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RECEIVED
MAY 23 2005

OIL CONSERVATION
DIVISION

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May 19, 2005

VIA FACSIMILE (505) 476-3462

No Pages: 29

Florene Davidson
Hearing Clerk
EMNRD
Oil Conservation District
1220 So. St. Francis Drive
Santa Fe, NM 87505

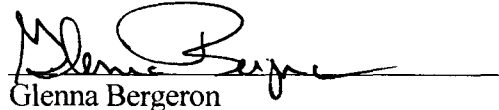
Re: Case No. 13480; Originals of Fax Filing

Dear Ms. Davidson:

Please find attached the Notice of Filing. The originals are being mailed. Please endorse the extra copy and return to our office in the enclosed stamped envelope.

Thank you for your courtesies in this matter.

Sincerely,
DOMENICI LAW FIRM, P.C.


Glenna Bergeron

srr/1548
Encl.
cc: file

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

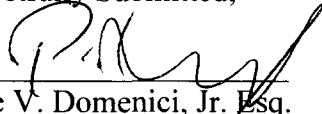
APPLICATION OF GANDY MARLEY, INC.
TO MODIFY THEIR EXISTING NMOCD
RULE 711 PERMIT NO. NM-01-019

CASE NO. 13480

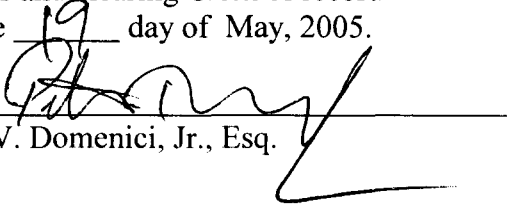
NOTICE OF FILING

COMES NOW the Applicant, Gandy Marley Inc. (GMI), by and through undersigned counsel of record, and respectfully provides Notice of Filing the attached documents as a comment to the record.

Respectfully Submitted,


Pete V. Domenici, Jr. Esq.
Attorney for Gandy Marley Inc.
6100 Seagull Street NE, Suite 205
Albuquerque, NM 87109
(505) 883-6250

I hereby certify that a true and correct copy of the foregoing was sent via facsimile and U.S. mail to parties and Hearing Clerk of record on the 19 day of May, 2005.


Pete V. Domenici, Jr., Esq.



Environmental & Geological Services, Inc.

Clayton M. Barnhill
CMB
Environmental & Geological
P.O. Box 2304
Roswell, NM 88202-2304
Tel (505) 622-2012
Fax (505) 622-2012
E-mail: cmbenviro@dfn.com

RECEIVED
MAY 23 2005
OIL CONSERVATION
DIVISION

MR. BILL MARLEY
GANDY MARLEY INC.
PO Box 1658
ROSWELL, NM 88202-1658

MAY 18, 2005

RE: SUBMITTAL OF MONITOR WELL PUMP TEST / FLUID RECOVERY REPORT
MONITOR WELLS # 1 & 2
GANDY MARLEY COMMERCIAL LANDFARM
SW/4 SEC.4, SE/4 SEC.5., NE/4 SEC.8, NW/4 SEC.9
T.11 S. R. 31 E.
CHAVES COUNTY, NEW MEXICO

DEAR MR. MARLEY:

CLAYTON M. BARNHILL PG, DBA / CMB ENVIRONMENTAL AND GEOLOGICAL SERVICES,
INC. ON BEHALF OF THE OWNER / OPERATOR, GANDY MARLEY INC. SUBMITS
THE ATTACHED MONITOR WELL PUMP TEST / FLUID RECOVERY TEST REPORT FOR THE
ABOVE MENTIONED SITE.

IF YOU HAVE ANY QUESTIONS ABOUT THE CONTENTS OF THE REPORT, PLEASE DO NOT
HESITATE TO CALL ME. THANK YOU.

SINCERELY,

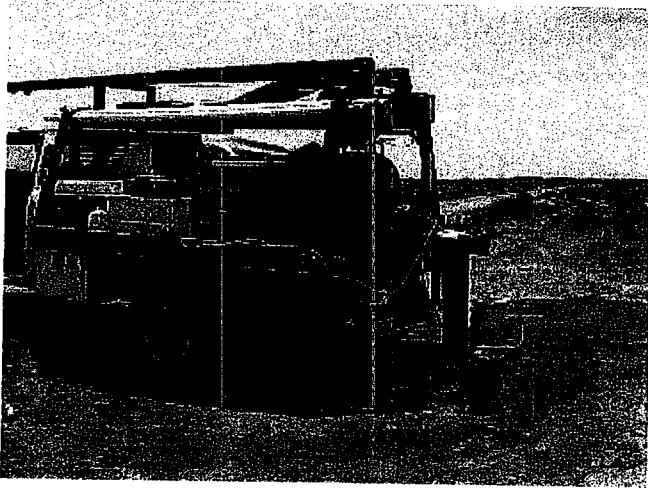
CLAYTON M. BARNHILL, PG
CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.
PO Box 2304
ROSWELL, NEW MEXICO 88202-2304
(505) 622-2012 PHONE FAX: (505) 625-0538
CMBENVIRO@DFN.COM

CC: GANDY MARLEY, INC.

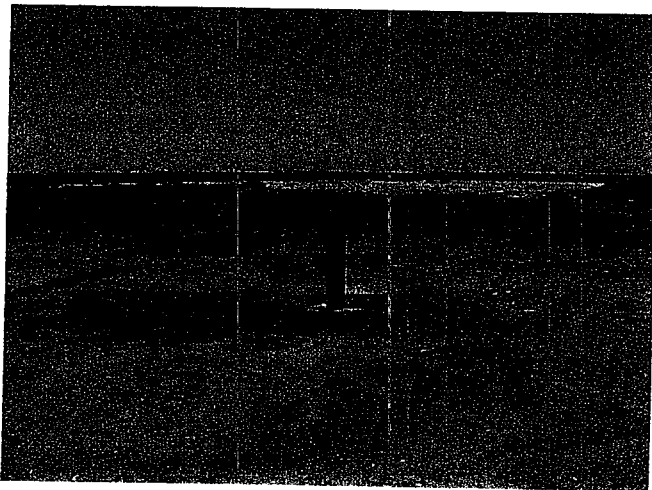
Site Information:

Gandy Marley Inc.
Commercial Landfarm
SW/4 Section 4, SE/4 Section 5, NE/4 Section 8, NW/4 Section 9
Township 11 South Range 31 E
Chaves County, New Mexico

Monitor Well # 1: N 33°23' 11.7"
W 103° 50' 20.7"



Monitor Well # 2: N 33°23' 05.0"
W 103° 50' 12.3"



Work Performed:

CMB Environmental and Geological Services, Inc. performed a pump test / fluid recovery test of Monitor Wells # 1 & 2, on 05/12/05, 05/16/05 and 05/17/05 to evaluate the permeability (or hydraulic conductivity) of the confined perched aquifer underlying the Gandy Marley Inc. Landfarm located in Chaves Co., N.M.

In this pump test/ fluid recovery test, the pre-test water levels and total depths of the wells were measured and noted. The same water level reference measuring point (top of casing) was used throughout the testing. A Grundfos Redi-flo2 1.8 inch submersible pump was submersed into the wells to rapidly lower the water levels. The pump was set at total depth in the monitor wells or near total depth, and the wells were pumped at a constant rate until dry. Field water parameters of pH, conductivity, dissolved oxygen, and temperature were measured at various gallon intervals while the wells were being pumped dry. The exact time the pump quit pumping was noted, and the pump quickly removed. Periodic water levels (rising head) were collected with a Solonist water level meter to track the rate of water level recovery. After the pump test, water samples were collected from both wells and sent to Trace Analysis Inc., laboratory located in Lubbock Texas for chemical analysis. The pump was de-contaminated between pump tests by pumping a solution ofalconox soap and water through the pump and rinsing with potable water.

Results of the pump tests / fluid recovery tests are as follows:

On May 12, 2005 a pump test / fluid recovery test of monitor well # 1 was performed by CMB Environmental and Geological Services, inc.

Initial water level monitor well # 1 was 133.72' feet. The total depth of Monitor Well # 1 was 203.40'. At sixty gallons purged from the well the water level in the well was 194.65' and after the 1.8" Grundfos submersible pump was removed the water level was 189.0' and the recovery test was begun.

Fluid recovery rates were recorded every minute for 41 minutes and then at 10-minute increments until 181 minutes of fluid recovery were completed. The initial gallon per minute recovery rate was 0.16 gpm (230 gallons per day) and the final fluid recovery rate was 0.08 gpm (115.20 gallons per day). A significant 50% drop in the fluid recovery rate at the end of the test.

All data was plotted graphically, with time in minutes on the x-axis of the graph and gallons of water recovered in the monitor well on the y-axis of the graphs.

On May 16th and 17th 2005, similar pump tests / fluid recovery tests were conducted on monitor well # 1.

On May 16th, 2005 the initial water level in MW-1 was 130.32' and the pump was removed at 70 gallons purged from the well. Fluid recovery rates were recorded every minute for 17 minutes and then at 10-minute increments until 78 minutes of fluid recovery were completed. The initial gallon per minute fluid recovery rate was 0.098 gpm(141 gallons per day) and the final per minute fluid recovery rate was 0.094 gpm (135.36 gallons per day).

May 17th 2005, the initial water level was 131.32' and the pump was removed at 80 gallons purged from the well. Fluid recovery rates were recorded every minute for 20 minutes and then at 10-minute increments until 80 minutes of fluid recovery were completed. The initial gallon per minute fluid recovery rate was 0.1306 gpm(188 gallons per day) and the final per minute fluid recovery rate was 0.1045 gpm (150.48 gallons per day).

On May 16th, 2005 the initial water level in MW-2 was 122.62' and the total depth was 180.0'. The pump was removed at 95 gallons purged from the well. Fluid recovery rates were recorded every minute for 47 minutes and then at 10-minute increments until 107 minutes of fluid recovery were completed. The initial gallon per minute fluid recovery rate was 0.4310 gpm(620.64 gallons per day) and the final per minute fluid recovery rate was 0.1471 gpm (211.82 gallons per day). A significant 66 % drop in the fluid recovery rate.

On May 17th, 2005 the initial water level in MW-2 was 124.70' and the pump was removed at 80 gallons purged from the well. Fluid recovery rates were recorded every minute for 12 minutes and then at 10-minute increments until 72 minutes of fluid recovery were completed. The initial gallon per minute fluid recovery rate was 0.1306 gpm(188 gallons per day) and the final per minute fluid recovery rate was 0.1515 gpm (218.16 gallons per day)
All field notes and graphs are attached.

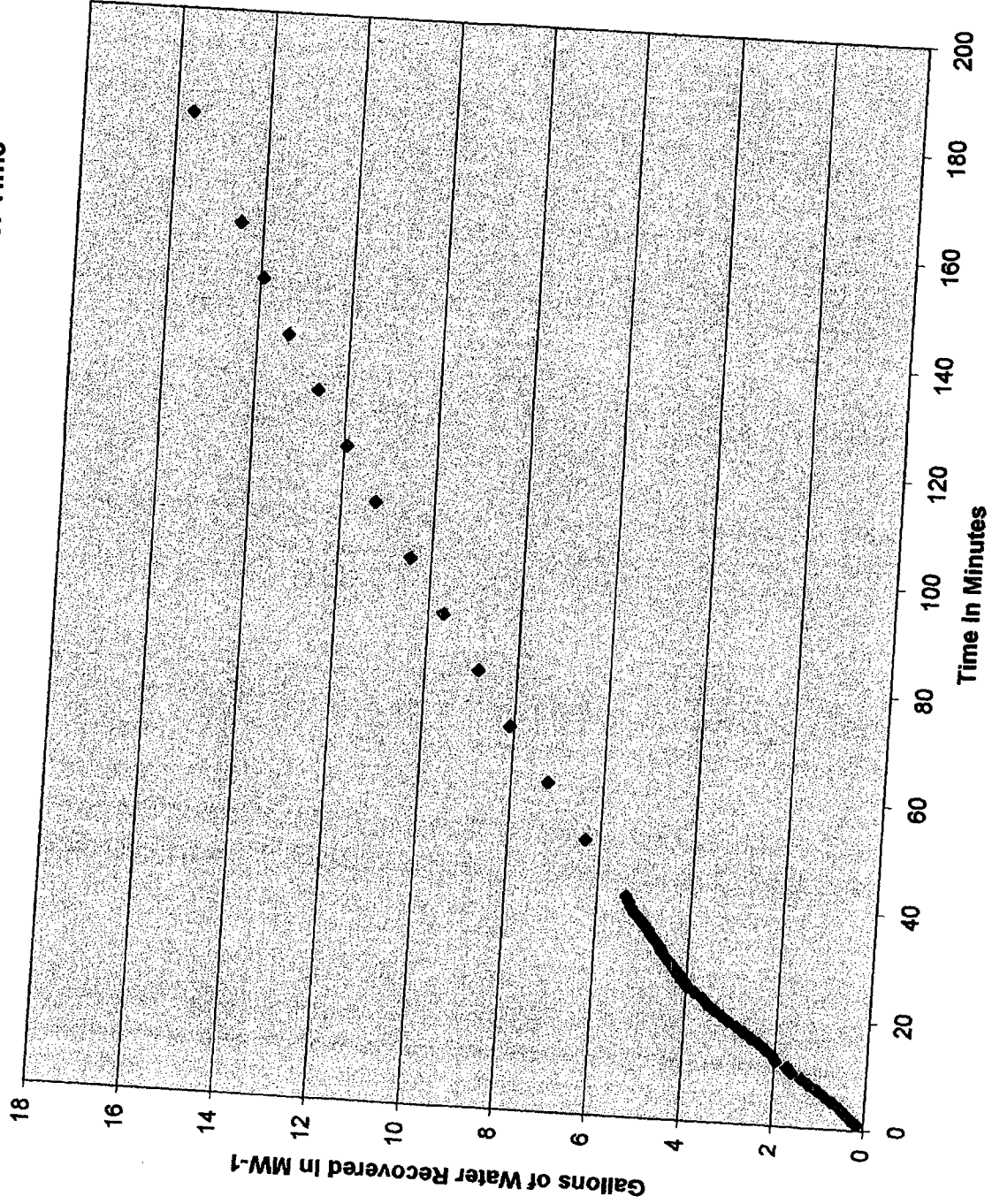
Conclusions:

- The aquifer appears to be poorly transmissive, confined, perched aquifer.
- Fluid recovery rates are slow and the monitor wells take many hours to recover. The wells quickly pump dry. The wells could never sustain domestic, livestock, or commercial usage, but will make excellent monitor wells. MW-1 may produce an estimated sustained rate on the average of 154 gallons per day. MW-2 could possibly produce an estimated sustained rate 206 gallons per day. The wells are properly screened across the water bearing formations.
- Fluid recovery trends in monitor wells were at least 75% of the full recovery of the initial water levels indicating that a good percentage of total fluid recovery was obtained during the test.
- Water quality in the area is poor and not suitable for domestic or livestock use.(See attached Trace Analysis Summary Report)

Gandy Marley Landfarm
Chaves Co, NM
MW-1 Pump Test
05/12/05

Clayton M. Barnhill, PG
CMB Environmental Geological Services Inc.

Gallons of Water Recovered Vs. Time



<u>TIME:</u>	<u>DTW:</u>	<u>Delta t (minutes)</u>	<u>Delta DTW (feet)</u>	<u>Gallons of Water Per Linear Foot</u>	<u>Gallons per minute Well Recovery</u>
13:49	189	0			
13:50	188.75	1	0.25	0.16325	0.1633
13:51	188.55	2	0.45	0.29385	0.1469
13:52	188.35	3	0.65	0.42445	0.1415
13:53	188.15	4	0.85	0.55505	0.1388
13:54	187.9	5	1.1	0.7183	0.1437
13:55	187.65	6	1.35	0.88155	0.1469
13:56	187.4	7	1.6	1.0448	0.1493
13:57	187.1	8	1.9	1.2407	0.1551
13:58	186.85	9	2.15	1.40395	0.1560
13:59	186.5	10	2.5	1.6325	0.1633
14:00	186.35	11	2.65	1.73045	0.1573
14:01	186.95	12	3.05	1.99165	0.1660
14:02	185.85	13	3.15	2.05695	0.1582
14:03	185.6	14	3.4	2.2202	0.1586
14:04	185.35	15	3.65	2.38345	0.1589
14:05	185.1	16	3.9	2.5467	0.1592
14:06	184.85	17	4.15	2.70995	0.1594
14:07	184.6	18	4.4	2.8732	0.1596
14:08	184.3	19	4.7	3.0691	0.1615
14:09	184.1	20	4.9	3.1997	0.1600
14:10	183.85	21	5.15	3.36295	0.1601
14:11	183.6	22	5.4	3.5262	0.1603
14:12	183.45	23	5.55	3.62415	0.1576
14:13	183.15	24	5.85	3.82005	0.1592
14:14	182.9	25	6.1	3.9833	0.1583
14:15	182.75	26	6.25	4.08125	0.1570
14:16	182.65	27	6.35	4.14655	0.1536
14:17	182.5	28	6.5	4.2445	0.1516
14:18	182.35	29	6.65	4.34245	0.1497
14:19	182.2	30	6.8	4.4404	0.1480
14:20	182.05	31	6.95	4.53835	0.1464
14:21	181.95	32	7.05	4.60365	0.1439
14:22	181.8	33	7.2	4.7016	0.1425
14:23	181.65	34	7.35	4.79955	0.1412
14:24	181.55	35	7.45	4.86485	0.1390
14:25	181.4	36	7.6	4.9628	0.1379
14:26	181.25	37	7.75	5.06075	0.1368
14:27	181.05	38	7.95	5.19135	0.1366
14:28	180.95	39	8.05	5.25665	0.1348
14:29	180.85	40	8.15	5.32195	0.1330
14:30	180.75	41	8.25	5.38725	0.1314
14:40	179.3	51	9.7	6.3341	0.1242
14:50	177.95	61	11.05	7.21565	0.1183
15:00	176.6	71	12.4	8.0972	0.1140
15:10	175.45	81	13.55	8.94615	0.1092
15:20	174.2	91	14.8	9.6644	0.1062
15:30	173	101	16	10.448	0.1034
15:40	171.75	111	17.25	11.26425	0.1015
15:50	170.7	121	18.3	11.9499	0.0988
16:00	169.67	131	19.33	12.62249	0.0964
16:10	168.6	141	20.4	13.3212	0.0945
16:20	167.65	151	21.35	13.94155	0.0923
16:30	166.82	161	22.18	14.48354	0.0900
16:50	165.05	181	23.95	15.63935	0.0864

Average Recovery Rate of 0.1392 Gallons per minute
Or 200 Hundred Gallons Per Day
Minimum 0.0864 gpm or 124.41 gallons per day
Maximum 0.1660 gpm or 239.04 gallons per day

05/12/05 C.H. Jones Co. N.M.

Monitor well Development and
Pump Test. Page 1 of 3 By: Clayton
MW-1: DTW = 133.72' (T.O.C) P.C.
T.D. = 203.40' 69.68' x 0.653
(4" SCH 40 PVC MW) = 45.50 Gallons
3CV = 13.65 Gallons. = 136.50 GPM
Screened Interval = 183.40' - 143.40'
203.40' - 183.40' = PVC casing.
8/16 Sand, Pack.

GPS COORDINATES OF MW-1:
N 33° 23' 11.7"
W 103° 50' 12.3"

Time	Gal. (Tot)	DTW	DO	T.C.	pH	COND.	ML/S	Remarks
12:28	1	131.72	6.5	20.2	8.86	10.4		TURBID
12:30	3	134.2	6.0	20.1	8.63	11.6		TOURNO
12:40	6	142.10	5.8	19.8	8.48	12.0		TURBID
13:01	9	147.50	6.4	21.5	8.88	12.4		PUMP
13:04	13.66	151.1	7.0	20.9	8.86	12.8		TURNO
13:08	20	156.3	4.3	21.7	8.59	13.0		" "
13:17	30	166.2	5.5	21.6	8.28	13.1		" "
								125 GPM

Sandy material

05/12/05 Land Farm - MW-1 Pump Test

Time	Gal. (Tot)	DTW	DO	T.C.	pH	COND.	ML/S	Remarks
13:24	40	133.40	21.4	8.42	12.9	12.9		12.9
13:32	50	184.60	21.8	8.28	12.9	12.9		12.9
13:41	60	196.5	22.5	8.01	13.5	13.5		13.5
		Stopped pump	13:43					
13:49		189.0		14:08	184.30			
13:50		188.75		14:09	184.10			
13:51		188.53		14:10	183.85			
13:52		188.35		14:11	183.60			
13:53		188.15		14:12	183.45			
13:54		187.9		14:13	183.15			
13:55		187.65		14:14	182.90			
13:56		187.40		14:15	182.75			
13:57		187.10		14:16	182.65			
13:58		186.85		14:17	182.50			
13:59		186.50		14:18	182.35			
14:00		186.35		14:19	182.20			
14:01		185.95		14:20	182.05			
14:02		185.85		14:21	181.95			
14:03		185.60		14:22	181.80			
14:04		185.35		14:23	181.65			
14:05		185.10		14:24	181.55			
14:06		184.85		14:25	181.40			
14:07		184.60		14:26	181.25			

05/12/65 MW-1 Pump Test

Time DTW Page 3 of 3 By: CMB

14:27 181.05

14:28 180.95

14:29 180.85

14:30 180.75

14:40 179.30

14:50 177.95 } (1.35' / 10 min)

15:00 176.65 } 0.135' / min

15:10 175.45 } 1.25' / 10 min

15:20 174.20 } 0.125' / min

15:30 173.0 } 1.25' / 10 min

15:40 171.75 } 0.125' / min

15:50 170.70 } 1.03' / 10 min

16:00 169.67 } 0.103' / min

16:10 168.60 } 0.95' / 10 min

16:20 167.65 } 0.095' / min

16:30 166.82 } 0.83' / 10 min

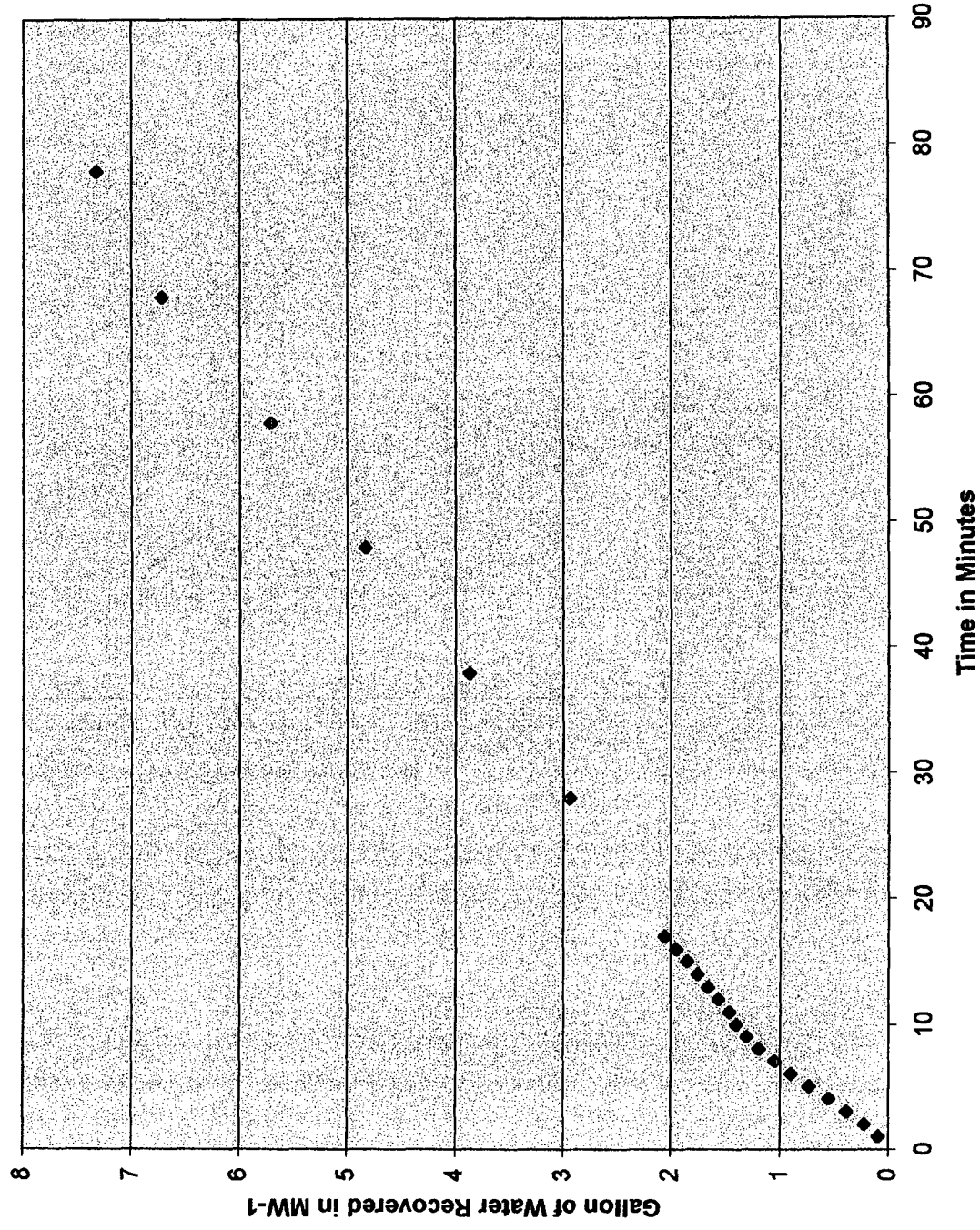
16:50 165.05 } 0.083' / min

16:50 165.05 } 0.08' / min

Gandy Marley Landfarm
Chaves Co, NM
MW-1 Pump Test
05/16/05

Clayton M. Barnhill PG
CMB Enviromental Geological Services Inc.

Gallons of Water Recovered Vs. Time



Gandy Marley Landfarm
Chaves, Co., NM
MW-1 Pump Test
05/16/05

Clayton M. Barnhill, PG
CMB Environmental Geological Services, Inc.

<u>TIME:</u>	<u>DTW:</u>	<u>Delta t (minutes)</u>	<u>Delta DTW (feet)</u>	<u>Gallons of Water Per Linear Foot</u>	<u>Gallons per minute Well Recovery</u>
15:23	184.75	0			0.0980
15:24	184.6	1	0.15	0.09795	0.1143
15:25	184.4	2	0.35	0.22855	0.1306
15:26	184.15	3	0.6	0.3918	0.1388
15:27	183.9	4	0.85	0.55505	0.1476
15:28	183.62	5	1.13	0.73789	0.1502
15:29	183.37	6	1.38	0.90114	0.1502
15:30	183.14	7	1.61	1.05133	0.1494
15:31	182.92	8	1.83	1.19499	0.1451
15:32	182.75	9	2	1.306	0.1404
15:33	182.6	10	2.15	1.40395	0.1336
15:34	182.5	11	2.25	1.46925	0.1306
15:35	182.35	12	2.4	1.5672	0.1281
15:36	182.2	13	2.55	1.66515	0.1259
15:37	182.05	14	2.7	1.7631	0.1241
15:38	181.9	15	2.85	1.86105	0.1224
15:39	181.75	16	3	1.959	0.1210
15:40	181.6	17	3.15	2.05695	0.1049
15:50	180.25	28	4.5	2.9385	0.1019
16:00	178.82	38	5.93	3.87229	0.1007
16:10	177.35	48	7.4	4.8322	0.0985
16:20	176	58	8.75	5.71375	0.0989
16:30	174.45	68	10.3	6.7259	0.0940
16:40	173.52	78	11.23	7.33319	

Average Recovery Rate of 0.1239 Gallons Per Minute
Or 178 Gallons per Day
Minimum 0.09 gpm or 135.36 gallons per day
Maximum 0.1502 gpm or 216.28 gallons per day

Type Well ☒ MW ☐ Production ☐ Other _____		Type of Data ☒ Development ☒ Sampling ☒ Pump Test ☐ Other _____		Well No. <u>MW-1</u> Sheet 1 of <u>2</u> Sheets					
1. Project <u>Well Development</u>		2. Project Location <u>Gandy Markey Land Farm</u>		3. Date <u>05/16/05</u>					
4. Technician <u>CMBarnhill, P.E.</u>		5. <u>Chaves Co, NM</u>							
6. Method <u>Pumping</u> Surging Air Lift Bailing Other		8. Manufacturer's Designation of Rig <u>DSR-2001</u>		9. Location of Well (Site, Description) <u>MW-1 N 33° 25' 11.7" W 10° 55' 12.5"</u>					
Water Levels									
Initial		Final		Final + 24 Hours					
Date: <u>05/16/05</u> Time: <u>13:55</u>		Date: <u>05/16/05</u> Time: <u>16:40</u>		Date: _____ Time: _____					
10. Total Depth of Well (from TOC) <u>203.20'</u>		15. Total Depth of Well (from TOC) <u>203.20</u>		20. Total Depth of Well (from TOC) _____					
11. Water Level (from TOC) <u>130.32'</u>		16. Water Level (from TOC) <u>173.52</u>		21. Water Level (from TOC) _____					
12. Water Column Height <u>72.88'</u>		Nom Dia x = gal/ft Sch 40 Sch 80		17.3 Well Volumes <u>146.48 Gallons</u>					
13. Well Diameter <u>4" SCH 40 PVC MW</u>		2" 0.16 0.1534 4" 0.67 0.5972 6" 1.47 1.3540 8" 2.61 2.3720		18.5 Well Volumes <u>244.10 Gallons</u>					
14. Well Volume (gal) <u>48.82 gal</u> (s) w.e. height)				19. Purge Volume <u>70 gallon</u>					
				22. Size and Type of Pump or Bailer <u>1.8" Submersible Redition 2 Set to T.O.</u>					
Final Field Analysis									
23. Total Amount of Water Removed <u>70 Gallons</u>		24. Was Well Pumped Dry? <u>No</u>		25. Was water added to well? <u>No</u> Yes If yes, source: _____					
				26. Was the Groundwater Sampled <u>Yes</u> No If yes, what was the sample number & Date: Sampling Personnel? <u>MW-1 05/16/05</u> <u>CMBarnhill 05/16/05</u>					
27. Final Parameters		Time		Temp C					
15:13		22.5		13.6					
Conductivity		pH		NTUs					
13.6		7.76		TURBID 189.45					
WL		Removed		Flow Rate					
130.32		70 gal		3.3 gpm					
Photo Roll #, Observations				TURBID					
IF PETROLEUM IS IN THE WELL, DO NOT TAKE pH AND CONDUCTIVITY PARAMETERS									
28. Physical Appearance and Remarks <u>Clear initially, TURBID 70 Gallons Purged</u>									
29. Purgewater disposal method: <u>ON GROUND SURFACE</u>									
Sampling / Development Parameters									
Time	Temp C	Conductivity	pH	NTUs	WL (from TOC)	Volume (gallons)	Dissolved Oxygen	Flow Rate (gpm)	Photo #, Observ. (1)
14:14	20.2	13.5	8.13	Clear	130.32	Initial	4.4	2.5	Clear H2O
14:19	20.4	13.8	8.09	Clear	145.20	10	3.9	2.5	Clear H2O
14:24	20.6	14.0	8.07	Clear	151.70	20	4.0	2.5	Clear H2O
14:29	20.7	13.9	8.01	Clear	157.20	30	4.2	2.5	Clear H2O
14:37	21.0	13.8	8.00	Clear	163.0	40	3.1	1.15	Clear
14:47	21.6	12.7	7.98	Slight TURBID	175.65	50	3.5	1.0	Slight TURBID
14:57	21.8	13.4	8.06	Slight TURBID	181.40	60	3.7	1.0	Slight TURBID
15:13	22.5	13.6	7.96	TURBID	189.45	70	3.3	0.625	TURBID
(1) Note volume and physical character of sediments removed. <u>Removed pump - will let well Re-charge</u>									
NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing									
Checked By <u>[Signature]</u>								Date <u>05/16/05</u>	

Well No. MW-1
Sheet 2
of 2 Sheets

2. Project Location

Gandy Marley Landfarms
CHAVES Co, NM

3. Date

05/16/05

4. Technician

Mr. E. V. Hill, Jr.

CHAVES Co, NM

[illegible]

WL = Water Level from Top of PVC Casing

Checked By

by Clinton M Barber PB

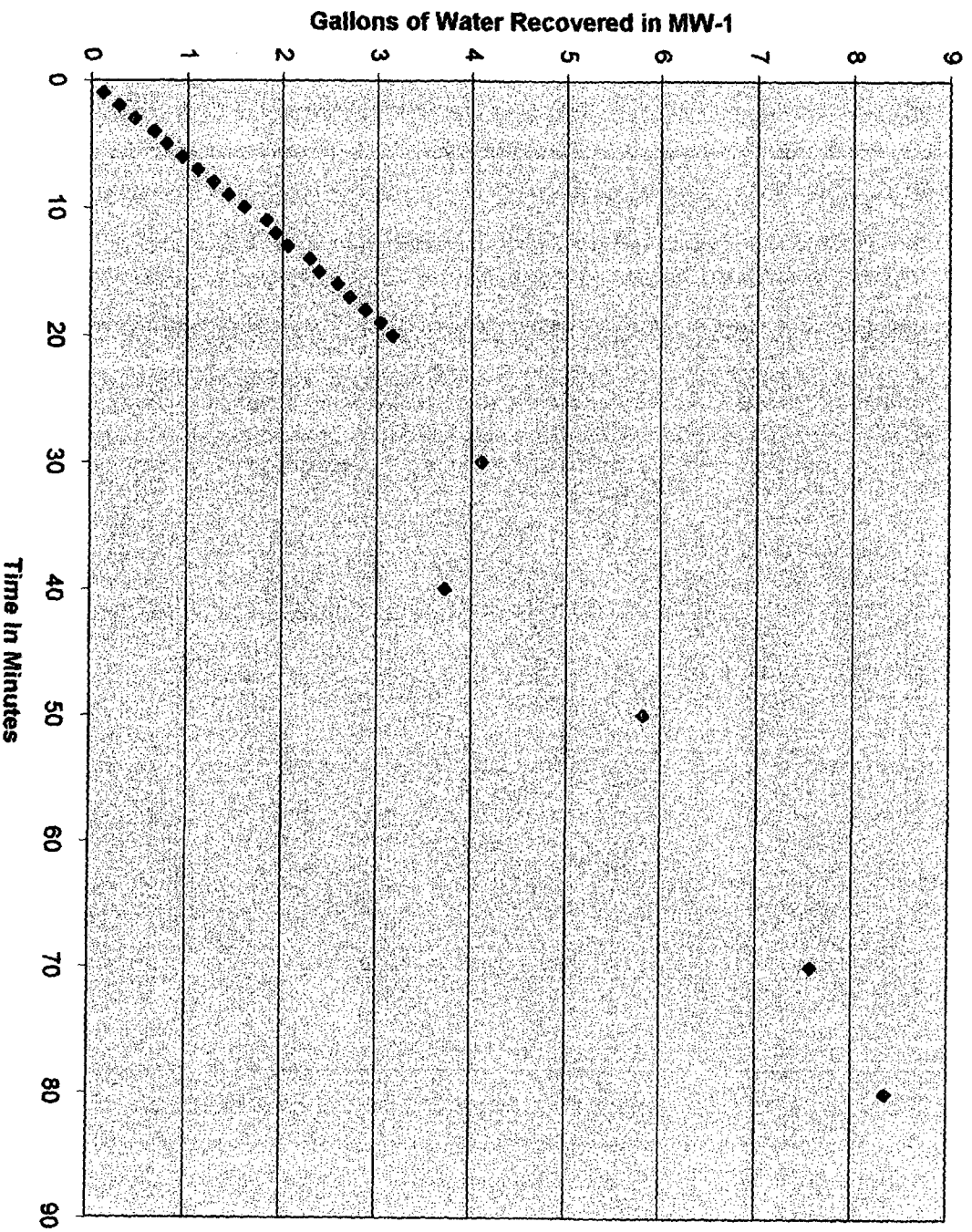
Date _____

05/14/03

Gandy Marley Landfarm
Chaves Co., NM
MW-1 Pump Test
05/17/05

Clayton M. Barnhill
CMB Environmental Geological Services, Inc.

Gallons of Water Recovered Vs. Time



◆ Gallons of Water Per Linear Foot

Gandy Marley Landfarm
Chaves, Co., NM
MW-1 Pump Test
05/17/05

Clayton M. Barnhill, PG
CMB Environmental Geological Services, Inc.

<u>TIME:</u>	<u>DTW:</u>	<u>Delta t (minutes)</u>	<u>Delta DTW (feet)</u>	<u>Gallons of Water Per Linear Foot</u>	<u>Gallons per minute Well Recovery</u>
14:40	187.8	0			0.1306
14:41	187.6	1	0.2	0.1306	0.1469
14:42	187.35	2	0.45	0.29385	0.1524
14:43	187.1	3	0.7	0.4571	0.1633
14:44	186.8	4	1	0.653	0.1567
14:45	186.6	5	1.2	0.7836	0.1578
14:46	186.35	6	1.45	0.94685	0.1586
14:47	186.1	7	1.7	1.1101	0.1592
14:48	185.85	8	1.95	1.27335	0.1596
14:49	185.6	9	2.2	1.4366	0.1600
14:50	185.35	10	2.45	1.59985	0.1662
14:51	185	11	2.8	1.8284	0.1605
14:52	184.85	12	2.95	1.92635	0.1582
14:53	184.65	13	3.15	2.05695	0.1633
14:54	184.3	14	3.5	2.2855	0.1589
14:55	184.15	15	3.65	2.38345	0.1612
14:56	183.85	16	3.95	2.57935	0.1594
14:57	183.65	17	4.15	2.70995	0.1596
14:58	183.4	18	4.4	2.8732	0.1598
14:59	183.15	19	4.65	3.03645	0.1584
15:00	182.95	20	4.85	3.16705	0.1371
15:10	181.5	30	6.3	4.1139	0.0932
15:20	180	40	7.8	3.72863	0.1162
15:30	178.9	50	8.9	5.8117	0.1082
15:50	176.2	70	11.6	7.5748	0.1045
16:00	175	80	12.8	8.3584	

Average Recovery Rate of 0.1484 Gallons per Minute
Or 213.69 Gallons per Day
Minimum 0.0932 or 134 gallons per day
Maximum 0.1662 gpm or 239.32 gallons per day

CMB CONSULTING GEOLOGIST WELL DATA FORM

Well No. *MW-1*

Sheet *1*

of /Sheets

1. Project

Pump Test MW-1

2. Project Location

*Gandy Marley Land farm -
Chaves Co, NM.*

3. Date

05/17/05

4. Technician

C. M. Barnhill, PGE

Sampling / Development Parameters, Continued

Time	Temp C	Conductivity (μ mhos/cm)	pH/DO	NTUs	WL (from TOC)	Volume (gallons)	Flow Rate (gpm)	Photo #, Observations (1)
<i>13:30</i>					<i>131.32</i>	<i>Initial</i>		
<i>13:35</i>	<i>Set pump in well (1.8" Red, to 2 Submersible) @ T.D. = 203.10'</i>							
<i>13:36</i>	<i>Started pumping well.</i>				<i>129.62</i>	<i>Initial</i>		
<i>13:36</i>	<i>22.3</i>	<i>10.98</i>	<i>8.0/3.8</i>	<i>TURBID</i>	<i>129.62</i>	<i>Initial</i>		<i>TURBID Red 3.14</i>
<i>13:47</i>	<i>21.5</i>	<i>11.08</i>	<i>8.02/3.2</i>	<i>TURBID</i>	<i>153.80</i>	<i>20</i>	<i>1.8</i>	<i>TURBID</i>
<i>13:58</i>	<i>21.3</i>	<i>10.70</i>	<i>7.91/2.4</i>	<i>TURBID</i>	<i>163.95</i>	<i>40</i>	<i>1.8</i>	<i>TURBID</i>
<i>14:09</i>	<i>21.6</i>	<i>10.60</i>	<i>7.99/3.0</i>	<i>TURBID</i>	<i>177.40</i>	<i>60</i>	<i>1.8</i>	<i>TURBID</i>
<i>14:30</i>	<i>22.6</i>	<i>10.8</i>	<i>8.13/4.6</i>	<i>TURBID - DRY</i>		<i>80</i>	<i>0.95</i>	<i>TURBID</i>
<i>14:30 Pumped well DRY @ 80 Gallons purged - Removed Pump Let well re-charge.</i>								
<i>Time</i>	<i>DTW</i>	<i>Time</i>	<i>DTW</i>					
<i>14:43:40</i>	<i>187.80</i>	<i>14:58</i>	<i>183.40</i>					
<i>14:43:41</i>	<i>187.60</i>	<i>14:59</i>	<i>183.15</i>					
<i>14:43:42</i>	<i>187.35</i>	<i>15:00</i>	<i>182.95</i>					
<i>14:43:43</i>	<i>187.10</i>	<i>15:10</i>	<i>181.50</i>					
<i>14:43:44</i>	<i>186.80</i>	<i>15:20</i>	<i>180.0</i>					
<i>14:43:45</i>	<i>186.60</i>	<i>15:30</i>	<i>178.90</i>					
<i>14:43:46</i>	<i>186.35</i>	<i>15:50</i>	<i>176.20</i>					
<i>14:43:47</i>	<i>186.10</i>	<i>16:00</i>	<i>175.0</i>					
<i>14:43:48</i>	<i>185.85</i>							
<i>14:43:49</i>	<i>185.60</i>							
<i>14:43:50</i>	<i>185.35</i>							
<i>14:43:51</i>	<i>185.0</i>							
<i>14:43:52</i>	<i>184.85</i>							
<i>14:43:53</i>	<i>184.65</i>							
<i>14:43:54</i>	<i>184.30</i>							
<i>14:43:55</i>	<i>184.15</i>							
<i>14:43:56</i>	<i>183.85</i>							
<i>14:43:57</i>	<i>183.65</i>							

NTU = Nephelometric turbidity units

WL = Water Level from Top of PVC Casing

Checked By

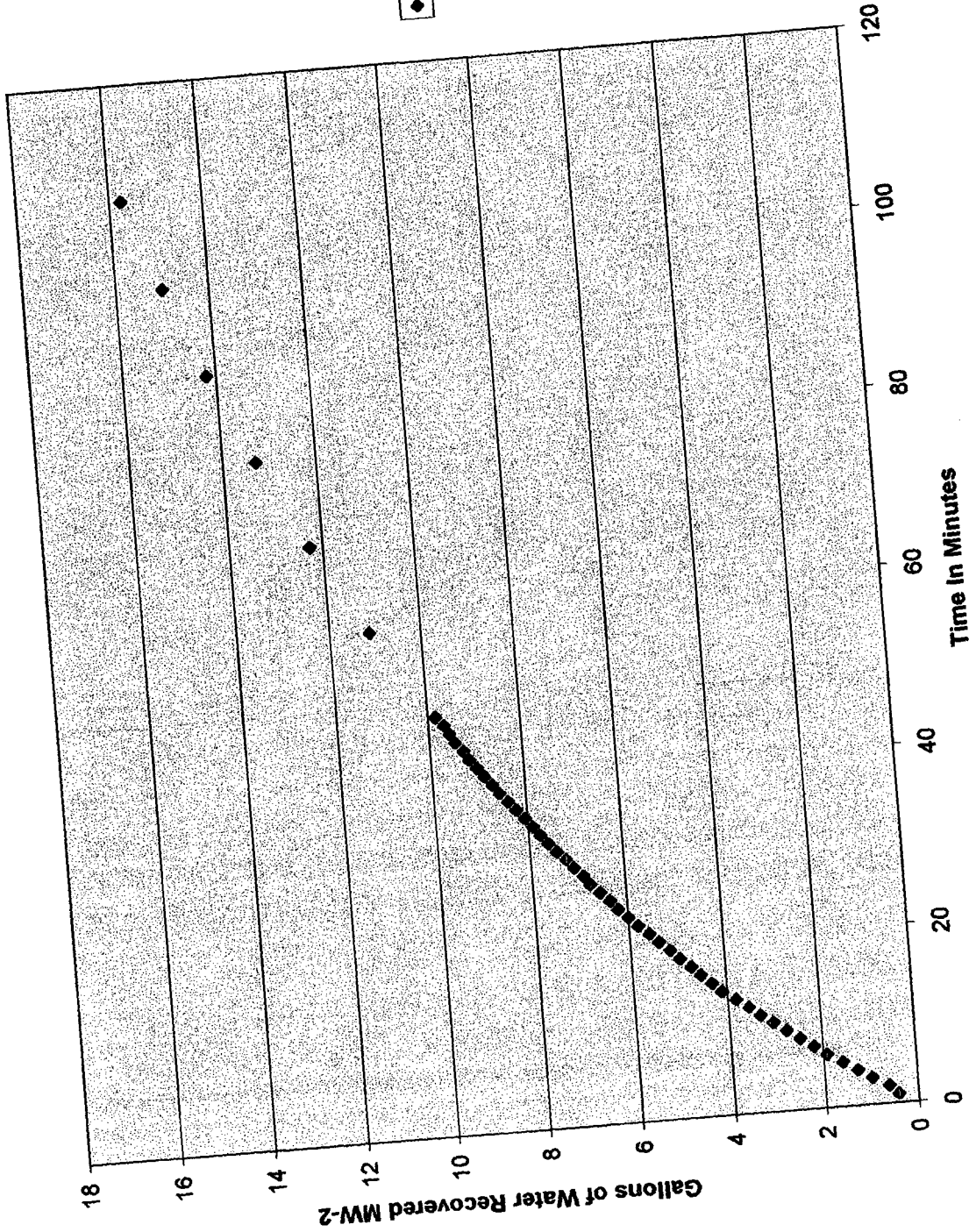
[Signature]

Date

05/17/05

Gandy Marley Landfarm
Chaves Co., NM
MW-2 Pump Test
05/16/05

Gallons of Water Recovered Vs. Time



TIME:	DTW:	Delta t (minutes)	Delta DTW (feet)	Gallons of Water Per Linear Foot	Gallons per minute Well Recovery
10:13	167.91	0			
10:14	167.25	1	0.66	0.43098	0.4310
10:15	166.95	2	0.96	0.62888	0.3134
10:16	166.42	3	1.49	0.97297	0.3243
10:17	165.95	4	1.96	1.27988	0.3200
10:18	165.47	5	2.44	1.59332	0.3187
10:19	164.95	6	2.96	1.93288	0.3221
10:20	164.55	7	3.36	2.19408	0.3134
10:21	164.1	8	3.81	2.48793	0.3110
10:22	163.66	9	4.25	2.77525	0.3084
10:23	163.25	10	4.66	3.04298	0.3043
10:24	162.85	11	5.06	3.30418	0.3004
10:25	162.47	12	5.44	3.55232	0.2960
10:26	162.05	13	5.86	3.82958	0.2944
10:27	161.62	14	6.29	4.10737	0.2934
10:28	161.32	15	6.59	4.30327	0.2869
10:29	160.95	16	6.96	4.54488	0.2841
10:30	160.65	17	7.26	4.74078	0.2789
10:31	160.3	18	7.61	4.96933	0.2761
10:32	160	19	7.91	5.16523	0.2719
10:33	159.65	20	8.26	5.39378	0.2697
10:34	159.35	21	8.56	5.58968	0.2662
10:35	159.02	22	8.89	5.80517	0.2639
10:36	158.72	23	9.19	6.00107	0.2609
10:37	158.4	24	9.51	6.21003	0.2588
10:38	158.15	25	9.76	6.37328	0.2549
10:39	157.85	26	10.06	6.56918	0.2527
10:40	157.55	27	10.36	6.76508	0.2506
10:41	157.35	28	10.56	6.95668	0.2463
10:42	157.05	29	10.86	7.09158	0.2445
10:43	156.8	30	11.11	7.25483	0.2418
10:44	156.52	31	11.39	7.43767	0.2399
10:45	156.27	32	11.64	7.60092	0.2375
10:46	156.02	33	11.89	7.76417	0.2353
10:47	155.8	34	12.11	7.90783	0.2326
10:48	155.55	35	12.36	8.07108	0.2306
10:49	155.3	36	12.61	8.23433	0.2287
10:50	155.05	37	12.86	8.39758	0.2270
10:51	154.8	38	13.11	8.56083	0.2253
10:52	154.56	39	13.35	8.71755	0.2235
10:53	154.33	40	13.58	8.86774	0.2217
10:54	154.1	41	13.81	9.01793	0.2199
10:55	153.87	42	14.04	9.16812	0.2183
10:56	153.7	43	14.21	9.27913	0.2168
10:57	153.45	44	14.46	9.44238	0.2146
10:58	153.27	45	14.64	9.55992	0.2124
10:59	153.05	46	14.86	9.6644	0.2101
11:00	152.85	47	15.06	9.83418	0.2092
11:10	150.87	57	17.04	11.12712	0.1952
11:20	149.11	67	18.8	12.2764	0.1832
11:30	147.55	77	20.36	13.29508	0.1727
11:40	146.15	87	21.76	14.20928	0.1633
11:50	144.95	97	22.96	14.98288	0.1546
12:00	143.8	107	24.11	15.74363	0.1471

Average Recovery Rate of 0.2543 Gallons per minute
Or 366.19 Hundred Gallons Per Day
Minimum 0.1471 gpm or 211.82 gallons per day
Maximum 0.4310 gpm or 620.64 gallons per day

Type Well ☒ MW ☐ Production ☐ Other _____		Type of Data ☒ Development ☒ Sampling ☒ Pump Test ☐ Other _____		Well No. <u>MW-2</u> Sheet 1 of <u>2</u> Sheets					
1. Project <u>Well Development</u> <u>Pump Test & GW Sampling</u>		2. Project Location <u>Gandy Marley Landfarm</u>		3. Date <u>05/16/05</u>					
4. Technician <u>CM Barnhill, PE</u>		5. <u>Charles G. N.M.</u> <u>Sec. 4, 5, 8, 9, T. 11. S. R. 31 E.</u>							
7. Method ☒ Pumping ☐ Surging ☐ Air Lift ☐ Bailing ☐ Other		8. Manufacturer's Designation of Rig <u>DSR-2001</u>		9. Location of Well (Site, Description) <u>N 33° 23' 05.0" W 103° 50' 20.7"</u> <u>MW-2</u>					
Water Levels <u>GPS Coordinates</u>									
Initial		Final		Final + 24 Hours					
Date: <u>05/16/05</u> Time: <u>0856</u>		Date: <u>05/16/05</u> Time: <u>13:15</u>		Date: _____ Time: _____					
10. Total Depth of Well (from TOC) <u>180.0'</u>		15. Total Depth of Well (from TOC) <u>180.60</u>		20. Total Depth of Well (from TOC)					
11. Water Level (from TOC) <u>122.621</u>		16. Water Level (from TOC) <u>137.30'</u>		21. Water Level (from TOC)					
12. Water Column Height <u>57.38'</u>		Nom Dia <u>Sch 40</u> x = gal/ft Sch 80		17. 3 Well Volumes <u>115.33 bbls</u>					
13. Well Diameter <u>4" SCH 40 PVC MW</u>		2" 0.16 0.1534 <u>4"</u> <u>0.67</u> 0.5972 6" 1.47 1.3540 8" 2.61 2.3720		18. 5 Well Volumes <u>192.22 bbls</u>					
14. Well Volume (gal) (s) w.e. height) <u>38.44 bbls</u>				19. Purge Volume <u>95 bbls</u>					
22. Size and Type of <u>Pump</u> or Bailer <u>1.8" submersible</u> <u>Redi-Flow</u> <u>Set @ 175' from TOC</u>									
Final Field Analysis									
23. Total Amount of Water Removed <u>95 Gallons</u>		24. Was Well Pumped Dry? ☒ Yes ☐ No <u>95 Gallons purged</u>		25. Was water added to well? ☒ No ☐ Yes If yes, source: _____					
26. Was the Groundwater Sampled ☒ Yes ☐ No If yes, what was the sample number & Date: Sampling Personnel? <u>MW-2, 05/16/05</u> <u>CM Barnhill, PE 12:10</u>									
27. Final Parameters Time <u>10:06</u> Temp C <u>20.5</u>		n/lc Conductivity <u>11.92</u> pH <u>8.13</u> NTUs <u>Turbid</u> WL <u>174.45</u>		Removed <u>95 bbls</u> Flow Rate <u>2.5 gpm</u> Photo Roll #, Observations <u>Turbid Red Silt</u>					
IF PETROLEUM IS IN THE WELL, DO NOT TAKE pH AND CONDUCTIVITY PARAMETERS									
28. Physical Appearance and Remarks <u>Turbid Red Silt - in H₂O</u>									
29. Purgewater disposal method: <u>ON GROUND SURFACE</u>									
Sampling / Development Parameters <u>n/lc</u>									
Time	Temp C	M/S Conductivity	pH	NTUs	WL (from TOC)	Volume (gallons)	Dissolved Oxygen	Flow Rate (gpm)	Photo #, Observ. (1)
<u>0930</u>	<u>17.9°</u>	<u>11.12</u>	<u>7.90</u>	<u>Turbid</u>	<u>122.62'</u>	<u>initial</u>	<u>4.8</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0932</u>	<u>19.1°</u>	<u>11.46</u>	<u>8.04</u>	<u>Turbid</u>	<u>129.65'</u>	<u>5</u>	<u>4.4</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0934</u>	<u>19.6</u>	<u>11.60</u>	<u>8.07</u>	<u>Turbid</u>	<u>133.10'</u>	<u>10</u>	<u>4.5</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0936</u>	<u>19.6</u>	<u>11.64</u>	<u>8.11</u>	<u>Turbid</u>	<u>136.35'</u>	<u>15</u>	<u>4.6</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0938</u>	<u>19.6</u>	<u>11.56</u>	<u>8.06</u>	<u>Turbid</u>	<u>140.10'</u>	<u>20</u>	<u>4.6</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0940</u>	<u>19.6</u>	<u>11.59</u>	<u>8.14</u>	<u>Turbid</u>	<u>143.43'</u>	<u>25</u>	<u>4.9</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0942</u>	<u>19.6</u>	<u>11.59</u>	<u>8.15</u>	<u>Turbid</u>	<u>146.35'</u>	<u>30</u>	<u>4.6</u>	<u>2.5</u>	<u>Red Silt</u>
<u>0944</u>	<u>19.6</u>	<u>11.24</u>	<u>8.17</u>	<u>Turbid</u>	<u>148.47'</u>	<u>35</u>	<u>5.4</u>	<u>2.5</u>	<u>Red Silt</u>
(1) Note volume and physical character of sediments removed. NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing									
Checked By <u>CM Barnhill, PE</u>								Date <u>05/16/05</u>	

CMB CONSULTING GEOLOGIST WELL DATA FORM

Well No. MW-2

Sheet 2

of Sheets 2

1. Project Well Development

2. Project Location

3. Date

Pump Test & GW Sampling

Gandy Marley Landfarm

4. Technician CM Barnhill, PE

Chaves Co., NM

05/16/05

Sampling / Development Parameters, Continued

Time	Temp C	Conductivity (umhos/cm)	pH	NTUs	WL (from TOC)	Volume (gallons)	Flow Rate (gpm)	Photo #, Observations (1)
0946	19.7	10.99	8.16/4.9	TURBID	152.0	40	2.5	Red Silt
0948	19.8	11.11	8.15/5.4	TURBID	154.15	45	2.5	Red Silt
0950	19.9	11.32	8.16/5.1	TURBID	156.52	50	2.5	Red Silt
0952	19.9	11.68	8.17/4.7	TURBID	158.80	55	2.5	Red Silt
0954	20.0	11.77	8.12/4.9	TURBID	160.95	60	2.5	Red Silt
0956	20.0	11.87	8.16/4.5	TURBID	163.45	65	2.5	Red Silt
0958	19.9	11.93	8.16/4.1	TURBID	165.24	70	2.5	Red Silt
1000	20.0	12.03	8.14/4.1	TURBID	168.05	75	2.5	Red Silt
1002	20.0	12.05	8.12/3.5	TURBID	170.05	80	2.5	Red Silt
10:04	20.0	12.19	8.19/2.9	TURBID	172.35	85	2.5	Red Silt
10:06	20.5	11.92	8.13/3.4	TURBID	174.45	90	2.5	Red Silt
10:08	Well Pumped down to 5' off bottom					95	2.5	Red Silt
Removal pump - let well recharge								

TIME	DTW	TIME	DTW	TIME	DTW	TIME	DTW
10:13	167.91	10:27	161.62	1041	157.35	1055	153.87'
10:14	167.25	10:28	161.32	1042	157.05	1056	153.70'
10:15	166.95	10:29	160.95	1043	156.80'	1057	153.45
10:16	166.42	10:30	160.65	1044	156.52	1058	153.27
10:17	165.95	10:31	160.30	1045	156.27	1059	153.05'
10:18	165.47	10:32	160.0	1046	156.02	1100	152.85
10:19	164.95	10:33	159.65	1047	155.80	155.05	
10:20	164.55	10:34	159.35	1048	155.55		
10:21	164.10	10:35	159.02	1049	155.30	11:10	150.87
10:22	163.66	10:36	158.72	1050	155.05	11:20	149.11
10:23	163.25	10:37	158.40	1051	154.80	11:30	147.55
10:24	162.85	10:38	158.15	1052	154.56	11:40	146.16
10:25	162.47	10:39	157.85	1053	154.33	11:50	144.95
10:26	162.05	10:40	157.55	1054	154.10	12:00	143.80

NTU = Nephelometric turbidity units

WL = Water Level from Top of PVC Casing

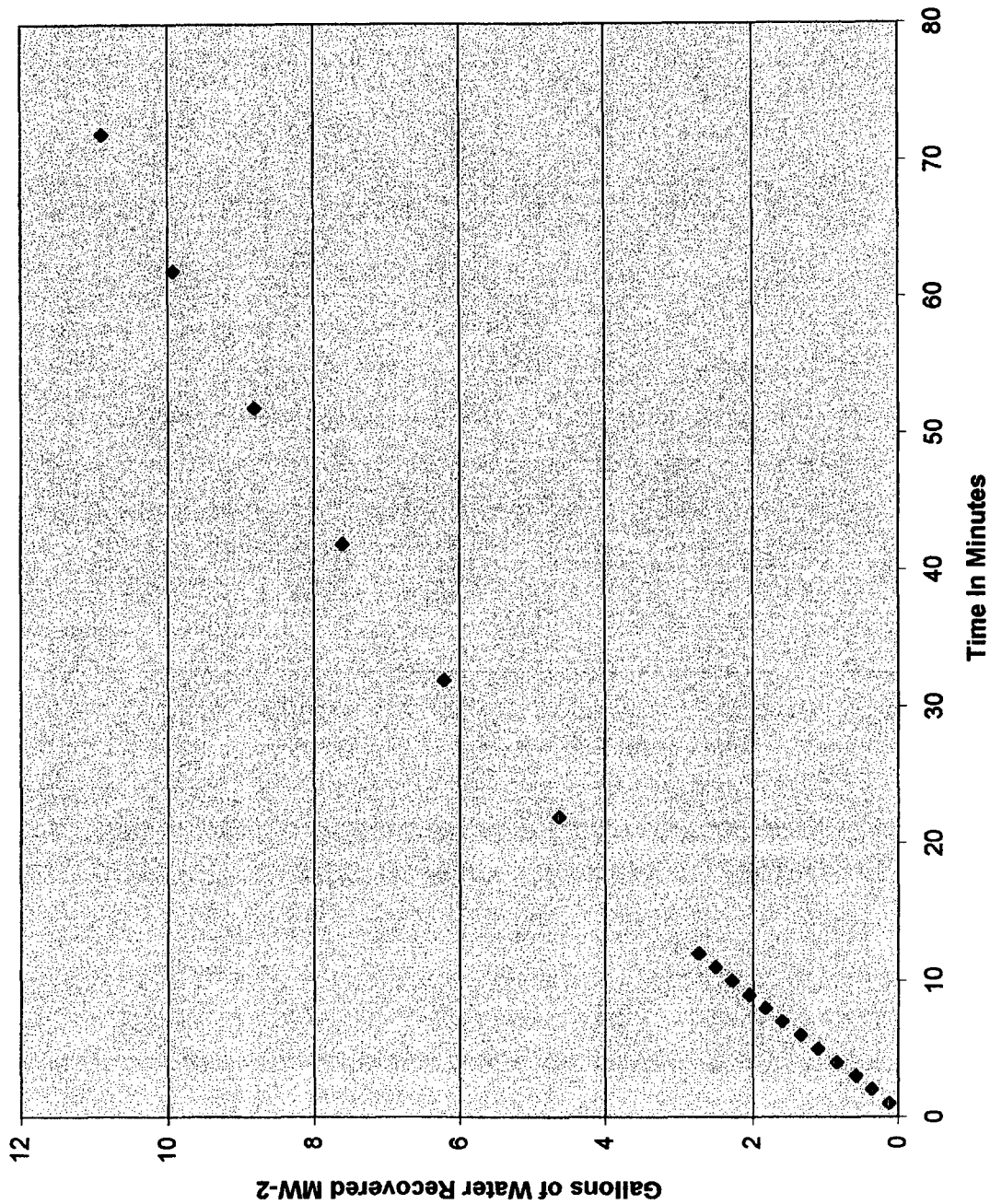
Checked By

Clinton M. Barnhill PE

Date

05/16/05

Gallons of Water Recovered Vs. Time



Gandy Marley Landfarm
Chaves, Co., NM
MW-2 Pump Test
05/17/05

Clayton M. Barnhill, PG
CMB Environmental Geological Services, Inc.

<u>TIME:</u>	<u>DTW:</u>	<u>Delta t (minutes)</u>	<u>Delta DTW (feet)</u>	<u>Gallons of Water Per Linear Foot</u>	<u>Gallons per minute Well Recovery</u>
11:48	165.6	0			
11:49	165.4	1	0.2	0.1306	0.1306
11:50	165.1	2	0.5	0.36568	0.1828
11:51	164.7	3	0.9	0.5877	0.1959
11:52	164.3	4	1.3	0.8489	0.2122
11:53	163.9	5	1.7	1.1101	0.2220
11:54	163.55	6	2.05	1.33865	0.2231
11:55	163.15	7	2.45	1.59985	0.2286
11:56	162.8	8	2.8	1.8284	0.2286
11:57	162.45	9	3.15	2.05695	0.2286
11:58	162.1	10	3.5	2.2855	0.2286
11:59	161.75	11	3.85	2.51405	0.2286
12:00	161.4	12	4.2	2.7426	0.2286
12:10	158.5	22	7.1	4.6363	0.2107
12:20	156.1	32	9.5	6.2035	0.1939
12:30	153.95	42	11.65	7.60745	0.1811
12:40	152.1	52	13.5	8.8155	0.1695
12:50	150.4	62	15.2	9.9256	0.1601
13:00	148.9	72	16.7	10.9051	0.1515

0.2003

Average Recovery Rate of 0.2003 Gallons per minute
Or 288 Gallons per day

Minimum 0.1306 or 188 gallons per day
Maximum 0.2286 or 329 gallons/day

CMB CONSULTING GEOLOGIST WELL DATA FORM

Well No. MW-2

Sheet 1

of / Sheets

1. Project

Pump Test MW-2

2. Project Location

Gandy Marley Land Farm
Chaves Co., NM

3. Date

05/17/05

4. Technician

C. M. Barnhill, Jr.

Sampling / Development Parameters, Continued

Time	Temp C	Conductivity (umhos/cm)	pH / D.O.	NTUs	WL (from TOC)	Volume (gallons)	Flow Rate (gpm)	Photo #, Observations (1)
10:36					124.70'	Initial		
10:40								Set well pump in well (1.8" Rediff 102 Submersible) @ T.D. 179.40'
10:50					123.0'			Started pumping well
10:50	20.4	9.96	7.87/2.9	TURBID	123.0	Initial	1.81	TURBID Red Silt
11:01	20.4	10.53	8.08/3.1	TURBID	139.95'	20	1.81	TURBID Red Silt
11:10	20.7	10.48	8.07/3.5	TURBID	150.0	40	2.22	TURBID Red Silt
11:21	21.0	10.31	8.12/4.5	TURBID	159.82'	60	1.81	TURBID Red Silt
11:38	21.3	10.20	8.03/3.6	TURBID	172.85'	80	1.17	TURBID Red Silt
11:40								Well pumped Dry @ 82 Gallons Purged - Removed pump
								Let well Recharge
Time:	DTW							
11:48	165.60							
11:49	165.40							
11:50	165.10							
11:51	164.70							
11:52	164.30							
11:53	163.90							
11:54	163.55							
11:55	163.15							
11:56	162.80							
11:57	162.45							
11:58	162.10							
11:59	161.75							
12:00	161.40							
12:10	158.5							
12:20	156.10							
12:30	153.95							
12:40	152.10							
12:50	150.40							
13:00	148.90							

NTU = Nephelometric turbidity units

WL = Water Level from Top of PVC Casing

Checked By

[Signature]

Date

05/17/05

Report Date: May 18, 2005
Quarterly Sampling (NM-711-1-0020)

Work Order: 5051704
Gandy Marley Landfarm

Page Number: 1 of 2
Sec4,Sec5,Sec8,Sec9 T.11.SR.31E

Summary Report

Larry Gandy
Gandy Marley Inc.
Box 1658
Roswell, NM 88202

Report Date: May 18, 2005

Work Order: 5051704

Project Location: Sec4,Sec5,Sec8,Sec9 T.11.SR.31E
Project Name: Gandy Marley Landfarm
Project Number: Quarterly Sampling (NM-711-1-0020)

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
62903	MW-2	water	2005-05-16	12:10	2005-05-16
62904	MW-1	water	2005-05-16	12:45	2005-05-16

Sample - Field Code	TPH DRO DRO (mg/L)
62903 - MW-2	<5.00
62904 - MW-1	<5.00

Sample: 62903 - MW-2

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		88.0	mg/L as CaCo3	4.00
Total Alkalinity		88.0	mg/L as CaCo3	4.00
Chloride		4790	mg/L	0.500
Specific Conductance		14200	µMHOS/cm	0.00
Nitrite-N		<0.0100	mg/L	0.0100
Nitrate-N		<1.00	mg/L	0.200
pH		8.15	s.u.	0.00
Sulfate		2180	mg/L	0.500
Total Dissolved Solids		8970	mg/L	10.00

Sample: 62904 - MW-1

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		90.0	mg/L as CaCo3	4.00
Total Alkalinity		90.0	mg/L as CaCo3	4.00
Chloride		4840	mg/L	0.500
Specific Conductance		14500	µMHOS/cm	0.00

continued ...

Report Date: May 18, 2005
Quarterly Sampling (NM-711-1-0020)

Work Order: 5051704
Gandy Marley Landfarm

Page Number: 2 of 2
Sec4,Sec5,Sec8,Sec9 T.11.SR.31E

sample 62904 continued ...

Param	Flag	Result	Units	RL
Nitrite-N		<0.0100	mg/L	0.0100
Nitrate-N		<1.00	mg/L	0.200
pH		8.14	s.u.	0.00
Sulfate		1760	mg/L	0.500
Total Dissolved Solids		8930	mg/L	10.00