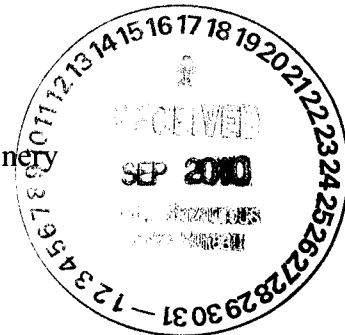


September 15, 2010

John E. Kieling  
Program Manager  
Permits Management Program  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Bldg. 1  
Santa Fe, NM 87505-6303

Certified Mail No. 7008 2810 0000 4726 2410

RE: Approval with Modifications  
Facility Wide Groundwater Monitoring Work Plan  
Western Refining Company Southwest, Inc., Gallup Refinery  
EPA ID#NMD000333211  
HWB-GRCC-09-001



Dear Mr. Kieling:

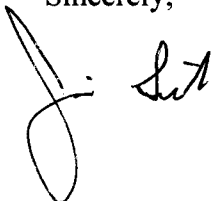
This letter is in reply to your letter to Western Refining Company Southwest, Inc. – Gallup Refinery dated August 25, 2010 regarding the Approval of the Facility Wide Groundwater Monitoring Work Plan. In your letter, you requested the following materials:

- Comment 1 - Data used to prepare the Figure 5 and the other flow maps provided in the plan.
- Comment 2 - Large scale maps of the Figure 5 and the other flow maps provided in the plan.
- Comment 3 - Field-corroborated groundwater well stick-up data.

In response, the Gallup refinery provides with this letter an updated Well Data Summary Table – 2009 that includes the data used to prepare the above referenced maps. The Well Data Summary Table – 2009 also includes the well stick up height data as corroborated by field measurements. Large scale versions of the Figure 5 and the other flow maps are also included with this letter.

If you have any questions regarding the submitted maps and well data table, please contact me at 505-863-0921.

Sincerely,



**Jim Lieb**  
**Environmental Engineer**  
**cc: Ed Riege**

**Well Data Summary Table – 2009**

Date of Installation	Well ID Number	Measurement date	Casing Diameter (Inch)	A Ground Level Elevations (ft)****	Well Casing Rim Elevations (ft)**	Stick-up length (ft)***	Well Casing Bottom Elevations (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation (ft)	Screened Interval Depth Top to Bottom (ft)	Stratigraphy unit in which screen exists	Purge Volume = 3 Well Vol (gal)
11/10/2003	BW-1A	7/6/2009	2.00	6,876.73	6,876.73	52.50	6,836.73	40*	0.00	0.00	37.85	6,838.88	NA	30 - 35	Chinle/alluvium	1.05
10/28/2003	BW-1B	7/6/2009	2.00	6,876.91	6,876.91	28.63	6,811.71	67.55**	0.00	0.00	67.51	6,809.40	NA	54.6 - 64.6	Chinle/alluvium	0.02
11/10/2003	BW-1C	7/6/2009	2.00	6,876.75	6,876.75	54.25	6,719.75	157.00	0.00	0.00	6.66	6,870.09	NA	125 - 135	Sonsela sandstone	73.5
11/10/2003	BW-2A	7/6/2009	2.00	6,874.72	6,874.72	51.25	6,809.22	65.50	0.00	0.00	31.97	6,842.75	NA	55 - 65	Chinle/alluvium	16.5
10/28/2003	BW-2B	7/6/2009	2.00	6,874.58	6,874.58	54.00	6,784.08	90.50	0.00	0.00	27.93	6,846.65	NA	80 - 90	Sonsela sandstone	30.6
10/28/2003	BW-2C	7/7/2009	2.00	6,875.40	6,875.40	35.75	6,724.40	151.00	0.00	0.00	20.62	6,854.78	NA	139.5 - 149.5	Sonsela sandstone	63.8
6/15/2004	BW-3A	7/7/2009	2.00	6,878.22	6,878.22	36.00	6,828.22	52.60	0.00	0.00	DRY	DRY	NA	39.5 - 49.5	Chinle/alluvium	DRY
10/15/2003	BW-3B	7/7/2009	2.00	6,878.79	6,878.79	37.75	6,803.79	75.00	0.00	0.00	32.90	6,845.89	NA	63 - 73	Chinle/alluvium	20.6
7/20/2004	BW-3C	7/7/2009	2.00	6,878.08	6,878.08	32.25	6,723.08	155.00	0.00	0.00	7.86	6,870.22	NA	144.5 - 154.5	Sonsela sandstone	72
1/5/1981	OW-1	2/11/2009	4.00	6,868.00	6,868.45	23.00	6,773.96	94.04	0.00	0.00	1.82	6,866.18	NA	89.3 - 99.3	Sonsela sandstone	NA
	OW-1	5/4/2009	4.00	6,868.00	6,868.45	23.00	6,773.96	94.04	0.00	0.00	1.85	6,866.15	NA	89.3 - 99.3	Sonsela sandstone	NA
	OW-1	8/10/2009	4.00	6,868.00	6,868.45	23.00	6,773.96	94.04	0.00	0.00	1.86	6,866.14	NA	89.3 - 99.3	Sonsela sandstone	NA
	OW-1	10/27/2009	4.00	6,868.00	6,868.45	23.00	6,773.96	94.04	0.00	0.00	1.79	6,866.21	NA	89.3 - 99.3	Sonsela sandstone	NA
11/25/1980	OW-10	2/11/2009	4.00	6,872.00	6,875.12	19.13	6,804.00	68.00	0.00	0.00	1.41	6,870.59	NA	40 - 60	Chinle/alluvium	NA
	OW-10	5/4/2009	4.00	6,872.00	6,875.12	19.13	6,804.00	68.00	0.00	0.00	1.46	6,870.54	NA	40 - 60	Chinle/alluvium	NA
	OW-10	8/10/2009	4.00	6,872.00	6,875.12	19.13	6,804.00	68.00	0.00	0.00	2.67	6,869.33	NA	40 - 60	Chinle/alluvium	NA
	OW-10	10/27/2009	4.00	6,872.00	6,875.12	19.13	6,804.00	68.00	0.00	0.00	2.91	6,869.09	NA	40 - 60	Chinle/alluvium	NA
9/25/1981	OW-11	7/27/2009	4.00	6,923.89	6,923.51	25.00	6,857.27	66.62	0.00	0.00	20.44	6,903.45	NA	43 - 65	Chinle/alluvium	102.5
11/15/1980	OW-12	7/29/2009	4.00	6,940.43	6,940.43	22.50	6,795.43	145***	0.00	0.00	48.85	6,891.58	NA	117.8 - 137.8	Sonsela sandstone	213.5
12/10/1980	OW-13	2/24/2009	4.00	6,920.12	6,920.12	57.50	6,820.12	100.00	0.00	0.00	23.93	6,896.19	NA	78.2 - 98.2	Sonsela sandstone	168.9
		5/14/2009	4.00	6,920.12	6,920.12	57.50	6,820.12	100.00	0.00	0.00	23.74	6,896.38	NA	78.2 - 98.2	Sonsela sandstone	169.3
		7/28/2009	4.00	6,920.12	6,920.12	57.50	6,820.12	100.00	0.00	0.00	24.02	6,896.10	NA	78.2 - 98.2	Sonsela sandstone	168.7
		11/3/2009	4.00	6,920.12	6,920.12	57.50	6,820.12	100.00	0.00	0.00	24.01	6,896.11	NA	78.2 - 98.2	Sonsela sandstone	168.7

**Well Data Summary Table – 2009 (Continued)**

Date of Installation	Well ID Number	Measurement date	Casing Diameter (Inch)	A Ground Level Elevations (ft)****	Well Casing Rim Elevations (ft)**	Stick-up length (ft)***	Well Casing Bottom Elevations (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation (ft)	Screened Interval Depth Top to Bottom (ft)	Stratigraphy unit in which screen exists	Purge Volume = 3 Well Vol (gal)
12/17/1980	OW-14	2/23/2009	4.00	6,926.64	6,926.64	27.00	6,881.64	45.00	0.00	0.00	26.73	6,899.91	NA	35 - 45	Chinle/alluvium	40.6
		5/12/2009	4.00	6,926.64	6,926.64	27.00	6,881.64	45.00	0.00	0.00	26.55	6,900.09	NA	35 - 45	Chinle/alluvium	41
		7/30/2009	4.00	6,926.64	6,926.64	27.00	6,881.64	45.00	0.00	0.00	26.74	6,899.90	NA	35 - 45	Chinle/alluvium	40.5
		11/2/2009	4.00	6,926.64	6,926.64	27.00	6,881.64	45.00	0.00	0.00	26.74	6,899.90	NA	35 - 45	Chinle/alluvium	40.7
8/23/1996	OW-29	2/25/2009	4.00	6,913.50	6,913.50	46.50	6,864.50	49.00	0.00	0.00	21.43	6,892.07	NA	37.5 - 47.5	Chinle/alluvium	67.9
		5/14/2009	4.00	6,913.50	6,913.50	46.50	6,864.50	49.00	0.00	0.00	24.24	6,889.26	NA	37.5 - 47.5	Chinle/alluvium	68.3
		7/29/2009	4.00	6,913.50	6,913.50	46.50	6,864.50	49.00	0.00	0.00	21.58	6,891.92	NA	37.5 - 47.5	Chinle/alluvium	67.5
		11/3/2009	4.00	6,913.50	6,913.50	46.50	6,864.50	49.00	0.00	0.00	24.10	6,889.40	NA	37.5 - 47.5	Chinle/alluvium	67.9
8/28/1996	OW-30	2/23/2009	4.00	6,921.60	6,921.60	58.25	6,873.20	48.40	0.00	0.00	28.87	6,892.73	NA	37.9 - 47.9	Chinle/alluvium	42.5
		5/13/2009	4.00	6,921.60	6,921.60	58.25	6,873.20	48.40	0.00	0.00	25.65	6,895.95	NA	37.9 - 47.9	Chinle/alluvium	49.7
		7/30/2009	4.00	6,921.60	6,921.60	58.25	6,873.20	48.40	0.00	0.00	25.96	6,895.64	NA	37.9 - 47.9	Chinle/alluvium	48.9
		11/2/2009	4.00	6,921.60	6,921.60	58.25	6,873.20	48.40	0.00	0.00	25.96	6,895.64	NA	37.9 - 47.9	Chinle/alluvium	49.2
10/5/2009	OW-50	11/17/2009	2.00	6,914.37	6,914.37	32.50	6,977.37	63.00	0.00	0.00	18.20	6,896.17	NA	48 - 63	Chinle/alluvium	23
10/5/2009	OW-52	11/17/2009	2.00	6,906.26	6,907.68	26.50	6,985.26	79.00	0.00	0.00	16.75	6,889.51	NA	64 - 79	Chinle/alluvium	31
10/14/1981	MW-1	7/16/2009	5.00	6,878.52	6,878.15	15.00	6,746.50	132.02	0.00	0.00	7.51	6,871.01	NA	117.72 - 127.72	Chinle/alluvium	381
10/15/1981	MW-2	7/16/2009	5.00	6,878.40	6,880.84	22.50	6,741.90	138.94	0.00	0.00	16.36	6,862.04	NA	112 - 122	Chinle/alluvium	379.1
10/16/1981	MW-4	7/8/2009	5.00	6,882.54	6,882.20	27.75	6,760.40	122.14	0.00	0.00	7.67	6,874.87	NA	101 - 121	Sonsela sandstone	350.3
7/21/1986	MW-5	7/15/2009	4.00	6,883.32	6,882.93	24.25	6,750.30	133.02	0.00	0.00	11.83	6,871.49	NA	115 - 125	Sonsela sandstone	269
3/28/1995	RW-1 (OW-27)	2/11/2009	4.00	6,943.50	6,943.50	53.00	6,900.50	43.00	30.18	1.54	31.72	6,911.78	6913.012	25 - 40	Chinle/alluvium	NA
		5/5/2009	4.00	6,943.50	6,943.50	53.00	6,900.50	43.00	30.40	0.40	30.80	6,912.70	6913.02	25 - 40	Chinle/alluvium	NA
		8/10/2009	4.00	6,943.50	6,943.50	53.00	6,900.50	43.00	30.03	0.99	31.02	6,912.48	6913.272	25 - 40	Chinle/alluvium	NA
		10/28/2009	4.00	6,943.50	6,943.50	53.00	6,900.50	43.00	30.02	0.73	30.75	6,912.75	6913.334	25 - 40	Chinle/alluvium	NA
2/29/1995	RW-2 (OW-28)	2/11/2009	4.00	6,927.20	6,927.20	43.00	6,889.20	38.00	0.00	0.00	26.95	6,900.25	ND	26.1 - 36.1	Chinle/alluvium	NA
		5/5/2009	4.00	6,927.20	6,927.20	43.00	6,889.20	38.00	0.00	0.00	26.74	6,900.46	ND	26.1 - 36.1	Chinle/alluvium	NA
		8/10/2009	4.00	6,927.20	6,927.20	43.00	6,889.20	38.00	0.00	0.00	26.87	6,900.33	ND	26.1 - 36.1	Chinle/alluvium	NA
		10/28/2009	4.00	6,927.20	6,927.20	43.00	6,889.20	38.00	0.00	0.00	26.64	6,900.56	ND	26.1 - 36.1	Chinle/alluvium	NA
8/27/1997	RW-5	2/11/2009	4.00	6,942.50	6,942.50	35.00	6,902.50	40.00	32.15	1.04	33.19	6,909.31	6910.1425	29.5 - 39.5	Chinle/alluvium	NA
		5/5/2009	4.00	6,942.50	6,942.50	35.00	6,902.50	40.00	31.91	0.86	32.77	6,909.73	6910.418	29.5 - 39.5	Chinle/alluvium	NA
		8/10/2009	4.00	6,942.50	6,942.50	35.00	6,902.50	40.00	31.94	0.68	32.62	6,909.88	6910.424	29.5 - 39.5	Chinle/alluvium	NA
		10/28/2009	4.00	6,942.50	6,942.50	35.00	6,902.50	40.00	31.05	0.66	31.71	6,910.79	6911.318	29.5 - 39.5	Chinle/alluvium	NA
8/27/1997	RW-6	2/11/2009	4.00	6,972.60	6,972.60	31.00	6,933.80	38.80	32.35	1.09	33.44	6,939.16	6940.0325	28.5 - 38.5	Chinle/alluvium	NA
		5/5/2009	4.00	6,972.60	6,972.60	31.00	6,933.80	38.80	32.26	0.76	33.02	6,939.58	6940.188	28.5 - 38.5	Chinle/alluvium	NA
		8/10/2009	4.00	6,972.60	6,972.60	31.00	6,933.80	38.80	32.28	0.55	32.83	6,939.77	6940.21	28.5 - 38.5	Chinle/alluvium	NA
		10/28/2009	4.00	6,972.60	6,972.60	31.00	6,933.80	38.80	32.03	0.43	32.46	6,940.14	6940.484	28.5 - 38.5	Chinle/alluvium	NA

**Well Data Summary Table – 2009 (Continued)**

Date of Installation	Well ID Number	Measurement date	Casing Diameter (Inch)	A Ground Level Elevations (ft)****	Well Casing Rim Elevations (ft)**	Stick-up length (ft)***	Well Casing Bottom Elevations (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation (ft)	Screened Interval Depth Top to Bottom (ft)	Stratigraphy unit in which screen exists	Purge Volume = 3 Well Vol (gal)
9/26/1985	SMW-2	7/27/2009	2.00	6,884.44	6,884.11	54.50	6,827.10	57.34	0.00	0.00	25.93	6,858.51	NA	34.31 - 54.31	Chinle/alluvium	15.4
9/25/1985	SMW-4	7/27/2009	2.00	6,882.54	6,882.73	46.00	6,760.40	122.14	0.00	0.00	29.59	6,852.95	NA	51.7 - 71.7	Chinle/alluvium	20.9
7/8/2004	GWM-1	2/11/2009	2.00	6,912.65	6,912.65	46.50	6,888.95	23.70	0.00	0.00	19.81	6,892.84	NA	17.5 - 23.5	Chinle/alluvium	1.9
		5/4/2009	2.00	6,912.65	6,912.65	46.50	6,888.95	23.70	0.00	0.00	19.56	6,893.09	NA	17.5 - 23.5	Chinle/alluvium	2
		8/10/2009	2.00	6,912.65	6,912.65	46.50	6,888.95	23.70	0.00	0.00	20.32	6,892.33	NA	17.5 - 23.5	Chinle/alluvium	1.7
		10/27/2009	2.00	6,912.65	6,912.65	46.50	6,888.95	23.70	0.00	0.00	20.57	6,892.08	NA	17.5 - 23.5	Chinle/alluvium	1.5
9/25/2005	GWM-2	2/11/2009	2.00	6,913.17	6,913.17	57.00	6,896.97	18.97	0.00	0.00	DRY	0.00	NA	3.2 - 16.2	Chinle/alluvium	DRY
		5/4/2009	2.00	6,913.17	6,913.17	57.00	6,896.97	18.97	0.00	0.00	DRY	0.00	NA	3.2 - 16.2	Chinle/alluvium	DRY
		8/10/2009	2.00	6,913.17	6,913.17	57.00	6,896.97	18.97	0.00	0.00	DRY	0.00	NA	3.2 - 16.2	Chinle/alluvium	DRY
		10/27/2009	2.00	6,913.17	6,913.17	57.00	6,896.97	18.97	0.00	0.00	DRY	0.00	NA	3.2 - 16.2	Chinle/alluvium	DRY
9/25/2008	GWM-3	2/11/2009	2.00	6,912.65	6,912.65	58.25	6,896.15	17.94	0.00	0.00	DRY	0.00	NA	3 - 15	Chinle/alluvium	DRY
		5/4/2009	2.00	6,912.65	6,912.65	58.25	6,896.15	17.94	0.00	0.00	DRY	0.00	NA	3 - 15	Chinle/alluvium	DRY
		8/10/2009	2.00	6,912.65	6,912.65	58.25	6,896.15	17.94	0.00	0.00	DRY	0.00	NA	3 - 15	Chinle/alluvium	DRY
		10/27/2009	2.00	6,912.65	6,912.65	58.25	6,896.15	17.94	0.00	0.00	DRY	0.00	NA	3 - 15	Chinle/alluvium	DRY
3/14/2008	NAPIS 1 KA-2R	3/23/2009	2.00	6,918.43	6,918.43	3.50	6,904.40	14.00	0.00	0.00	8.92	6,909.51	NA	3.7 - 13.7	Chinle/alluvium	2.5
		5/28/2009	2.00	6,918.43	6,918.43	3.50	6,904.40	14.00	0.00	0.00	8.67	6,909.76	NA	3.7 - 13.7	Chinle/alluvium	2.6
		8/11/2009	2.00	6,918.43	6,918.43	3.50	6,904.40	14.00	0.00	0.00	9.06	6,909.37	NA	3.7 - 13.7	Chinle/alluvium	2.3
		11/23/2009	2.00	6,918.43	6,918.43	3.50	6,904.40	14.00	0.00	0.00	10.28	6,908.15	NA	3.7 - 13.7	Chinle/alluvium	1.8
11/23/2008	NAPIS 2 (KA-2R)	3/23/2009	2.00	6,917.27	6,917.27	1.25	6,902.80	14.50	0.00	0.00	9.35	6,907.92	NA	4.2 - 14.2	Chinle/alluvium	2.5
		1/5/2009	2.00	6,917.27	6,917.27	1.25	6,902.80	14.50	0.00	0.00	9.22	6,908.05	NA	4.2 - 14.2	Chinle/alluvium	2.6
		8/11/2009	2.00	6,917.27	6,917.27	1.25	6,902.80	14.50	0.00	0.00	9.39	6,907.88	NA	4.2 - 14.2	Chinle/alluvium	2.2
		11/23/2009	2.00	6,917.27	6,917.27	1.25	6,902.80	14.50	0.00	0.00	9.72	6,907.55	NA	4.2 - 14.2	Chinle/alluvium	2.3
3/14/2008	NAPIS 3 (KA-3R)	3/23/2009	2.00	6,917.31	6,917.31	3.50	6,886.60	30.70	0.00	0.00	9.93	6,907.38	NA	25.4 - 30-4	Chinle/alluvium	10.2
		6/15/2009	2.00	6,917.31	6,917.31	3.50	6,886.60	30.70	0.00	0.00	8.59	6,908.72	NA	25.4 - 30-4	Chinle/alluvium	10.8
		8/31/2009	2.00	6,917.31	6,917.31	3.50	6,886.60	30.70	0.00	0.00	8.39	6,908.92	NA	25.4 - 30-4	Chinle/alluvium	10.9
		11/23/2009	2.00	6,917.31	6,917.31	3.50	6,886.60	30.70	0.00	0.00	21.62	6,895.69	NA	25.4 - 30-4	Chinle/alluvium	4.4

### WELL DATA SUMMARY TABLE – (Continued)

Date of Installation	Well ID Number	Measurement date	Casing Diameter (Inch)	A Ground Level Elevations (ft)****	Well Casing Rim Elevations (ft)**	Stick-up length (ft)***	Well Casing Bottom Elevations (ft)	Total Well Depth (ft)	Depth to SPH (ft)	B SPH Thickness (ft)	C Depth to Water (ft)	D = A-C Ground water Elevation (ft)	= 0.8 B + D Corrected Water Table Elevation (ft)	Screened Interval Depth Top to Bottom (ft)	Stratigraphy unit in which screen exists	Purge Volume = 3 Well Vol (gal)
6/11/2007	KA-3	3/23/2009	2.00	6,917.17	6,917.17	2.00	6,892.40	25.00	0.00	0.00	9.23	6,907.94	NA	15 - 25	Chinle/alluvium	7.7
		5/28/2009	2.00	6,917.17	6,917.17	2.00	6,892.40	25.00	0.00	0.00	9.12	6,908.05	NA	15 - 25	Chinle/alluvium	7.8
		8/31/2009	2.00	6,917.17	6,917.17	2.00	6,892.40	25.00	0.00	0.00	9.36	6,907.81	NA	15 - 25	Chinle/alluvium	7.7
		11/23/2009	2.00	6,917.17	6,917.17	2.00	6,892.40	25.00	0.00	0.00	9.60	6,907.57	NA	15 - 25	Chinle/alluvium	7.5

NA = Not Applicable

ND = Non Detect

SPH = Separate Phase Hydrocarbons

Corrected water table elevations are only provided if SPH was detected.

\*BW-1A Annual inspection revealed well depth to be 37.89 feet. There was a water level in this well of 0.03 feet. Not enough water to bail or sample. Well is usually dry.

\*\*BW-1B annual inspection revealed a water level of 0.04 feet. Not enough water to bail or sample. Well is usually dry.

\*\*\*OW-12 Annual inspection revealed well depth measurement to be 126 feet instead of 145 feet as listed.

\*\*\*\*Note 1: Western has determined that in the past, these ground level elevations have been incorrectly marked as well casing rim elevations. However, from a review of the well logs, we have determined that the elevation levels were in the table as rim casing levels when they should have been listed as ground surface elevations.

Note 2: OW-50 and OW-52. Initial ground water samples were taken by AMEC on 11/17/09 after well was allowed to develop.