3R - 448

2009 **GWMR**

06/02/2009

Animas Environmental Services, LLC

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2009 JUN 4 PM 1 09

June 2, 2009

Brad Jones Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87505

Dixon Sandoval Jicarilla Apache Nation Environmental Protection Office P.O. Box 507 Dulce, NM 87528

Re: Periodic Progress Report for the Benson-Montin-Greer Highway 537 Truck
Receiving Station Llaves Pipeline 2007 Oil Spill, Rio Arriba County, New Mexico

Dear Sirs:

Animas Environmental Services, LLC (AES), on behalf of Benson-Montin-Greer Drilling Corporation (BMG), conducted groundwater sampling of monitor wells at the BMG Highway 537 Truck Receiving Station 2007 Spill Location on April 6, 2009. Work was conducted in accordance with a Sampling and Analysis Plan (SAP) submitted to the Jicarilla Apache Nation Environmental Protection Office (JEPO) and the U.S. Environmental Protection Agency (USEPA) on April 4, 2007.

The release originated in March 2007 on the Schmitz Ranch within the SW¼ NW¼ of Section 18, T25N, R3W (latitude and longitude recorded as N36° 23′ 59.781″ and W107° 11′ 26.450″). Petroleum hydrocarbons flowed into the Los Ojitos Arroyo and then downstream to a livestock pond located on Jicarilla Apache Nation Land within the SE¼ SE¼ of Section 13, T25N, R4W (latitude and longitude recorded as N36° 23′ 40.417″ and W107° 11′ 53.337″), Rio Arriba County, New Mexico. The locations of the release and flow route are shown on Figures 1 and 2.

1.0 Site History

On March 7, 2007, Schmitz Ranch personnel observed oil leaking into the Los Ojitos Canyon Arroyo. BMG personnel discovered that a small corrosion hole in the Llaves Pipeline, which runs parallel to the south side of Highway 537, was the source of the



leaking oil, and the pipeline was removed from service until the pipeline was repaired and clean up action was completed.

Approximately 25,230 cubic yards of petroleum-contaminated soils were excavated from the origin of the oil pipeline leak toward the Los Ojitos Arroyo and within the arroyo during March and April 2007. The soils were then transported off-site to a New Mexico Oil Conservation Division (NMOCD) permitted facility, the Schmitz Ranch Landfarm. Confirmation samples were collected by AES personnel for soil confirmation during excavation activities and surface water at Vigil Pond on April 3, 2007. Excavation and clean up efforts are discussed in detail within the SAP prepared by AES and dated April 5, 2007, which was submitted to the JEPO and USEPA.

On July 16 and 17, 2007, AES installed 11 monitor wells along the route of the release in order to define the lateral and vertical extent of near surface and subsurface soil contamination.

Quarterly groundwater sampling has been conducted throughout 2007 and 2008. Analytical results from groundwater samples collected during the December 2008 and January 2009 sampling event showed that benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH) C₆-C₃₆ concentrations in all wells samples remained below laboratory detection limits. During this event MW-7, MW-9, MW-10 and MW-11 were not sampled. Details of groundwater sampling were presented within the AES *Periodic Progress Report*, dated February 11, 2009.

2.0 Groundwater Monitoring and Sampling, April 2009

AES personnel conducted groundwater monitoring and sampling at the project area on April 6, 2009. Groundwater samples were laboratory analyzed for BTEX and TPH C_6 - C_{36} per EPA Methods 8021/8015 at Hall Environmental Analysis Laboratory (Hall), Albuquerque, New Mexico.

2.1 Groundwater Measurements and Water Quality Data

During the April 2009 sampling event, groundwater measurements were recorded for MW-1 through MW-7 and MW-10. Due to an obstruction in the well, MW-8 was not measured or sampled. Monitor wells MW-9 and MW-11 have been destroyed and therefore were not measured. Groundwater elevations were measured with a Keck water level with accuracy to 0.01 foot and found to range from 7,030.44 feet above mean sea level (amsl) in MW-10 up to 7,041.05 feet amsl in MW-4. Groundwater

elevations generally increased approximately 0.19 feet across the project area since the last sampling event in December 2008 and January 2009.

Water quality measurements were made with an YSI Water Quality Meter, and temperature ranged temperature ranged from 9.44°C in MW-10 to 13.74°C in MW-2. Groundwater pH measurements ranged from 6.60 to 7.37, and dissolved oxygen concentrations ranged between 1.63 mg/L in MW-3 and 2.52 mg/L in MW-5. Oxidation reduction potential (ORP) measurements were between 8.3 mV to 14.5 mV, and conductivity readings were between 2.828 mS and 22.69 mS. Depth to groundwater measurements and water quality data are presented in Table 1. Water Sample Collection Forms are included as Appendix A.

2.2 Groundwater Analytical Results

Groundwater samples were collected from MW-1 through MW-7 and MW-10 for laboratory analysis on April 6, 2009. In each of the wells sampled, analytical results for BTEX showed that concentrations remained below laboratory detection limits, and therefore also below applicable New Mexico Water Quality Control Commission (WQCC) standards for BTEX. TPH concentrations were also below laboratory detection limits in each of the wells sampled. Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are attached as Appendix B.

3.0 Conclusions and Recommendations

Petroleum hydrocarbon impacts to groundwater have not been detected since the monitor wells were installed in July 2007. Groundwater laboratory analytical results continue to show non-detectable concentrations of BTEX and TPH in April 2009. AES has scheduled the next quarterly sampling event to occur in late June or early July 2009.

If you have any questions about site conditions or this report, please feel free to contact Elizabeth McNally or Ross Kennemer at (505) 564-2281.

Sincerely,

Deborah Watson Project Manager

Cebrah Water

Elizabeth McNally, P.E.

Attachment: Figures

Figure 1. Topographic Site Location Map

Figure 2. General Site Plan

Tables

Table 1. Summary of Groundwater and Water Quality Data

Table 2. Summary of Groundwater Analytical Results

Appendices

Appendix A. Water Sample Collection Forms
Appendix B. Laboratory Analytical Reports

Cc:

Brandon Powell

New Mexico Oil Conservation Division

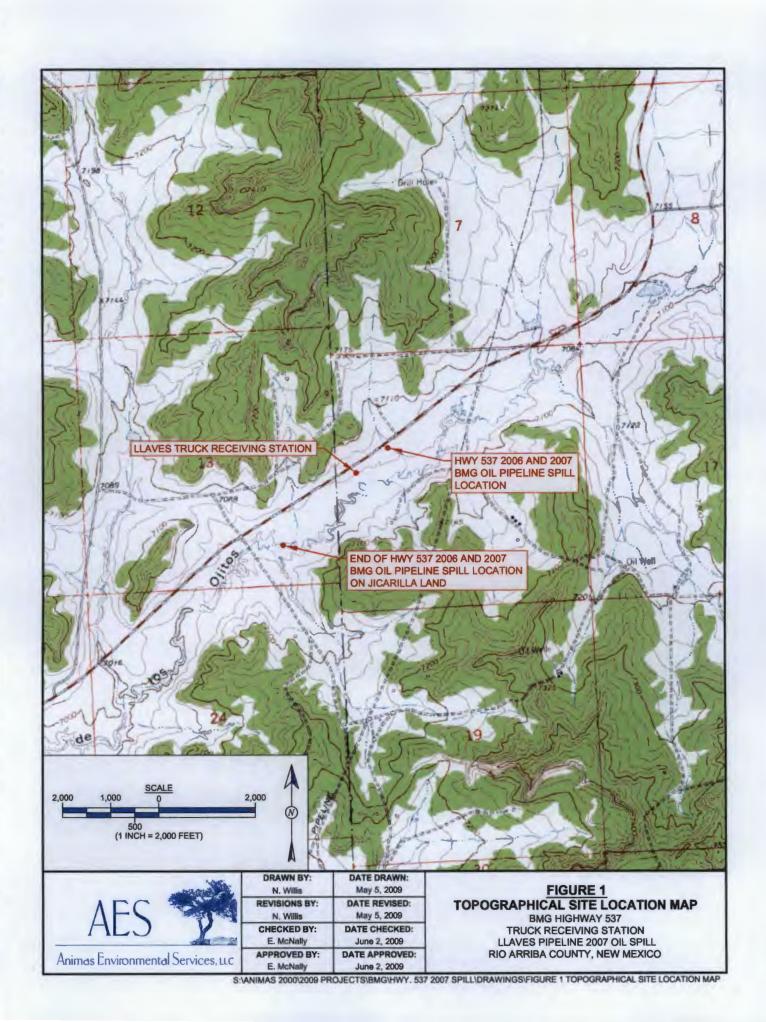
1000 Rio Brazos Rd. Aztec, NM 87410

Mike Dimond

Benson-Montin-Greer Drilling Corp.

4900 College Blvd Farmington NM 87402

File: 2009\BMG\Hwy. 537 2007Spill\Reports\gc Letter Report 060209



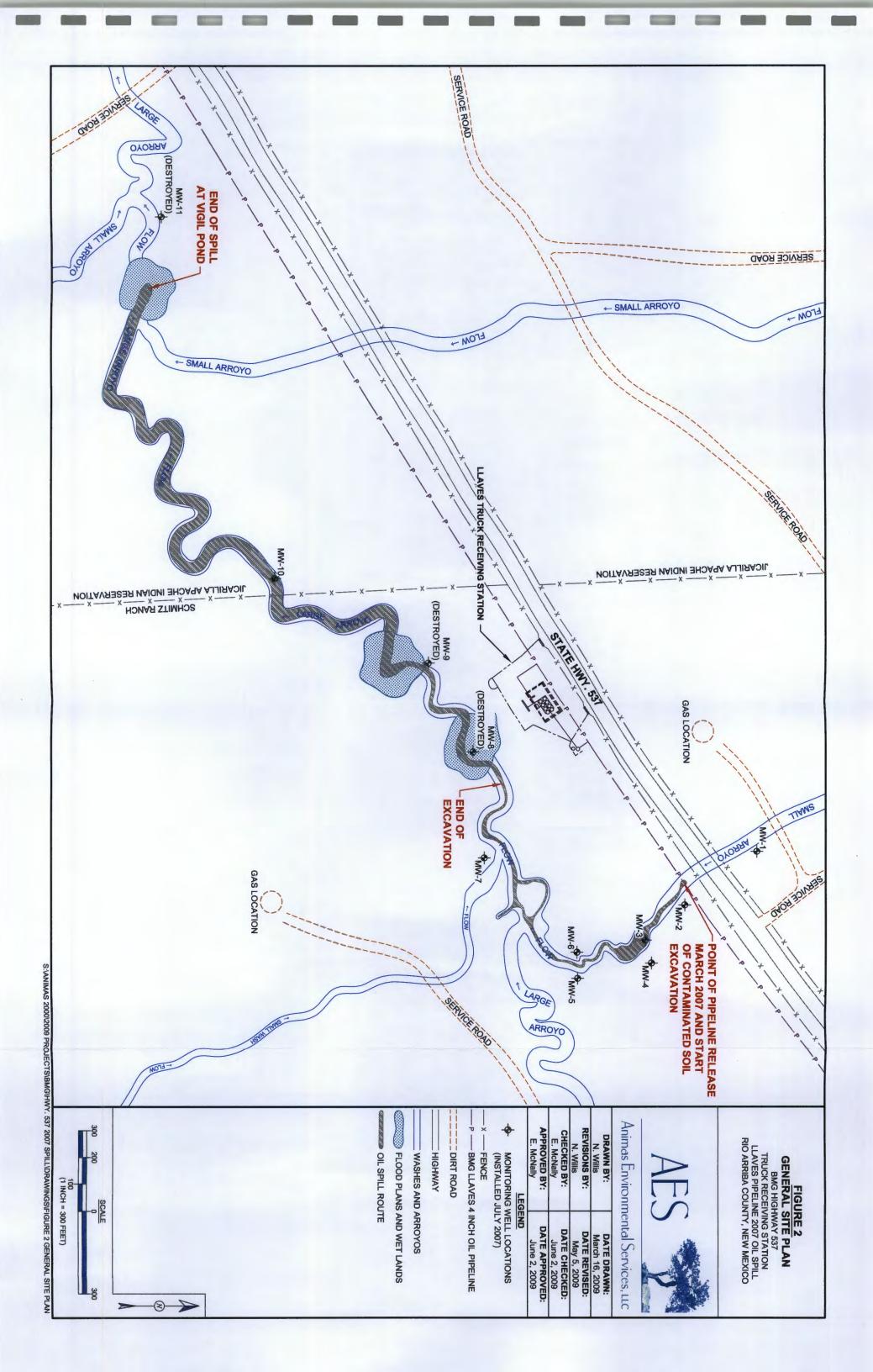


TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL

Rio Arriba County, New Mexico

TOC (ft) (ft) pH 7086.81 7039.43 7.36 7086.81 7049.84 7.78 7086.81 7039.69 7.02 7086.81 7039.69 7.02 7086.81 7039.60 7.22 7086.81 7039.60 7.44 7076.43 7040.04 7.13 7076.43 7040.09 6.88 7076.43 7040.04 7.37 7076.43 7040.14 7.37 7076.43 7040.14 7.37 7069.66 7040.12 7.38 7069.66 7040.15 7.49 7069.66 7040.15 7.46 7069.66 7040.15 7.49 7069.66 7040.55 6.98 7068.11 7040.90 6.89 7068.11 7040.98 6.71 7068.11 7041.05 6.92 7059.97 7039.53 7.81	Date	Depth to	Surveyed	GW Elev.		Conductivity	00	Temperature	ORP
10-Aug-07 47.38 7086.81 7039.43 7.36 27-Mar-08 36.97 7086.81 7049.84 7.78 25-Sep-08 47.12 7086.81 7039.69 7.02 31-Dec-08 47.26 7086.81 7039.69 7.02 31-Dec-08 47.21 7086.81 7039.69 7.02 06-Apr-09 47.21 7086.81 7039.60 7.44 10-Aug-07 36.53 7076.43 7040.09 6.88 25-Sep-08 36.43 7076.43 7040.09 6.88 05-Jan-09 36.29 7076.43 7040.09 6.88 10-Aug-07 29.35 7069.66 7040.14 7.37 25-Sep-08 NM 7069.66 7040.15 7.46 10-Aug-07 29.35 7069.66 7040.15 7.46 25-Sep-08 NM 7069.66 7040.15 7.46 10-Aug-07 22.34 7068.11 7041.19 7.46 25-Sep-08 27.23 7068.11 7040.90 6.89 25-Sep-08 27.23 7068.11 <th>Sampled</th> <th>Water (ft)</th> <th>TOC (ft)</th> <th>(L</th> <th>Hd</th> <th>(sm)</th> <th>(mg/L)</th> <th>(c)</th> <th>(mV)</th>	Sampled	Water (ft)	TOC (ft)	(L	Hd	(sm)	(mg/L)	(c)	(mV)
27-Mar-08 36.97 7086.81 7049.84 7.78 25-Sep-08 47.12 7086.81 7039.69 7.02 31-Dec-08 47.26 7086.81 7039.69 7.02 31-Dec-08 47.21 7086.81 7039.60 7.22 06-Apr-09 47.21 7086.81 7039.60 7.22 10-Aug-07 36.53 7076.43 7040.09 6.88 25-Sep-08 36.43 7076.43 7040.09 6.88 05-Jan-09 36.43 7076.43 7040.00 6.88 10-Aug-07 29.35 7069.66 7040.14 7.37 27-Mar-08 28.94 7069.66 7040.15 7.88 10-Aug-07 29.51 7069.66 7040.55 6.98 10-Aug-07 29.11 7069.66 7040.55 6.98 10-Aug-07 22.34 7068.11 7041.19 7.46 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.23 7068.11 7040.90 6.89 25-Sep-08 27.23 7068	10-Aug-07	47.38	7086.81	7039.43	7.36	1.998	3.62	16.61	-121.0
25-Sep-08 47.12 7086.81 7039.69 7.02 31-Dec-08 47.26 7086.81 7039.55 6.25 31-Dec-08 47.21 7086.81 7039.50 7.22 06-Apr-09 47.21 7086.81 7039.50 7.22 10-Aug-07 36.53 7076.43 7040.24 7.13 27-Mar-08 36.19 7076.43 7040.00 6.88 05-Jan-09 36.29 7076.43 7040.00 6.88 10-Aug-07 29.35 7069.66 7040.14 7.37 27-Mar-08 28.94 7069.66 7040.15 7.38 05-Jan-09 29.51 7069.66 7040.15 7.39 10-Aug-07 29.31 7069.66 7040.55 6.98 10-Aug-09 29.51 7069.66 7040.55 6.98 10-Aug-07 22.34 7068.61 7040.90 6.89 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.23 7068.11 7040.90 6.92 10-Aug-09 27.23 7068	27-Mar-08	36.97	7086.81	7049.84	7.78	3.419	5.62	13.48	122.3
31-Dec-08 47.26 7086.81 7039.55 6.25 06-Apr-09 47.21 7086.81 7039.60 7.22 10-Aug-07 36.53 7076.43 7039.90 7.44 27-Mar-08 36.19 7076.43 7040.24 7.13 25-Sep-08 36.34 7076.43 7040.09 6.88 05-Jan-09 36.29 7076.43 7040.00 6.88 10-Aug-07 29.35 7069.66 7040.14 7.37 27-Mar-08 28.94 7069.66 7040.15 7.38 05-Jan-09 29.51 7069.66 7040.15 6.98 10-Aug-07 29.35 7069.66 7040.15 6.98 06-Apr-09 29.51 7069.66 7040.55 6.98 10-Aug-07 22.34 7068.61 7040.50 6.89 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.90 6.92 06-Jan-09 27.24 7068	25-Sep-08	47.12	7086.81	7039.69	7.02	3.859	2.31	16.76	30.0
06-Apr-09 47.21 7086.81 7039.60 7.22 10-Aug-07 36.53 7076.43 7039.90 7.44 27-Mar-08 36.19 7076.43 7040.09 6.88 25-Sep-08 36.34 7076.43 7040.09 6.88 05-Jan-09 36.29 7076.43 7040.00 6.88 10-Aug-07 29.35 7069.66 7040.72 7.37 27-Mar-08 28.94 7069.66 7040.72 7.38 25-Sep-08 NM 7069.66 7040.72 7.38 06-Apr-09 29.51 7069.66 7040.75 6.98 10-Aug-07 22.34 7069.66 7040.55 6.98 27-Mar-08 29.51 7069.66 7040.55 6.98 27-Mar-09 29.11 7069.66 7040.55 6.98 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.21 7068.11 7040.90 6.92 06-Jan-09 27.06 7068.11 7040.90 6.92 06-Apr-09 27.06 7068.11	31-Dec-08	47.26	7086.81	7039.55	6.25	3.925	ΝN	11.43	104.9
10-Aug-07 36.53 7076.43 7039.90 7.44 10-Aug-07 36.53 7076.43 7040.24 7.13 25-Sep-08 36.34 7076.43 7040.09 6.88 05-Jan-09 36.29 7076.43 7040.14 7.37 10-Aug-07 29.35 7069.66 7040.15 7.38 25-Sep-08 NM 7069.66 7040.15 7.38 25-Sep-08 NM 7069.66 7040.15 7.49 10-Aug-07 22.34 7068.11 7041.19 7.46 25-Sep-08 27.21 7069.11 7041.19 7.46 25-Sep-08 27.21 7068.11 7041.19 7.46 25-Sep-08 27.23 7068.11 7040.88 6.71 10-Aug-07 20.44 7059.97 7039.53 7.81	06-Apr-09	47.21	7086.81	7039.60	7.22	4.063	1.97	12.45	9.4
10-Aug-07 36.53 7076.43 7039.90 7.44									
27-Mar-08 36.19 7076.43 7040.24 7.13 25-Sep-08 36.34 7076.43 7040.09 6.88 05-Jan-09 36.39 7076.43 7040.00 6.88 06-Apr-09 36.29 7076.43 7040.00 7.37 10-Aug-07 29.35 7069.66 7040.14 7.57 27-Mar-08 28.94 7069.66 7040.72 7.38 25-Sep-08 NM 7069.66 7040.72 7.38 06-Apr-09 29.51 7069.66 7040.15 6.98 10-Aug-07 22.34 7069.66 7040.55 6.98 27-Mar-08 26.92 7068.11 7040.55 6.98 25-Sep-08 27.21 7068.11 7040.90 6.89 25-Sep-08 27.23 7068.11 7040.90 6.92 06-Apr-09 27.06 7068.11 7040.88 6.71 10-Aug-07 20.44 7059.97 7039.53 7.81	10-Aug-07	36.53	7076.43	7039.90	7.44	2.216	2.34	17.09	-138.0
25-Sep-08 36.34 7076.43 7040.09 6.88 05-Jan-09 36.43 7076.43 7040.00 6.88 06-Apr-09 36.29 7076.43 7040.14 7.37 10-Aug-07 29.35 7069.66 7040.31 7.57 27-Mar-08 28.94 7069.66 7040.15 7.38 05-Jan-09 29.51 7069.66 7040.15 6.98 06-Apr-09 29.11 7069.66 7040.15 6.98 10-Aug-07 22.34 7068.11 7045.77 7.49 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Jan-09 27.23 7068.11 7040.96 6.92 06-Jan-09 27.23 7068.11 7040.96 6.92 06-Jan-09 27.24 7068.11 7041.05 6.92 06-Jan-09 27.24 7059	27-Mar-08	36.19	7076.43	7040.24	7.13	4.089	1.16	13.05	9.92
05-Jan-09 36.43 7076.43 7040.00 06-Apr-09 36.29 7076.43 7040.14 7.37 10-Aug-07 29.35 7069.66 7040.31 7.57 27-Mar-08 28.94 7069.66 7040.31 7.57 25-Sep-08 NM 7069.66 7040.72 7.38 05-Jan-09 29.51 7069.66 7040.15 6.74 10-Aug-07 29.51 7069.66 7040.15 6.98 27-Mar-08 29.51 7068.11 7045.77 7.46 25-Sep-08 27.21 7068.11 7040.90 6.89 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Jan-09 27.06 7068.11 7040.88 6.71 10-Aug-07 20.44 7059.57 7039.53 7.81	25-Sep-08	36.34	7076.43	7040.09	6.88	3.415	6.48	15.05	60.1
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10-Aug-07 29.35 7069.66 7040.31 7.57 27-Mar-08 28.94 7069.66 7040.72 7.38 25-Sep-08 NM 7069.66 NM 6.74 05-Jan-09 29.51 7069.66 7040.15 6.98 06-Apr-09 29.11 7069.66 7040.15 6.98 10-Aug-07 22.34 7068.11 7045.77 7.46 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7040.88 6.71 10-Aug-07 20.44 7059.57 7039.53 7.81									
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25-Sep-08 NM 7069.66 NM 6.74 05-Jan-09 29.51 7069.66 7040.15 6.98 06-Apr-09 29.11 7069.66 7040.55 6.98 10-Aug-07 22.34 7068.11 7045.77 7.49 27-Mar-08 26.92 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Jan-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	27-Mar-08	28.94	99'6902	7040.72	7.38	2.735	98.0	13.16	9.79
05-Jan-09 29.51 7069.66 7040.15 6.98 06-Apr-09 29.11 7069.66 7040.55 6.98 10-Aug-07 22.34 7068.11 7045.77 7.49 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	25-Sep-08	ŃΝ	99'6902	MN	6.74	2.776	2.61	14.35	50.1
06-Apr-09 29.11 7069.66 7040.55 6.98 10-Aug-07 22.34 7068.11 7045.77 7.49 27-Mar-08 26.92 7068.11 7040.90 6.89 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	05-Jan-09	29.51	99.6902	7040.15			NN		
10-Aug-07 22.34 7068.11 7045.77 7.49 7.49 27-Mar-08 26.92 7068.11 7041.19 7.46 7.5-Sep-08 27.21 7068.11 7040.90 6.89 6.71 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Jan-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	06-Apr-09	29.11	99'6902	7040.55	6.98	3.233	1.63	12.88	10.9
10-Aug-07 22.34 7068.11 7045.77 7.49 27-Mar-08 26.92 7068.11 7041.19 7.46 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81									
27-Mar-08 26.92 7068.11 7041.19 7.46 25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	10-Aug-07	22.34	7068.11	7045.77	7.49	1.517	2.40	14.47	-164.6
25-Sep-08 27.21 7068.11 7040.90 6.89 06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	27-Mar-08	26.92	7068.11	7041.19	7.46	2.340	1.89	12.40	76.1
06-Jan-09 27.23 7068.11 7040.88 6.71 06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	25-Sep-08	27.21	7068.11	7040.90	6.89	2.434	3.70	14.76	43.1
06-Apr-09 27.06 7068.11 7041.05 6.92 10-Aug-07 20.44 7059.97 7039.53 7.81	06-Jan-09	27.23	7068.11	7040.88	6.71	2.902	4.36	11.91	230.9
10-Aug-07 20.44 7059.97 7039.53 7.81	06-Apr-09	27.06	7068.11	7041.05	6.92	2.828	2.07	13.62	8.3
10-Aug-07 20.44 7059.97 7039.53 7.81							:		
	10-Aug-07	20.44	7059.97	7039.53	7.81	7.155	2.40	15.72	-122.0
MW-5 28-Mar-08 19.80 7059.97 7040.17	28-Mar-08	19.80	76:6507	7040.17			NM - LOW YIELD	VIELD	

Periodic Progress Report June 2, 2009

Periodic Progress Report June 2, 2009

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL
Rio Arriba County, New Mexico

Well ID	Date	Depth to	Surveyed	GW Elev.		Conductivity	0	Temperature	ORP
	Sampled	Water (ft)	TOC (ft)	(ft)	pН	(mS)	(mg/L)	(c)	(mV)
MW-5	25-Sep-08	20.26	7059.97	7039.71	6.97	19.17	1.62	16.26	6'6
MW-5	06-Jan-09	20.16	7059.97	7039.81	6.52	23.84	2.22	8.91	231.2
MW-5	06-Apr-09	20.11	7059.97	7039.86	7.01	22.69	2.52	12.10	6.7
MW-6	10-Aug-07	22.32	7061.97	7039.65	7.47	1.842	2.11	17.01	-138.7
MW-6	28-Mar-08	21.61	7061.97	7040.36	7.34	3.261	3.22	14.11	303.9
MW-6	25-Sep-08	22.45	7061.97	7039.52	6.76	3.092	2.92	16.55	32.4
MW-6	06-Jan-09	22.54	7061.97	7039.43	6.94	4.537	2.77	77.7	21.8
MW-6	06-Apr-09	22.24	7061.97	7039.73	7.19	4.246	2.08	12.77	10.6
MW-7	13-Aug-07	13.31	7051.30	7037.99		NM - BE	ENTONITE FC	BENTONITE FOUND IN WELL	
MW-7	28-Mar-08	12.11	7051.30	7039.19			NM - LOW YIELD	YIELD	
MW-7	25-Sep-08	13.64	7051.30	7037.66	86.9	3.308	3.19	15.65	44.9
MW-7	07-Jan-09	NN	7051.30			- MN	NM - WATER IN WELL FROZEN	'ELL FROZEN	
MW-7	06-Apr-09	13.32	7051.30	7037.98	6.60	3.191	2.29	10.78	13.1
MW-8	13-Aug-07	13.39	7049.96	7036.57	7.33	1.550	3.02	15.97	-26.6
MW-8	28-Mar-08	11.44	7049.96	7038.52			NM - LOW YIELD	YIELD	
MW-8	25-Sep-08	13.55	7049.96	7036.41	6.50	2.090	1.56	16.77	17.4
MW-8	06-Jan-09	13.65	7049.96	7036.31	6.48	2.430	2.25	6.78	41.0
MW-8	06-Apr-09		7049.96			- MN	NM - OBSTRUCTION IN WELI	ON IN WELL	
MW-9	13-Aug-07		7045.47	7045.47			NM - WELL DRY	DRY	
MW-9	28-Mar-08		7045.47	7063.00		Z	NM - WELL DAMAGED	MAGED	
MW-9	25-Sep-08	12.74	7045.47	7032.73	6.85	14.65	3.62	16.54	40.5
6-MM	07-Jan-09				NM -	NM - WELL DESTROYED	٩		

Labs 040609

Periodic Progress Report

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL
Rio Arriba County, New Mexico

Water (ft) TOC (ft) (ft) pH 5.95 7038.05 7032.10 7.17 5.57 7038.05 7032.48 7.17 8.66 7038.05 7029.39 7.17 7.61 7038.05 7030.44 6.74 16.78 7042.00 7025.22 7.45 11.59 7042.00 7030.41 7.07 DRY 7042.00 7030.41 7.07 NM - W	WellID	Date	Depth to	Surveyed	GW Elev.		Conductivity	00	Temperature	ORP
10-Aug-07 5.95 7038.05 7032.10 7.17 2.72 28-Mar-08 5.57 7038.05 7029.39 7.17 9.85 07-Jan-09 7.61 7038.05 7030.44 6.74 4.83 10-Aug-07 16.78 7042.00 7025.22 7.45 10.3 28-Mar-08 11.59 7042.00 7030.41 7.07 10.1 28-Mar-09 DRY 7042.00 7030.41 7.07 10.1 07-Jan-09 DRY 7042.00 7030.41 7.07 10.1		Sampled	Water (ft)	TOC (ft)	(ft)	Hd	(mS)	(mg/L)	(C)	(mV)
28-Mar-08 5.57 7038.05 7029.39 7.17 9.85 07-Jan-09 7.61 7038.05 7030.44 6.74 4.83 06-Apr-09 7.61 7038.05 7030.44 6.74 4.83 10-Aug-07 16.78 7042.00 7025.22 7.45 10.3 28-Mar-08 11.59 7042.00 7030.41 7.07 10.1 28-Mar-09 DRY 7042.00 7030.41 7.07 10.1 07-Jan-09 DRY 7042.00 7030.41 7.07 NM - WELL DES	MW-10	10-Aug-07	5.95	7038.05	7032.10	7.17	2.727	2.17	21.07	-138.0
25-Sep-08 8.66 7038.05 7.17 9.85 07-Jan-09 7.61 7038.05 7030.44 6.74 4.83 10-Aug-07 16.78 7042.00 7025.22 7.45 10.3 28-Mar-08 11.59 7042.00 7030.41 7.07 10.1 28-Mar-09 DRY 7042.00 7030.41 7.07 10.1 06-Apr-09 OG-Apr-09 NM - WELL DES	MW-10	28-Mar-08	5.57	7038.05	7032.48		Z	M - WELL DA	MAGED	
07-Jan-09 7.61 7038.05 7030.44 6.74 4.83 10-Aug-07 16.78 7042.00 7025.22 7.45 10.3 28-Mar-08 11.59 7042.00 7030.41 7.07 10.1- 28-Mar-09 DRY 7042.00 7030.41 7.07 10.1- 06-Apr-09 RY 7042.00 7030.41 RM - WELL DES	MW-10	25-Sep-08	99.8	7038.05	7029.39	7.17	9.857	2.41	14.83	-5.8
06-Apr-09 7.61 7038.05 7030.44 6.74 4.835 1.90 10-Aug-07 16.78 7042.00 7025.22 7.45 10.34 11.21 28-Mar-08 11.59 7042.00 7030.41 7.07 10.14 5.78 28-Mar-08 11.59 7042.00 7030.41 NM - WELL DESTROY 07-Jan-09 DRY 7042.00 7030.41 NM - WELL DESTROYED	MW-10	07-Jan-09		7038.05			- MN	WATER IN W	ELL FROZEN	
10-Aug-07 16.78 7042.00 7025.22 7.45 10.34 11.21 28-Mar-08 11.59 7042.00 7030.41 7.07 10.14 5.78 28-Mar-08 11.59 7042.00 7030.41 NM - WELL DESTROYED 07-Jan-09 DRY 7042.00 NM - WELL DESTROYED	MW-10	06-Apr-09	7.61	7038.05	7030.44	6.74	4.835	1.90	9.44	14.5
10-Aug-07 16.78 7042.00 7025.22 7.45 10.34 11.21 11.21 28-Mar-08 11.59 7042.00 7030.41 7.07 10.14 5.78 10.34 5.78 28-Mar-08 11.59 7042.00 7030.41 NM - WELL DESTROY 07-Jan-09 DRY 7042.00 NM - WELL DESTROYED						1			"	
28-Mar-08 11.59 7042.00 7030.41 7.07 10.14 5.78 5.78 28-Mar-08 11.59 7042.00 7030.41 NM - WELL DESTROYED 07-Jan-09 DRY 7042.00 NM - WELL DESTROYED	MW-11	10-Aug-07	16.78	7042.00	7025.22	7.45	10.34	11.21	22.98	-135.7
28-Mar-08 11.59 7042.00 7030.41 07-Jan-09 DRY 7042.00 06-Apr-09 NM - WELL DESTRO	MW-11	28-Mar-08	11.59	7042.00	7030.41	7.07	10.14	2.78	10.38	495.8
07-Jan-09 DRY 7042.00 NM - WELL DESTROYED	MW-11	28-Mar-08	11.59	7042.00	7030.41		N	M - WELL DES	STROYED	
06-Apr-09	MW-11	07-Jan-09	DRY	7042.00				NM - WELL	DRY	
_	MW-11	06-Apr-09				NM -	WELL DESTROY	ED		

NOTE: NM = NOT MEASURED

TABLE 2 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL

Rio Arriba County, New Mexico

				Ethyl-	Total		
	Date	Benzene	Toluene	benzene	Xylenes	DRO	GRO
Well ID	Sampled	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(mg/L)	(mg/L)
	l Method	8021B	8021B	8021B	8021B	8015B	8015B
	ico WQCC	10	750	750	620	NE	NE
MW-1	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	31-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	05-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	05-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	06-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	13-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	06-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	13-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	06-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050

TABLE 2 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL Rio Arriba County, New Mexico

			l	Ethyi-	Total				
	Date	Benzene	Toluene	benzene	Xylenes	DRO	GRO		
Well ID	Sampled	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(mg/L)	(mg/L)		
	l Method	8021B	8021B	8021B	8021B	8015B	8015B		
	ico WQCC	10	750	750	620	NE	NE		
MW-7	13-Aug-07	- 120		- Bentonite					
MW-7	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-7	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-7	07-Jan-09		1	NS -Water Fr	ozen in Well	· · · · · · · · · · · · · · · · · · ·			
MW-7	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
					"1"				
MW-8	13-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-8	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-8	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-8	06-Jan-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-8	06-Apr-09			NS - Obstruc	tion in Well				
			<u>.</u>				-		
MW-9	13-Aug-07	NS - Well Dry							
MW-9	28-Mar-08	NS - Well Damaged							
MW-9	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-9	07-Jan-09			NS - Well D	Destroyed				
MW-10	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-10	28-Mar-08			NS - Well [Damaged				
MW-10	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-10	07-Jan-09			IS - Water Fr	ozen in Well				
MW-10	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-11	13-Aug-07	<1.0	<1.0	<1.0	<2.0	1.4	<0.050		
MW-11	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050		
MW-11	25-Sep-08			NS - Well D					
MW-11	07-Jan-09			NS - We					
MW-11	06-Apr-09		****	NS - Well D	estroyed				

NOTE: NS = Not Sampled

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services

624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring

Site: Hwy 537 2006 and 2007 Spill

Location: Llaves, Rio Arriba County, New Mexico

Tech: N. Willis

Project No.: AES 070301

Date: <u>4-6-09</u> Time: <u>1034</u> Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	1038		47.21		
MW-2	1143		3629		
MW-3	1202		29.11		
MW-4	1224		27.06		
.MW-5	1245		20,11		
MW-6	1305		ZZ.24		
MW-7	1333		13.32		
MW-8					
MW -9					Destroyed
MW-10	1417		7.61		
MW-11					Destroyed
					7
·					
				- i	

Wells measured with KECK water level or KECK interface tape, decontaminated between each well measurement.

MONITO	RING WE	LL SAMPLIN	G RECO	RD	Anim	as Environmenta	l Services		
Monitor W	ell No:	MW-1				Comanche, Farmington			
					Tel. (50	5) 564-2281 Fax (505) 3	324-2022		
		37 Station Spill			Proje	ct No.: AES 070302	-		
1		County, New Me	xico	_		Date: 4-6-09			
-		er Monitoring		_	Arrival	Time: 1034	-		
		N. Willia			Air	Temp: <u>50°</u> F	_		
Purge	/ No Purge:	Muner No Pura	e	Т.	O.C. Ele	ev. (ft):			
Well Dia	ameter (in):	2	,	Total V	Vell Dep				
Initial	D.T.W. (ft):		Time:			(taken at initial gauging	of all wells)		
Confirm	D.T.W. (ft):	47.21	Time:	10:3	8	(taken prior to purging	well)		
Final	D.T.W. (ft):		Time:			(taken after sample col	lection)		
	1	Water Quality	Paramete	ers - Rec	orded	During Well Purging	· · · · · · · · · · · · · · · · · · ·		
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L)	рH	(mV)	(see reverse for calc.)	Notes/Observations		
1041	12.45	4.063	1.97	7.22	9.4	0.25			
1046							Samples Collected		
10 ,0							Sambes conscien		
Analyti	cal Parame	store (include	analysis i	mothod	and nu	mber and type of sa	mple containers)		
Analytic	cai Paraille	eters (include	anaiysis i	nethod	and nu	mber and type or sa	mple containers)		
		BTEX per EPA I	Method 802	1 (2 40m	L Vials w	// HCI)			
		TPH C ₆ -C ₃₆ per			·				
		TPH C ₆ -C ₃₆ per	EPA Metho	d 8015B	(40mL \	/ials no preservative)			
	D	isposal of Purg	ed Water:						
Collect	ed Samples	Stored on Ice	in Cooler:				-		
(Chain of Cu	stody Record (Complete:						
		Analytical La	aboratory:	Hall Envi	ronmenta	al Analysis Laboratory, A	Albuquerque, NM		
Equipment	Used Durin	g Sampling:	_	Keck Wa	ter Level	, YSI Water Quality Met	er.		
						ble Bailer	•		
Notes/Com	ments				- P				
10100/00/11									
			**						

Well Volume = (h)(cf)

where:

h = height of water column (feet)

cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	RING WEI	LL SAMPLIN	G RECO	RD	Anim	as Environmenta	I Services		
Monitor W	ell No:	MW-2			624 E. 0	Comanche, Farmington	NM 87401		
					Tel. (50	5) 564-2281 Fax (505) 3	324-2022		
Site:	Highway 53	7 Station Spill		_	Proje	ct No.: AES 070302			
Location:	Rio Arriba C	County, New Me	xico	-		Date: 4-6.09			
Project:	Groundwate	er Monitoring		-		Time: 1/40			
Sampling 1	Technician:	N. Willia			Air	Temp: <u>5 4°F</u>			
Purge	/ No Purge:	Provide No Pu	rae	-		ev. (ft):			
Well Dia	ameter (in):	2		Total V	Vell Dep	· ·			
Initial	D.T.W. (ft):		Time:			(taken at initial gauging	•		
	D.T.W. (ft):	36.29	Time:	1143		(taken prior to purging	,		
Final	D.T.W. (ft):		Time:			_(taken after sample col	lection)		
		Water Quality	Paramete	ers - Rec	orded	During Well Purging			
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1144	13.74	5,308	2.47	7.37	8.8	0.25			
1149							Samples Collected		
							O CALLED COLLEGEN		
	X								
Analyti	cal Parame	eters (include	analysis	method	and nu	mber and type of sa	mple containers)		
		BTEX per EPA I	Method 802	21 (2 40m	L Vials v	v/ HCI)			
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(2 40mL	. Vials w/ HCI)			
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(40mL \	Vials no preservative)			
	D	isposal of Purg	ed Water:	***************************************					
Collect		Stored on Ice	•						
	-	stody Record (
		*	•	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM		
Equipment	Used Durin	ng Sampling:		Keck Wa	ter Leve	I, YSI Water Quality Met	er,		
		-				ble Bailer			
Notes/Com	ments								

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	RING WE	LL SAMPLIN	G RECO	RD	Anim	as Environmenta	I Services		
Monitor W	ell No:	MW-3				Comanche, Farmington			
						05) 564-2281 Fax (505) 3	324-2022		
		37 Station Spill			Proje	ect No.: AES 070302			
		County, New Mex	xico	_	*!a/	Date: 4-6-09	_		
	Groundwate Technician:	er Monitoring		_		Time:	-		
Samping	/ No Purge:	M. Willis Plange No. Put		- т	Air O.C. Ele		-		
Well Di	ameter (in):	2	<u>rge</u>		Nell Dep		-		
	D.T.W. (ft):		Time:		VOI. 2 - ,	(taken at initial gauging	of all wells)		
	D.T.W. (ft):		Time:	120) ユ	_(taken prior to purging	-		
	D.T.W. (ft):		Time:			(taken after sample col	•		
		Water Quality	Paramete	ers - Rec	orded	During Well Purging	1		
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)		Notes/Observations		
1207	12,88	3.233	1.63	6.98	10.9	0.75			
1212							Samples Collected		
Analyti	cal Param	eters (include	analysis	method	and nu	ımber and type of sa	imple containers)		
		BTEX per EPA I	Method 802	21 (2 40m	I Vials v	w/ HCI)			
		TPH C ₆ -C ₃₆ per				······································			
		0 00 .			<u> </u>	Vials no preservative)			
		isposal of Purg				,			
Collect		s Stored on Ice	•						
	-	ustody Record (-						
	Ollain V. J.	•	•		ronment	al Analysis Laboratory, A	Albuquerque, NM		
Fauinment	lleed Durir	ng Sampling:	-			l, YSI Water Quality Met			
Equipment	Useu Du	g Jampinia.				able Bailer	.Gi ,		
Notes/Com	ments			une .	D.Cp	Dio Edito			
10100. 4	Money								

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	LL SAMPLIN	G RECO	RD	Anim	as Environmenta	l Services	
Monitor W	ell No:	MW-4			624 E. (Comanche, Farmington	NM 87401
			-			5) 564-2281 Fax (505)	
Site:	Highway 53	37 Station Spill				ct No.: AES 070302	
		County, New Me	xico	_		Date: 4-6-09	-
Project: Groundwater Monitoring			_		Time: 1222		
		W. Willia				Temp: <u>58°F</u>	
		Parge No D	urge	_	O.C. Ele		
	ameter (in):		T!	_ Total v	Vell Dep		• · · · · · · · · · · · · · · · · · · ·
	D.T.W. (ft):		Time:	100		(taken at initial gauging	
	D.T.W. (ft): D.T.W. (ft):		Time:		.4	_(taken prior to purging (taken after sample co	
	· · · · · · · · · · · · · · · · · · ·					- `	
		Water Quality	Paramete	ers - Rec	orded:	During Well Purging	
	Temp	Conductivity	DO		ORP	PURGED VOLUME	
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)		Notes/Observations
1225	13.62	2.828	2.07	6.92	8.3	0.25	
1230							Samples Collected
							1
			-				
Analyti	cal Parame	eters (include	analysis	method	and nu	mber and type of sa	mple containers)
, mary cr							
		BTEX per EPA I					
		TPH C ₆ -C ₃₆ per			<u> </u>	Vials w/ nci)	
				JU 60 13B	(4011111	viais no preservative)	
		isposal of Purg	•				
	•	Stored on Ice	•				
	Chain of Cu	stody Record (
		Analytical La	aboratory:	Hall Envi	ronmenta	al Analysis Laboratory,	Albuquerque, NM
Equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,						er,	
		·		and New	Disposa	ble Bailer	
Notes/Com	ments						

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	RING WEI	LL SAMPLIN	G RECO	RD	Anim	as Environmenta	I Services	
Monitor W	ell No:	MW-5		624 E. Comanche, Farmington NM 87401				
						5) 564-2281 Fax (505)		
Site:	Highway 53	7 Station Spill			Proje	ct No.: AES 070302	_	
•		County, New Me	xico			Date: 4-6-09	•	
_		er Monitoring		•		Time: <u>/24/</u>		
		<u>N. W:11:0</u>				Temp: <u>58°F</u>		
	/ No Purge: ameter (in):	0.75		•	Vell Dep	ev. (ft):		
1	D.T.W. (ft):	0.73	Time:	. 10tai 1	ven bep	(taken at initial gauging	r of all wells)	
	D.T.W. (ft):	Z0.[[Time:	17.4	45	(taken prior to purging	•	
	D.T.W. (ft):	20,11	Time:			(taken after sample col	•	
		Water Quality	Paramete	ers - Red	orded	During Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(µS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations	
1247	1210	ZZ. 69	Z,52	7.01	9.7	1/16		
1252			7(37	1,01	1. 1		Samples Collected	
1200		4					SCHIPES COLLECTED	
			T 44 1	0 1				
		L Y5	x 10/a1	functio	<u> </u>			
					<u> </u>	·		
Analyti	cal Parame	eters (include	analysis	method	and nu	mber and type of sa	mple containers)	
		BTEX per EPA	Method 802	1 (2 40m	L Vials v	v/ HCI)		
		TPH C ₆ -C ₃₆ per						
						Vials no preservative)		
	D	isposal of Purg	ed Water:					
Collect		Stored on Ice						
	Chain of Cu	stody Record	Complete:					
		Analytical La	aboratory:	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque, NM	
Equipment	Used Durin	g Sampling:		Keck Wa	ter Leve	I, YSI Water Quality Met	er,	
· •		-				ble Bailer		
Notes/Com	ments							

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	MONITORING WELL SAMPLING RECORD Animas Environmental Services								
Monitor W	/ell No:	MW-6			624 E. (Comanche, Farmington	NM 87401		
	01.112.					05) 564-2281 Fax (505)			
		37 Station Spill			· · · · · · · · · · · · · · · · · · ·	ct No.: AES 070302			
		County, New Me	xico	_	Date: 4-6-09				
		er Monitoring		-		Time: 13 03	-		
	/ No Purge:	No Purge		- т	Air O.C. Ele	Temp: 58°f			
	ameter (in):			_	.O.C. Ele Well Dep	`	-		
1	D.T.W. (ft):		Time:			(taken at initial gauging	of all wells)		
Confirm	D.T.W. (ft):	22,24	Time:	13.0	0 <u>5</u>	(taken prior to purging	well)		
Final	D.T.W. (ft):		Time:			(taken after sample col	llection)		
	1	Water Quality	Paramete	ers - Rec	corded	During Well Purging	J		
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
1308	12.77	4.246	2.08	7.19	10.6	1/16			
1313							Samples Collected		
1212							Daniel Control		
					-				
				-					
									
									
Analytic	cal Parame	eters (include	analysis ı	method	and nu	mber and type of sa	mple containers)		
		BTEX per EPA	~~~						
		TPH C ₆ -C ₃₆ per							
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(40mL \	Vials no preservative)			
	D	isposal of Purg	ed Water:						
Collect	ed Samples	Stored on Ice	in Cooler:						
	Chain of Cu	stody Record (Complete:						
		Analytical La	aboratory:	Hall Envi	ronment	al Analysis Laboratory, /	Albuquerque, NM		
Equipment	quipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,								
						ble Bailer			
Notes/Com	ments								
,									

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	MONITORING WELL SAMPLING RECORD Animas Environmental Services							
Monitor W	ell No:	MW-7				Comanche, Farmington		
					Tel. (50	5) 564-2281 Fax (505)	324-2022	
Site:	Highway 53	37 Station Spill		_	Proje	ct No.: AES 070302	_	
Location: Rio Arriba County, New Mexico			_		Date: 4-6-09			
		er Monitoring		_	Arriva	Time: 1328		
		N. Willis		_	Air	Temp: 58°F		
_	/ No Purge:			-	O.C. Ele	` '		
	ameter (in):		,	_ Total V	Veli Dep	` '		
	D.T.W. (ft):		Time:			_(taken at initial gauging	•	
		13.32	Time:	133	3	(taken prior to purging	•	
Final	D.T.W. (ft):		Time:			_(taken after sample col	llection)	
	1	Water Quality	Paramete	ers - Rec	corded	During Well Purging	1	
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
1336	10.78	3.191	Z.29	6.60	13.1	1/16		
1341							6-10-11	
10 11							Samples Collected	
							,	
Analytic	cal Parame	aters (include	analysis i	method	and nu	mber and type of sa	mole containers)	
Allalyth							imple containers)	
		BTEX per EPA						
		TPH C ₆ -C ₃₆ per						
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(40mL \	Vials no preservative)		
	D	isposal of Purg	ed Water:					
Collect	ed Samples	Stored on Ice i	in Cooler:		• • • • • • • • • • • • • • • • • • • •			
	Chain of Cu	istody Record (Complete:					
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM								
equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,								
				and New	Disposa	ble Bailer		
Notes/Com	ments							
			<u>-</u>					
		10.00						

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	MONITORING WELL SAMPLING RECORD Animas Environmental Services							
Monitor W	ell No:	MW- 8			624 E. 0	Comanche, Farmington	NM 87401	
						5) 564-2281 Fax (505)	324-2022	
	Site: Highway 537 Station Spill Location: Rio Arriba County, New Mexico					ct No.: AES 070302	-	
		County, New Mex er Monitoring	XICO	-	Arrival	Date: <u>4-7-09</u> Time: <u>0930</u>	-	
		N. W:\\is		-		Temp: 45°F	-	
	/ No Purge:			Т.	O.C. Ele		•	
	ameter (in):			Total V	Vell Dep			
	D.T.W. (ft):		Time:			(taken at initial gauging		
	D.T.W. (ft):		Time: Time:			(taken prior to purging (taken after sample col	•	
Final D.T.W. (ft): Time: (taken after sample collection)								
	Water Quality Parameters - Recorded During Well Purging							
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
	,							
				\sim	+			
	/							
Analyti	cal Parame	eters (include	analysis ı	method	and nu	mber and type of sa	mple containers)	
		BTEX per EPA	Method 802	1 (2 40m	L Vials w	// HCI)		
		TPH C ₆ -C ₃₆ per			·			
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(40mL \	/ials no preservative)		
	D	isposal of Purg	ed Water:					
Collect	ed Samples	Stored on Ice i	in Cooler: _					
	Chain of Cu	stody Record 0	Complete:					
		Analytical La	boratory:	Hall Envi	ronmenta	al Analysis Laboratory, A	Albuquerque, NM	
equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,								
		_				ble Bailer		
lotes/Com	ments				···········			
		يد امم العد	ا طمام	rot An	t . t	to inter To at	it retreve shiest	
						to water. Tryed	L' ICHEENE MARCL	
		t is stuck or					.1 1	
·oo usad	TO IETTE	we object; fi	sning line	, weigh	15, and	hooks, builting win	, steel tape.	

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITO	MONITORING WELL SAMPLING RECORD Animas Environmental Services							
Monitor Well No: MW-9 Destroy				624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022				
Site: Highway 537 Station Spill					Project No.: AES 070302			
		County, New Me	xico	•		Date: 4-6-09	•	
Project:	Groundwate	er Monitoring		- -		Time:	•	
	Technician:					Temp:	•	
_	/ No Purge:					ev. (ft):		
	ameter (in):		Time:	. Total V	Vell Dep		of all walls)	
	D.T.W. (ft): D.T.W. (ft):		Time:			(taken at initial gauging (taken prior to purging	•	
	D.T.W. (ft):		Time:			(taken after sample col	•	
			•	Da		• • • • • • • • • • • • • • • • • • • •	······································	
	· · · · · · · · · · · · · · · · · · ·	1		ers - Rec	1	During Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
	(X					
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11	1	710			NV			
//	10		7					
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	P		<u> </u>					
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		\						
Analyti	cal Parame	eters (include	analysis i	method	and nu	mber and type of sa	mple containers)	
	J-1-	BTEX per EPA I	Method 802	1 (2 40m	L Vials w	// HCI)	the state of the s	
		TPH C ₆ -C ₃₆ per						
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(40mL \	Vials no preservative)		
	D	isposal of Purg	ed Water:					
Collect	ed Samples	Stored on Ice	in Cooler:					
(Chain of Cu	stody Record (Complete:					
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM								
Equipment	equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,							
				and New	Disposa	ble Bailer		
Notes/Com	ments						,	
						The state of the s		

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITORING WELL SAMPLING RECORD Animas Environmental Services									
Monitor Well No: MW-10 624 E. Comanche, Farmington NM 87401									
			•	Tel. (505) 564-2281 Fax (505) 324-2022					
Site:	Highway 53	37 Station Spill				ect No.: AES 070302			
		County, New Mex	xico	-		Date: 4-6-69	-		
		ter Monitoring	Aloo .	-	Arriva	1 Time: 1415	-		
		: N. Willis		-		Temp: 58°F	-		
	/ No Purge:			- т	O.C. Ele		-		
	ameter (in):			_		` '	-		
	D.T.W. (ft):		Time:	Total Well Depth (ft):					
	D.T.W. (ft):		- Time:	(taken prior to purging well)					
	D.T.W. (ft):	T.01	- Time:			_(taken phor to purging - (taken after sample col			
1 11101			-			- `			
		Water Quality	Paramete	ers - Rec	corded	During Well Purging	J		
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	рH	(mV)	(see reverse for calc.)	Notes/Observations		
1418	9.44	4.835	1.90	6.74	14.5	716			
	· · · · · · · · · · · · · · · · · · ·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		C4 , .	7.11-		2 1 2 11 1 1		
1423							Samples Collected		
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	l								
Analyti	cal Parame	eters (include	analysis	method	and nu	mber and type of sa	mple containers)		
-		BTEX per EPA							
		TPH C ₆ -C ₃₆ per				· · · · · · · · · · · · · · · · · · ·			
TPH C ₆ -C ₃₆ per EPA Method 8015B (40mL Vials no preservative)									
	D	isposal of Purg	jed Water:						
Collected Samples Stored on Ice in Cooler:									
Chain of Custody Record Complete:									
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM									
Eauipment	Equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,								
•	and New Disposable Bailer								
Notes/Comments									
TOLES/ COMMITTER INC.									
	· · · · · · · · · · · · · · · · · · ·								

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITORING WELL SAMPLING RECORD Animas Environmental Services								
Monitor Well No: MW-11 (Destroyed) 624 E. Comanche, Farmington NM 87401							NM 87401	
			Tel. (505) 564-2281 Fax (505) 324-2022					
		37 Station Spill			Proje	ct No.: AES 070302	•	
		County, New Mex	xico	-	A	Date: 4-6-09		
		er Monitoring ハルルル		-	Arrival	Temp:		
	/ No Purge:			т.	O.C. Fle	ev. (ft):	•	
	ameter (in):				Vell Dep		•	
	D.T.W. (ft):		Time:	(taken at initial gauging of all wells)				
	D.T.W. (ft):		Time:	(taken prior to purging well)				
Final	D.T.W. (ft):		Time:			(taken after sample col	lection)	
	1	Water Quality	Paramete	rs - Rec	orded	During Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
	-							
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			7					
Analyti	cal Parame	eters (include	analysis ı	method	and nu	mber and type of sa	mple containers)	
		BTEX per EPA I	Method 802	1 (2 40m	L Vials w	// HCI)		
		TPH C ₆ -C ₃₆ per	EPA Metho	od 8015B	(2 40mL	Vials w/ HCI)		
TPH C ₆ -C ₃₆ per EPA Method 8015B (40mL Vials no preservative)								
Disposal of Purged Water:								
Collected Samples Stored on Ice in Cooler:								
Chain of Custody Record Complete:								
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM								
Equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,								
and New Disposable Bailer								
Notes/Comments								
	M1111111111111111111111111111111111111							

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

MONITORING WELL SAMPLING RECORD Animas Environmental Services									
Monitor Well No: 624 E. Comanche, Farmington NM 87401									
			Tel. (505) 564-2281 Fax (505) 324-2022						
	37 Station Spill		_	Proje	ct No.: AES 070302	_			
		County, New Mex	xico	_		Date:	-		
-		er Monitoring		_		I Time:	-		
	Technician:					Temp:	-		
	/ No Purge:				O.C. Ele		_		
	ameter (in):			Total Well Depth (ft):					
	D.T.W. (ft):		Time:	(taken at initial gauging of all wells)					
	D.T.W. (ft):		Time:	(taken prior to purging well)					
Final	D.T.W. (ft):		Time:		(taken after sample collection)				
		Water Quality	Paramete	ers - Rec	corded	During Well Purging			
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(µS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations		
	, , ,			-					
Analytic	cal Parame	eters (include	analysis	method	and nu	mber and type of sa	mple containers)		
		BTEX per EPA	Method 802	21 (2 40m	ıL Vials v				
		TPH C ₆ -C ₃₆ per							
	TPH C ₆ -C ₃₆ per EPA Method 8015B (40mL Vials no preservative)								
0 - 114		isposal of Purg	-						
	=	s Stored on Ice i	-						
Chain of Custody Record Complete:									
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM									
Equipment Used During Sampling: Keck Water Level, YSI Water Quality Meter,									
and New Disposable Bailer									
Notes/Comments									
		1.1111111111111111111111111111111111111							

If it is necessary to calculate the volume of the monitoring well to determine what volume of groundwater will need to be purged from the well prior to collecting the samples, use the following equation:

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

revised: 05/23/07

MONITO	RING WE	LL SAMPLIN	G RECO	RD	Anim	as Environmenta	l Services
Monitor W	ell No:				624 E. (Comanche, Farmington	NM 87401
			-			5) 564-2281 Fax (505)	
Site:	Highway 53	37 Station Spill			Proje	ct No.: AES 070302	_
		County, New Me	xico	_		Date:	
•		er Monitoring		_	Arrival		•
	Technician:					Temp:	-
_	/ No Purge:			-	O.C. Ele	` '	-
	ameter (in):			_ Total V	Well Dep		- C - H H - \
	D.T.W. (ft):		Time:			(taken at initial gauging	
	D.T.W. (ft): D.T.W. (ft):		Time:			_(taken prior to purging (taken after sample col	
rinai	D. 1.44. (II):		Time:			(taken alter sample col	lection)
		Water Quality	Paramete	ers - Rec	orded	During Well Purging	
	Temp	Conductivity	DO		ORP	PURGED VOLUME	
Time	(deg C)	(µS) (mS)	(mg/L)	рH	(mV)	(see reverse for calc.)	Notes/Observations
Analyti	cal Parame	eters (include	analysis	method	and nu	mber and type of sa	mple containers)
		BTEX per EPA i					
		TPH C ₆ -C ₃₆ per					
		0 00 .			<u>` </u>	Vials no preservative)	
					·		
Collect		s Stored on Ice					
	-	stody Record (
	onam or oc	-	•	Hall Envi	ronment	al Analysis Laboratory,	Albuquerque NM
Fauinment	Used Durin	ng Sampling:	•			I, YSI Water Quality Met	
Lquipinoiii	OSCU DUIII	g camping.				ble Bailer	
Notes/Com	monto						
Notes/Com	ments					<u> </u>	

If it is necessary to calculate the volume of the monitoring well to determine what volume of groundwater will need to be purged from the well prior to collecting the samples, use the following equation:

Well Volume = (h)(cf)

where:

h = height of water column (feet) cf = gallons/foot based on well diameter shown below

The gallons/foot for common size monitoring wells are as follows:

Well Diameter (inches)	2"	3"	4"	6"
Volume (gallons/foot)	0.1632	0.3672	0.6528	1.4688

The well volume is typically tripled to determine the volume to be purged.

Show purge volume calculation below:

revised: 05/23/07



COVER LETTER

Wednesday, April 15, 2009

Ross Kennemer Animas Environmental Services 624 East Comanche Farmington, NM 87401

TEL: (505) 564-2281 FAX (505) 324-2022

RE: HWY 537 '06-'07 Spill

Dear Ross Kennemer:

Order No.: 0904127

Hall Environmental Analysis Laboratory, Inc. received 9 sample(s) on 4/8/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001 Texas Lab# T104704424-08-TX



Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Client Sample ID: MW-1

Lab Order:

0904127

Collection Date: 4/6/2009 10:46:00 AM

Project:

HWY 537 '06-'07 Spill

Date Received: 4/8/2009

Lab ID:

0904127-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	105	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAN	GE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/14/2009 9:41:51 PM
Surr: BFB	87.2	59.9-122	%REC	1	4/14/2009 9:41:51 PM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	1	4/14/2009 9:41:51 PM
Toluene	ND	1.0	µg/L	· 1	4/14/2009 9:41:51 PM
Ethylbenzene	ND	1.0	μg/L	1	4/14/2009 9:41:51 PM
Xylenes, Total	ND	2.0	µg/L	1	4/14/2009 9:41:51 PM
Surr: 4-Bromofluorobenzene	86.6	65.9-130	%REC	1	4/14/2009 9:41:51 PM

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Lab Order:

0904127

HWY 537 '06-'07 Spill

Project: Lab ID:

0904127-02

Client Sample ID: MW-2

Collection Date: 4/6/2009 11:49:00 AM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	109	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RANG	SE .				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/14/2009 10:12:21 PM
Surr: BFB	87.5	59.9-122	%REC	1	4/14/2009 10:12:21 PM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	1	4/14/2009 10:12:21 PM
Toluene	ND	1.0	µg/L	1	4/14/2009 10:12:21 PM
Ethylbenzene	ND	1.0	µg/L	1	4/14/2009 10:12:21 PM
Xylenes, Total	ND	2.0	µg/L	1	4/14/2009 10:12:21 PM
Surr: 4-Bromofluorobenzene	87.6	65.9-130	%REC	1	4/14/2009 10:12:21 PM

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 9

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

0904127

Lab Order: Project:

HWY 537 '06-'07 Spill

Lab ID:

0904127-03

Client Sample ID: MW-3

Collection Date: 4/6/2009 12:12:00 PM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL (Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	110	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAN	IGE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/14/2009 10:42:45 PM
Surr: BFB	89.0	59.9-122	%REC	1	4/14/2009 10:42:45 PM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	µg/L	1	4/14/2009 10:42:45 PM
Toluene	ND	1.0	μg/L	1	4/14/2009 10:42:45 PM
Ethylbenzene	ND	1.0	μg/L	1	4/14/2009 10:42:45 PM
Xylenes, Total	ND	2.0	μg/L	1	4/14/2009 10:42:45 PM
Surr: 4-Bromofluorobenzene	89.3	65.9-130	%REC	1	4/14/2009 10:42:45 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- Estimated value Ε
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Lab Order:

0904127

Project:

HWY 537 '06-'07 Spill

Lab ID:

0904127-04

Client Sample ID: MW-4

Collection Date: 4/6/2009 12:30:00 PM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF ·	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	109	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAN	IGE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/14/2009 11:13:15 PM
Surr: BFB	88.3	59.9-122	%REC	1	4/14/2009 11:13:15 PM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	1	4/14/2009 11:13:15 PM
Toluene	ND	1.0	μg/L	1	4/14/2009 11:13:15 PM
Ethylbenzene	ND	1.0	μg/L	1	4/14/2009 11:13:15 PM
Xylenes, Total	ND	2.0	μg/L	1	4/14/2009 11:13:15 PM
Surr: 4-Bromofluorobenzene	88.4	65.9-130	%REC	1	4/14/2009 11:13:15 PM

Qualifiers:

S Spike recovery outside accepted recovery limits

RL Reporting Limit

Page 4 of 9

Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Lab Order:

0904127

0704127

HWY 537 '06-'07 Spill

Project: Lab ID:

0904127-05

Client Sample ID: MW-5

Collection Date: 4/6/2009 12:52:00 PM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL (Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	108	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAI	NGE				Analyst: DAM
Gasoline Range Organics (GRO)	N D	0.050	mg/L	1	4/14/2009 11:43:39 PM
Surr: BFB	82.6	59.9-122	%REC	1	4/14/2009 11:43:39 PM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	1	4/14/2009 11:43:39 PM
Toluene	ND	1.0	μg/L	1	4/14/2009 11:43:39 PM
Ethylbenzene	. ND	1.0	μg/L	1	4/14/2009 11:43:39 PM
Xylenes, Total	ND	2.0	μg/L	1	4/14/2009 11:43:39 PM
Surr: 4-Bromofluorobenzene	80.1	65.9-130	%REC	1	4/14/2009 11:43:39 PM

S Spike recovery outside accepted recovery limits

RL Reporting Limit

Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Lab Order:

0904127

Project:

HWY 537 '06-'07 Spill

Lab ID:

0904127-06

Client Sample ID: MW-6

Collection Date: 4/6/2009 1:13:00 PM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL Q	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	108	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAN	IGE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/15/2009 12:15:51 AM
Surr: BFB	82.8	59.9-122	%REC	1	4/15/2009 12:15:51 AM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	. 1	4/15/2009 12:15:51 AM
Toluene	ND	1.0	µg/L	1	4/15/2009 12:15:51 AM
Ethylbenzene	ND	1.0	µg/L	1	4/15/2009 12:15:51 AM
Xylenes, Total	ND	2.0	µg/L	1	4/15/2009 12:15:51 AM
Surr: 4-Bromofluorobenzene	82.9	65.9-130	%REC	1	4/15/2009 12:15:51 AM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Lab Order:

0904127

Project:

HWY 537 '06-'07 Spill

Lab ID:

0904127-07

Client Sample ID: MW-7

Collection Date: 4/6/2009 1:41:00 PM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE	•	· · · · · · · · · · · · · · · · · · ·				Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	ı	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	1	mg/L	1	4/13/2009
Surr: DNOP	110	58-140	C	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAN	GE					Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	r	mg/L	1	4/15/2009 12:46:16 AM
Surr: BFB	86.7	59.9-122	Ç	%REC	1	4/15/2009 12:46:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	1.0	ŀ	ug/L	1	4/15/2009 12:46:16 AM
Toluene	ND	1.0	ļ	ug/L	1	4/15/2009 12:46:16 AM
Ethylbenzene	ND	1.0	ŀ	ug/L	1	4/15/2009 12:46:16 AM
Xylenes, Total	ND	2.0	ŀ	ug/L	1	4/15/2009 12:46:16 AM
Surr: 4-Bromofluorobenzene	86.0	65.9-130	9	%REC	1	4/15/2009 12:46:16 AM

S Spike recovery outside accepted recovery limits

RL Reporting Limit

Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Lab Order:

0904127

Project:

HWY 537 '06-'07 Spill

Lab ID:

0904127-08

Client Sample ID: MW-10

Collection Date: 4/6/2009 2:23:00 PM

Date Received: 4/8/2009

Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	4/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	4/13/2009
Surr: DNOP	105	58-140	%REC	1	4/13/2009
EPA METHOD 8015B: GASOLINE RAN	IGE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/15/2009 1:16:53 AM
Surr: BFB	91.8	59.9-122	%REC	1	4/15/2009 1:16:53 AM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	1	4/15/2009 1:16:53 AM
Toluene	ND	1.0	μg/L	1	4/15/2009 1:16:53 AM
Ethylbenzene	ND	1.0	µg/L	1	4/15/2009 1:16:53 AM
Xylenes, Total	ND	2.0	μg/L	1	4/15/2009 1:16:53 AM
Surr: 4-Bromofluorobenzene	94.1	65.9-130	%REC	1	4/15/2009 1:16:53 AM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 8 of 9

Date: 15-Apr-09

CLIENT:

Animas Environmental Services

Client Sample ID: Trip Blank

Lab Order:

0904127

Collection Date:

Project:

HWY 537 '06-'07 Spill

Date Received: 4/8/2009

Lab ID:

0904127-09

Matrix: TRIP BLANK

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAM	IGE				Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	4/15/2009 1:47:19 AM
Surr: BFB	91.6	59.9-122	%REC	1	4/15/2009 1:47:19 AM
EPA METHOD 8021B: VOLATILES					Analyst: DAM
Benzene	ND	1.0	μg/L	1	4/15/2009 1:47:19 AM
Toluene	ND	1.0	μg/L	1	4/15/2009 1:47:19 AM
Ethylbenzene	ND	1.0	μg/L	1	4/15/2009 1:47:19 AM
Xylenes, Total	ND	2.0	µg/L	1	4/15/2009 1:47:19 AM
Surr: 4-Bromofluorobenzene	93.9	65.9-130	%REC	1	4/15/2009 1:47:19 AM

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 9 of 9

Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Date: 15-Apr-09

QA/QC SUMMARY REPORT

Client:

Animas Environmental Services

Project:

HWY 537 '06-'07 Spill

Work Order:

0904127

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit Qual
Method: EPA Method 8015B: D	iesel Range							
Sample ID: MB-18809		MBLK			Batch	ID: 18809	Analysis Dat	te: 4/13/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-18809		LCS			Batch	ID: 18809	Analysis Dat	te: 4/13/2009
Diesel Range Organics (DRO)	5.228	mg/L	1.0	105	74	157		
Sample ID: LCSD-18809		LCSD			Batch	ID: 18809	Analysis Dat	te: 4/13/2009
Diesel Range Organics (DRO)	5.455	mg/L	1.0	109	74	157	4.25	23
Method: EPA Method 8015B: G	asoline Ran	ge						
Sample ID: 5ML RB		MBLK			Batch	ID: R33239	Analysis Dat	e: 4/14/2009 9:30:26 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch	ID: R33239	Analysis Dat	e: 4/14/2009 6:38:55 PM
Gasoline Range Organics (GRO)	0.5620	mg/L	0.050	112	80	115		
Method: EPA Method 8021B: Vo	olatiles							
Sample ID: 5ML RB		MBLK			Batch	ID: R33239	Analysis Dat	e: 4/14/2009 9:30:26 AM
Benzene	ND	μg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	μg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R33239	Analysis Date	e: 4/14/2009 7:09:20 PM
Benzene	20.70	μg/L	1.0	103	85.9	113		
Toluene	21.19	μg/L	1.0	106	86.4	113		
Ethylbenzene	20.63	μg/L	1.0	103	83.5	118		
Xylenes, Total	61.39	μg/L	2.0	102	83.4	122		

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E Estimated value

Page 1

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Sample Receipt Checklist

Client Name ANIMAS ENVIRONMENTAL				Date Receive	ed:		4/8/2009	
Work Order Number 0904127				Received by	r: AT		a 9	
				Sample ID I	abels checked	by:		
Checklist completed by: Signature Signature			Date	18/09			Initials	
Matrix:	Carrier name	Gre	yhound					
Shipping container/cooler in good condition?		Yes	V	No 🗌	Not Present			
Custody seals intact on shipping container/cool	er?	Yes	$\overline{\checkmark}$	No 🗀	Not Present		Not Shipped	
Custody seals intact on sample bottles?		Yes		No 🗌	N/A	V		
Chain of custody present?		Yes	\checkmark	No 🗌				
Chain of custody signed when relinquished and	received?	Yes	\checkmark	No 🗆				
Chain of custody agrees with sample labels?		Yes	✓	No 🗆				
Samples in proper container/bottle?		Yes	\checkmark	No 🗌				
Sample containers intact?		Yes	\checkmark	No 🗌				
Sufficient sample volume for indicated test?		Yes	✓	No 🗌				
All samples received within holding time?		Yes	✓	No 🗌				
Water - VOA vials have zero headspace?	No VOA vials subm	itted		Yes 🗹	No 🗆			
Water - Preservation labels on bottle and cap m	atch?	Yes		No 🗌	N/A 🗹			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹			
Container/Temp Blank temperature?			3°	<6° C Acceptable				
COMMENTS:				If given sufficient	time to cool.			
						_		
Client contacted	Date contacted:			Pers	on contacted			
Contacted by:	Regarding:							
Comments:								
	***************************************						70-11-11-11-11-11-11-11-11-11-11-11-11-11	
Corrective Action								

HALL ENVIDONMENTAL	ANALYSIS LABORATORY	www.hallenvironmental.com	E - Albuquerque, NM 87109	'5 Fax 505-345-4107	Anal		bcB.	27/ 280	+ (\(\frac{1}{2}\)\)	stals y,NC A) (A) (OV-		Anior 8081 8260 8270 8270 8270		XX	XX	XX	××	XX	×	×	×					,	data will be clearly notated on the analytical report.
	AN	www	50,1 4901 Hawkins NE	Tel. 505-345-3975		(ʎJu	(802) 0 SES	IB'sell	9T - 831 1.8	oq ₹1 q 80 .BE +	(+ MT (+ MT (+ MT (+ MT	BTE) TPH TPH		2 -	5-	ナー	-2		- 7	8	6 /		Time	1650	e Time	1641510	This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
Turn-Around Time:	★ Standard □ Rush	Project Name:	557 66-67	Project #:	010302	Project Manager:	Ross Kommonde		Sampler: /Jathan Will	Sample Temperature - S	Container Preservative	Type and # Type	5-40mLabes 1-10m Pe.	\					<i>→ →</i>	5-40m/ 4 kg 4- Hcl Dr.	2-40m/alus HCI	ſ	Deceived by:	Whenthe Water 4-6-09	Received by:	I Inwal The	
Chain-of-Custody Record	Client. Animas Environmental Services		Comandre	47401	-86	5-324-7022	(acitabilation) A love I				Matrix Sample Regulest ID		40 MW-1	, MW-2	/ Mu1-3			9-MW /	T-MW-7	H=0 MW-10	znk		Dali-aniobod but	MIN	Relinquished by:	Which Watom	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories.
Chain-	Client: Animas		Mailing Address: 624 E.	Farming ton	Phone #:	ax#:	QA/QC Package:	Standard	☐ Other☐		oto C		9401 60-9-	1	2121	0EZ)	757	1313	17241	6-09 1423					Time:	4-8-09 0840	If necessary,

	. >								(or N)	() se	Air Bubble										-	H		
	ANALYSIS LABORATOR	0	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis	(*C	05'*0	d' ^z C	(1.814) 504.1) (HAQ (HAQ (HAQ (HAQ (HAQ (HAQ (HAQ (HAQ	hod thod A or Meta 1,13, ticida ticida	TPH Meth (Meth (Me	XX			X X X		××	XX	XX	×			·S	
			49(Te							M + X3T8												Remarks:	
			11.05 FO	-				CNN CN (M)	KU (I)(IS			1-	2-	~	ケー	5-	7-	1-	-8	5			1-6-09 1650 F	Halley 1520
nd Time:	Ird 🗆 Rush	me:	75+ 66-67		10302	ınager:	7	=	Nathan	MINERAL MESTAL		4-HCI PE.	1	_	_			>	4-HCl Pre.	H			of Water	nuch
Turn-Around Time:	¥ Standard	Project Name:	Hwy S	Project #:	00	Project Manager:	Dace	2	Sampler:		Container Type and #	5- 40m/obs	0	_			/	>	5-40mlglass	2-40m also			Received by:	Received by:
Chain-of-Custody Record	Client: Animas Environmental Services	-	Mailing Address: 624 E. Comanche	47401	-56	15-324-7022		☐ Level 4 (Full Validation)			Matrix Sample Request ID	1-MW 041	1 MW-2)		9-MW /	T-MM-7	H=0 MW-10	znk	-		Relinquished by:	Relinquished by: Almah Watom
Chain-	Animas		g Address:	Established Long	# C	ax#	QA/QC Package:	Standard Standard	☐ Cther ☐ EDD (Type) _		Time	1046		7171	1230	1252	1,313	1341	1 1423				Time: 1650	D840
9	Client		Mailing	N	Phone #:	email	aAac	Sta Sta	□ Other		Date	6-09	-		/		-	>	60-9				Sate:	Postson P-9-09

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