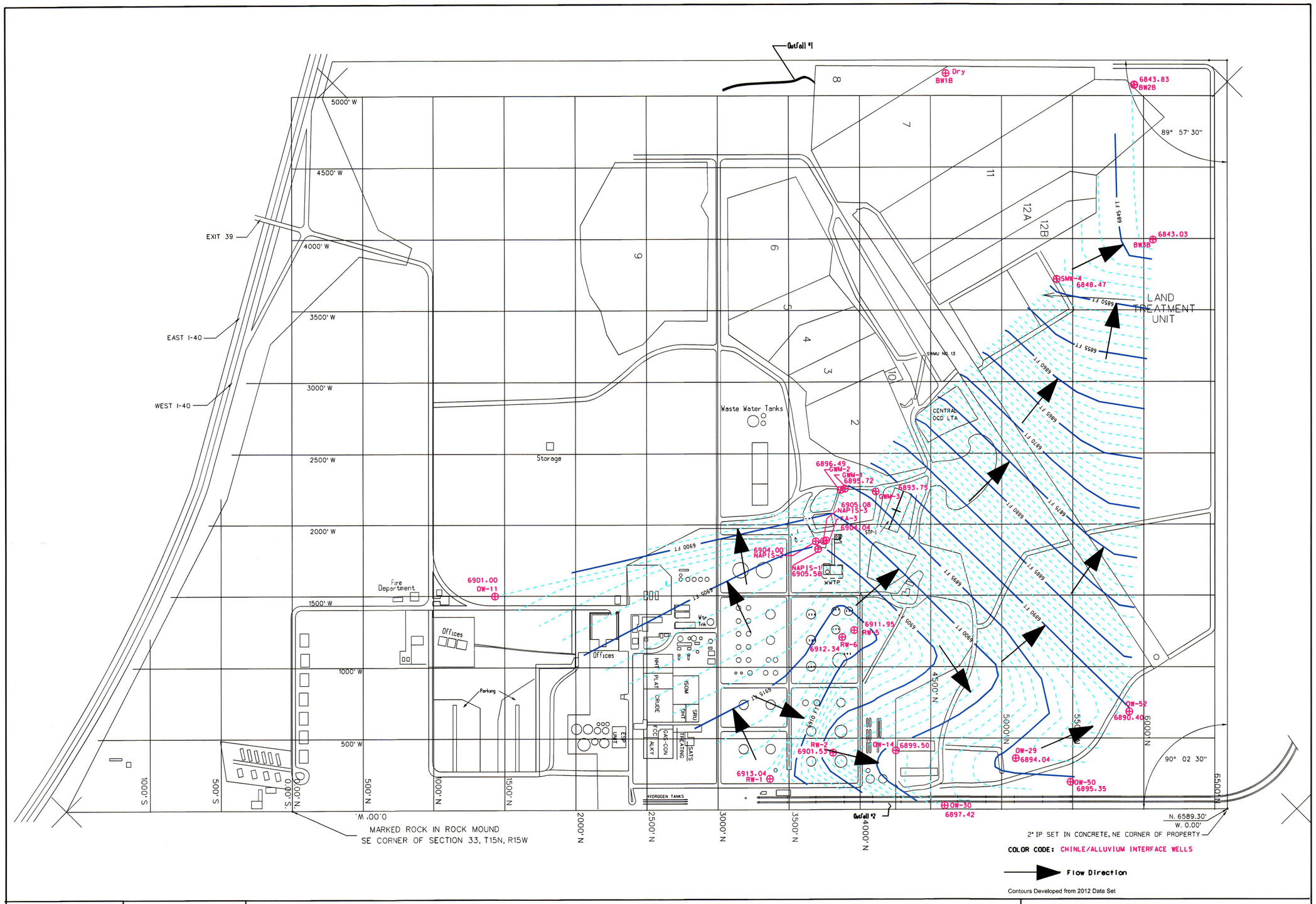
Figure 9

SONSELA WATER ELEVATION MAP

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



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1"=500'

Project #: 0625557

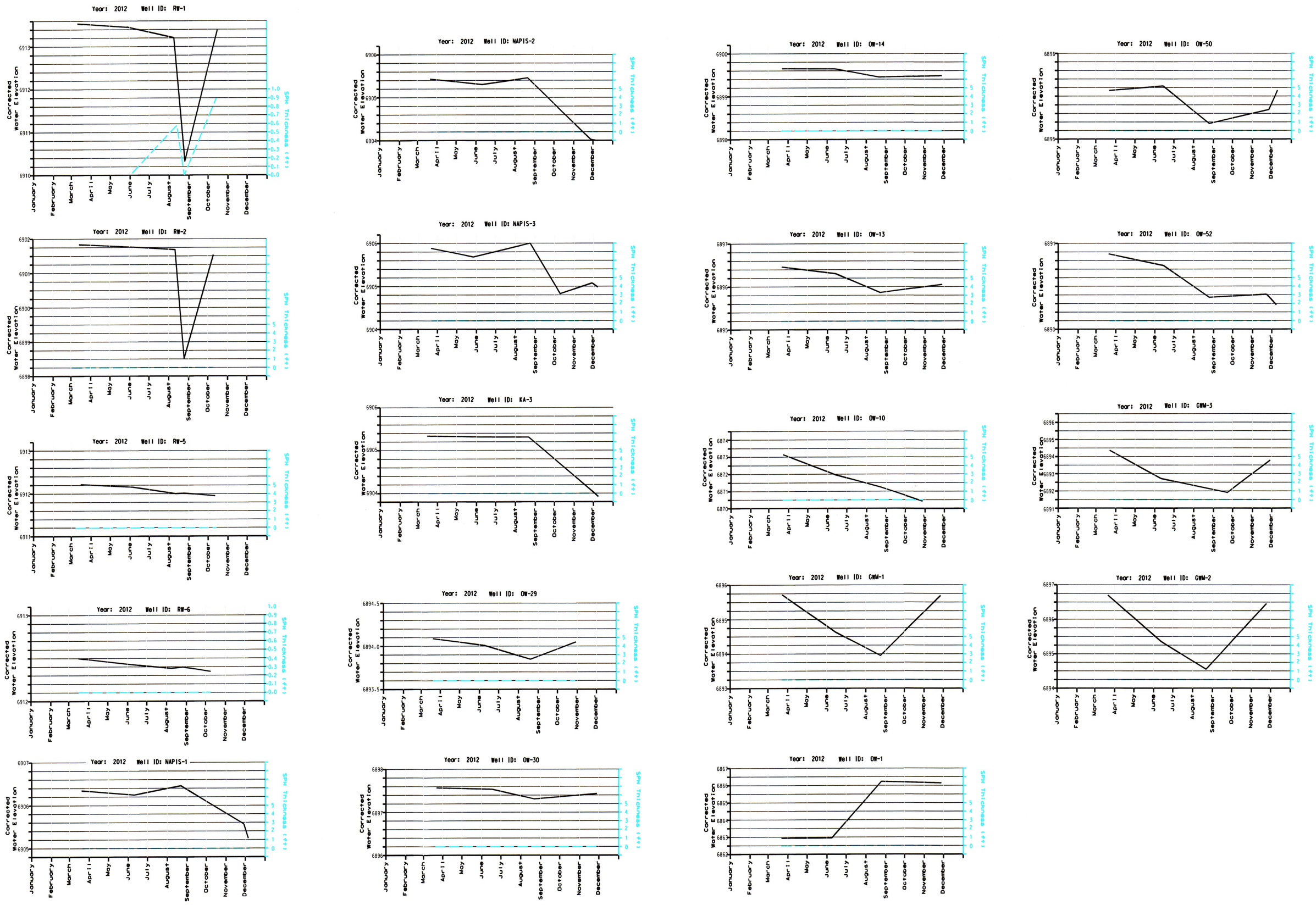
Figure 10

CHINLE GP/ALLUVIUM INTERFACE WATER ELEV.

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



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NTS

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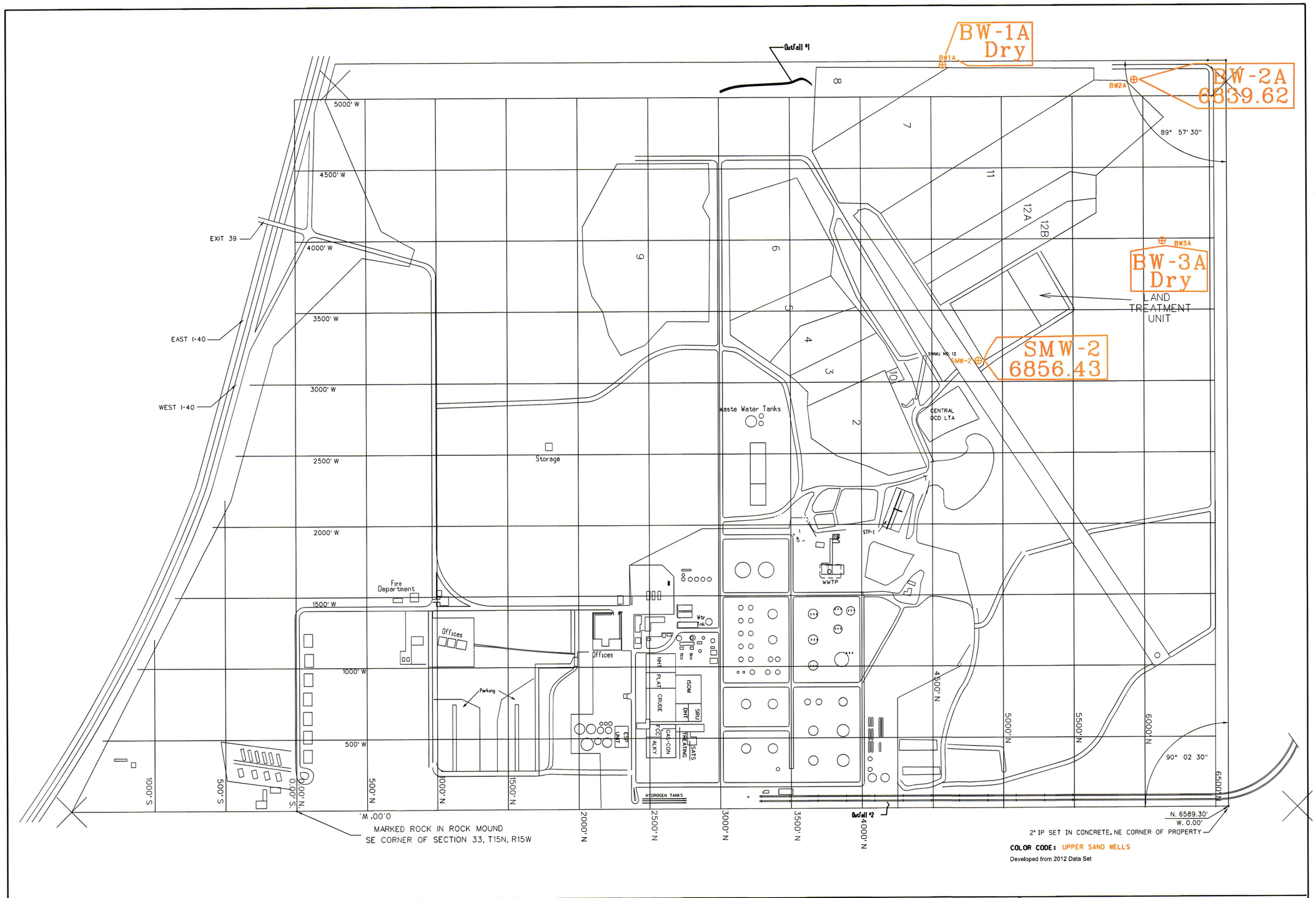
Figure 11

GROUNDWATER ELEVATION VS TIME

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



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1"=500'

Project #: 0625557

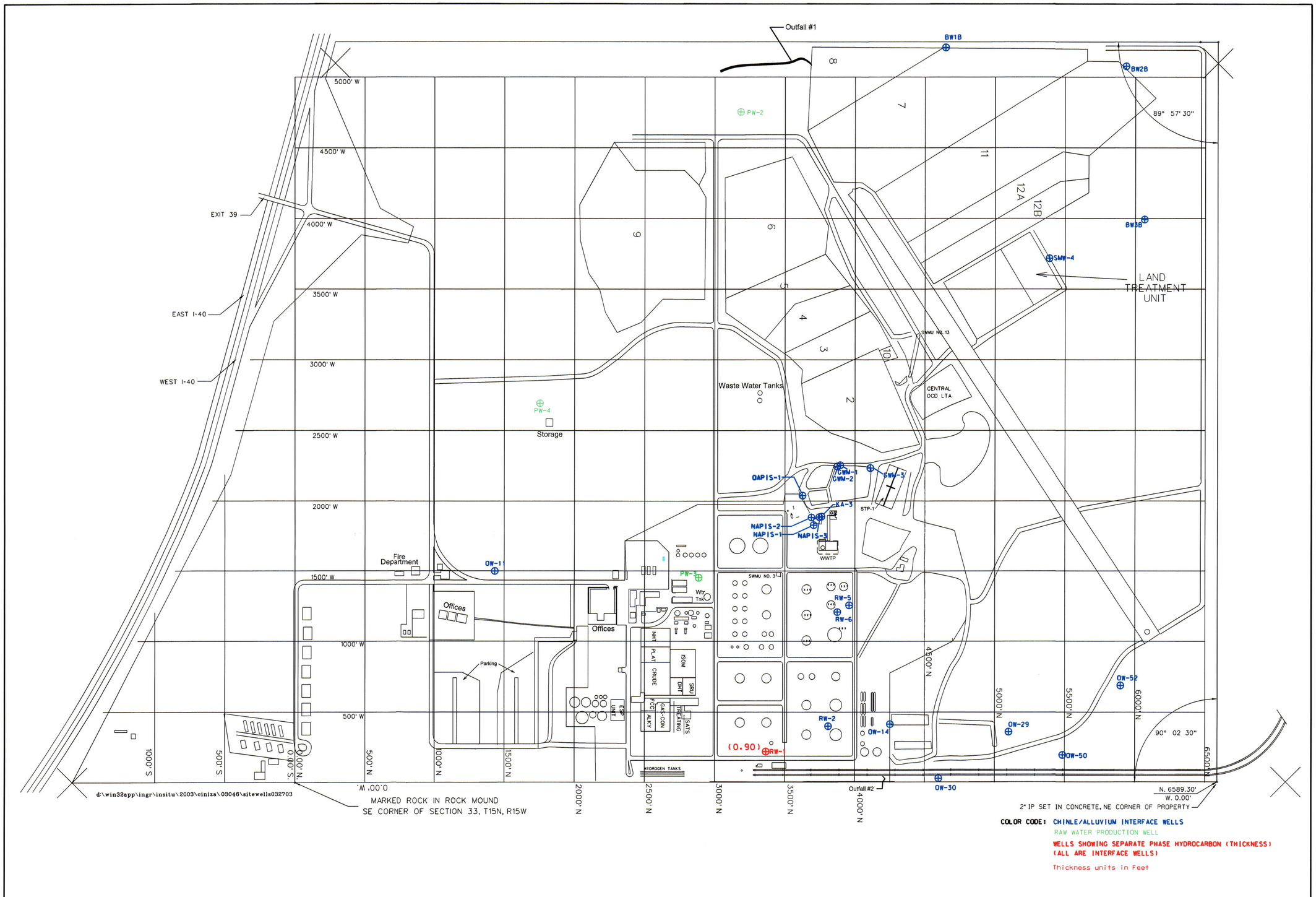
Figure 12

ALLUVIAL/FLUVIAL UPPER SAND WATER ELEV.

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



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915-584-1317

1"=500'

Project #: 0625557

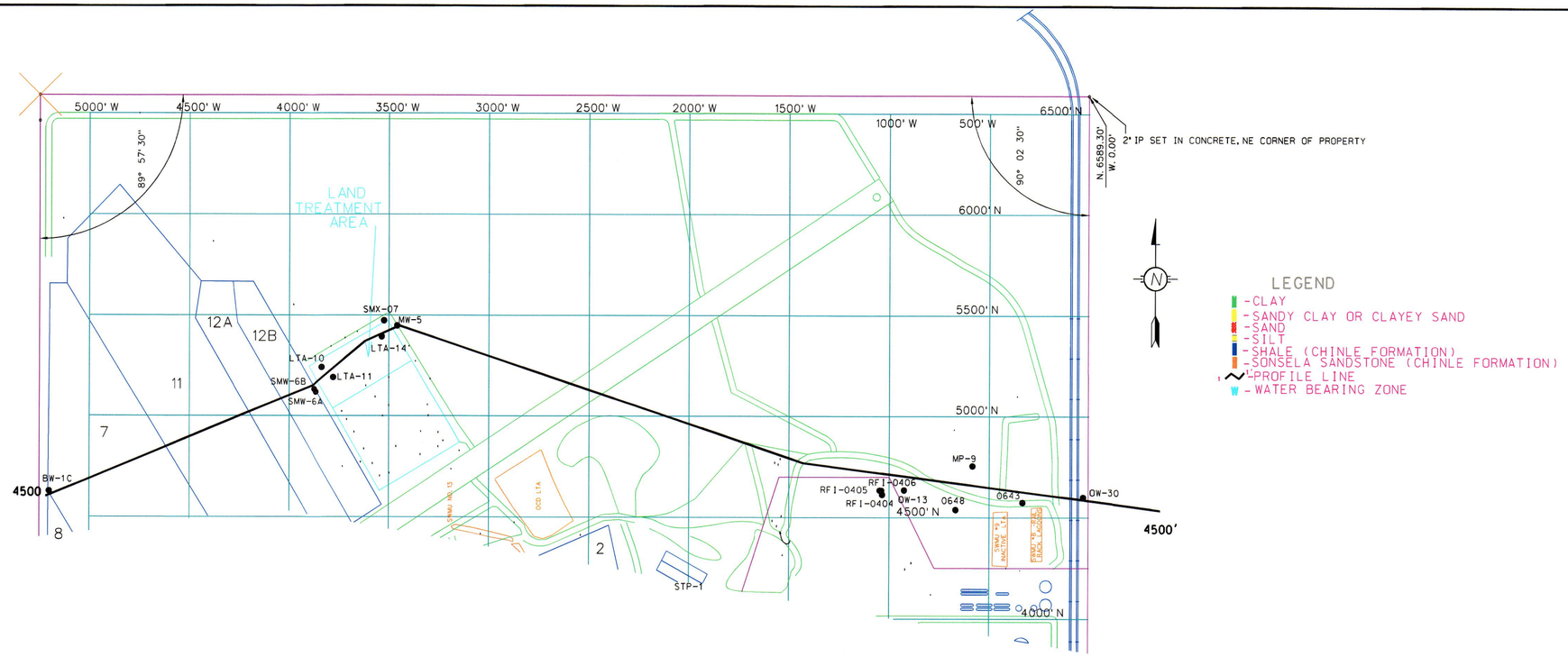
Figure 13

PRODUCT THICKNESS MAP (SEP. PH. HYDROCARBON OCT 12)

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013



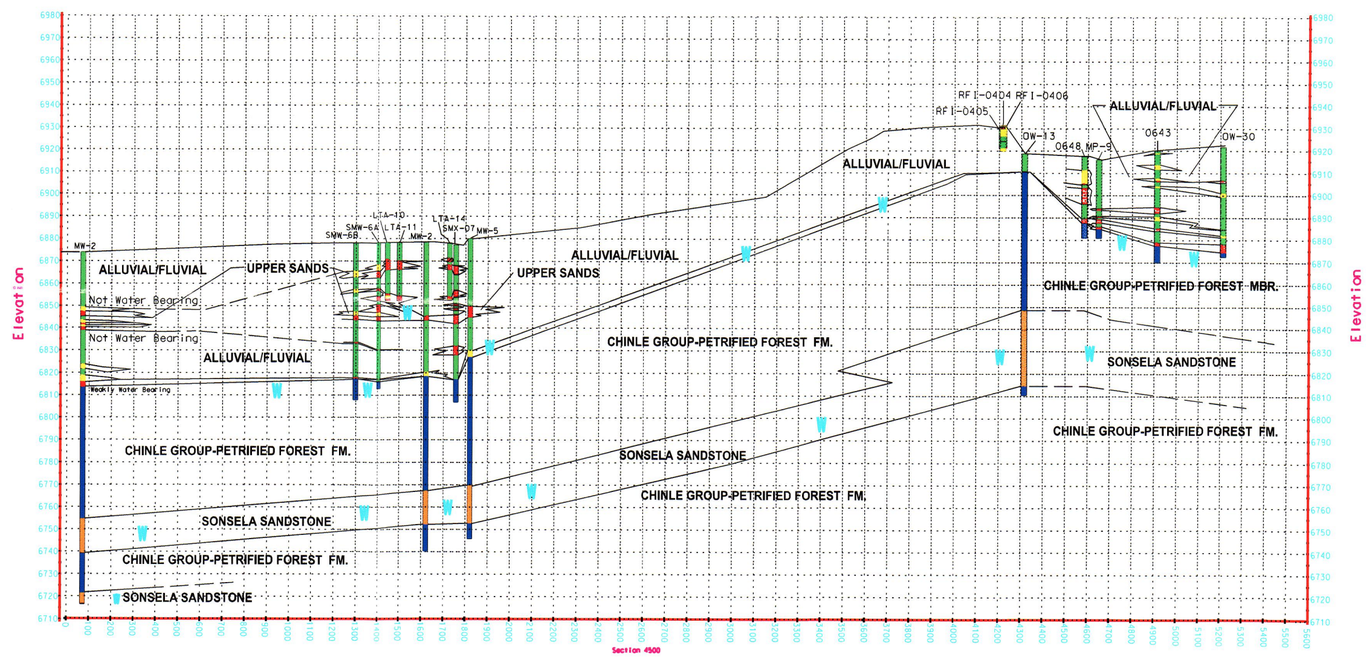


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Figure 14

TYPICAL WEST - EAST GEOLOGIC PROFILE

WESTERN REFINING - GALLUP REFINERY

Western Refining - Gallup Refinery
Interstate 40, Exit 39
Jamestown, New Mexico 87347

Date: March 18, 2013