H2S - 54

H2S CONTINGENCY PLAN

2022

From: dwhite@geolex.com
To: Chavez, Carl J, EMNRD
Cc: Goetze, Phillip, EMNRD; Jackson, Rob , EMNRD; sflores@geolex.com
Subject: RE: [EXTERNAL] Revised H2S Contingency Plan (Durango Midstream - Dagger Draw Facility)
Date: Tuesday, May 3, 2022 3:38:47 PM

Carl,

The OGRID number should be 221115, for the Durango operating entity, Frontier Field Services. If preferred, we can revise the cover page of the plan to reflect this information.

Regards,

David A. White, P.G.
(859) 967-7231 Cell

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Tuesday, May 3, 2022 9:00 AM
To: dwhite@geolex.com
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Jackson, Rob , EMNRD <Rob.Jackson@state.nm.us>
Subject: RE: [EXTERNAL] Revised H2S Contingency Plan (Durango Midstream - Dagger Draw Facility)

David,

Good morning!

I cannot find an Ogrid# for Durango Midstream, LLC. Could you please provide the Ogrid# to me?

I presume they purchased the GP from Lucid Artesia Company? Just checking to see if I need to make changes to OCD E-Permitting to reflect the new company. However, oil and gas companies who do business in NM must obtain an Ogrid# from the OCD. I believe the contact for obtaining an Ogrid# is Rob Jackson (505) 476-3441 or E-mail: Rob.Jackson@state.nm.us.

Thank you.

Carl J. Chavez ● UIC Group
Engineering Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue, N.E. Suite 100 | Albuquerque, NM 87113
505.660.7923
www.emnrd.nm.gov

From: dwhite@geolex.com <dwhite@geolex.com>
Sent: Monday, May 2, 2022 4:33 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>
Subject: RE: [EXTERNAL] Revised H2S Contingency Plan (Durango Midstream - Dagger Draw Facility)

This is revision to an existing plan and I believe it would be associated with H2S-54.

Regards,

David A. White, P.G.
(859) 967-7231 Cell

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Monday, May 2, 2022 3:59 PM
To: DAVID WHITE <dwhite@geolex.com>
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>
Subject: FW: [EXTERNAL] Revised H2S Contingency Plan (Durango Midstream - Dagger Draw Facility)
Importance: High

Re:

API	Well Name	Well Number	Type	Mineral Owner	Surface Owner	Status	Unit Letter	Section	Township	Range	OCD Unit Letter	Last Production	Spud Date	Plugged On	Current Operator
30-015-31905	METROPOLIS DISPOSAL	#001	Acid Gas Injection	State		Active	K	36	18S	25E	K	Apr-21	8/1/2001		[221115] FRONTIER FIELD SERVICES, LLC

David,

Good afternoon!

Do you know what Imaging “H2S-??” the attached H2S Contingency Plan is associated with or is this a new contingency plan?

Metropolis Disposal #1 Well – API 30-015-31905 (See Map 1)
Go south of Artesia, NM on Hwy 285 approximately 9 miles to County Road 38 (Kincaid Ranch Road). Turn right (west) on Kincaid Ranch Road and go 2.6 miles. Turn left (south) on dirt lease road and go approximately 0.6 miles then turn left (east) and go 0.2 miles to the Metropolis Disposal #1 Well.
Well Location: UL K-Section 36-Township 18S-Range 25E

1650 FSL, 1650 FWL
32.7018394, -104.4416504 (NAD 83)

Thank you.

Carl J. Chavez ● UIC Group
Engineering Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue, N.E. Suite 100 | Albuquerque, NM 87113
505.660.7923
www.emnrd.nm.gov

From: dwhite@geolex.com <dwhite@geolex.com>
Sent: Monday, May 2, 2022 11:06 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: sflores@geolex.com
Subject: [EXTERNAL] Revised H2S Contingency Plan (Durango Midstream - Dagger Draw Facility)
Importance: High

Good morning Mr. Chavez,

I hope all has been well for you. I'm reaching out, as we have completed some revisions to an existing H_2S Contingency Plan for the Durango Midstream Dagger Draw Facility and AGI well (see attached plan), which was previously operated by Lucid. A few months back, I believe we briefly discussed that these revisions would be coming up, but as it has been a while it is clear that notice was premature. Please let me know if this should also be submitted via the NMOCD online filing system.

Generally, gas volume through the plant and AGI well is increasing slightly, and the plan has been modified to reflect those changes in the ROE, along with minor revision to describe facility improvement and update key personnel contact information. We have also reached out and had discussions with all residents and interested parties in the area to discuss the proposed changes, provide and update contact information for Durango personnel and the interested parties, and to discuss emergency procedures and any concerns or comments the residents may have regarding the facility operation. A correspondence log describing these discussions has been added as an appendix to this version of the plan.

As with our other recent H2S plan submissions, you will find the NMOCD checklist at the beginning of the document to aid in your review. Please feel free to give me a call anytime, if you have questions or wish to discuss. Have a great day.

Regards,

David A. White, P.G.
Geolex, Incorporated
500 Marquette Avenue NW, Suite 1350
Albuquerque, NM 87102
(505) 842-8000 Office
(859) 967-7231 Cell

H_2S CONTINGENCY PLAN

DURANGO MIDSTREAM, LLC – DAGGER DRAW PROCESSING PLANT AND METROPOLIS DISPOSAL #1 WELL EDDY COUNTY, NEW MEXICO

Durango Midstream, LLC
278 Pipeline Road
Artesia, New Mexico 88210

May 2022

Prepared by:

GEOLEX®
INCORPORATED

500 Marquette Ave. NW, Suite 1350
Albuquerque, NM 87102
(505) 842-8000

The following check list is provided by NMOCD to ensure completeness and accuracy of the components of the H_2S Contingency Plan. Requirements, applicable regulations, and location within this document are provided for reference.

Contingency Plan Requirements Checklist	Applicable Regulation(s)		
19.15.11.9.B NMAC Requirement		**Included?**	**Page in Document?**
Emergency Procedures			
Responsibilities & duties of personnel during emergency	19.15.11.9.B.2.a & 19.15.11.9.B.2.d	Yes	2
Immediate action plan	19.15.11.9.B.2.a; 19.15.11.9.B.2.d; & 12.15.11.12.D.2 (well control)	Yes	2-6, Appendix B
Evacuation & shelter in place plans	19.15.11.9.B.2.a; & 19.15.11.9.B.2.d	Yes	3-6, 9, 20
Telephone numbers of emergency responders	19.15.11.9.B.2.a & 19.15.11.9.H	Yes	7
Telephone numbers of public agencies	19.15.11.9.B.2.a & 19.15.11.9.H	Yes	7, Appendix E
Telephone numbers of local government	19.15.11.9.B.2.a & 19.15.11.9.H	Yes	7
Telephone numbers of appropriate public authorities	19.15.11.9.B.2.a	Yes	7
Location of potentially affected public areas	19.15.11.7.H; 19.15.11.8.C.2; 19.15.11.8.D; 19.15.11.9.A; 19.15.11.9.B.2.a; 19.15.11.9.D.2; 19.15.11.11.D; 19.15.11.12.B.2.a; & 19.15.11.12.D	Yes	8-9, Map C-1
Location of potentially affected public roads	19.15.11.7.H.2; 19.15.11.7.J; 19.15.11.9.B.2.a; 19.15.11.9.B.2.c; & 19.15.11.9.C	Yes	9, Map 1
Proposed evacuation routes, with locations of road blocks	19.15.11.9.B.2.a & 19.15.11.9.B.2.d	Yes	9, Map A-4, A-6, Appendix D
Procedures for notifying the public	19.15.11.9.B.2.a	Yes	3-6, Appendix B
Availability & location of safety equipment & supplies	19.15.11.9.B.2.a; 19.15.11.11.C; & 19.15.11.12.D	Yes	9-12, Map A-3
Characteristics of hydrogen sulfide & sulfur dioxide			
Discussion of characteristics	19.15.11.9.B.2.b	Yes	13-15
Maps & Drawings			
Area of exposure	19.15.11.7.B & 19.15.11.9.B.2.c;	Yes	16, Appendix C
Public areas within area of exposure	19.15.11.7.B; 19.15.11.7.H; 19.15.11.7.I; 19.15.11.7.K.1-3; 19.15.11.8.C.1-2; 19.15.11.8.D; 19.15.11.9.B.2.c; 19.15.11.9.C; 19.15.11.9.D.2; 19.15.11.11.D; 19.15.11.11.E; 19.15.11.12.D; & 19.15.11.12.D.	Yes	8-9, Map 1, Map 2, Map C-1
Public roads within area of exposure	19.15.11.9.B.2.a; 19.15.11.9.B.2.c & 19.15.11.9.C	Yes	9, Map 1, Map C-1
Training & Drills			
Training of personnel to include responsibilities, duties, hazards, detection, personal protection & contingency procedure	19.15.11.9.B.2.a; 19.15.11.9.B.2.d; 19.15.11.12 & 19.15.11.13	Yes	19
Periodic drills or exercises that simulate a release	19.15.11.9.B.2.d	Yes	19-20
Documentation of training, drills, & attendance	19.15.11.9.B.2.d	Yes	20
Training of residents on protective measures	19.15.11.9.B.2.d	Yes	19
Briefing of public officials on evacuation or shelter-in-place plans	19.15.11.9.B.2.a & d	Yes	20

Coordination with state emergency plans			
How emergency response actions will coordinate with OCD & the state police response plans	19.15.11.9.B.2.e	Yes	20-21
Activation Levels			
Activation Levels & description of events which may lead to a release in excess of activation level	19.15.11.9.B.2.f' 19.15.11.9.C; & 19.05.11.16	Yes	3-6, 21
Plan Activation			
Commitment to activate contingency plan whenever H2S concentration of more than 100 ppm in a public area or 500 ppm at a public road	19.15.11.7.H & 19.15.11.7.I; 19.15.11.9.B.2.a 19.15.11.9.B.2.c & 19.15.11.9.C	Yes	21
Commitment to activate contingency plan whenever H2S concentration of more than 100 ppm 3000 feet from the site of release	19.15.11.7.H & 19.15.11.9.C	Yes	21
Acid Gas Injection Well Information			
Well name, API#, legal description, map location, figures &/or construction diagrams	API RP-49 Recommended Practice for Drilling & Well Servicing Operations Involving Hydrogen Sulfide; & API RP-54 Recommended Practice for Occupational Safety for Oil & Gas Drilling & Servicing Operations	Yes	vii., 1, Map 1, Map 2, Figure 3, Map A-1
Compliance w/ OCD "Well" Regulations:	19.15.11.7K(3) NMAC; 19.15.11.9B(2)&H NMAC; 19.15.11.10 NMAC; 19.15.11.11 NMAC. 19.15.11.12 NMAC & 19.15.11.16 NMAC	Yes	1, 2-5, 18, Figure 2, Maps A1-A6
Compliance w/ applicable standards	API RP-49; API RP-54 (formerly RP-68); API RP-55; & NACE Standards for Sour Gas Wells	Yes	18
Adequate H2S Detection Monitoring	19.15.11.11.B NMAC	Yes	9-12, Map A-2, A-3, A-5
Notification CP implementation w/ C-141 Full Report submitted to the OCD within 15-days of release	19.15.11.16 NMAC	Yes	20
Miscellaneous			
AGI Well Location	19.15.11.7K(3) NMAC; 19.15.11.9B(2)&H NMAC; 19.15.11.10 NMAC; 19.15.11.11 NMAC. 19.15.11.12 NMAC & 19.15.11.16 NMAC	Yes	vi., Map 1, Map 2
Pipeline(s)	19.15.11.12 NMAC; 19.15.11.12.B NMAC; & 19.15.11.12.C NMAC	Yes	12, 18, Figure 1, Map 2, Map C-1,
Flare Stack	19.15.11.11.D NMAC;	Yes	17-18, Map A1-A5
Signs	19.15.11.10 NMAC	Yes	12, Figure 2
Emergency Shut Down- ESD	19.15.11.12.D.1 NMAC	Yes	9-10, 16, Map A-2, A-3
Hazards	19.15.11.13 NMAC	Yes	21
AGI Wells	19.15.11.7.D.2-4 NMAC; 19.15.11.7K(3) NMAC; 19.15.11.9B(2)&H NMAC; 19.15.11.10 NMAC; 19.15.11.11 NMAC. 19.15.11.12 NMAC & 19.15.11.16 NMAC	Yes	17-19, Figure 3, Map A-1, Map A-6
Maps & Drawings	19.15.11.9.B.2.c NMAC	Yes	v., Figures 1-3, Map 1-2, Appendix A, C, D

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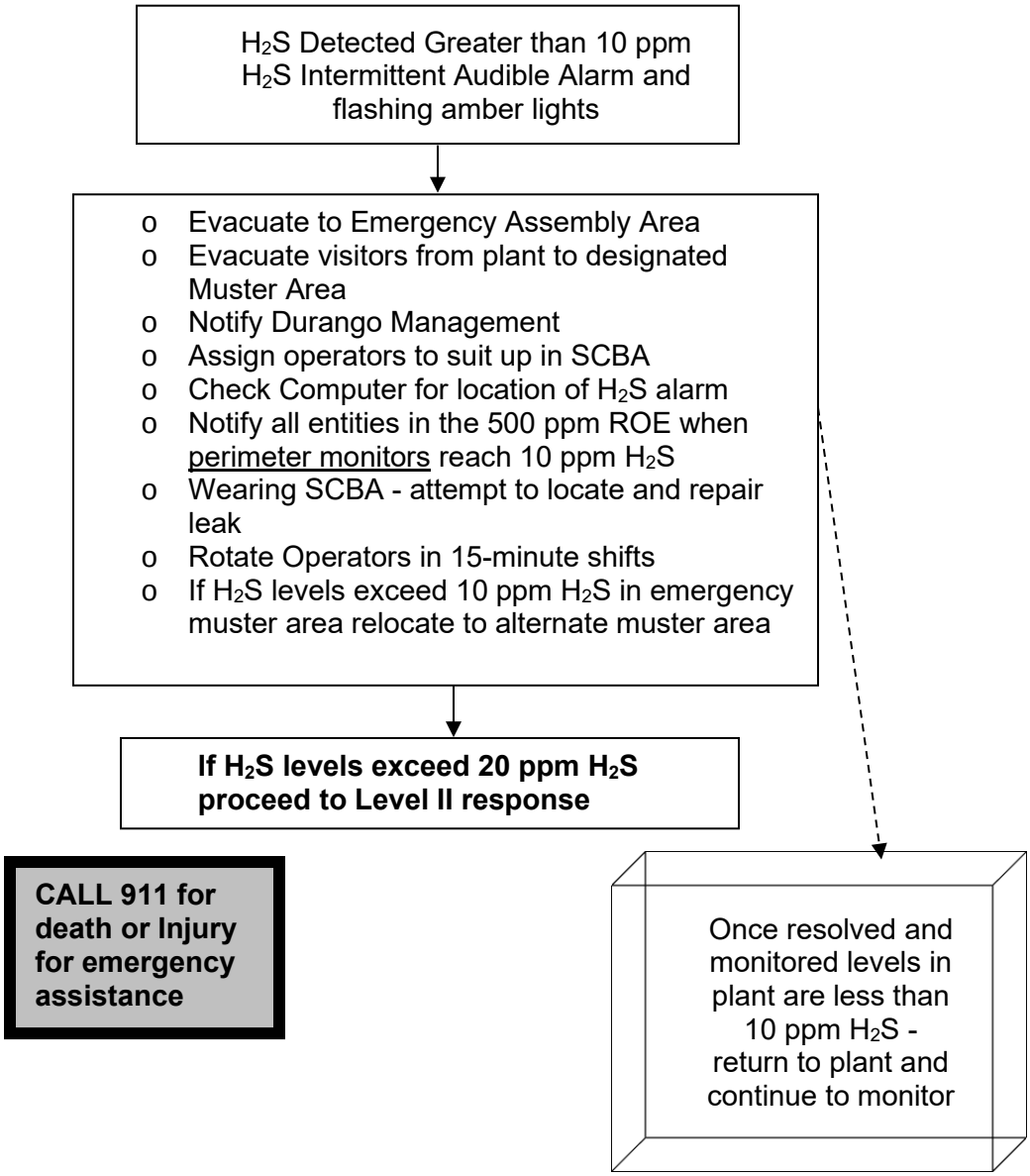
MAPS AND FIGURES

APPENDICES

OPERATOR QUICK REFERENCE GUIDE

Dagger Draw Processing Plant
Level 1 Response
FOR PLANT OR WELLHEAD ALARMS



Location of Facilities

Durango Dagger Draw Processing Plant (See Map 1)
Go south of Artesia, NM on Hwy 285 approximately 9 miles to County Road 38 (Kincaid Ranch Road). Turn right (west) on Kincaid Ranch Road and go approximately 2.8 miles to Pipeline Road. Turn right (north) and go 0.2 miles to the Dagger Draw Gas Plant Office. Physical address is 278 Pipeline Road, Artesia, NM 88210.
Section 36-Township 18S-Range 25E

Metropolis Disposal #1 Well – API 30-015-31905 (See Map 1)
Go south of Artesia, NM on Hwy 285 approximately 9 miles to County Road 38 (Kincaid Ranch Road). Turn right (west) on Kincaid Ranch Road and go 2.6 miles. Turn left (south) on dirt lease road and go approximately 0.6 miles then turn left (east) and go 0.2 miles to the Metropolis Disposal #1 Well.

Well Location: UL K-Section 36-Township 18S-Range 25E
1650 FSL, 1650 FWL
32.7018394, -104.4416504 (NAD 83)

I. Introduction [API RP-55 7.1]

The Durango Midstream, LLC (Durango) Dagger Draw Processing Plant is a natural gas processing plant which handles and/or generates hydrogen sulfide (H_2S) and/or sulfur dioxide (SO_2). This H_2S contingency plan was created to outline procedures that are to be followed in the event of an H_2S release that occurs at the plant, the acid gas well, or on the acid gas pipeline. The response plan is the same regardless of where the release takes place. This plan complies with the ***New Mexico Oil Conservation Division (OCD) Rule 11***. The plan and operation of the Dagger Draw Plant also conform to standards set forth in ***API RP-55 "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide"*** as well as ***API RP-49 "Recommended Practice for Drilling and Well Servicing Operations Involving Hydrogen Sulfide."*** The Dagger Draw Plant does not have any storage tanks in which hydrogen sulfide or other gas, or gas products are stored, and thus, API regulations and OCD regulations (specifically 19.15.11.12.E NMAC) relative to those types of storage are not applicable for this plant. There are no businesses within the 100-ppm radius of exposure (ROE). Durango has committed to provide notice to nearby property owners within the 100ppm ROE as detailed in Section C-4 (Page 7) in the case of an unintended release.

II. Scope [API RP-55 7.2]

This contingency plan is specific to the Durango Midstream Dagger Draw Gas Processing Plant and acid gas injection system. This plan contains procedures to provide an organized response to an unplanned release from the plant, well site, and pipeline connecting them and outlines procedures that would be followed to alert and protect any members of the public, residents in surrounding areas and/or contractors working on or around the plant in the event of an unplanned release. All operations shall be performed with safety as the primary goal. Any part of the operation that might compromise the safety of personnel will cease until the operation can be re-evaluated and the proper engineering controls implemented.

III. Plan Availability [API RP-55 7.3]

This contingency plan shall be available to all personnel responsible for implementing any portion of the plan. Copies of the plan will be distributed to nearby residences as well as the following agencies: New Mexico Oil Conservation Division (OCD), New Mexico Department of Public Safety, Local Emergency Planning Committee (LEPC), Artesia State Police, and the State of New Mexico Emergency Response Commission. In addition to electronic copies, physical copies of the Plan are available at the following Durango Midstream locations: the Dagger Draw Processing Plant, the Maljamar Gas Plant, the Durango Abo Field Office, and the Durango Main Office in The Woodlands, TX. See Appendix E for a complete distribution list.

IV. Emergency Procedures [NMAC 19.15.11.9.B(2)(a)] [API RP-55 7.4 a] [CFR 1910.1200]

A. Responsibilities and Duties of Personnel during an Emergency

1. Area Manager or designee will serve as the Incident Commander (IC); is responsible for training operators assigned to the plant, contractors, and visitors on the implementation of this plan; and will maintain communication with Durango management and residents within the radius of exposure (ROE).

2. Plant Supervisor or designee will serve as the Incident Commander (IC) in the absence of the Area Manager; is responsible for training and supervising plant operators on the implementation of this plan; will maintain accountability of all contractors and visitors; and will maintain communication with the Area Manager and Durango management.

3. Plant Operators will perform operations in accordance with this safety plan; assist in the accountability and evacuation of visitors and contractors to designated muster areas; and keep the plant supervisor and manager informed on the repair progress.

4. Essential Durango Personnel will be familiar with the procedures in this plan and assist plant operators in assisting with the implementation of this plan in a safe manner.

5. Visitors and contractors on site will be familiar with safety alarms and signals at the Dagger Draw Gas Processing Plant and the acid gas injection system; and adhere to instructions of Plant Operators and other Durango personnel in evacuation of the facilities.

B. Immediate Action Plan

1. The following outlines the Immediate Action Plan that is illustrated by the response flow diagram in Appendix B. This is to be used when responding to an H_2S release. Response levels are the same for a release at the plant or the acid gas well. Additional or long-term response actions will be determined on a case-by-case basis, if needed, once the Incident Command Center (ICC) and System (ICS) are established following the immediate response.

Lev.	Alarms	Actions
I	Intermittent audible alarm sounded and/or flashing yellow lights activated for H_2S at 10 ppm or greater.	**1.** The audible signal for a Plant emergency and evacuation is an intermittent alarm and yellow lights (repeating off/on) activated when levels of H_2S of 10 ppm or greater are detected. In addition, a flashing yellow light or beacon will be activated at 10 ppm or greater of H_2S. The audible alarm and flashing yellow lights are redundant systems which function independently of one another so that should one system fail, the other would remain active. These systems incorporate back-up battery capabilities as recommended in API RP 55 which insure their operation in the event of a power failure. A computer in the control room and in the Plant Supervisor office establishes which H_2S monitor has activated the alarm and/or flashing yellow beacon, be it a plant monitor or well monitor. At the initial sound of the intermittent alarm or the flashing yellow beacon, assigned operators will put on a 30-minute self-contained breathing apparatus (SCBA). (There is a maximum of two operators at the plant at any one time, and at least seven SCBA devices are located where they are accessible to the operators.) All other personnel in the Plant complex or well site shall immediately evacuate the Plant or well site to the closest Emergency Assembly Area (see Appendix D, Map D-1). If H_2S concentrations are 10 ppm or greater, then personnel will evacuate to a designated Muster Area determined by the Incident Commander (IC) (see Appendix D, Map D-1). The operators, upon suit up with the SCBA, will first help any persons in distress evacuate to the Emergency Assembly Area. If deemed necessary by the Area Manager or Plant Supervisor, local emergency response service providers will be contacted by Plant personnel designated by the Area Manager or Supervisor. **2.** All entities within the 500-ppm radius of exposure (ROE) will be notified (by telephone) of a release if the perimeter alarms are activated at 10 ppm H_2S or greater. Notification will be done by personnel designated by the Area Manager or his designee. The nature of the release and status of containment will be conveyed. Businesses will be advised to report the incident to employees working near the Plant and to alert any third-party contractors or service companies working in the Plant vicinity or imminently scheduled to work in the vicinity of the release. All should be instructed to leave the area and not to enter/re-enter area until further notice. **3.** Wearing the SCBA, the operator(s) will attempt to fix the cause of the release. The H_2S levels at the Emergency Assembly Area will be monitored with a handheld or personal monitor and with the fixed monitor. **4.** The Incident Commander (IC) will set up secondary re-entry team(s) with 30-minute SCBA to re-enter and resolve the situation. Re-entry will occur in 15-minute shifts at the direction of the Incident Commander (IC) until the problem is resolved or the emergency shut down (ESD) is activated. If H_2S levels in the Emergency Assembly Areas exceed 10 ppm H_2S, evacuate to alternate Emergency Assembly Area and continue to monitor Emergency Assembly Area with personal or handheld H_2S monitors. If evacuation to Muster Area occurs, road blocks will be established near the Muster Areas on Kincaid and Pipeline Road. If release is resolved and monitored levels in the Plant are less than 10 ppm H_2S, personnel may re-enter the Plant. If the release is not resolved and H_2S levels continue to increase, Level II Response is indicated. The Oil Conservation Division shall be notified within four hours of any release that activates the Plan (i.e., Level III Activation). Per 19.15.11.16 NMAC, notification of contingency plan implementation will be submitted to the OCD via form C-141 within 15-days of release.

Lev.	Alarms	Actions
II	Intermittent audible alarm sounded and/or flashing red lights activated for H_2S greater than 20 ppm	**1.** The intermittent alarm **and** red flashing lights indicate the detection of H_2S greater than or equal to 20 ppm (Flashing yellow lights indicate a H_2S release of 10 ppm or greater and they will change to red for a release of 20 ppm or greater.) The audible alarm and flashing red lights are redundant systems which function independently of one another so that should one system fail, the other would remain active. These systems incorporate back-up battery capabilities as recommended in API RP 55 which ensure their operation in the event of a power failure. A control panel in the Plant supervisor's office establishes which H_2S monitor has activated the alarm and or flashing red beacon, be it a plant monitor or a well monitor. At the initial sound of the intermittent alarm or observance of the flashing red beacons, the operators will exit to the Emergency Assembly Area specified by incident commander. All personnel in the Plant complex will put on emergency escape packs located throughout the plant, or at the well location and evacuate, using the evacuation routes to the Emergency Assembly Area (see Appendix A, Maps A-4 and A-6 and Appendix D, Map D-1) and then to the Muster Area (see Appendix D, Map D-1) specified by the Area Manager or designee. At the assembly area, the Area Manager or designee may assign operators to put on a 30-minute self-contained breathing apparatus (SCBA). Local emergency response service providers will be contacted by Area Manager or designee. See Section F. 4 (Page 11) for a listing of respirator equipment. **2.** All entities within the 100-ppm radius of exposure (ROE) will be contacted by phone and notified of release and asked to evacuate when a perimeter monitor reads 10 ppm H_2S or greater. All other entities within the 100-ppm ROE will be contacted by phone and notified of release. The nature of the release and status of containment will be conveyed. Depending on release status and prevailing wind conditions, some entities within the 100-ppm ROE may be asked to shelter in place or evacuate. Notifications will include but are not limited to the following: **a)** Other entities within the 100-ppm ROE, depending on release status and prevailing wind conditions, will be asked to shelter in place. Those entities will be instructed to close windows and shut off air conditioning/heating until further notice. In addition, they will be instructed to contact other employees/residents not present and instruct them not to enter/reenter the area until further instruction. **b)** If a perimeter monitor is activated, the LEPC and law enforcement will be contacted by phone and notified of the release and status of containment. The Incident Commander (IC) will assign personnel notification responsibility. **3.** Operator(s) with 30-minute SCBA will assess the release and attempt to resolve it. If after 45 minutes on scene there is no resolution, the operator(s) will notify the Area Manager to determine if the emergency shut down (ESD) should be activated. **4.** If monitored H_2S levels at Muster Area exceed 10 ppm, evacuate to an alternate Muster Area. If deemed necessary, local emergency response service providers will be contacted by the Incident Commander (IC). **a)** Re-entry will occur in full SCBA and in 15-minute shifts at the direction of the IC until IC determines problem has been resolved or emergency shut downs (ESDs) are activated. **b)** If release is resolved and monitored levels of H_2S in the Plant are less than 10 ppm, personnel may return to the Plant. All entities previously notified will be informed that the release has been resolved and advised of the current monitored H_2S levels at the Plant. The Oil Conservation Division shall be notified within four hours of any release that activates the Plan (i.e., Level III Activation). Per 19.15.11.16 NMAC, notification of contingency plan implementation will be submitted to the OCD via form C-141 within 15-days of release.

		c) No resolution requires activation of Level III Response with notifications and reporting as per Plan. If the release is not resolved and/or H_2S levels continue to increase, Level III Response is indicated. **d)** Monitoring will continue after problems are abated, at the direction of the Area Manager. **5.** Initiate and maintain a Chronological Record of Events log.

Lev.	Alarms	Actions
III	Intermittent audible alarm sounded and/or flashing red lights activated for catastrophic release; fire; or explosion ESD alarm is a continuous siren with red, amber, and blue lights that flash	**1.** If H_2S is at 20 ppm or greater and repair efforts at Level II have been unsuccessful, a PHV is detected, or worst-case scenario, and/or catastrophic release have occurred, then a Level III response will be implemented. **2.** Roadblocks will be set up near the Muster Areas on Kincaid Road and Pipeline Road (see Appendix D, Map D-1). **3.** All personnel shall have evacuated to a designated Muster Areas. Evacuation of all entities within the 500-ppm radius of Exposure (ROE) will have been confirmed. Implement full H_2S Plan with all notifications and public agency involvement. Notifications to all entities within the 100-ppm ROE will include the nature of the release and status of containment. Notifications will include but are not limited to the following: **a)** All businesses within the 100-ppm ROE will be instructed to immediately alert all company personnel, third party contractors and/or services companies working in the area, and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They will be instructed to immediately leave and/or not enter/reenter the area within the roadblocks until further instruction. **b)** All other entities (including private residents) within the 100-ppm ROE will be instructed to immediately shelter in place, if appropriate based on the source of the release and the wind direction. Those entities will be instructed to close any windows and shut off any air conditioning/heating until further notice. In addition, they will be instructed to contact other employees/residents not currently present to not enter/reenter the area until further instruction. **c)** The Incident Commander (IC) will make the decision based on, but not limited to, H_2S concentration and wind direction, whether a safe evacuation can be implemented, and recommend an evacuation route. **4**. If escaping vapors have ignited, the vapors should be allowed to continue to burn unless the fire endangers personnel, other property, or other equipment. **5.** When applicable, maintain communication with the Area Manager, or his designee, to keep him up to date of the situation and the action taken prior to his arrival at the location. **6.** Initiate and maintain a Chronological Record of Events log. **7.** Within one hour after the activation of the H_2S Plan, begin agency notifications by calling Oil Conservation Division (OCD) and National Response Center (NRC). **8.** Establish media staging area adjacent to Muster Area 2 and direct all media to it. **9.** Once resolved and monitored levels in the Plant and at Muster Area are less than 10 ppm, roadblocks will be removed, and all entities within the 100-ppm ROE will be allowed to return. All entities previously notified will be informed that the release has been resolved and advised of the current monitored H_2S levels. **10.** Monitoring will continue after problems are abated, at the direction of the Area Manager **11.** Agency reports to be submitted as required. Per 19.15.11.16 NMAC, notification of contingency plan implementation will be submitted to the OCD via form C-141 within 15-days of release.

C. Telephone Numbers and Communication Methods

1. Emergency Services

Agency	**Phone**
Artesia Fire Department	(575) 746-5051
Atoka Fire Department	(575) 746-9562
Artesia Police Department	(575) 746-5000
Eddy County Sheriff	(575) 887-7551
Carlsbad Police Department	(575) 885-2111
State Police (HMER)	
District 3 Roswell	(575) 827-9312
Sub District 3 Carlsbad	(575) 885-3138
Sub District 3 Artesia	(575) 748-9718
Ambulance Services	
Artesia	(575) 746-5050
Carlsbad	(575) 885-2111
Hospitals	
Artesia General	(575) 748-3333
Carlsbad Medical Center	(575) 887-4100
Veterinarians	
Artesia Animal Clinic	(575) 748-2042
Helicopter Services	
Lifeguard (Albuquerque)	1-800-633-5438 (505) 272-2798
Trans Aero Medevac	(844) 435-4911

2. Government Agencies

Agency	**Phone**
New Mexico Oil Conservation Division (NMOCD) Artesia Santa Fe	 (575) 626-0830 (505) 476-3460
US Bureau of Land Management (BLM) Carlsbad	 (575) 234-5972
Local Emergency Planning Committee (LEPC)	(575) 887-9511
National Response Center (NRC)	1-800-424-8802
New Mexico Department of Homeland Security & Emergency Management (NMDHSEM)	(505) 476-9635

4. Businesses and Residences

Name	Address	Phone
Business Property for Sale	276 West Kincaid Ranch Rd	-
David and Diana Wilson	80 West Kincaid Ranch Rd	(575) 308-1128 (David cell) (575) 308-8138 (Diana cell) (575) 457-2309 (Land Line)
Delilah Baeza	193 West Kincaid Ranch Rd	(575) 308-8446
Maria and Efrin Baeza	179 West Kincaid Ranch Rd	(575) 308-3452
Christine Baeza/Joel's Towing	175 West Kincaid Ranch Rd	(575) 457-2585 (Daytime) (575) 746-7030 (24 Hour)
Tamatha and Kyle McCauley	175-3 West Kincaid Ranch Rd	(575) 703-5940

5. ROE Well Operators

Company	Address	Phone
ANADARKO PETROLEUM CORP	P.O. Box 2497, Midland, TX 79702	(915) 682-1666
CIMAREX ENERGY CO. OF COLORADO	600 N. Marienfeld Street, Suite 600, Midland, TX 79701	(432) 571-7800
COG OPERATING LLC	600 W Illinois Ave, Midland, TX 79701	(432) 683-7443
EOG RESOURCES INC*	P.O. Box 2267, Midland, TX 79702	(432) 686-3689
EOG Y RESOURCES, INC.	104 S 4th St, Artesia, NM 88210	(575) 748-4168
SPUR ENERGY PARTNERS LLC*	9655 Katy Freeway, Suite 500, Houston, TX 77024	(832) 930-8502
THREE FORKS RESOURCES, LLC*	4080 Youngfield Street, Wheat Ridge, CO 80033	(303) 318-0717

*Operators have wells with an "Active" status within the ROE

6. Durango Internal Call List

NAME	TITLE	Office Phone #	Cell Phone #
David Stone	Chief Operation Officer	346-351-2792	(281) 785-7962
John Prentiss	Area Manager	575-676-3528	(575) 706-6983
Bobby Mallett	Dagger Draw Area Supervisor	575-457-2591	(575) 361-0392
Ruben Molina	Safety Compliance Coordinator	575-457-2231	(575) 703-4113
Dusty Taylor	Plant Operations Tech	575-457-2591	-
Jimmy Flores	Plant Operations Tech	575-457-2591	-
Gabe Turner	Plant Operations Tech	575-457-2591	-
Jacob Sedillo	Plant Operations Tech	575-457-2591	-
Julie Green	Plant Operations Tech	575-457-2591	-
Brandon Davis	Plant Operations Tech	575-457-2591	-
Michael Thompson	Plant Operations Tech	575-457-2591	-
LaMar Shaw	I&E Tech	575-457-2591	(575) 312-5132
Chad Frost	Field Operations Tech	575-457-2231	(575) 703-1804
Martin Chavarria	Field Operations Tech	575-457-2231	(575) 703-7528
Eddy Boydston	Field Operations Tech	575-457-2231	(575) 703-1968
Dagger Draw Plant	Direct Line	575-457-2591	-

7. Durango uses 2-way radios and telephones to communicate internally. Telephones are used for external communication. Land lines and high-speed internet access are available at the plant office.

D. Location of Nearby Residences, Roads, and Medical Facilities

1. All residences listed in Section C., Table 4, are located within the 100-ppm ROE

2. The following roads are located within the ROE:
   a) Kincaid Ranch Road
   b) Pipeline Road
   c) Shafer Ranch Road

3. There are no medical facilities located within the ROE.

4. There are no businesses located within the 100 ppm ROE. There are currently several wells within in the 100 ppm ROE and the 500 ppm ROE. These operators have been listed in this plan and will be advised if the plan is activated. Durango personnel will make a visual inspection of the ROE area to ensure that no individuals are seen inside the ROE, and if any are observed, they will be advised to immediately evacuate to the designated Muster Area, described above.

E. Evacuation Routes, Emergency Assembly Area, Muster Areas, and Road Blocks

1. Evacuation Routes, Emergency Assembly Area, and Muster Areas are depicted on Maps A-4 and A-6 in Appendix A and Map D-1 in Appendix D.

2. Pre-planned road block locations are designated near the muster areas on Pipeline Road and Kincaid Ranch Road and are depicted on Map D-1 in Appendix D. Each location will have pre-positioned, portable road barriers with lights. The locations will have flashing lights and warning signs (see Figure 2). If the release is sufficient to require evacuation to muster areas, then roadblocks near the muster areas on Kincaid Ranch Road and Pipeline Road to the west and north of the facility, respectively, will be established. The Incident Commander (IC) will designate a representative to staff each of the two roadblocks. If deemed necessary by the Incident Commander (IC), the State or Local Police will be asked to assist with maintaining the roadblocks.

3. Emergency lights on the Muster Area signs will be activated by any perimeter alarm of 10 ppm or greater H_2S or Level III activation.

F. Monitoring Equipment, Alarm Systems, Safety Equipment, and Supplies Available

1. EMERGENCY SHUTDOWN SYSTEM (ESD): There are six (6) ESD manual, push button stations and two (2) computer-controlled ESD stations located at various points in the facility. See Maps A-2 and A-3 in Appendix A. The Plant ESD can be activated at any time by any employee or at the direction of the Incident Commander (IC). If any of the perimeter H_2S sensors at the plant detect a concentration of 10 ppm or higher the Plant ESD is automatically activated.

When any one of the eight (8) ESD stations are activated, the system will be shut down and the natural gas inlets and outlets will be blocked. The operators are also able to automatically close the one (1) main block valve on the incoming gas line to the Plant. Activating these should allow the plant to avoid a Level III response. The Incident Commander (IC) can send trained personnel to designated off-site manual block valves. There are also various methods to shut down gas flow at the various wellheads and incoming gathering lines. These can and would be evaluated on a case-by-case basis.

Designated employees will have remote access to the plant controls including ESD capabilities.

2. PLANT ALARMS, VISIBLE BEACONS & WIND INDICATORS: Colored beacons, horns, and wind direction indicators are located in various locations throughout the Plant and are indicated in Appendix A on Maps A-2, A-3, and A-6.

The audible signal for an emergency response and Plant evacuation is a repeating intermittent alarm that sounds at H_2S concentrations of 10 ppm or greater. The alarm will remain intermittent when the concentration of the H_2S release is 20 ppm or higher. At the initial sound of this intermittent alarm, the plant operators will evacuate to the emergency assembly area put on a self-contained breathing apparatus (SCBA) and all personnel in the plant complex shall immediately proceed in a safe manner to the Emergency Assembly Areas as prescribed by the Emergency Action Plan.

A flashing red beacon signifies an H_2S release of 20 ppm or higher and all personnel in the plant complex shall immediately proceed in a safe manner to the Emergency Assembly Area located outside of the plant office. If this area is not determined to be safe, all will move to designated Muster Area. Evacuation routes and Muster Areas are indicated on the maps in Appendix A, as well as Appendix D.

A routine process alarm will cause a horn to sound. This horn sound is used to alert the plant Operator to return to the Control Room. No emergency response or evacuation is required when this horn sounds.

Wind direction indicators are installed throughout the plant. At least one wind direction indicator can be seen at any location within the Plant complex, as well as from any point on the perimeter of the plant. There are ten (10) windsocks located in the Plant.

3. GAS DETECTION EQUIPMENT: The Plant uses a Smart Sensor System™ fixed plant H_2S Sensors. These sensors are a fixed-point monitoring system used to detect the presence of hydrogen sulfide in ambient air. The yellow flashing beacon is activated at H_2S concentrations of 10 ppm or greater. The horn is activated with an intermittent alarm at H_2S concentrations of 10 ppm or greater. The lights change to red at 20 ppm H_2S and the horn remains intermittent. The fixed hydrogen sulfide monitors are strategically located throughout the Plant to detect an uncontrolled released of hydrogen sulfide. The Plant operators are able to monitor the H_2S level of all the Plant sensors on the control monitor located in the control room and the Dagger Draw Plant Field Office. In addition, select employees can access this information remotely. These sensors are located on the plot plan in Appendix A, Maps A-2 and A-3. These sensors all have to be acknowledged and will not clear themselves. This requires immediate action for any occurrence or

malfunction. The Plant sensors have battery backup systems and are calibrated monthly. Audible alarm systems are also calibrated monthly.

Pemtech™ wireless H_2S detectors with battery backup systems are installed along the perimeter of the plant and the perimeter of the acid gas disposal well. Perimeter H_2S detectors report to the Pemtech monitor every five minutes to confirm detector functionality. Once H_2S gas is detected, the H_2S detectors report to the monitor every five seconds. The detectors will go into alarm at H_2S values of 10 ppm and above. Pemtech H_2S head unit locations are depicted on Map A-5 and A-6 in Appendix A.

Handheld gas detection monitors are available to plant personnel to check specific areas and equipment prior to initiating maintenance or work on the process equipment. There are 3 handheld monitors and each individual is assigned a personal H_2S monitor. The handheld gas detection devices are Honeywell BW single gas monitors for H_2S and Honeywell 4-gas detectors. The 4-gas detectors have sensors for oxygen, LEL (explosive hydrocarbon atmospheres), hydrogen sulfide, and carbon dioxide. They indicate the presence of H_2S with a beeping sound at 10 ppm. The beeps change in tone as H_2S increases to 20 ppm. The personal monitors are set to alarm (beep) at 10 ppm with the beeps becoming closer together as the H_2S concentration increases to 20 ppm. Both the handheld and personal monitors have digital readouts of H_2S ppm concentration.

The compressor building has two methane sensors;one sends a call out at 30% lower explosive limit (LEL); the second shuts the compressors down at 50% lower explosive limit (LEL). The methane sensors are visual and audible alarms. The compressor building also is equipped with fire eyes that will also shut the units down. The four product pumps also have LEL sensors.

4. RESPIRATORS: The facility has seven (7) 30-minute self-contained breathing apparatus (SCBA) respirators and six (6) 5-minute escape packs strategically located throughout the Plant. There are also five (5) emergency packs with supplied air lines distributed throughout the plant. The respirator locations are identified in Appendix A on Maps A-3 and A-6. All Plant personnel are certified to use the self-contained breathing apparatus (SCBA) respirators and emergency packs.

5. FIRE FIGHTING EQUIPMENT: The Plant personnel are trained only for insipient stage fire-fighting. The fire extinguishers located in the Plant process areas, compressor buildings, process buildings, and company vehicles are typically a 20# ABC dry chemical fire extinguisher. See Appendix A, Maps A-3, and A-6 for locations. The Plant does not have a fire water system, only a utility water system that is not designed for fire-fighting.

6. EMERGENCY RESPONSE ROAD BLOCK EQUIPMENT: Durango has emergency response mobile traffic barriers (or equivalent equipment) located on the plant site at an accessible location that can be augmented with supplies, such as traffic control kits and first aid kits from the plant. An emergency response trailer with SCBA will be stationed at the plant. Additionally, there are three (3) road-side signs that have flashing light that are activated if the plant perimeter sensors detect an H_2S concentration of 20 ppm or greater. The signs read “Do Not Enter”.

7. TRAFFIC CONTROL KIT CONTENTS

3 Electronic Road Flares
1 28” Stop Sign Paddle
4 Reflective Traffic Control Vests
2 Emergency Signal Wands
1 Emergency Response Guidebook

FIRST AID EQUIPMENT LOCATIONS:
a) First Aid Kits are located at the following locations:
Lab
Office
Eye Wash stations are located at the following locations:
Lab
Office

9. PERSONAL H_2S MONITORS: All Durango personnel assigned to the Plant and associated field personnel are issued personal H_2S monitors.

10. SIGNS and MARKERS: The Plant has warning signs indicating the presence of “H_2S/Poisonous Gas” and high-pressure gas at the entrance to the Plant. Emergency response phone numbers are posted at the entrance to the Plant. Signs are located at the Plant gate entrance indicating that all visitors are to sign in. Signs conform to divisions standards as outlined in 19.15.11.10. The pipeline connecting the Plant and the AGI wellhead is buried and clearly marked (see Figure 1).

V. Characteristics of Hydrogen Sulfide (H_2S), Sulfur Dioxide (SO_2) and Carbon Dioxide (CO_2) [NMAC 19.15.11.9.B(2)(b)] [API RP-55 7.4 b.]

A. Hydrogen Sulfide (H_2S):

The inlet gas streams into the Plant contain a maximum of 7,840 ppm (or 0.784 mole percent) of hydrogen sulfide based on data generated from the sampling of the inlet gas at least daily. Hydrogen sulfide is a colorless, toxic, and flammable gas, and has the odor of rotten eggs. Hydrogen sulfide gas is heavier than air. Hydrogen sulfide presents a significant health hazard by paralyzing the respiratory system resulting in serious injury or death.

Hydrogen Sulfide Properties and Characteristics		
CAS No.	7783-06-4	
Molecular Formula	H_2S	
Molecular Weight	34.082 g/mol	
Ceiling Concentration	20 ppm (OSHA)	
Ceiling Peak Concentration	50 ppm (OSHA)	
Threshold Limit Value (TLV)	15 ppm (ACGIH)	
Time Weighted Average (TWA)	10 ppm (NIOSH)	
Short Term Exposure Level (STEL)	15 ppm (ACGIH)	
Immediately Dangerous to Life or Health (IDLH)	100 ppm	
Specific Gravity Relative to Air (Air=1.0)	1.189	
Boiling Point	-76.5F	
Freezing Point	-121.8F	
Vapor Pressure	396 psia	
Autoignition Temperature	518F	
Lower Flammability Limit	4.3%	
Upper Flammability Limit	46.0%	
Stability	Stable	
pH in water	3	
Corrosivity	Reacts with metals, plastics, tissues, and nerves	
Physical Effects of Hydrogen Sulfide		
Concentration		
ppm	%	Physical Effects
1	0.00010	Can be smelled (rotten egg odor)
10	0.0010	Obvious & unpleasant odor; Permissible exposure level; safe for 8-hour exposure
20	0.0020	Acceptable ceiling concentration
50	0.0050	Loss of sense of smell in 15 minutes
100	0.0100	Immediately dangerous to life and health (IDLH) loss of sense of smell in 3-15 minutes; stinging in eyes & throat; Altered breathing
200	0.0200	Kills smell rapidly; stinging in eyes & throat
500	0.0500	Dizziness; Unconscious after short exposure; Need artificial respiration
700	0.0700	Unconscious quickly; death will result if not rescued promptly
1,000	0.1000	Instant unconsciousness; followed by death within minutes

B. Sulfur Dioxide (SO_2):

Sulfur dioxide is produced as a by-product of H_2S combustion at the flare. The flare unit receives the residual hydrogen sulfide and carbon dioxide stream that is routed from the amine unit. It is colorless, transparent, and is non-flammable, with a pungent odor associated with burning sulfur. Sulfur dioxide is heavier than air, but will be picked up by a breeze and carried downwind at elevated temperatures. Sulfur dioxide can be extremely irritating to the eyes and mucous membranes of the upper respiratory tract.

Sulfur Dioxide Properties & Characteristics	
CAS No.	7446-09-5
Molecular Formula	SO_2
Molecular Weight	64.07 g/mol
Permissible Exposure Limit (PEL)	5 ppm(OSHA)
Time Weighted Average (TWA)	2 ppm(ACGIH)
Short Term Exposure Level (STEL)	5 ppm(ACGIH)
Immediately Dangerous to Life and Health (IDLH)	100 ppm
Specific Gravity Relative to Air (Air = 1.0)	2.26
Boiling Point	14°F
Freezing Point	-103.9°F
Vapor Pressure	49.1 psia
Auto ignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
Corrosivity	Could form an acid rain in aqueous solutions

Physical Effects of Sulfur Dioxide	
Concentration	**Effect**
1 ppm	Pungent odor, may cause respiratory changes
2 ppm	Permissible exposure limit; Safe for an 8-hour exposure
3-5 ppm	Pungent odor; normally a person can detect sulfur dioxide in this range
5 ppm	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure
12 ppm	Throat irritation, coughing, chest constriction, eyes tear and burn
100 ppm	Immediately Dangerous To Life & Health (IDLH)
150 ppm	So irritating that it can only be endured for a few minutes
500 ppm	Causes a sense of suffocation, even with first breath
1,000 ppm	Death may result unless rescued promptly.

C. Carbon Dioxide (CO2):

The inlet streams into the Plant contain a maximum of 17,070 ppm (or 1.707 mole percent) of carbon dioxide based on data generated from the sampling of the inlet gas at least daily. Carbon dioxide gas is colorless, odorless and non-flammable and is heavier than air.

Carbon Dioxide Properties & Characteristics	
CAS No.	124-38-9
Molecular Formula	CO_2
Molecular Weight	44.010 g/mol
Time Weighted Average (TWA)	5,000 ppm
Short Term Exposure Level (STEL)	30,000 ppm
Immediately Dangerous to Life and Health (IDLH)	40,000 ppm
Specific Gravity Relative to Air (Air = 1.0)	1.5197
Boiling Point	-109.12°F
Freezing Point	-69.81°F
Vapor Pressure	830 psia
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
pH in Saturated Solution	3.7
Corrosivity	dry gas is relatively inert & not corrosive; can be corrosive to mild steels in aqueous solutions

Physical Effects of Carbon Dioxide	
Concentration	**Effect**
1.0 %	Breathing rate increases slightly
2.0 %	Breathing rate increases to 50% above normal level. Prolonged exposure can cause headache, tiredness
3.0 %	Breathing rate increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increased blood pressure and pulse rate
4 – 5 %	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident, and slight choking may be felt
5 – 10 %	Characteristic sharp odor noticeable. Very labored breathing, headache, visual impairment, and ringing in the ears. Judgment may be impaired, followed within minutes by loss of consciousness
10 – 100 %	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation

D. Radii of Exposure (ROE) [NMAC 19.15.11.7.K]

The basis for worst case scenario calculations is as follows:

The hydrogen sulfide content of the inlet natural gas stream into the Durango Dagger Draw Gas Plant is variable, ranging upwards to 7,840 parts per million (ppm) or 0.784 mole percent.

- The plant has a maximum daily (24 hour) processing volume of 115.6 MMSCF.
- The worst-case scenario radius of exposure (ROE) also assumes an uncontrolled instantaneous release from the area around either the Metropolis Disposal #1 Well, the amine still at the facility and/or at any point along the pipeline connecting the two of the above referenced volume and concentration. Because the Plant is a throughput process plant, it is impossible that the entire 24 hour-throughput volume of the Plant could be released instantaneously as is assumed in the worst-case scenario calculations of the ROE. However, to comply with NMAC 19.15.11, that assumption is the worst-case scenario in the formulas/calculations provided here.

It should further be noted that the reason this rate, used as worst-case, could not be released over a 24-hour period is the Plant's emergency shutdown (ESD) systems would be activated. The emergency shutdown (ESD) would prevent the flow of gas into the Plant in the event of an emergency. See Appendix C and Map C-1 for more information.

The formulas for calculating the two radii of exposure (ROE) are as follows:

100 ppm Radius of Exposure Calculation (as per 19 NMAC 15.11.7.K.1):

$$X=[(1.589)(\text{hydrogen sulfide concentration})(Q)]^{(0.6258)}$$

500 ppm Radius of Exposure Calculation (as per 19 NMAC 15.11.7.K.2):

$$X=[(0.4546)(\text{hydrogen sulfide concentration})(Q)]^{(0.6258)}$$

Where:
X = radius of exposure in feet
"hydrogen sulfide concentration" = the decimal equivalent of the mole or volume fraction of hydrogen sulfide in the gaseous mixture
Q = Escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psi absolute and 60 degrees Fahrenheit)

The ROE calculations for the amine unit (facility), pipeline, and acid gas disposal well, based on the methods above, are as follows:

500-ppm ROE = 3,350 feet
100-ppm ROE = 7,332 feet

The ROE for the facility, pipeline and well are shown on Map C-1 of Appendix C. This ROE pattern is designed to include the 100 and 500 ppm radii for a potential worst-case failure at any point in the system from the facility at the north to the well to the south.

VI. Facility Description, Maps, and Drawings [NMAC 19.15.11.9.B(2)(c)] [API RP-55 7.4 c.]

A. Dagger Draw Processing Plant Description of Operations

The primary function of the plant is to remove H_2S and CO_2 from sour field gas so that the gas can meet pipeline specifications. The plant has been designated a primary Standard Industrial Classification (SIC) Code of 1311. The operation of the Durango Dagger Draw Gas Plant is intended to process 115.6 MMSCFD of gas. The facility is authorized to operate continuously (8,760 hr/yr) at design maximum capacity processing rates. The gas is treated to remove acid gas components, dehydrated to remove water, and processed to remove heavy (liquid) hydrocarbons from the gas stream. Several plant systems are involved to perform these functions.

The amine unit is designed to remove acid gas components (carbon dioxide, hydrogen sulfide, and mercaptans) from the natural gas stream. These components are removed from the natural gas because they are corrosive, hazardous to health, and reduce the heating value of the natural gas stream. In addition, the carbon dioxide can freeze in the cryogenic unit forming dry ice and forcing the shutdown of the facility. This is known as the gas sweetening process. The acid gas removed by the amine unit is disposed of by either acid gas injection into a disposal well or by incinerating in a flare. The preferred method of disposal is to compress the gas and inject it into the well. Under emergency situations, the gas will be flared to prevent the emission of lethal hydrogen sulfide to the atmosphere.

The glycol dehydration unit receives approximately 113 MMSCFD of treated gas (sweet) from the amine unit and reduce the water content of the gas by circulating triethylene glycol (TEG). Molecular sieve dehydration is used upstream of the cryogenic processes to achieve a -150°F dew point. The process uses two molecular sieve vessels with one vessel in service absorbing moisture from the gas stream and the other vessel in the regeneration mode.

The cryogenic unit is designed to liquefy natural gas components from the sweet, dehydrated inlet gas by removing work (heat) from the gas by means of the turbo expander. The cryogenic unit recovers natural gas liquids (NGL) by cooling the gas stream to extremely cold temperatures (-150°F) and condensing components such as ethane, propane, butane, and heavier hydrocarbons. Once the sweet, dry gas exits the cryogenic unit, it needs to be recompressed to approximately 800 to 1200 psi before the gas is sent to the main transportation pipeline. This is accomplished with two 2500 horsepower electric drive compressors.

The hot oil system in the plant is used to provide heat to certain processes within the facility. The system circulates approximately 600 GPM of hot oil and deliver 15.5 MMBTU/hr to other processes.

B. Metropolis Disposal #1 Well Description of Operations

The low pressure (< 10 psig), acid gas stream from the amine unit is routed to the acid gas compressor. The stream is then subject to a series of compression and cooling cycles, thus, dehydrating and compressing the acid gas stream to the required injection pressure of approximately 1100 -1600 psig which is well under the maximum allowable working pressure for the pipeline of 2350 psig. The high-pressure acid gas stream then flows

through a 2” stainless steel pipeline to the injection well site. At this point, the stream is introduced into the well.

There are a number of safeguards designed to prevent leaks or overpressure of the system. The acid gas compressor is equipped with multiple pressure transmitters. These transmitters monitor compressor suction and discharge pressures and are programmed to shut the acid gas system down when the pressures fall outside a pre-programmed operating range. As an additional safeguard, the compressor panel is also equipped with high- and low-pressure shutdowns for each stage of compression that will shut the compressor down when pressures reach preset high and low pressure set points.

As shown on Map 2, the acid gas pipeline runs from the Durango Dagger Draw Plant in a southwesterly direction, crosses Kincaid Ranch Road at the plant boundary and continues southwesterly along a gravel road for approximately 3680 feet. The pipeline then turns east along the Metropolis Disposal #1 Well access road for an additional 900 feet to the wellhead. South of Kincaid Ranch Road, the pipeline and well are entirely contained within Section 36, Township 18 South, Range 25 East. This land is owned by the State of New Mexico. Durango has the following three Rights-of-Way from the State of New Mexico in this section for the pipeline: R18068, R17745 and R17949. The pipeline is buried at a depth of 6-1/2 feet for its entire length and is marked, as required, with permanent surface markers (See Map 2, Map A-1, and Figure 1)

The acid gas pipeline is constructed from 2” inch 304 stainless steel tubing consistent with NACE standards for sour gas service. The pipeline has been designed with a maximum allowable working pressure of 2350 psig. In order to assure the safety of the pipeline system, the acid gas pipeline is contained within a 6” SDR 11 polyethylene pipeline (rated at 100 psig) which is swept from the wellhead location to the main plant with pure “sweet” gas for leak detection purposes., This “sweet” gas stream flows through the annulus between the 6” and 2” pipelines at a preset pressure of 5 psig and flow rate sufficient to continuously be monitored by a Delmar™ H_2S gas analyzer. This sweet gas stream is monitored continuously for H_2S and over/ under pressure. If any single variable falls outside the narrow predetermined operating range, the automatic safety valves are activated, the acid gas compressor is shut down and the acid gas stream is routed to the flare.

The injection string within the well is also constructed with multiple safety features which include L80 FX FJ 2 7/8” corrosion resistant tubing stabbed into a Halliburton 13-20# permanent packer, made of Incoloy® 925 with fluorel elements set at 9,857 ft and an automated Halliburton subsurface safety valve also made of Incoloy® 925, set at 250 ft. Incoloy® 925 is a nickel-iron chromium alloy that is resistant to corrosion and pitting. This valve is designed to isolate and automatically shut in the injection well if a leak occurs along the acid gas pipeline or at the surface of the well. The annular space between the tubing and the production casing above the packer is filled with diesel which is designed to allow the pressure in the annular space to be monitored and recorded continuously. If a pressure excursion outside of the narrow predetermined operating range occurs, the acid gas compressor is shut down and the automatic safety valves at the pipeline inlet (located at the plant) and at the wellhead are automatically closed preventing any escape of acid gas. The acid gas stream would then be routed to the flare until the problem with the well is corrected and the system can be safely re-started. These redundant systems are compliant with API RP 55 and API RP 49, various applicable NACE standards for sour service and current best

management practices. (See Figure 3 for a Schematic of the Dagger Draw Plant and Metropolis #1 Well.)

C. Map of Plant and Metropolis Disposal #1 Well

See Appendix A, Map A-1

VII. Training and Drills [NMAC 19.15.11.9.B(2)(d)] [API RP-55 7.4 d]

A. Responsibilities and Duties of Essential Personnel

1. Personnel responsible for implementing this plan shall be trained on their duties and responsibilities related to this plan during the annual on-site or table top training exercises.

2. Plant Orientation Training - All Plant personnel, visitors, and contractors must attend a Plant overview orientation prior to obtaining permission to enter the Plant. A refresher course on this training is required annually for all persons. This training also complies with the requirements of the Durango Midstream Process Safety Management Program and Procedures Manual.

B. On-site or Classroom Drills

Durango may use table top exercises as well as hands on emergency response training methods. Durango shall conduct a table top exercise annually at a minimum.

C. Notification and Training of Others on Protective Measures in Emergency Situations

Nearby residents, including those within the ROE, will be invited to participate in and/or observe annual drills, where they will be briefed on notification, evacuation, and shelter in place options such as closing windows and shutting off any air conditioning/heating until they are notified that it is safe. Operators will be invited to attend the trainings.

D. Training and Attendance Documentation

All training and drills will be documented. Documentation shall include sign in sheets, synopsis of the training conducted, and an after-action review of the training, as seen in the example below.

Sample Training and Attendance Record			
Date:	Time:	Location:	
Description of Training or Scope of Drill		Summary of Activities	
Attendee and Participant Sign-in			
Name	Organization	Email	Phone
Post-Drill Debriefing and Review			

E. Briefing of Public Officials on Evacuation and Shelter in Place Plans

Local law enforcement, first responders, and fire personnel will also be invited to participate and/or observe annual drills, as well as being briefed on notification, evacuation, and shelter in place plans.

VIII. Coordination with State Emergency Plans [NMAC 19.15.11.9.B(2)(e)]

A. Oil Conservation Division (OCD)

1. Oil Conservation Division (OCD) will be notified with an automatic email to the District II office advising of the activation of the H_2S Contingency Plan if a PHV is detected. In the event of a power failure, a phone call will be made within four hours. All subsequent paperwork will be filed in a timely fashion. Per 19.15.11.16 NMAC, notification of contingency plan implementation will be submitted to the OCD via form C-141 within 15 days of release.

B. New Mexico State Police/New Mexico Hazardous Materials Emergency Response Plan

1. The New Mexico State Police are responsible for overall scene management and coordination of all resources if their response is warranted. A designated Emergency Response Officer (ERO) will establish the National Interagency Incident Management System (NIIMS) Incident Command System (ICS) as the Incident Commander (IC) and be responsible for management of all response resources on scene. Off-scene coordination of response resources will be handled through designated Headquarters Emergency Response Officers. Law enforcement-related activities will be coordinated by State Police under their discretion.

IX. Plan Activation [NMAC 19.15.11.9.C] [API RP-55 7.4 d]

A. Activation Levels

Level I– Intermittent alarm sounded and/or flashing amber beacons activated for H_2S greater than or equal to 10 ppm
Level II – Intermittent alarm sounded and/or flashing red beacons activated for H_2S greater than or equal to 20 ppm
Level III–Catastrophic release; fire; explosion; a continuous release of maximum volume for 24 hours; or NMAC 19.15.11: mandatory activation of indication of 100 ppm in any defined public area; 500 ppm at any public road; or 100 ppm at a distance greater than 3000 feet from the site or the release. Because the 100-ppm radius of exposure (ROE) boundary is greater than 3000 feet from the site of release, a Level III response would occur before the escape of the 24-hour release volume.

B. Events that Could Lead to a Release of H_2S

- Inlet and plant piping failure
- Amine still failure
- Flange/gasket leaks on inlet and plant piping
- Flange/gasket leaks on the acid gas compressor
- Flange/gasket leaks at metropolis disposal well
- Failure of acid gas pipeline
- Valve packing
- Seal failure on acid gas compressor
- Failure of flare to ignite during Plant emergency blow down

X. Submission of H_2S Contingency Plans [NMAC 19.15.11.9.D]

A. Submission

1. Durango will submit the H_2S Contingency Plan to the Oil Conservation Division (OCD).

B. Retention

1. Durango shall maintain a copy of the contingency plan in the Main Office at 10077 Grogans Mill Rd. Suite 300, The Woodlands, TX, and at the facility control room located at 278 Pipeline Road, Artesia, New Mexico

The plan shall be readily accessible for review by the Oil Conservation Division (OCD) upon request.

C. Inventory

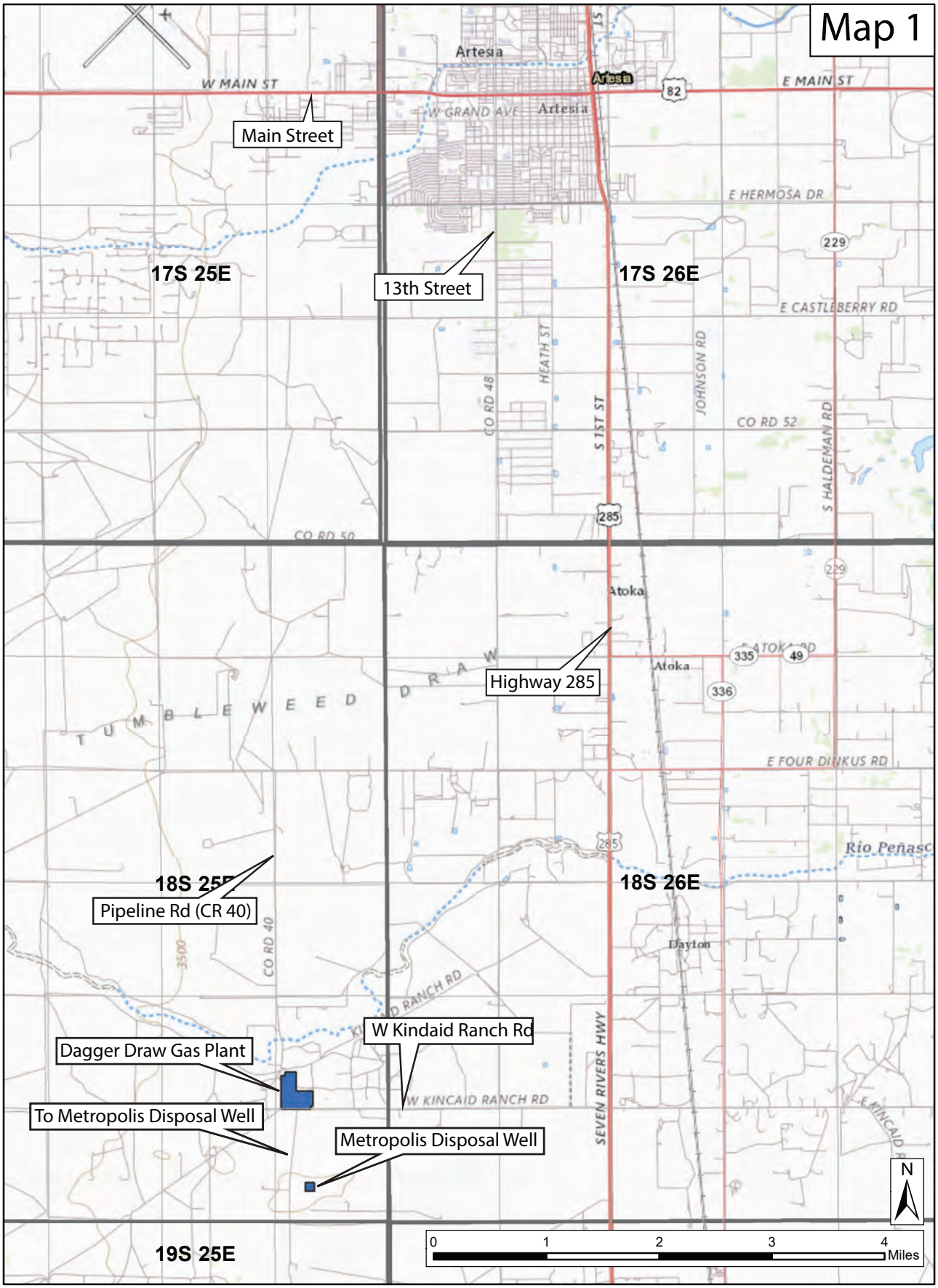
1. Durango will file an annual inventory of wells, facilities and operations for which plans are on file with the Oil Conservation Division (OCD), to the Local Emergency Planning Committee (LEPC) and the State Emergency Response Commission as per NMAC 19.15.11.

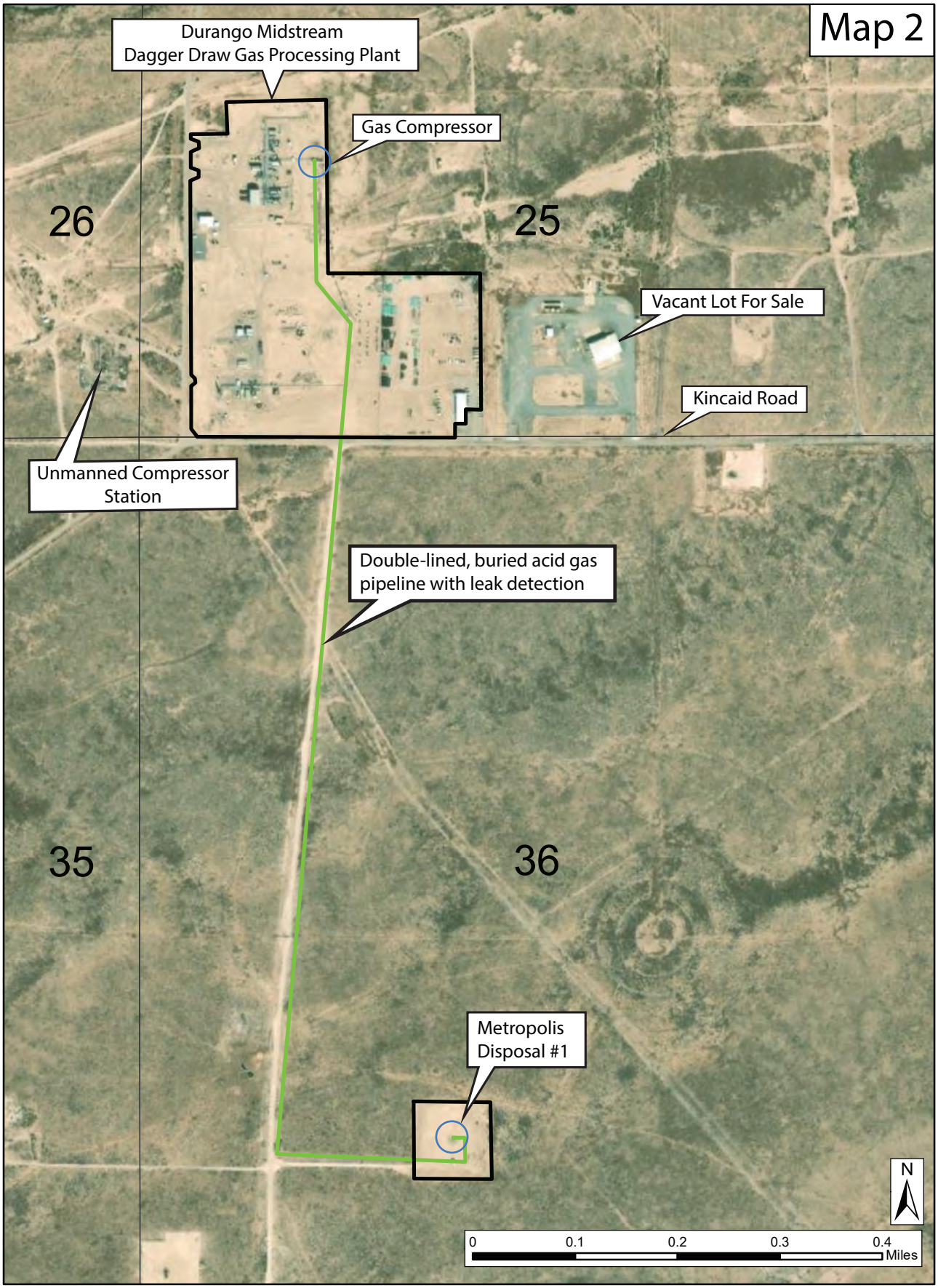
2. The inventory shall include the name, address, telephone number, and point of contact for all operations in which plans are on file.

MAPS AND FIGURES

DURANGO MIDSTREAM

GEOLEX INCORPORATED





Map 2: General Diagram of Durango Dagger Draw Gas Plant and location of pipeline connecting the Plant with the Metropolis Disposal #1 Well. Please note that the former Agave Facility located immediately south of the Plant is inactive and unmanned.

Figure 1: Photos of Pipeline connecting Durango Midstream's Dagger Draw Gas Plant with Metropolis Disposal #1 well. A) Acid gas compressed at the gas plant is introduced to a 2" stainless steel pipeline surrounded by a 6" polyethylene pipe. Pipeline integrity is monitored using a stream of sweet natural gas in the volume between the two pipes. B) Outside of the fended-in areas at the plant and wellhead, the pipeline is buried and clearly marked. C) The pipeline rises above ground and connects to the production tree at the metropolis disposal #1 wellhead.

Figure 2: Photos of the three warning signs outside of Durango Midstream's Dagger Draw Gas Plant and Metropolis Disposal #1 well ROE. A) Warning sign for closure of Eddy County Road 38 "Kincaid Ranch Road" B) Warning sign for closure of Eddy County Road 39 "Pipeline Road" C) Warning sign for closure of "Wilson Ranch access"

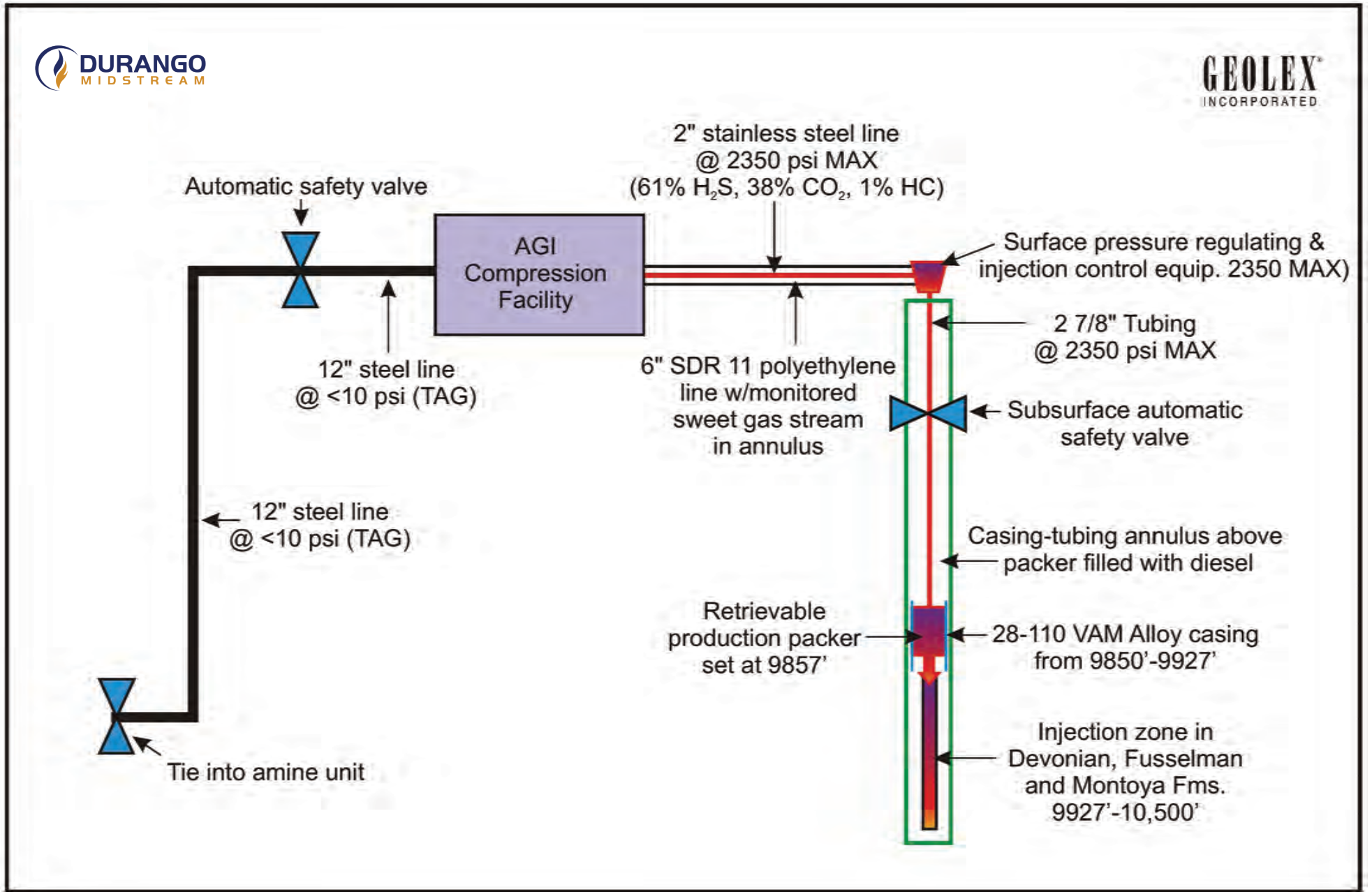


Figure 3. Schematic of Durango Midstream's Dagger Draw Gas Plant and Metropolis Disposal #1 acid gas injection (AGI) system components.

APPENDIX A – Facility Maps

Map A-1: Facility Map

Map A-2: Alarms and Monitors, Dagger Draw Active Equipment

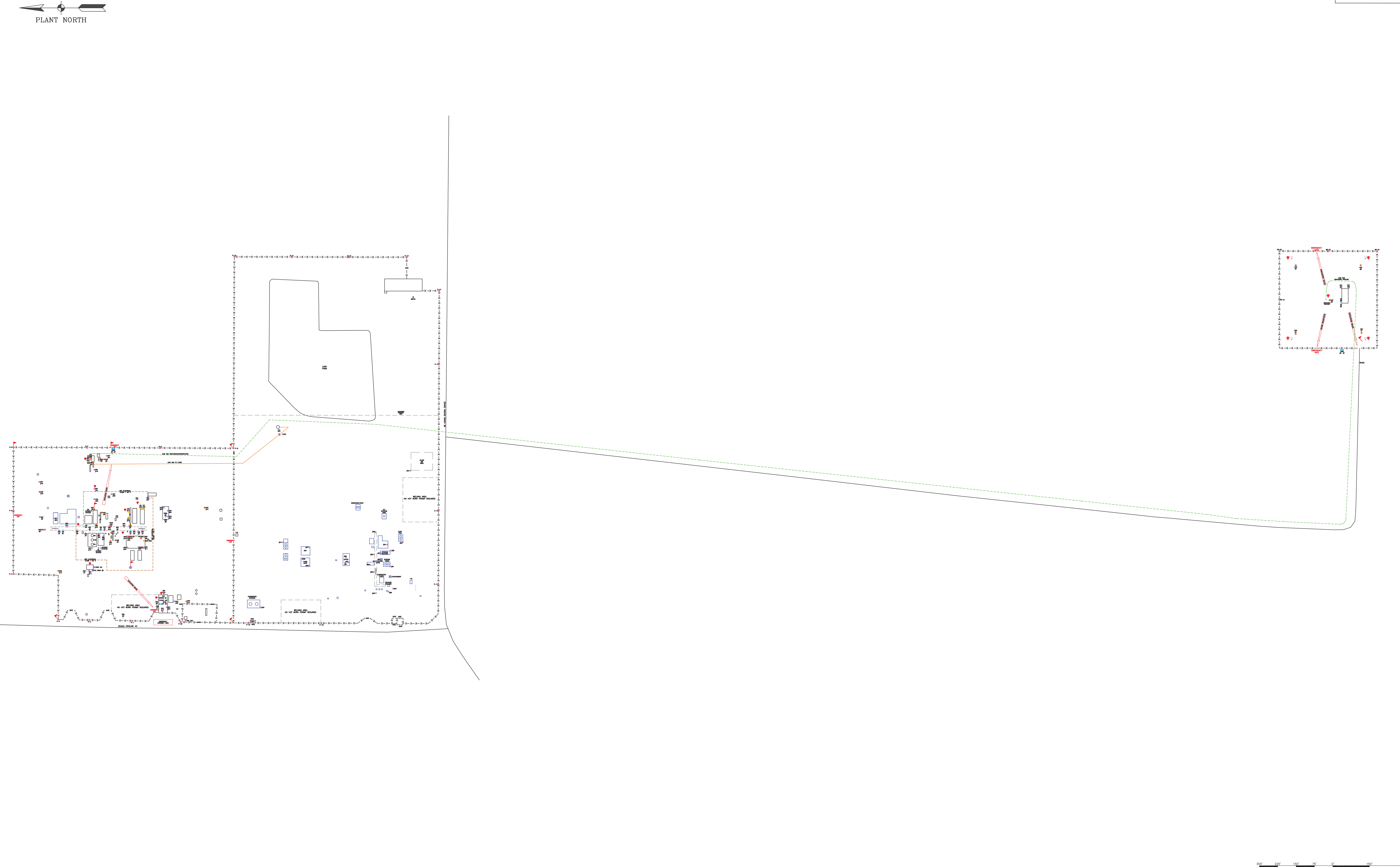
Map A-3: Safety and Fire Equipment, Dagger Draw Active Equipment

Map A-4: Evacuation Router, Dagger Draw Active Equipment

Map A-5: Perimeter Alarms

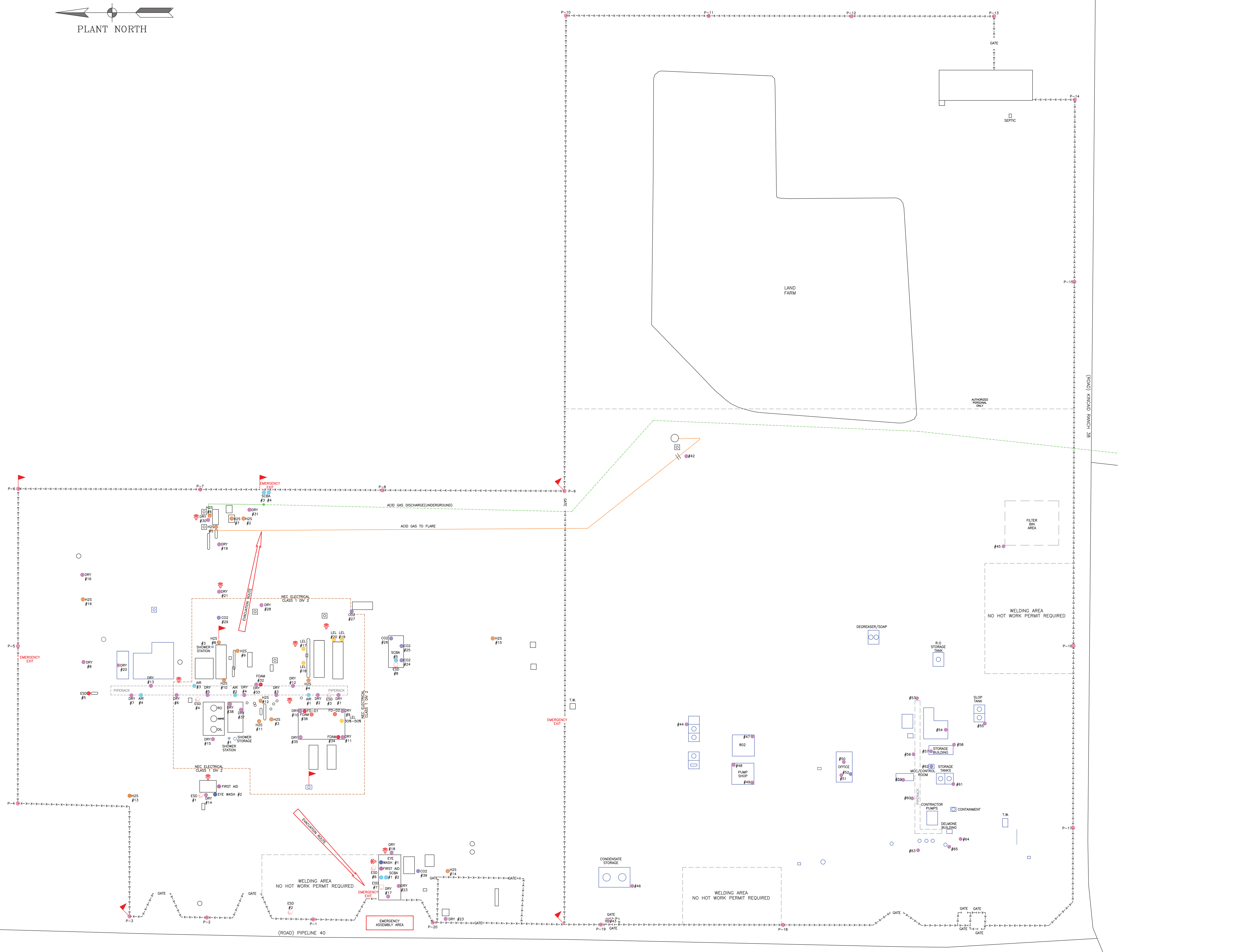
Map A-6: Metropolis Disposal Well

MAP A-1



		AGAVE ENERGY COMPANY 105 South Fourth Street, Artesia, New Mexico 88210 AGAVE DAGGER DRAW GAS PROCESSING PLANT	
DRAFTING: WDM	DATE: 11/24/09	STATE: NEW MEXICO	Facility Map & Metropolis Disposal Well
CHK: JK	DATE: 4/09/10	COUNTY: EDDY	
APPROVED: JK	DATE: 4/09/10	SECTION: 25	
GPS: TWH-SF	DATE: 7/10/12	TOWNSHIP: 18S	
SIZE: ANSI F	SCALE: 1"=150'	RANGE: 25E	PRINTED: 2/23/11 SHEET 1 OF 1

MAP A-2



120' 90' 60' 30' 0' 60' 120'

H2S DECTECTION	ESD
#2 DEL MAR BUILDING #2	#1 LAB
#3 DEL MAR ANALYZING	#2 GATE
#4 CHROMATOGRAPH BUILDING	#3 PIPERACK
#5 ACID GAS COMPRESSOR WEST	#4 PIPERACK
#13 YATES AREA	#5 FLARE KNOCKOUT
#14 AIR COMPRESSOR BUILDING	#6 SHOP
#15 POWER DISTRIBUTION AREA	#7 OFFICE COMPUTER
#16 FLARE PIPERACK	#8 CONTROL ROOM COMPUTER

H2S DETECTION VISUAL & AUDIBLE

#6 ACID GAS COMPRESSOR NORTH
#7 CONDENSATE SKID
#8 AMINE AREA
#9 AMINE REBOILER
#10 AMINE PIPERACK
#11 INLET AREA
#12 INLET PIPERACK

PUSH — COMPUTER

PRODUCT PUMP LEL

#17 PRODUCT PUMP G0901A
#18 PRODUCT PUMP G0901B
#19 PRODUCT PUMP G0501A
#20 PRODUCT PUMP G0501B

GAS DETECTORS

LEL_30 COMPRESSOR BUILDING 30%
LEL_50 COMPRESSOR BUILDING 50%

H2S ALARM — WIND SOCK

SECURITY FENCE

AGAVE ENERGY COMPANY
105 South Fourth Street, Artesia, New Mexico 88210

AGAVE DAGGER DRAW GAS PROCESSING PLANT

Alarms & Monitors

DRAFTING: WDM	DATE: 11/24/09	STATE: NEW MEXICO	
CHK: JK	DATE: 4/09/10	COUNTY: EDDY	
APPROVED: JK	DATE: 4/09/10	SECTION: 25	
GPS: TWH-SF	DATE: 07/10/12	TOWNSHIP: 18S	
SIZE: ANSI F	SCALE: 1"= 60'	RANGE: 25E	PRINTED: 2/23/11 — SHEET 2 OF 6

MAP A-3


PLANT NORTH
(ROAD) KINCAID RANCH 38
(ROAD) PIPELINE 40
LAND FARM
SEPTIC
AUTHORIZED PERSONAL ONLY
FILTER BIN AREA
WELDING AREA NO HOT WORK PERMIT REQUIRED
DEGREASER/SOAP
R.O. STORAGE TANK
SLOP TANK
STORAGE BUILDING
STORAGE TANKS
MCC/CONTROL ROOM
CONTRACTOR PUMPS
DELMONE BUILDING
CONTAINMENT
OFFICE
PUMP SHOP
B02
CONDENSATE STORAGE
ACID GAS DISCHARGE(UNDERGROUND)
ACID GAS TO FLARE
EMERGENCY EXIT
EVACUATION ROUTE
EMERGENCY ASSEMBLY AREA
NEC ELECTRICAL CLASS 1 DIV 2
PIPERACK
SHOWER STATION
FIRST AID
EYE WASH
FIRE EXTINGUISHERS
CO2 DRY FOAM
Total Fire extinguishers 65 including well site
MONITORS
FENCELINE AUDIBLE H2S MONITORS
H2S DETECTION
LEL DETECTION
FD-D1 NORTH COMPRESSOR D1
FD-D2 NORTH COMPRESSOR D2
BREATHING AIR
ESCAPE PACK
SCBA
FIRST AID
FIRST AID KIT
EYE WASH STATION
WIND SOCK
SECURITY FENCE
AGAVE ENERGY COMPANY
105 South Fourth Street, Artesia, New Mexico 88210
AGAVE DAGGER DRAW GAS PROCESSING PLANT
Safety & Fire Equipment
DRAFTING: WDM
DATE: 11/24/09
STATE: NEW MEXICO
CHK: JK
DATE: 4/09/10
COUNTY: EDDY
APPROVED: JK
DATE: 4/09/10
SECTION: 25
GPS: TWH-SF
DATE: 07/10/12
TOWNSHIP: 18S
SIZE: ANSI F
SCALE: 1"= 60'
RANGE: 25E
PRINTED: 06/05/12
SHEET 1 OF 1

MAP A-4

120' 90' 60' 30' 0' 60' 120'

SECURITY FENCE	AGAVE ENERGY COMPANY 105 South Fourth Street, Artesia, New Mexico 88210 AGAVE DAGGER DRAW GAS PROCESSING PLANT		
DRAFTING: TWH	DATE: 11/24/09	STATE: NEW MEXICO	Evacuation Routes
CHK: JK	DATE: 4/09/10	COUNTY: EDDY	
APPROVED: JK	DATE: 4/09/10	SECTION: 25	
GPS: TWH-SF	DATE: 07/10/12	TOWNSHIP: 18S	
SIZE: ANSI F	SCALE: 1"= 60'	RANGE: 25E	PRINTED: 2/23/11 — SHEET 4 OF 6

MAP A-5

PLANT NORTH

P-10 P-11 P-12 P-13 P-14 P-15 P-16 P-17 P-18 P-19 P-20 P-1 P-2 P-3 P-4 P-5 P-6 P-7 P-8 P-9

GATE

SEPTIC

LAND FARM

AUTHORIZED PERSONAL ONLY

(ROAD) KINCAID RANCH 38

#42

ACID GAS DISCHARGE(UNDERGROUND)

ACID GAS TO FLARE

EMERGENCY EXIT

SCBA #3 #4

DRY #31

H2S #7 #2

DRY #19

DRY #16

H2S #16

DRY #8

ESD #5

DRY #20

PIPERACK

DRY #13

DRY #7 AIR #4

DRY #6

ESD #4

RO HMI OL

DRY #36 DRY #37

DRY #15

SHOWER STATION #1 SHOWER STORAGE

EVACUATION ROUTE

DRY #21

DRY #28

NEC. ELECTRICAL CLASS 1 DIV 2

CO2 #29

CO2 #27

H2S #3 SHOWER STATION

H2S #9

H2S #10

AIR #3 DRY #5 AIR #2 DRY #4

FOAM #32 DRY #33

DRY #12

H2S #4

LEL #17 LEL #18

LEL LEL #20 #19

CO2 #26

SCBA #5 CO2 #25 CO2 #24 ESD #8

H2S #15

T.W.

EMERGENCY EXIT

H2S #12

H2S #11

H2S #3

AIR #1 AIR #2 DRY #3 ESD #1

DRY #10 FOAM #36 FD-01 FD-02 DRY #9 LEL 30%-50%

DRY #35 FOAM #34 DRY #11

NEC. ELECTRICAL CLASS 1 DIV 2

FIRST AID

EYE WASH #2

ESD #1 DRY #14

H2S #13

EVACUATION ROUTE

DRY #18

EYE WASH #1 FIRST AID SCBA #1 #2

ESD #6 ESD #7 DRY #17

DRY #23

CO2 #39

H2S #14

GATE

WELDING AREA NO HOT WORK PERMIT REQUIRED

EMERGENCY EXIT

ESD #2

EMERGENCY ASSEMBLY AREA

DRY #23

(ROAD) PIPELINE 40

CONDENSATE STORAGE #46

#44

#47 802

#48 PUMP SHOP #49

#50 OFFICE #52 #51

DEGREASER/SOAP

R.O. STORAGE TANK

#53

#54

SLOP TANK #55

STORAGE BUILDING #57 #58

#56

#62 MCC/CONTROL ROOM #59

STORAGE TANKS #61

#60

CONTRACTOR PUMPS

CONTAINMENT

DELMONE BUILDING #64

#63 #65

T.W.

FILTER BIN AREA #45

WELDING AREA NO HOT WORK PERMIT REQUIRED

WELDING AREA NO HOT WORK PERMIT REQUIRED

GATE GATE GATE GATE GATE GATE GATE GATE GATE GATE GATE GATE GATE GATE

120° 90° 60° 30° 0° 60° 120°

PROPOSED WELL SITE

FENCELINE AUDIBLE H2S MONITORS

WIND SOCK

SECURITY FENCE

AGAVE ENERGY COMPANY
105 South Fourth Street, Artesia, New Mexico 88210

AGAVE DAGGER DRAW GAS PROCESSING PLANT

Perimeter Alarms

DRAFTING: TWH	DATE: 11/24/09	STATE: NEW MEXICO	
CHK: DL	DATE: 4/09/10	COUNTY: EDDY	
APPROVED: DL	DATE: 4/09/10	SECTION: 25	
GPS: T9S16-SF	DATE: 11/24/09	TOWNSHIP: 16S	
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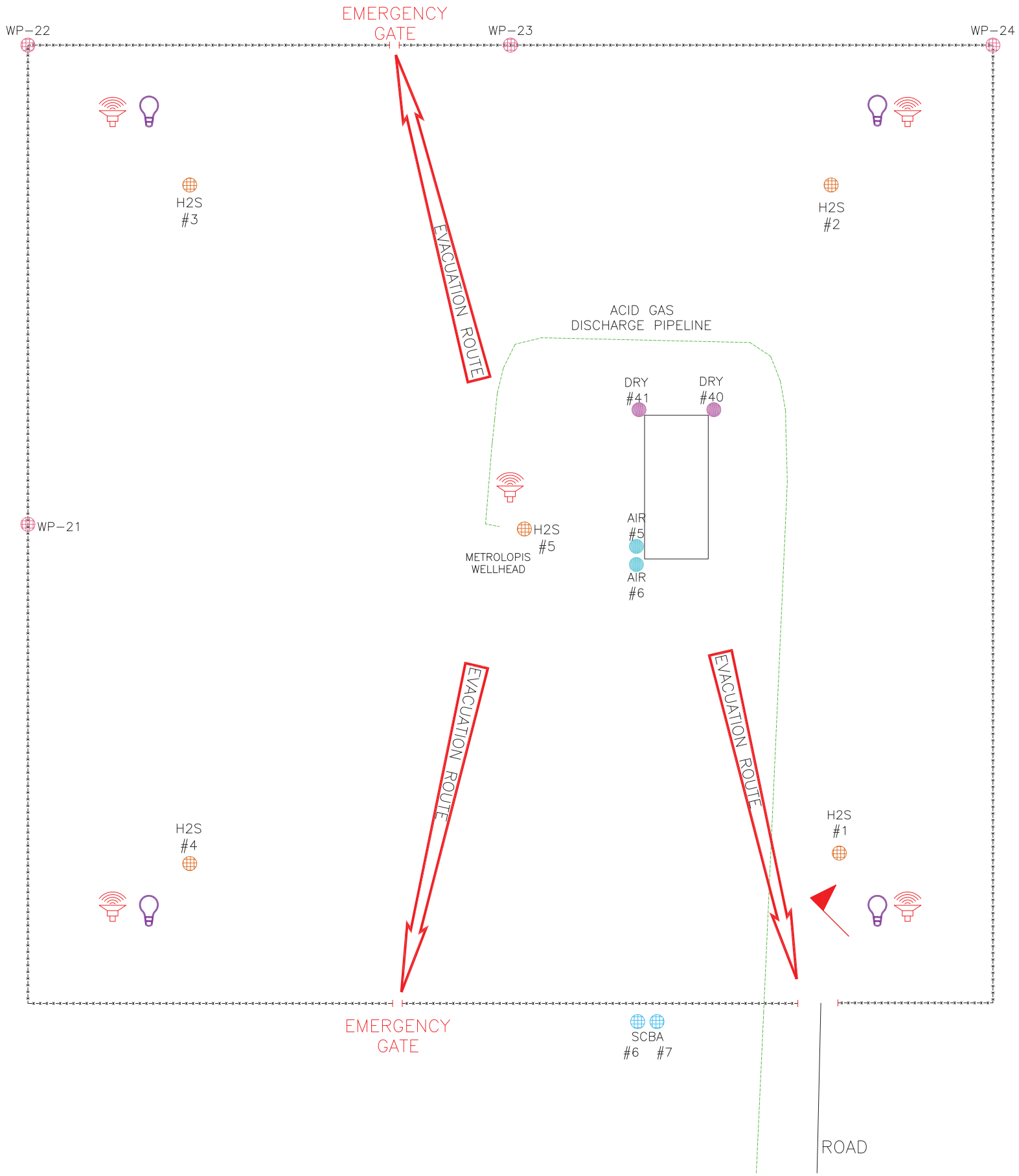
SHEET 5 OF 6

MAP A-6

PLANT NORTH



PROPOSED WELL SITE

FENCELINE AUDIBLE H2S MONITORS

BREATHING AIR

ESCAPE PACK

SCBA

FIRE EXTINGUISHER

#40 DRY

#41 DRY

H2S DECTECTION

#1 SOUTHWEST

#2 SOUTHEAST

#3 NORTHEAST

#4 NORTHWEST

#5 WELLHEAD

WIND SOCK

H2S ALARM

LIGHTS

SECURITY FENCE

AGAVE ENERGY COMPANY
105 South Fourth Street, Artesia, New Mexico 88210

AGAVE DAGGER DRAW GAS PROCESSING PLANT

Metropolis Disposal Well

DRAFTING: TWH	DATE: 11/24/09	STATE: NEW MEXICO	
CHK: JK	DATE: 4/09/10	COUNTY: EDDY	
APPROVED: JK	DATE: 4/09/10	SECTION: 25	
GPS: TW164F	DATE: 11/24/09	TOWNSHIP: 18S	
SIZE: ANSI F	SCALE: 1"=20'	RANGE: 29E	PRINTED: 2/25/11 SHEET 6 OF 6

APPENDIX B – Response Flow Diagrams

Level I Response

Level II Response

Level III Response

LEVEL I RESPONSE

CALL 911 for death or Injury for emergency assistance

H_2S detected at levels greater than or equal to 10 ppm: intermittent audible alarm and flashing amber lights

- **Evacuate to Emergency Assembly Area**
- **Evacuate visitors from plant to appropriate Muster Area**
- **Notify Durango Management**
- **Assign operators to suit up in SCBA**
- **Check PLC Computer for location of H_2S alarm**
- **Notify all entities in the 500 ppm ROE if perimeter alarms are activated**
- **Wearing SCBA will attempt to locate and repair leak**
- **Rotate Operators in 15-minute shifts**
- **If H_2S levels exceed 10 ppm in emergency assembly area relocate to an alternate assembly area**

- **If H_2S levels exceed 20 ppm proceed to Level II response**

Once resolved and monitored levels in Plant are less than 10 ppm H_2S: return to plant and continue to monitor

LEVEL II RESPONSE

CALL 911 for death or Injury for emergency assistance

H_2S detected greater than or equal to 20 ppm: intermittent audible alarm and flashing red lights

- **Put on Emergency Respirators**
- **Evacuate to Emergency Assembly Area**
- **Evacuate visitors from plant to designated Muster Area**
- **Assign operators to suit up in SCBA**
- **Check Plant Control System for location of H_2S alarm**
- **Notify all entities in the 500 ppm ROE if perimeter alarms are activated**
- **Notify residents in the 100 ppm ROE to shelter in place or evacuate depending on weather and release conditions (IC determines this) if perimeter alarms are activated**
- **Wearing SCBA attempt to locate and repair leak**
- **Rotate Operators in 15-minute shifts**
- **Re-entry will occur for 45 minutes or until the IC determines the ESD must be activated**
- **Notify LEPC**
- **If H_2S levels exceed 10 ppm in emergency assembly area relocate to an alternate Muster Area**

Once resolved and monitored levels in Plant are less than 10 ppm H_2S: return to plant and continue to monitor

- **If H_2S levels exceed 20 ppm and repair efforts are unsuccessful, worst-case scenario and/or catastrophic release have occurred then implement Level 3 response**

LEVEL III RESPONSE

CALL 911 for death or Injury for emergency assistance

H_2S detected greater than 20 ppm: intermittent audible alarm and flashing red lights
repair efforts are unsuccessful, worst-case scenario and/or catastrophic release have occurred or a PHV is detected

H_2S detected greater than 50 ppm: plant will automatically go in to ESD. IC determines to proceed with Level III or Level II after ESD

- **Set up road blocks on Kincaid and Pipeline Roads near the muster areas**
- **Confirm all personnel have evacuated the 500 ppm ROE**
- **Instruct all personnel in the 100 ppm to evacuate to Muster Area as determined by the IC**
- **If vapors have ignited, continue to let burn unless fires endanger personnel**
- **Initiate a chronological record of events**
- **Within one hour of activation of the plan notify NMOCD and the NRC**
- **Establish a Media staging area in Muster Area 2 or other location as the situation permits**
- **Submit agency reports as required**

Once resolved and monitored levels in Plant are less than 10 ppm H_2S: return to Plant continue to monitor

APPENDIX C – Radius of Exposure

Radius of Exposure Calculations

Map C-1

APPENDIX C - RADIUS OF EXPOSURE CALCULATIONS

The basis for worst case scenario calculations is as follows:

- The hydrogen sulfide content of the inlet natural gas stream into the Agave Dagger Draw Gas Plant can be variable but is approximately 7,840 parts per million (ppm) or 0.784 mole percent.

- The inlet gas H_2S concentration of approximately 0.784 mole percent is estimated from known field gas production compositions. Using a mass-balance approach, the expected mole percent H_2S in the acid gas stream will be approximately 31.5% with a maximum acid gas flow rate of 3.0 MMSCFD. It is assumed that the amine system removes 100% of the H_2S from the inlet gas.

The plant has an expected maximum daily (24 hour) processing volume of 115,600 MMSCF.

- The worst-case scenario radius of exposure (ROE) also assumes an uncontrolled instantaneous release from the area around either the Metropolis Well, the amine still at the facility and at any point along the pipeline connecting the two of the above referenced volume and concentration. Because the Plant is a throughput process plant, it is impossible that the entire 24 hour-throughput volume of the Plant could be released instantaneously as is assumed in the worst-case scenario calculations of the ROE. However, to comply with NMAC 19.15.11, that assumption is the worst-case scenario in the formulas/calculations provided here.

It should further be noted that the reason this rate, used as worst case, could not be released over a 24-hour period is the Plant's emergency shutdown (ESD) systems would be activated. The emergency shutdown (ESD) would prevent the flow of gas into the Plant in the event of an emergency. See Appendix C and Map C-1 for more information.

The formulas for calculating the two radii of exposure (ROE) are as follows:

100 ppm Radius of Exposure Calculation (as per 19 NMAC 15.11.7.K.1):

$$X=[(1.589)(\text{hydrogen sulfide concentration})(Q)]^{(0.6258)}$$

500 ppm Radius of Exposure Calculation (as per 19 NMAC 15.11.7.K.2):

$$X=[(0.4546)(\text{hydrogen sulfide concentration})(Q)]^{(0.6258)}$$

Where:
X = radius of exposure in feet
"hydrogen sulfide concentration" = the decimal equivalent of the mole or volume fraction of hydrogen sulfide in the gaseous mixture
Q = Escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psi absolute and 60 degrees Fahrenheit)

ROE Inside the Plant

The escape rate (Q) is the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For releases inside the Durango Dagger Draw Gas Plant, the Company is using for contingency planning purposes an "escape rate" equal to the maximum TAG injection volume of 3,000 MCFD. The (actual) injection volume at the Plant will be somewhat variable and is continuously metered. The Plant records daily inlet and injection gas volumes and prepares a daily volume report. The assumed 3,000 MCFD TAG injection volume has been selected as the "escape rate" because it is the highest anticipated injection volume that the Plant would handle under its proposed operations and is considered worst case interpretation of the volume of gas.

It should be noted that the plan will remain effective as long as the processed volume and H_2S content equate to the same or smaller ROE.

Previous monitoring data indicated variable inlet concentrations of hydrogen sulfide, but concentration will remain at approximately 7,840 ppm or .784 mole percent. Therefore, 7,840 ppm or .784 mole percent has been used for contingency planning purposes.

Using:
Q = 3,000 MSCF
H_2S conc = 314,900 ppm or 31.49 mole%

500-ppm RADIUS OF EXPOSURE CALCULATION

$X = [(0.4546)*(H_2S \text{ concentration})*(\text{gas volume } (Q))]^{0.6258}$

$X = [(0.4546)*(314{,}900*.000001)*(3{,}000{,}000)]^{0.6258}$

X = 3350 feet (0.63 miles) = 500 ppm ROE

100-ppm RADIUS OF EXPOSURE CALCULATION

$X = [(1.589)*(H_2S \text{ concentration})*(\text{gas volume})]^{0.6258}$

$X = [(1.589)*(314{,}900*.000001)*(3{,}000{,}000)]^{0.6258}$

X = 7332 feet (1.39 miles) = 100 ppm ROE

ROE Along the Pipeline and At the Injection Well

The escape rate (Q) is the best estimate of the maximum daily flow rate of the acid gas. For releases inside the Durango Dagger Draw Gas Plant, the Company is using, for contingency planning purposes, an "escape rate" equal to that of the plant. The assumed 3,000 MCFD acid gas volume has been selected as the "escape rate" because it is the highest anticipated TAG volume that the Plant would handle under its proposed operations and is considered the worst-case interpretation of the volume of gas.

It should be noted that the plan will remain effective as long as the processed volume and H_2S content equate to the same or smaller ROE.

Previous monitoring data indicated variable inlet concentrations of hydrogen sulfide, but concentration is expected to remain at approximately 314,900 ppm or 31.49 mole% coming off of compression. Therefore, 314.900 ppm or 31.49 mole% has been used in the worst-case scenario operations for contingency planning purposes. Durango will not measure the H_2S concentration in the acid gas stream; rather the concentration is calculated based on the inlet conditions.

Using:
Q = 3,000 MSCF

H_2S conc = 314,900 ppm or31.49 mole%

500-ppm RADIUS OF EXPOSURE CALCULATION

$X = [(0.4546)*(H_2S \text{ concentration})*(\text{gas volume } (Q))]^{0.6258}$

$X = [(0.4546)*(314{,}900*.000001)*(3{,}000{,}000)]^{0.6258}$

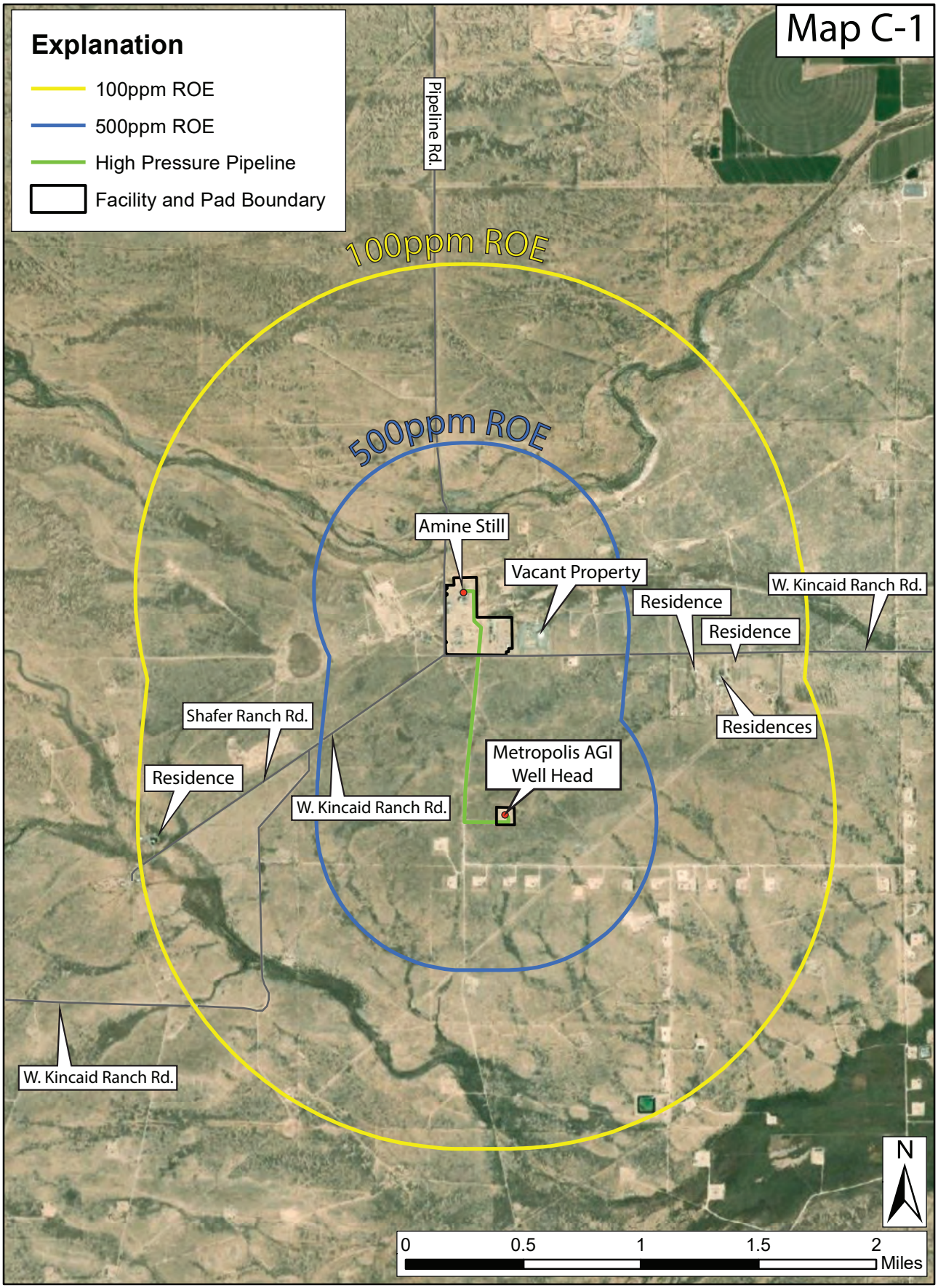
X = 3350 feet (0.63 miles) = 500 ppm ROE

100-ppm RADIUS OF EXPOSURE CALCULATION

$X = [(1.589)*(H_2S \text{ concentration})*(\text{gas volume})]^{0.6258}$

$X = [(1.589)*(314{,}900*.000001)*(3{,}000{,}000)]^{0.6258}$

X = 7332 feet (1.39 miles) = 100 ppm ROE

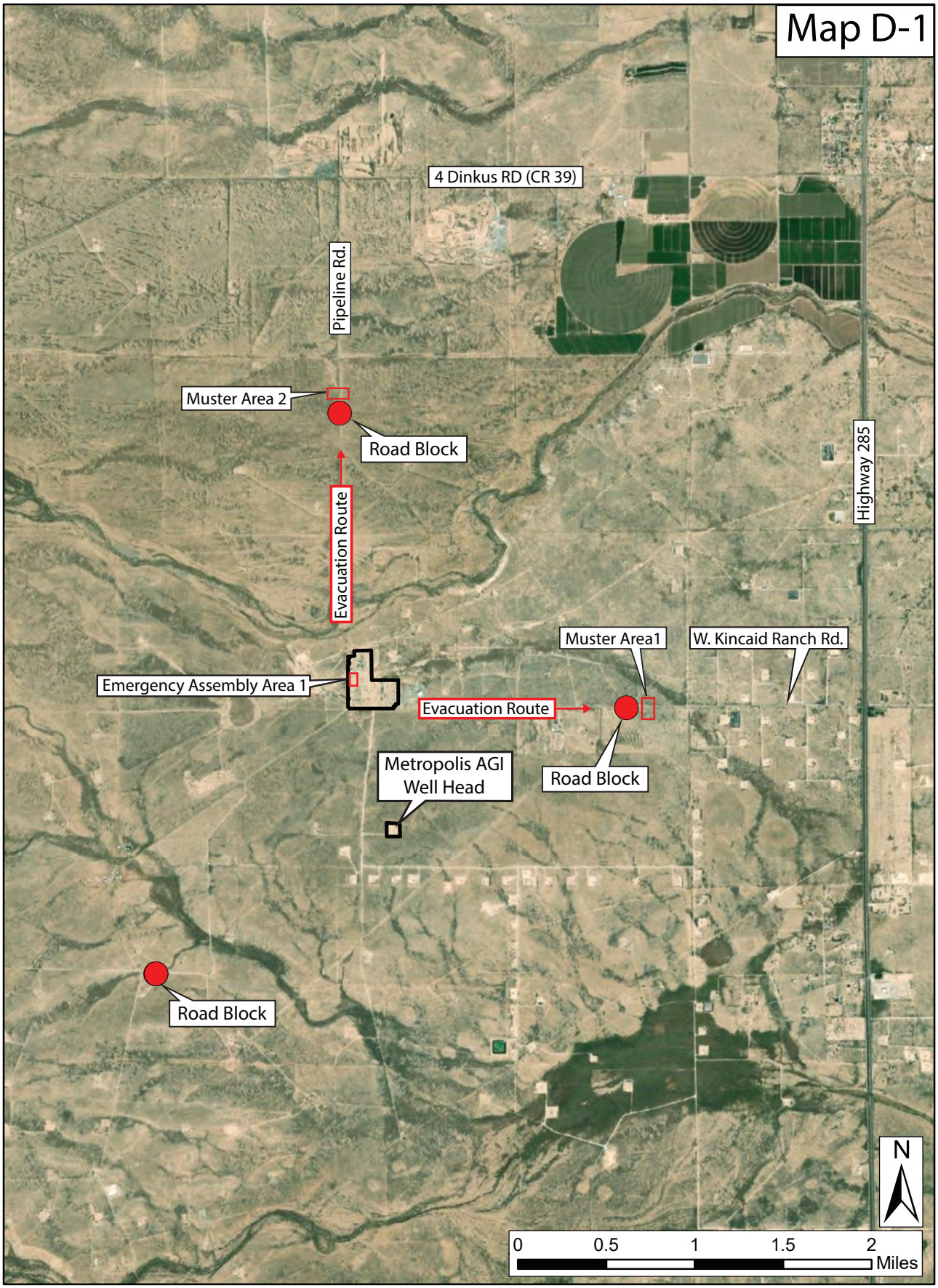

Map C-1
Explanation
100ppm ROE
500ppm ROE
High Pressure Pipeline
Facility and Pad Boundary
Pipeline Rd.
100ppm ROE
500ppm ROE
Amine Still
Vacant Property
Residence
Residence
W. Kincaid Ranch Rd.
Residences
Shafer Ranch Rd.
Residence
W. Kincaid Ranch Rd.
Metropolis AGI Well Head
W. Kincaid Ranch Rd.
N
0
0.5
1
1.5
2
Miles

APPENDIX D – Muster Areas, Evacuation Routes

Map D-1: Evacuation Routes to Muster Areas

DURANGO MIDSTREAM

GEOLEX INCORPORATED



APPENDIX E – H2S Contingency Plan Distribution List

Nearby Residences

New Mexico Oil Conservation Division, Santa Fe Office

New Mexico Department of Public Safety (State Office)

Eddy County Local Emergency Planning Committee (LEPC)

Dagger Draw Plant Control Room

Dagger Draw Area Manager's Office

Durango Midstream Corporate Office

Dagger Draw Plant Emergency Trailer

New Mexico State Police, Artesia

State of New Mexico Emergency Response Commission

APPENDIX F – Resident Call Log

Record of discussion of emergency procedures with nearby residents

Record of contact with nearby residents to discuss Dagger Draw emergency procedures and to confirm contact information.

Resident	**Phone**	**Description**
David and Diana Wilson	(575) 308-1128 (David Wilson Cell) (575) 308-8138 (Diana Wilson Cell) (575) 457-2309 (Land Line)	Contacted Mr. Wilson by phone at 11:53 am on 4/15/22; Mr. Wilson expressed his concerns with the plant and the location of his residence. Mr. Wilson requests periodic follow-up from Durango, in order to remain informed and to provide input regarding the effective facility emergency response, based on his proximity and elevation relative to the plant/AGI. Plant phone numbers were texted to him and his wife, and he requested a hard copy with plant phone numbers be mail to him. This hard copy phone list will be provided, as well as a complete copy of the H_2S Contingency Plan, once the revised plan is approved by NMOCD technical staff.
Christine Baeza/Joel's Towing	(575) 703-5940 (Daytime Office) (575) 746-7030 (After Hours Cell)	Contacted Mrs. Baeza by phone at 3:35 pm on 4/14/22; Reviewed emergency procedures and discussed concerns. Plant phone numbers were provided, and she prefers a physical copy of the Plan to be mailed or dropped off with her.
Delilah Baeza	(575) 308-8446	Contacted Mrs. Baeza by phone at 3:58 pm on 4/14/22; Reviewed emergency procedures and discussed concerns. Plant phone numbers were provided, and she prefers an electronic copy of the Plan to be e-mailed to her.
Maria and Efrin Baeza	(575) 308-3464	Contacted Mr. Baeza by phone at 1:17 pm on 4/15/22; Reviewed emergency procedures and discussed concerns. Plant phone numbers were provided, and he preferred that a physical copy of the Plan is mailed to him.
Tamatha and Kyle McCauley	(575) 703-5940	Contacted Mrs. McCauley at 9:55 am on 4/15/22; Reviewed emergency procedures and discussed concerns. Plant phone numbers were provided, and she prefers that an electronic copy of the Plan is e-mailed to her.