(505) 867-6990 GORDON ENVIRONMENTAL, INC. 213 S. Camino del Pueblo
(505) 867-6991 Fax Consulting Engineers Bernalillo, New Mexico 87004

June 29, 2012

Mr. George Schuman
Permit Section Manager
NMED Solid Waste Bureau
Harold Runnels Bldg – Room 2050
P.O. Box 5469 – 1190 St Francis Drive
Santa Fe, NM 87502-5469

Re: Sandoval County Landfill: Landfill Gas Monitoring Probe Installation Report [211.12.01/02]

Dear Mr. Schuman:

This Landfill Gas Monitoring Probe Installation Report summarizes the completion activities associated with the installation of landfill gas (LFG) monitoring probes LFG-20 and LFG-21 at the Sandoval County Landfill (**Figure1**). Borehole drilling and probe installation/completion were performed by Precision Sampling, Inc. (PSI) of Albuquerque, NM between 05/30/12 and 06/01/12; and Gordon Environmental, Inc. (GEI) provided construction observation and documentation.

1.0 LANDFILL GAS MONITORING PROBE INSTALLATION

The locations of landfill gas monitoring probes LFG-20 and LFG-21 are shown on **Figure 2**, which shows the updated landfill gas monitoring network approved by NMED Solid Waste Bureau on 04/24/12. A generalized schematic of each landfill gas monitoring probe, as constructed, is provided as **Figure 3**. The borehole for each probe was advanced to a depth of approximately 20 feet below ground surface (bgs) utilizing a $7^5/_8$" outer diameter (O.D.) hollow-stem auger. A table summarizing probe installation specifications is included as **Table 1**. In general, the soil types adjacent to the perforated interval of the probe are sufficiently permeable to allow for potential LFG migration into the probe. Deposits of the red-to-tan silty sand (with some caliche nodules) typical at the site are evident across the 5' – 19' bgs perforated interval.

Each probe is constructed of 2-inch-diameter SCH 40 PVC flush-threaded pipe. The pipe extends from 19 feet below ground surface (bgs) to one foot above ground surface. The uppermost 6 feet of the pipe is solid, and the lower 14 feet of pipe is constructed with ⅛"-diameter perforations. Attached to the pipe above ground surface is a 2-foot-long, 2-inch diameter SCH 40 PVC flush-threaded riser pipe extension, fitted with a wellhead assembly for monitoring/sampling of landfill gas. The assembly consists of a PVC couple that allows for attachment of a ¼" NPT, quick-connect gas sampling port.

The annular space from the bottom of each borehole to one foot above the perforated section is filled with $^{3}/_{8}$"-diameter washed pea gravel. The next 2 feet of annular space is filled with drill cuttings and pelletized bentonite seal, respectively; and the remaining 2 feet of annular space is filled with concrete. A 4-foot-long x 4-inch-square steel protective casing is installed at the ground surface surrounding the PVC pipe and wellhead assembly. The protective casing is equipped with a locking cover and is anchored into a 4-foot x 4-foot x 4-inch-thick sloped concrete pad. A 4½"-diameter x 4-foot-long, concrete-filled steel bollard is installed at each corner of the concrete pad.

We appreciate the Bureau's ongoing review of the upgrades to the gas monitoring program at the Sandoval County Landfill. Please contact us if you have any questions.

Very truly yours,
Gordon Environmental, Inc.

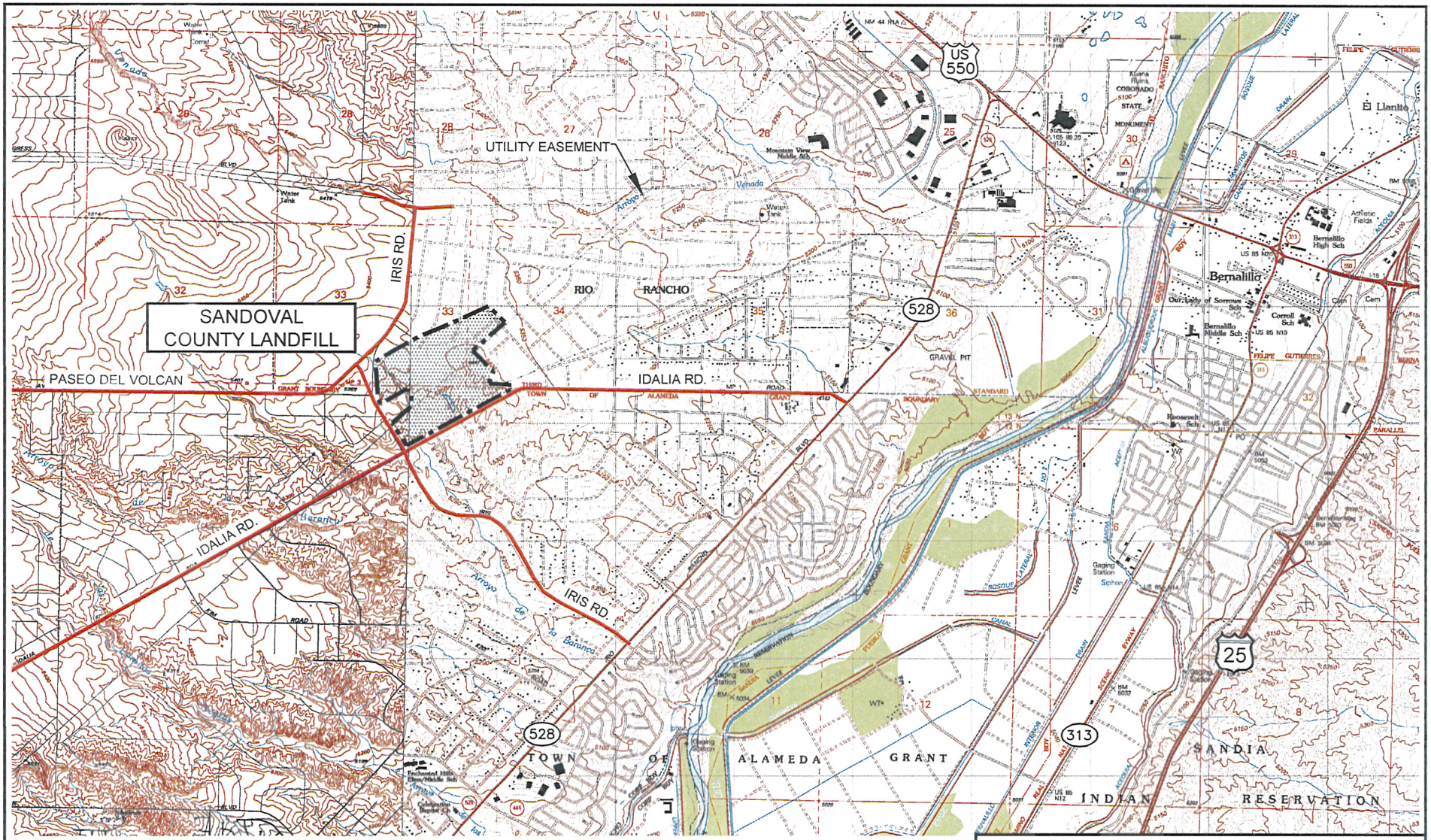
Michael J. Crepeau, P.E.
Project Manager

I. Keith Gordon, P.E.
Principal

Attachments:

Figure 1	Site Location Map
Figure 2	Landfill Gas Monitoring Network
Figure 3	Landfill Gas Monitoring Probe Detail
Table 1	Landfill Gas Monitoring Probe Detail Summary

cc: Mr. Ricardo Compos, Director, Sandoval County Public Works
Mr. Bert Sanchez, Assistant Director of Solid Waste, Sandoval County (Facility Operating Record)



Based on Bernalillo, NM (2006), and Loma Machete, NM (1996) Quadrangles, USGS 7.5' Series (1:24,000 Scale).

NORTH

0' 2000' 4000'

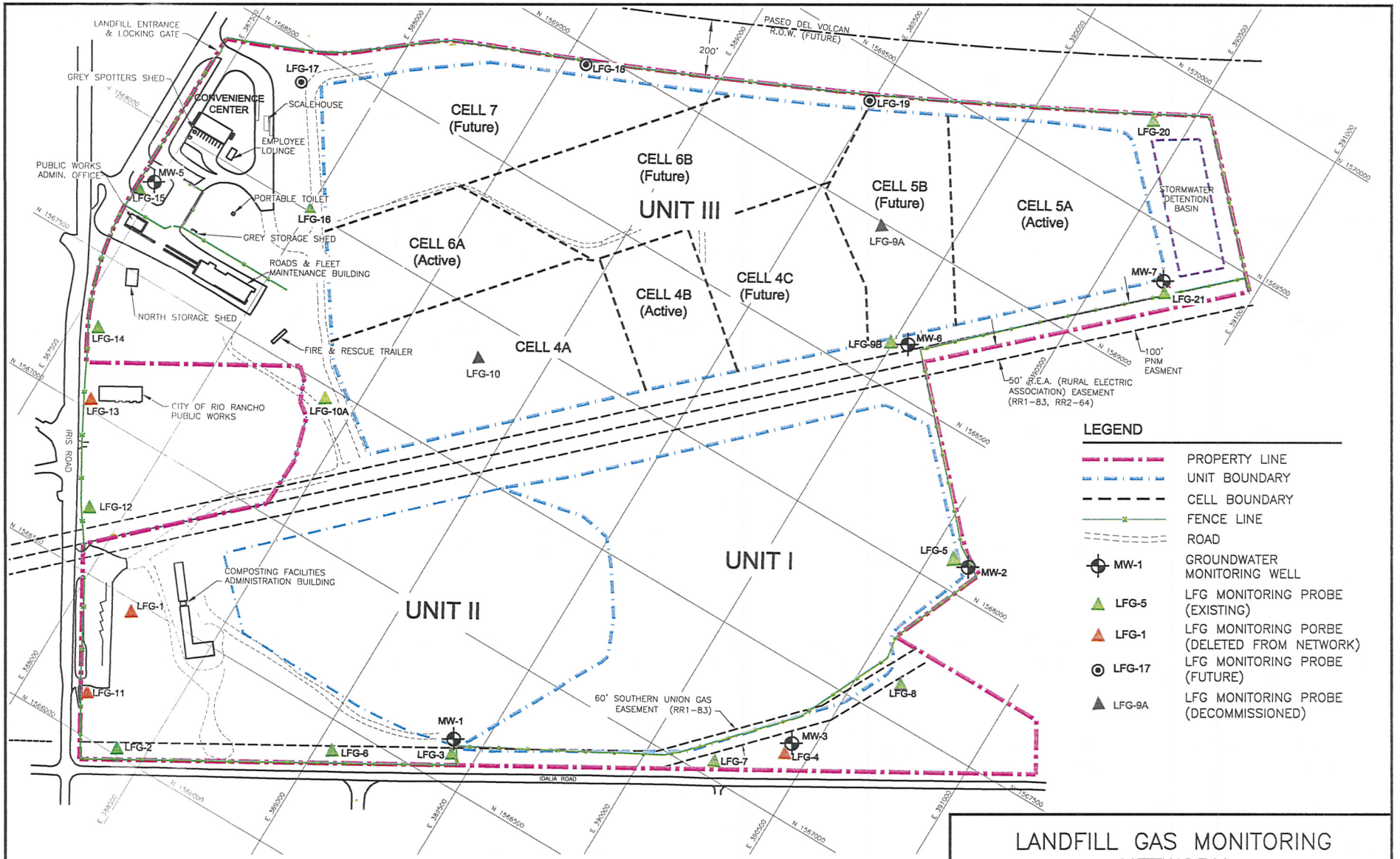
SITE LOCATION MAP

SANDOVAL COUNTY LANDFILL
RIO RANCHO, NEW MEXICO

Gordon Environmental, Inc.
Consulting Engineers
213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

DATE: 06/287/2012	CAD: SITE LOC SCLF.dwg	PROJECT #: 211.12.01
DRAWN BY: JMC/MLH	REVIEWED BY: MJC	FIGURE 1
APPROVED BY: IKG	gei@gordonenvironmental.com	

Drawing:P:\acad 2003\211.12.01\02\2012 PROBE INSTALL\SITE LOC SCLF.dwg
Date/Time:Jun. 29, 2012-10:55:06



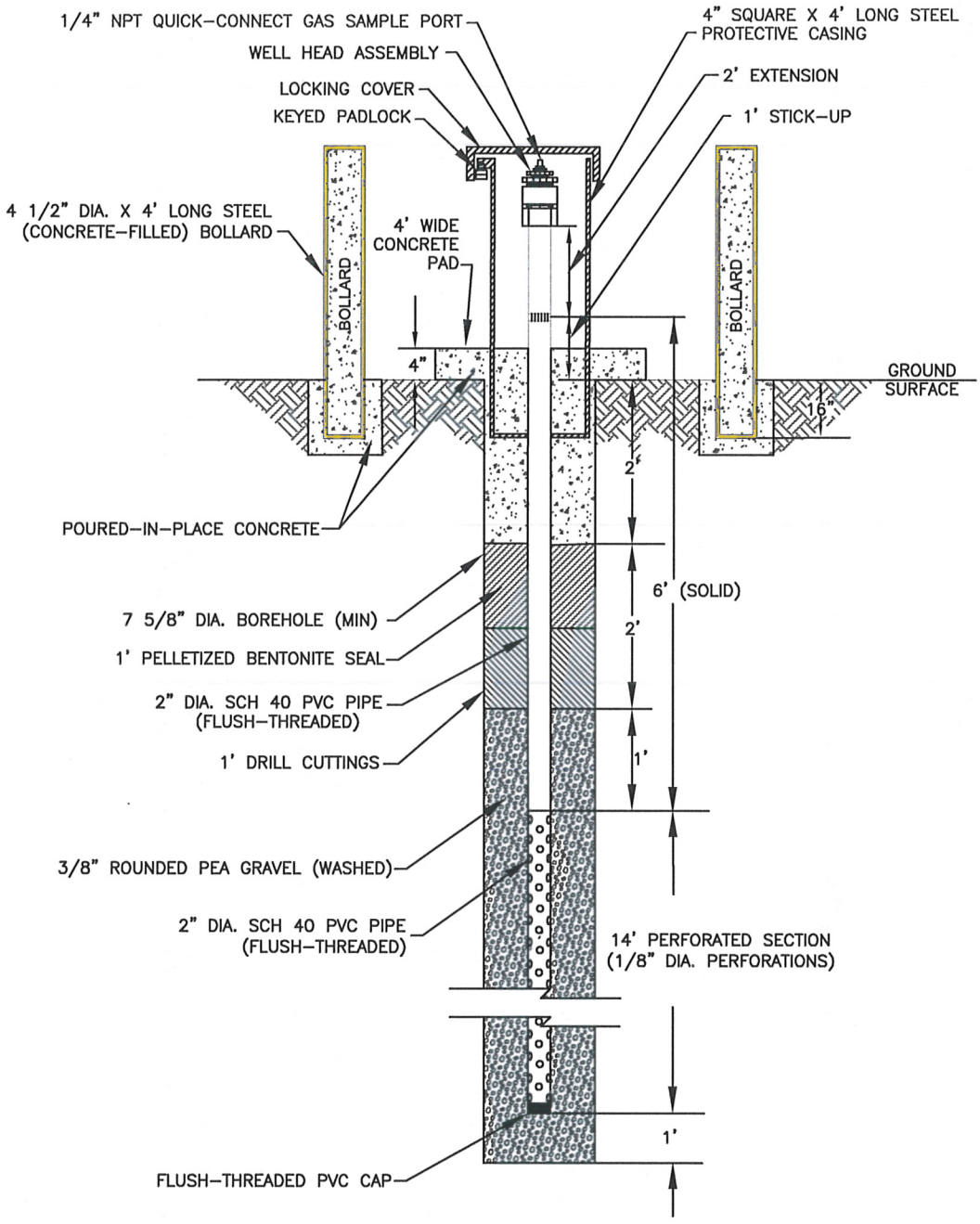
LANDFILL GAS MONITORING NETWORK

SANDOVAL COUNTY LANDFILL
RIO RANCHO, NEW MEXICO

Gordon Environmental, Inc.
Consulting Engineers
213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

DATE: 06/28/2012	CAD: LFG MON NTWK.dwg	PROJECT #: 211.12.01/02
DRAWN BY: JMC/MLH	REVIEWED BY: MJC	FIGURE 2
APPROVED BY: MJC	gei@gordonenvironmental.com	

Drawing:P:\acad 2003\211.12.01\02\2012 PROBE INSTALL\LFG MON NTWK.dwg
Date/Time:Jun. 29, 2012-10:58:10



TYPICAL LANDFILL GAS MONITORING PROBE

NOT TO SCALE

LANDFILL GAS MONITORING PROBE DETAIL

SANDOVAL COUNTY LANDFILL
RIO RANCHO, NEW MEXICO

Gordon Environmental, Inc.
Consulting Engineers
213 S. Camino del Pueblo
Bernalillo, New Mexico, USA
Phone: 505-867-6990
Fax: 505-867-6991

DATE: 06/28/2012	CAD: PROBE DETAIL.dwg	PROJECT #:112.12.01/02
DRAWN BY: JMC/MLH	REVIEWED BY: MJC	FIGURE 3
APPROVED BY: MJC	gei@gordonenvironmental.com	

Drawing:P:\acad 2003\211.12.01\02\2012 PROBE INSTALL\PROBE DETAIL.dwg
Date/Time:Jun. 29, 2012-10:54:41

ATTACHMENT 4
Landfill Gas Monitoring Probe Detail Summary
Sandoval County Landfill

LFG Probe I.D.	Probe Location		Ground Surface Elevation (fmsl)[1]	Casing Diameter/Type	Solid Casing Interval (fbgs)[2]	Perforated Casing Interval (fbgs)	Total Depth of Borehole (fbgs)	Installation Date	Probe Status
	Northing	Easting							
LFG-1	1,566,500	388,184	5,312	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	10/13/99	Deleted from Network
LFG-2	1,566,101	388,471	5,294	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	10/13/99	Active
LFG-3	1,566,638	389,416	5,318	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	10/13/99	Active
LFG-4	1,567,224	390,450	5,367	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	10/12/99	Deleted from Network
LFG-5	1,568,112	390,654	5,413	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	10/12/99	Active
LFG-6	1,566,435	389,041	5,303	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	12/20/00	Active
LFG-7	1,567,007	390,613	5,344	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	12/21/00	Active
LFG-8	1,567,654	390,618	5,410	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	12/20/00	Active
LFG-9A[3]	1,568,971	389,766	5,389	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	01/18/02	Decommissioned (05/10)
LFG-9B	1,568,715	390,096	5,420	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	07/14/05	Active
LFG-10[3]	1,567,850	388,780	5,374	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	12/21/00	Decommissioned (01/04)
LFG-10A	1,567,445	388,405	5,335	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	07/14/05	Active
LFG-11	1,566,139	388,200	5,305	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	01/17/02	Deleted from Network
LFG-12	1,566,708	387,895	5,323	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	01/22/02	Active
LFG-13	1,567,007	387,703	5,341	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	01/18/02	Deleted from Network
LFG-14	1,567,282	387,582	5,354	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	01/18/02	Active
LFG-15	1,567,755	387,462	5,358	2" SCH 40 PVC	0-9 ft.	9-29 ft.	30 ft.	01/18/02	Active
LFG-16	1,567,985	388,010	5,356	2" SCH 80 PVC	0-9 ft.	9-29 ft.	30 ft.	06/02/09	Active
LFG-20[3]	1,569,800	390,385	5,355	2" SCH 40 PVC	0-5 ft.	5-19 ft.	20 ft.	05/30/12	Active
LFG-21[3]	1,569,315	390,750	5,361	2" SCH 40 PVC	0-5 ft.	5-19 ft.	20 ft.	05/31/12	Active

Notes:

[1] fmsl = feet above mean sea level

[2] fbgs = feet below ground surface

[3] Location and elevation are approximate