Colorado Interstate Gas Company, L.L.C.
a Kinder Morgan company

June 20, 2024

Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Attention: Ms. Debbie-Anne A. Reese, Acting Secretary

Re: Colorado Interstate Gas Company, L.L.C.;
Docket No. CP24-124-000
Responses to Environmental Data Request – OEP/DG2E/Gas Branch 2

Dear Ms. Reese:

On May 31, 2024, Colorado Interstate Gas Company, L.L.C. ("CIG"), received an environmental data request ("Data Request") in Docket No. CP24-124-000 from the Office of Energy Projects ("OEP") seeking information related to CIG's Totem Enhanced Deliverability Project. CIG is herein filing with the Federal Energy Regulatory Commission ("Commission") its responses to the Data Request.

**Description of Proceeding**

On April 8, 2024, CIG filed an application, pursuant to Section 7(c) and (b) of the Natural Gas Act, and Part 157.5, et seq., of the Commission's Regulations for a certificate of public convenience and necessity and abandonment authorization to modify and enhance its existing Totem storage field located in Adams County, Colorado in order to increase the maximum withdrawal rate by approximately 50 million cubic feet per day. Specifically, CIG proposes to: (1) install six new injection and withdrawal wells; (2) replace and install various sections of storage pipeline; (3) reclassify one existing injection/withdrawal well to an observation well; (4) install various appurtenant and auxiliary facilities; and (5) inject approximately one billion cubic feet of additional base gas into the Totem storage field. The proposed project, is referred to as the "Totem Enhanced Deliverability Project".

**Description of Information Being Filed**

CIG is herein submitting its responses to the May 31, 2024 OEP Data Request.

**Filing Information**

CIG is e-Filing this letter and attachment with the Commission's Secretary in accordance with the Commission's Order No. 703, *Filing Via the Internet,* guidelines issued on November 15, 2007 in Docket No. RM07-16-000.

Respectfully submitted,
COLORADO INTERSTATE GAS
COMPANY, L.L.C.

By */s/ Francisco Tarin*
Francisco Tarin
Director, Regulatory

Enclosures

Cc. Ms. Sydney Harris, OEP

COLORADO INTERSTATE GAS COMPANY, L.L.C.
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**ENVIRONMENTAL INFORMATION REQUEST**

**Resource Report 1: General Project Description**

1. Provide an updated table 1.8.1 ("Permits, Approvals, Certifications, Consultations, and Notifications Anticipated for Construction and Operation of the Project"). Provide any additional agency correspondence not previously filed with the Commission. Records of communication must show both directions of correspondence (i.e., what information was sent to the agency and the agency's response). Clearly identify which agency-recommended mitigation measures CIG would and would not adopt.

**Response:**

CIG is providing an updated table 1.8.1 below. Additions since the April 2024 filing are highlighted.

Additional correspondence associated with this update is included in Attachment 1.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

COLORADO INTERSTATE GAS COMPANY, L.L.C.
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| **Federal** | | | | | |
| Federal Energy Regulatory Commission ("FERC"), Office of Energy Projects | Section 7(c) Natural Gas Act - Certificate of Public Convenience and Necessity | April, 2024 | *Request Order May 1, 2025* | Project Manager, FERC, TBD<br>Office of Energy Projects<br>888 First Street, NE<br>Washington, DC 20426 | Certificate application, filed in April, 2024. |
| United States Environmental Protection Agency ("USEPA"), Region 4 | Compliance with Sections 401, 402, and 404 of the Clean Water Act | -- | -- | USEPA, Region 8<br>1595 Wynkoop Street<br>Denver, CO 80202 | USEPA will be notified upon submittal of the certificate application. USEPA review anticipated to be concurrent with FERC's review of the certificate application. |
| United States Army Corps of Engineers ("USACE"), Omaha Regulatory District, Denver Regulatory Office | Section 404 Clean Water Act / Section 10 Rivers and Harbors Act Permit | *N/A* | *N/A* | N/A | No jurisdictional resources impacted by the Project. |
| United States Fish and Wildlife Service ("USFWS"), Colorado Ecological Services Office | Consultation under Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act | **January 29, 2024** | **February 13, 2024** | Ms. Liisa Niva, Acting Colorado Field Office Supervisor<br>USFWS, CO Ecological Services Office - Lakewood<br>134 Union Boulevard, Suite 670<br>Lakewood, CO 80228-1807 | IPaC ran December 21, 2023 (Results in Appendix 3A)<br>Initial notification letter / request for review of federally listed species survey list sent January 29, 2024.<br>Email response indicating "no concerns" received on February 13, 2024. |
| Advisory Council on Historic Preservation ("ACHP") | National Historic Preservation Act (NHPA), Section 106 Consultation | -- | -- | ACHP<br>401 F Street NW, Suite 308<br>Washington, DC 20001 | ACHP will be notified if it is determined that the Project would have an adverse effect on historic properties. |

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| Natural Resources Conservation Service ("NRCS"), Denver State Office | FERC Data Gathering Consultations | **January 24, 2024** | **February 5, 2024** | Craig Engelhardt<br>Program Technician<br>Adams/Broomfield/Denver County FSA Office<br>United States Department of Agriculture<br>57 W. Bromley Lane<br>Brighton CO 80601-3065 | Email and telephone communications on January 24, 2024.<br>Response from landowner that no special land use tracts are in the Project area. |
| **State** | | | | | |
| Colorado State Board of Land Commissioners | Review/Modification of Existing Lease No. GS-3365 | *2Q 2024* | 2Q 2024 | Steve Freese<br>Minerals Field Specialist<br>Colorado State Board of Land Commissioners<br>1127 Sherman Street, Suite 300<br>Denver, CO 80203 | CIG initiated discussions CSLB in February 2024 and provided information for Project components on CSLB land. |
| Colorado Energy and Carbon Management Commission | Permit to Drill | *3Q, 2024* | *4Q 2024* | Penny Garrison<br>Permit/Completion Supervisor<br>Colorado Energy and Carbon Management Commission<br>1120 Lincoln Street, Suite 801<br>Denver CO 80203 | CIG has initiated discussions with ECMC and is preparing an informational submittal for proposed I/W wells |
| Colorado Parks and Wildlife (CPW) | State Threatened and Endangered Species Review | **January 29, 2024** | **March 15, 2024** | Mr. Brandon Marette<br>Northeast Region Energy Liaison<br>Colorado Parks and Wildlife | Review/Consultation Letter issued January 29, 2024. |

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| | | | | Via email<br>brandon.mareet@state.co.us | Response email received March 15, 2024, concurring with the biological evaluation and requesting CIG to check status of raptor nests and/or ground-nesting songbirds should work occur during nesting season. |
| Colorado Natural Heritage Program | State Threatened and Endangered Species Review | **December 2023** | N/A | | On line environmental review completed December, 2023 in advance of field surveys. |
| Colorado State Historic Preservation Office (CO SHPO) | Section 106 of the NHPA of 1966, as amended – cultural resources consultation and clearance | **January 30,2024** | *Anticipate 2Q 2024* | Dawn DiPrince<br>Colorado State Historic Preservation Office<br>History Colorado<br>Office of Archaeology and Historic Preservation<br>1200 Broadway<br>Denver, CO 80203 | Limited Results Archaeological Survey Report submitted January 30, 2024.<br>Email to CO SHPO requesting status update on Totem report issued June 6, 2024.<br>Email Response from CO SHPO received June 7, 2024 |
| Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division | Modification to Title V Operating Permit Number 21OPAD443 | **March 14, 2024** | *Anticipate 3Q 2024* | Air Pollution Control Division<br>Colorado Department of Public Health and Environment<br>4300 Cherry Creek Drive South, APCD-SS-B1<br>Denver Colorado 80246-1530 | Permit Modification Application submitted March 13, 2024 |

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| CDPHE Water Quality Control Division (WQCD) | Colorado Discharge Permit System (CDPS) Stormwater Discharge Associated with Construction Activities Colorado Water Quality Control Act (25-8-101 et seq., CRS, 1973 as amended) and 33 U.S.C 1251 et seq. | *Second Quarter, 2025* | | TBD | |
| CDPHE, WQCD | CDPS General Permit Hydrostatic Testing of Pipelines, Tanks, and Similar Vessels Colorado Water Quality Control Act (25-8-101 et seq., CRS, 1973 as amended) and 33 U.S.C 1251 et seq. | *Third Quarter, 2025* | | TBD | |
| CDPHE, WQCD | Section 401 of the CWA – State 401 Water Quality Certification (WQCC Regulation No. 82:5 CCR 1002-82) | N/A | N/A | N/A | No jurisdictional resources impacted by the Project. |
| **Native American Tribes** | | | | | |

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| Apache Tribe of Oklahoma | Native American Tribal Coordination | **January 31, 2024** | N/A | Durell Cooper, Chairman<br>511 East Colorado<br>Anadarko, OK 73005<br><br>Bobby Komardley, Chairman<br>PO Box 1330<br>Anadarko, OK 73005 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>No response to date. |
| Cheyenne and Arapaho Tribes of Oklahoma | Native American Tribal Coordination | **February 5, 2024** | N/A | Reggie Wassana, Governor<br>100 Red Moon Circle<br>Concho, OK 73022<br><br>Max Bear, THPO<br>700 Black Kettle Boulevard<br>Concho, OK 73022 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>No response to date. |
| Comanche Nation of Oklahoma | Native American Tribal Coordination | **February 5, 2024** | N/A | Mark Woommavovah, Chairman<br>584 NW Bingo Road<br>Lawton, OK 73507<br><br>Martina Minthorn, THPO<br>6 SW<br>Lawton, OK 73502 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>Letter from THPO indicating “No Properties” issued on March 27, 2024.. |
| Fort Belknap Indian Community of the Fort Belknap Reservation of Montana | Native American Tribal Coordination | **February 5, 2024** | N/A | Jeffery Stiffarm, President<br>656 Agency Main Street<br>Harlem, MT 59526<br><br>Michael Blackwolf, THPO<br>656 Agency Main Street<br>Harlem, MT 59526 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>No response to date. |

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| Northern Arapaho Tribe of the Wind River Reservation, Wyoming | Native American Tribal Coordination | **February 5, 2024** | N/A | Lee Spoonhunter, Chairperson<br>P.O. Box 396<br>Fort Washakie, WY 82514-0396<br><br>Ben Ridgley, THPO<br>P.O. Box 67<br>St Stevens, WY 82524 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>Email/Letter concurrence of "No Effect" determination received May 3, 2024. |
| Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation | Native American Tribal Coordination | **February 5, 2024** | N/A | Serena Wetherelt, Vice President<br>600 Cheyenne Avenue South<br>Lame Deer, MT 59043<br><br>Teanna Limpy, THPO<br>P.O. Box 128<br>Lame Deer, MY 59043 | Initial notification letter and request for review sent 1/31/2024.<br>Email "No Effect" determination from FCC/Section 106 Coordinator received March 6, 2024. |
| Shoshone-Bannock Tribes of the Fort Hall Reservation | Native American Tribal Coordination | **February 5, 2024** | N/A | Lee Tyler, Chairman<br>Agency Building 82 1 Prima Drive<br>Fort Hall, ID 83203 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>No response to date. |
| Ute Mountain Ute Tribe | Native American Tribal Coordination | **February 5, 2024** | N/A | Manuel Heart, Chairman<br>125 Mike Wash Road<br>Tribal Complex<br>Towaoc, CO 81334<br><br>Terry Knight, THPO<br>P.O. Box 468<br>Towaoc, CO 81334 | Initial notification letter and request for review sent February 5,2024.<br>Email follow-up sent March 18, 2024<br>No response to date. |
| Local | | | | | |

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| | | Submittal | Approval | | |
| Adams County | Conditional Use Permit | *3Q, 2024* | *Anticipate 4Q 2024* | Jen Rutter, Planning and Development Manager<br>Adams County Government Center<br>4420 S. Adams County Parkway<br>Brighton, CO 80601 | CIG in early stages of engagement with Adams County staff.<br>Introductory Meeting held on March 13, 2024 with Oil and Gas Administrator, Community and Economic Development Department |

[1] Anticipated dates are shown in italics.

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**Resource Report 2: Water Use and Quality**

2. Section 2.2.1.2.2 states that the Eastern Adams County Metro District has a well protection area that overlaps the Project. Although CIG does not expect the Project to affect wellhead and water protection areas, clarify whether CIG would implement specific measures to avoid impacting wellhead protection areas, other than general mitigation measures for groundwater described in Section 2.2.2.

**Response:**

CIG is not proposing any specific measures to avoid impacting well head protection areas, beyond industry standard best management practices CIG will develop a well plan with the drilling company prior to well development to avoid affecting any existing wells.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

3. Section 2.2.1.2.3 states that there are 2 groundwater supply wells within 1 mile of the Project area. Clarify whether there are any groundwater supply wells within 150 feet of the Project area, and whether CIG would offer pre- and post-construction well yield and quality testing for those wells within 150 feet of the Project area.

**Response:**

CIG confirms that there are no groundwater supply wells identified within 150 feet of the Project area. As such, CIG has not identified the need to perform pre- or post-construction well yield and quality testing for any wells in the Project area.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

4. Section 2.2.2.1.2 specifies measures that CIG would take in the event that it encounters unanticipated potentially hazardous waste, and section 7.2.5 further states that "the proposed Project does not involve any facilities known to have been contaminated with polychlorinated biphenyls." Clarify whether there is any known groundwater or soil contamination within 0.25 mile of the Project area, other than polychlorinated biphenyls.

**Response:**

Based on review of the United States Environmental Protection Agency's "NEPAssist" tool there is no known groundwater or soil contamination such as hazardous waste sites, water discharges, toxic releases, superfund sites, or brownfield sites within 0.25 mile of the Project area (USEPA, 2024).

With regard to groundwater or soil contamination, CIG notes that Kiowa Creek, at its closest point to the Project area, is located approximately 0.41 mile from the Project area and is listed as a 303(d) impaired water (Category 5) for Aquatic Life Warm Water-Class 2 (benthic macroinvertebrates and dissolved oxygen). The Project area does not cross or otherwise impact Kiowa Creek.

Reference:

United States Environmental Protection Agency (USEPA). 2024, NEPAssist Tool. Available at https://www.epa.gov/nepa/nepassist. Accessed January 2024.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

5. Confirm that there are no springs within 0.25 mile of the Project area.

**Response:**

CIG confirms that there are no springs identified within 0.25 miles of the Project area.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

6. Section 2.3.3.1 states that hydrostatic testing would be conducted. Clarify the volume of water required for hydrostatic testing and identify the discharge rate.

**Response:**

CIG estimates approximately 24,000 gallons of water will be required to hydrostatically test the new facilities. This water would be sourced from a local municipal source, and no chemicals would be added to the test water. The water would be reused to test multiple sections of new piping as necessary. Upon completion of the hydrostatic testing, CIG would discharge into upland areas using an energy dissipating device at a rate of no more than 1,500 gallons per minute. CIG will obtain a hydrostatic discharge permit from the Colorado Department of Public Health and Environment prior to any discharges.

Response prepared by or under the supervision of:

Steve Gassman
Project Manager
Kinder Morgan
719-520-4475

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**Resource Report 3: Fish, Wildlife, and Vegetation**

7. Section 3.5.4 of the application states that revegetation monitoring will only assess whether undesirable exotic plant species become established because the land is actively managed cropland. However, section VII.A.2 of the FERC Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) states "In agricultural areas, revegetation shall be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise." Confirm compliance with VII.A.2 of the Plan, for all workspaces, including the contractor yard, or provide alternative measures and a justification for a modification to the Plan.

**Response:**

CIG will comply with Section VII.A.2 of the FERC Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and visually assess disturbed areas that are returned to agricultural use to compare crop growth and vigor with adjacent areas in the same field that were not disturbed as a result of the Project. The results of the visual assessments will be provided in the FERC Post-Construction Quarterly Reports. If after the second growing season the growth and vigor are not similar to undisturbed areas, CIG will work with the landowner/tenant to address and resolve any issues.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

8. Section 3.1 says CIG plans begin construction in June of 2025 which will be during the nesting season for migratory birds and bald and golden eagles in Colorado. Clarify whether CIG would comply with the May 15, 2024 email from Colorado Parks and Wildlife to check the status of the unidentified raptor nest and/or any ground nesting songbirds, should work occur during the nesting season.

**Response:**

CIG will comply with the recommendations from Colorado Parks and Wildlife. For construction activities involving clearing and grading of Project workspaces during the nesting season, CIG will check the status of the unidentified raptor nest and survey for any potential ground nesting songbirds within construction workspaces. As appropriate, CIG will coordinate with Colorado Parks and Wildlife and/or the United States Fish and Wildlife Service if active raptor nesting is documented within ½ mile of active construction activities.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

9. Section 3.5.4 states that CIG will implement the measures in its stormwater pollution prevention plan, however there is no such plan filed in the application. Clarify this discrepancy.

**Response:**

In Colorado, the Environmental Protection Agency issues all National Pollution Discharge Elimination System (NPDES) permits for federally-owned facilities and on tribal lands. All other permits are issued by the Colorado Department of Public Health & Environment. (Note: The Colorado program is referred to as the Colorado Discharge Permit System, or CDPS, instead of NPDES). The Water Quality Control Division ("WQCD") has permit regulations (5CCR 1002-61) in place, and the regulation is noted in Table 1.8.1 (updated as part of response to Request No. 1). As no federal lands or tribal lands occur in the Project area, CIG will need to notify WQCD in advance of initiation of ground disturbing activities. Notification can only be completed after a Project-specific Stormwater Pollution Prevention Plan ("SWPPP") is completed. As indicated in Table 1.8.1, CIG intends to develop the SWPPP and submit appropriate notification to WQCD in the second quarter of 2025.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
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10. In the January 29, 2024 letter to the U.S. Fish and Wildlife Service requesting concurrence with species effects determinations for the Project, CIG says surveys will be undertaken to determine presence or absence of nesting birds prior to construction and appropriate conservation measures will be implemented as needed to ensure project compliance with the Migratory Bird Treaty Act. Detail how CIG would conduct bird surveys, especially regarding ground-nesting birds.

**Response:**

The vast majority of the construction workspace is actively managed agricultural land, with a low probability of supporting avian nesting activities; however, as recommended by the Colorado Parks and Wildlife, CIG will conduct pre-construction surveys if clearing and grading are scheduled to occur during nesting season. CIG would conduct bird surveys no more than 5 days prior to the start of ground disturbing activities. Pedestrian surveys would be conducted in a serpentine pattern throughout the disturbance area at 20-foot intervals. Due to the lack of trees and shrubs particular attention would be paid to the potential for ground nesting birds. If active nests are observed the location will be marked with a survey stake and all activity within a minimum of a 30-foot radius will be avoided until a biologist determines that the nest is no longer active. If avoidance is not possible, CIG will coordinate with Colorado Parks and Wildlife and/or the United States Fish and Wildlife Service for further guidance.

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Mike Bonar
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**Resource Report 4: Cultural Resources**

11. The project's Area of Potential Effects (APE) includes "the compressor station modification, a corridor around the proposed new gathering lines 200 feet wide, a corridor around the access roads 100 feet wide, and variably sized workspaces around the wells." Provide the total acreage of the APE.

**Response:**

As presented in the Limited Results Cultural Resource Survey Form submitted to the Colorado SHPO and included as Appendix 4D in CIG's Application, the proposed Project consists of approximately 70.01 acres however, the total acreage of the Area of Potential Impact ("APE") for the Cultural Survey encompassed 165.1 Acres, which afford CIG with flexibility if additional workspace is delineated ahead of construction. Of the 165.1 total acres of APE, the Class III Survey encompassed 62 acres of fenced areas (i.e., Totem Storage Compressor Station and active well sites) or considered areas of high disturbance related to existing infrastructure (e.g. existing roadways), which were excluded from testing.

The Visual APE included the total acreage of APE and an additional 1-mile buffer to account for any visual impacts to resources outside the APE.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

12. Confirm that outreach letters were sent to Tribal Historic Preservation Officers (THPOs). Provide copies of all correspondence.

**Response:**

Correspondence letters to the THPOs were initially sent via certified mail on February 2, 2024, to all affected Native American tribes. Follow up emails were then sent on March 18, 2024. All THPO correspondence received prior to CIG's formal application was provided as Appendix 4.B (Correspondence with Native American Tribes).

An additional response from the Northern Arapaho received subsequent to the formal application is included in Attachment 1.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

13. Explain and depict the remaining acreage of outstanding surveys in the APE. Provide a copy of the *final* 2024 Class III cultural resources survey report.

**Response:**

CIG confirms there are no outstanding surveys for any acreage in the APE. CIG completed 100 percent of surveys for the Project area. CIG's final Class III cultural resources survey report was provided as Appendix 4D in CIG's application.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

14. Provide a status update on CIG's Section 106 review with the Colorado Office of Archaeology and Historic Preservation.

**Response:**

The Section 106 review with the Colorado Office of Archaeology and Historic Preservation is ongoing. The Colorado SHPO has requested FERC staff engagement prior to moving forward on issuing an effects determination. CIG provided SHPO with contact information for the FERC project archaeologist. Documentation of email correspondence with the Colorado SHPO is included in Attachment 2.

Response prepared by or under the supervision of:

Mike Bonar
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15. Edit the Unanticipated Discovery Plan for Cultural Resources and Human Remains - Proposed Totem Enhanced Deliverability Project (UDP) as follows and file a new UDP with FERC:

In section "3.0. Procedures When Cultural Materials are Observed," part F (page 2)
"In the event that the Project Archaeologist has determined the discovery may be a significant cultural resource, Tetra Tech will develop a Scope of Work and in consultation with CIG, will prepare to conduct…"
edit to reflect:

"In the event that the Project Archaeologist has determined the discovery may be a significant cultural resource, Tetra Tech will develop a Scope of Work and in consultation with CIG, the Colorado Office of Archaeology and Historic Preservation, and FERC, will prepare to conduct…"

Page 2, section "4.0 Unanticipated Discovery of Human Remains," part b
"The CM and Environmental PM will be immediately notified of the discovery of human remains, even if there is uncertainty about the identification of the remains as human. The Environmental PM will immediately notify CIG of the discovery."
edit to reflect:

"The CM and Environmental PM will be immediately notified of the discovery of skeletal remains, even if there is uncertainty about the identification of the remains as human. The Environmental PM will immediately notify CIG, the Colorado Office of Archaeology and Historic Preservation, and FERC of the discovery."

Page 3, "Contacts"

FERC Archaeologist
Laurie Boros
205-502-8046
Laurie.boros@ferc.gov

edit to reflect:
FERC Archaeologist
Brad Wazaney
202-502-6696
Bradford.Wazaney@FERC.gov

FERC PM TBD
edit to reflect:

FERC PM
Sydney Harris

202-502-6151
Sydney.Harris@ferc.gov

**Response:**

CIG submits as Attachment 3, an updated Unanticipated Discovery Plan for Cultural Resources and Human Remains - Proposed Totem Enhanced Deliverability Project reflecting the requested changes.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

COLORADO INTERSTATE GAS COMPANY, L.L.C.
Responses to Data Request – OEP/DG2E/Gas Branch 2
Dated May 31, 2024 in Docket No. CP24-124-000
Totem Enhanced Deliverability Project

**Resource Report 5: Socioeconomics**

16. Describe the number of construction spreads and their milepost boundaries; average and peak workforce in each construction spread; duration of construction (e.g., days, months) from initial clearing to final restoration.

**Response:**

As detailed in CIG's application, construction for the Totem Enhanced Reliability Project will not follow a pipeline spread convention. Rather, CIG is proposing distinct construction crews for 1) well drilling activities; 2) well lateral installation and modifications; 3) well head facilities, and 4) modifications within the existing Totem Compressor Station. Separate crews will be working concurrently on these activities through the construction phase of the Project. In addition to the construction crews, CIG will also maintain a suite of inspection staff overseeing the various construction activities. Round trips associated with each unique construction crew is discussed below.

1. **Well drilling:** as indicated in the application, CIG estimates that a work crew of 15-20 workers will be required for the well drilling. The scheduled duration for the well drilling work is 225 days.

2. **Well lateral installation and modifications:** CIG estimates that 8-10 workers will be required for the well lateral work. The scheduled duration for this well later work is 37 weeks, 6 days a week (for a total of 222 days).

3. **Well head facilities:** CIG also estimates that 8-10 workers will be required for the well head facility work. The scheduled duration for this work is 32 weeks, 6 days a week (for a total of 192 days).

4. **Totem Station modifications**: CIG estimate of 10-20 workers will be required for the well head facility work. The scheduled duration for this work is 23 weeks, 6 days a week for a total of 138 days).

Response prepared by or under the supervision of:

Steve Gassman
Project Manager
Kinder Morgan
719-520-4475

17. Describe CIG's outreach and consultation with local fire departments and emergency providers.

**Response:**

CIG will reach out to local fire departments and emergency providers regarding the proposed Project during late first quarter or early second quarter 2025. Additionally, CIG notes that annual drills are already held at the Totem Storage facility where the local fire department and emergency providers are invited to attend. The addition of the new wells will be incorporated into CIG's annual drills.

Response prepared by or under the supervision of:

Steve Gassman
Project Manager
Kinder Morgan
719-520-4475

COLORADO INTERSTATE GAS COMPANY, L.L.C.
Responses to Data Request – OEP/DG2E/Gas Branch 2
Dated May 31, 2024 in Docket No. CP24-124-000
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18. Provide an estimate of the total number of average daily round trips generated by construction activities at each pipeline spread and each aboveground facility.

**Response:**
CIG is proposing four distinct construction crews for 1) well drilling activities; 2) well lateral installation and modifications; 3) well head facilities; and 4) modifications within the existing Totem Compressor Station. Separate crews will work concurrently on these activities through the construction phase of the Project. In addition to the construction crews, CIG will also maintain a suite of inspection staff overseeing the various construction activities. Round trips associated with each unique construction crew is discussed below.

1. **Well drilling:** As indicated in the application, CIG estimates that a work crew of 15-20 workers will be required for the well drilling. Using the upper estimate of 20 workers and figuring that on average, 2 workers will travel to and from the worksite per pick-up/vehicle, resulting in 10 daily vehicle trips.

   The total number of rounds trips for the crew associated with the well drilling would be 2,250. In addition to the base crew, CIG assumes 3 additional trips per day (on average) for equipment/material pick-up, travel off-site, etc. which would account for an additional 675 round trips.
   Accordingly, the total number of round trips associated with the well drilling is estimated to be 2,925.

2. **Well lateral installation and modifications:** CIG estimates that 8-10 workers will be required for the well lateral work. Using the upper estimate of 10 workers and figuring that on average, 2 workers will travel to and from the worksite per pick-up/vehicle, resulting in 5 daily vehicle trips.

   The total number of round trips for the crew associated with the well lateral work would be 1,110. In addition to the base crew, CIG assumes an additional 2 trips per days (on average) for equipment/material pick-up, travel off-site, etc. which would account for an additional 444 round trips.
   Total round trips associated with well lateral installation and modifications are estimated to be 1,554.

3. **Well head facilities:** CIG also estimates that 8-10 workers will be required for the well head facility work. Using the upper estimate of 10 workers and figuring that on average, 2 workers will travel to and from the worksite per pick-up/vehicle, resulting in 5 daily vehicle trips.

   The total number of round trips for the crew associated with the well lateral work would be 960. In addition to the base crew, CIG assumes 2 additional trips per day (on average) for equipment/material pick-up, travel off-site, etc. which would account for an additional 384 round trips.

Accordingly, the total number of round trips for well head facilities work is estimated to be 1,344.

4. **Totem Station modifications**: CIG estimate of 10-20 workers will be required for the well head facility work. Using the upper estimate of 20 workers and figuring that on average, 2 workers will travel to and from the worksite per pick-up/vehicle, resulting in 10 daily vehicle trips.

   The total number of rounds trips for the crew associated with the compressor station modifications would be 1,380. In addition to the base crew, CIG assumes 2 additional trips per day (on average) for equipment/material pick-up, travel off-site, etc. which would account for an additional 276 round trips.
   Accordingly, the total number of round trips for Totem Storage Compressor Station modifications is estimated to be 1,656.

5 **CIG Inspections:** Throughout the course of construction activities, CIG assumes that, on average, 10 CIG inspectors will be on site overseeing construction activities. This includes utility inspectors, the environmental inspector, as well as on-site visits conducted by occasional visits from CIG staff based in Colorado Springs. The planned duration encompassing all construction activities is 236 days. CIG assumes that each of these inspectors would have their own vehicle.
Accordingly, the total number of round trips associated with CIG inspections is estimated to be 2,360.

Response prepared by or under the supervision of:

Steve Gassman
Project Manager
Kinder Morgan
719-520-4475

COLORADO INTERSTATE GAS COMPANY, L.L.C.
Responses to Data Request – OEP/DG2E/Gas Branch 2
Dated May 31, 2024 in Docket No. CP24-124-000
Totem Enhanced Deliverability Project

***Environmental Justice***

19. Provide an expanded project mailing list that includes addresses for environmental justice stakeholders who may be interested in the project, including but not limited to: civic associations; minority business associations; environmental and environmental justice organizations; legal aid providers; homeowners', tenants', and neighborhood watch groups; rural cooperatives; business and trade organizations; community and social service organizations; universities, colleges, vocational and other schools; labor organizations; civil rights organizations; local schools and libraries; senior citizens' groups; public health agencies and clinics; religious organizations; and other places where people gather in the community.

**Response:**

At this time, CIG has not identified environmental justice stakeholders who may be interested in the Project. Given the rural location of the Project, CIG identified a single landowner within a 1-mile radius who CIG has reached out to and who has no concerns. In addition, the two closest communities (Towns of Bennett and Strasburg) to the Project area are located over 6-miles away and CIG has not identified any EJ stakeholders in those communities. CIG did not initially develop a project-specific mailing list for environmental justice (EJ) stakeholders who may be interested in the project based on analysis of the Adams County block group data, which confirmed that the Project area is not considered an EJ Community based on applicable federal guidelines (see Promising Practices for EJ Methodologies in NEPA Reviews, 2016). As identified in Resource Report 5 of CIG's application, the analysis of census block group data indicated that minorities made up approximately 15.9 percent of the block group population compared to 52.5 percent of Adams County total population. Similarly, within the same census block group, low-income households made up approximately 8.1 percent of the block group population compared to 9.1 percent of Adams County total population.

Reference:
Promising Practices for EJ Methodologies in NEPA Reviews. Available at https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

20. Describe public outreach efforts conducted for environmental justice communities. For example, provide:

    a. a list of environmental justice stakeholders (e.g.: civic associations; minority business associations; environmental and environmental justice organizations; legal aid providers; homeowners', tenants', and neighborhood watch groups; rural cooperatives; business and trade organizations; community and social service organizations; universities, colleges, vocational and other schools; labor organizations; civil rights organizations; local schools and libraries; senior citizens' groups; public health agencies and clinics; religious organizations; and other places where people gather in the community) contacted;
    b. a summary of outreach conducted prior to filing the application (include the date, time, and location of any public meetings);
    c. a summary of key issues identified by community organizations or groups; and
    d. planned future outreach activities (e.g., project notifications via mail or providing notices and project materials at frequently visited community locations).

**Response:**

As provided in Resource Report 5 of CIG's application and further discussed in response 19 above, the Project is not located within an environmental justice community, and, accordingly, CIG has not conducted any associated public outreach.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

COLORADO INTERSTATE GAS COMPANY, L.L.C.
Responses to Data Request – OEP/DG2E/Gas Branch 2
Dated May 31, 2024 in Docket No. CP24-124-000
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**Resource Report 6: Geological Resources**

21. Section 6.3 states that there are 13 active intake/withdrawal oil/natural gas wells within the Project area, which are operated by CIG. Clarify the mitigation measures CIG would implement to avoid impacting these active wells during Project construction.

**Response:**

CIG will design the well paths and implement drilling techniques to avoid any existing well bores within the project area. The orientation of the well connecting laterals will be designed to avoid current wellbores using horizonal drilling technologies, geology and reservoir mapping. In order to avoid impacting active wells during Project construction, CIG will work with a directional drilling company to develop a Project-specific well plan in advance of construction activities. This site-specific well plan will be collaboratively developed between CIG and the contractor once a directional drilling company is selected for Project execution. As CIG is the active operator of all 13 wells, the well plan will be reviewed approved by CIG prior to authorizing the directional drilling company to initiate drilling activities for the Project.

Response prepared by or under the supervision of:

Steve Gassman
Project Manager
Kinder Morgan
719-520-4475

22. Section 6.3 states that the Scranton mine, which is located southwest of the Project area, has been inactive since about 1900. Clarify how far from the Project area this mining district is.

**Response:**

The Scranton Mine District boundary is located approximately 4.35 miles from the Project area in Adams County. The district spans Adams, Arapahoe, Elbert, Denver and El Paso counties, Colorado. The Scranton Mine itself is located approximately 21.35 miles away in Denver County.

References:

Kirkham, R.M., and Ladwig, L.R., 1979, Coal resources of the Denver and Cheyenne Basins, Colorado: Colorado Geological Survey, Resource Series 5, 70 p.

Roberts, S.B., 2007, Coal in the front range urban corridor—An overview of coal geology, coal production, and coal-bed methane potential in selected areas of the Denver Basin, Colorado, and the potential effects of historical coal mining on development and land-use planning, in Higley, D.K., compiler, Petroleum systems and assessment of undiscovered oil and gas in the Denver Basin Province, Colorado, Kansas, Nebraska, South Dakota, and Wyoming—USGS Province 39: U.S. Geological Survey Digital Data Series DDS–69–P, ch. 3, 45 p.

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

COLORADO INTERSTATE GAS COMPANY, L.L.C.
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**Resource Report 8: Land Use, Recreation, Aesthetics**

23. Describe how drain tiles would be identified and repaired if damaged during construction.

**Response:**

CIG has contacted each of the three landowners/tenants operating in the Project area and confirmed that only dryland agricultural practices are utilized on the site. Based on this CIG does not anticipate any drain tiles would occur within the Project area. Should CIG identify drain tiles or irrigation systems prior to or during construction, CIG will implement appropriate measures to avoid or mitigate for any damage in consultation with the landowner and in accordance with the FERC Plan, as adopted by CIG as part of the Project's Environmental Construction Management Plan ("ECMP")."

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

24. Identify the distance to the nearest residences from the wells/ aboveground structures and identify any screening between the structure and the residence.

**Response:**

Distances to the nearest residences were provided as **Table 9.3.1** in Resource Report 9, and are also included below. These residences were identified as the nearest noise sensitive areas to the Project facilities. The nearest residence is located nearly one mile away from the nearest Project above ground facility.

Based on the distance to the nearest residence, as well as the presence of existing injection withdrawal wells and the existing Totem Storage Compressor Station, CIG is not proposing any mitigative screening, as all new above ground structures associated with the Totem Enhanced Deliverability Project will be consistent with the existing landscape.

**Table** Error! No text of specified style in document.**-2 Summary of Identified Aboveground Facility NSR Locations**

| NSR | NSR Type | Distance to Nearest New Well (Feet) | Distance to Totem Storage CS (Feet) | Directions to Nearest NSR |
|---|---|---|---|---|
| 1 | Residence | 13,900 | 13,015 | Northwest |
| 2 | Residence | 5,175 | 8,240 | Northeast |
| 3 | Residence | 6,670 | 9,125 | Southeast |
| 4 | Residence | 8,800 | 10,230 | Southwest |
| 5 | Residence | 10,600 | 10,950 | West |

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

COLORADO INTERSTATE GAS COMPANY, L.L.C.
Responses to Data Request – OEP/DG2E/Gas Branch 2
Dated May 31, 2024 in Docket No. CP24-124-000
Totem Enhanced Deliverability Project

**Resource Report 9: Air Quality and Noise**

25. Provide quantified emissions total hazardous air pollutants (HAP) in tons per year from pipeline construction activities including site grading, excavation, trenching, pile-driving, filling, demolition, pipe removal, drilling activities, delivery vehicles, fugitive dust, clean/pigging activities, open burning, and tailpipe emissions from all construction equipment. Provide a breakdown of the emissions by calendar year demonstrating when the construction emissions would likely occur. Include supporting calculations, emission factors, fuel consumption rates, vehicle power ratings, utilization rates, and hours of operation.

**Response:**

A revised Appendix 9.A.1 is included as Attachment 4. The appendix has been updated to include hazardous air pollutants (HAPs).

Response prepared by or under the supervision of:

Mike Bonar
Environmental Permitting Project Manager
Kinder Morgan EHS Project Permitting
719-520-4817

26. Provide an air quality screening (AERSCREEN) or refined analysis (AERMOD or U.S. Environmental Protection Agency [EPA]-approved alternative) of the Totem compressor station(s) identifying the incremental increase in air quality impact criteria pollutants from the entire facility in comparison of the National Ambient Air Quality Standards (NAAQS); or state ambient air quality standards. This modeling should:

    a. identify existing emission rates of criteria pollutants from the station, and provide modeling results to identify existing local impact levels of criteria pollutants;
    b. identify proposed emission rates of criteria pollutants from the station and provide modeling results to identify the local impacts of the new turbines in addition to the existing equipment at the compressor station;
    c. Provide all source input parameters (emission rate, stack height, stack temperature, exit velocity, etc.), and justify the bases for any assumptions. Provide a description on how the modeling was performed (for example, identify the specific model number, meteorological data source, terrain data, source parameters, building information, receptor grids, NO2/NOx conversion, post-processing assumptions, etc.). Provide input data, as well as output data showing maximum impacts outside the fence line (the EPA-defined ambient air boundary), and at sensitive receptors in the area (schools, hospitals, nursing homes, etc). You should also provide the input and output files in a form such that staff or staff contractors can reproduce the analysis (these may need to be submitted as text files for compatibility with eLibrary); and
    d. Identify and provide modeling results of compliance of the new particulate matter with a diameter less than or equal to 2.5 micrometers (PM2.5) NAAQS threshold.

**Response:**

CIG does not believe that refined dispersion modeling is required for this facility modification. The proposed Project emissions do not include increases from NAAQS regulated pollutants. The Title V permit modification application addresses an increase in VOC emissions only; NAAQS pollutant emission rates are not changing as a result of the Project. Additionally, per the CDPHE Permit Modeling Unit (PMU) guidance no modeling was required with the submittal of the permit modification application. Section 2.2 of the guidance states, “The Division does not currently evaluate VOC emissions via modeling. Therefore, sources that propose an increase only in VOC emissions will not require a modeling determination for the same reasons outlined under Section 2.1”.

For responses 26a through 26d CIG has attached a 2010 modeling report as Attachment 5. CIG will submit the supporting modeling files separately via U.S. Postal service or parcel service given that many of the file types can not be submitted via the Commission’s e-library system.

26a: Emission rates for all pollutants except PM2.5 are addressed in the modeling report and files, along with existing local impacts. There is no change in PM2.5 emissions associated with this Project.

26b: As stated in response 26a, the current Totem Project does not include any changes to criteria pollutants. Please also note there are no proposed new turbines associated with this Project.

26c: The input parameters requested are included in the attached modeling report and associated files. Although the 2010 modeling did not include terrain files, elevation information is included within the model input files.
26d: As stated in response 26a, there is no change in PM2.5 emissions associated with this project.

Response prepared by or under the supervision of:

Julie Griffin
Air Permitting Project Manager
Kinder Morgan EHS APC – Natural Gas & CO2
303-914-7577

27. Based on the modifications to operational emissions from the Totem Compressor Station, provide:

    a. Air dispersion modeling and mapping for the existing facility and proposed modifications highlighting the resulting change from existing facility modifications;
    b. a table of Significant Impact Levels (SILs) and identify the radius of impact (ROI) for any pollutants that exceed the SILs;
    c. a description of how the modeling was performed (for example, identify specific model numbers, meteorological data sources, terrain data, source parameters, building information, receptor grids, NO2/NOx conversion, post-processing assumptions, background monitors, nearby source inputs, etc.); and
    d. input and output files in a form such that staff can reproduce the analyses (these may need to be submitted as text files for compatibility with eLibrary).

**Response:**

As stated in Response 26 above, CIG does not believe that refined dispersion modeling is required for this facility modification. The proposed Project emissions do not include increases of NAAQS regulated pollutants. The 2010 modeling report and associated files are included with this submittal.

27a: The current Totem project does not result in any changes in NAAQS pollutants, thus there is no resulting change from existing conditions.

27b: The 2010 modeling does not show SIL impacts, but it indicates NAAQS compliance for facility-wide emissions.

27c: As stated in the response above (27a) the current Totem project does not result in any changes to NAAQS pollutants.

27d: As stated in the response above (27a) the current Totem project does not result in any changes to NAAQS pollutants.

Response prepared by or under the supervision of:

Julie Griffin
Air Permitting Project Manager
Kinder Morgan EHS APC – Natural Gas & CO2
303-914-7577

Colorado Interstate
Gas Company, L.L.C.
a Kinder Morgan company

Docket No. CP24-124-000
Responses to 5/31/24 Environmental Data Request

# ATTACHMENT NO. 1

**From:** Peltier, Rob
**To:** Villacorta, Suzanne; Donnelly, Mike
**Subject:** Fw: Totem Enhanced Deliverability Project
**Date:** Monday, May 6, 2024 1:33:20 PM
**Attachments:** Totem Enhanced Deliverability Project.pdf
Outlook-cid_image0

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We received another response for tribal outreach for the Totem project.

The response (no issues) is from the Northern Arapaho and is saved in the project folder (tribal response folder).

**Robert J. Peltier, M.A., RPA**
**Project Manager - Cultural Resources Services**
Direct: 716.541.9226 | Cell: 716.510.9115
Main: 716.849.9419 | Fax: 716.849.9420
rob.peltier@tetratech.com

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**From:** Crystal C'Bearing <crystal.cbearing@northernarapaho.com>
**Sent:** Friday, May 3, 2024 1:22 PM
**To:** Peltier, Rob <rob.peltier@tetratech.com>
**Subject:** Totem Enhanced Deliverability Project

You don't often get email from crystal.cbearing@northernarapaho.com. Learn why this is important

**CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments.

Hello,

Attached is our determination letter for this proposed project.

Thank you,

*Crystal C'Bearing*
*Northern Arapaho THPO Director*
*Mailing: P.O. Box 67, St. Stephens, Wyoming 82524*
*Physical: 1010 Railroad Avenue, Riverton, Wyoming 82501*
*Office: 307.856.1628*
*Cell: 307.840.2903*
*Fax: 307.856.1974*
*crystal.cbearing@northernarapaho.com*
*~When we show our respect for other living things, they respond with respect for us.~*

***Hinono'einino'***
**Northern Arapaho Tribe**
**TRIBAL HISTORIC PRESERVATION OFFICE**
**P.O. Box 67 - St. Stephens, Wyoming 82524**
**PH: 307.856.1628 FX: 307.856.1974**

**Date:** 3/7/24

**Contact Name:** ROBERT PELTIER **Contact Phone:** 716-849-9419
**Email Address** rob.peltier@tetratech.com
**Company Name:** TETRA TECH
**Company Address:** 301 ELLICOTT STREET
**City:** BUFFALO **State:** NY **Zip Code:** 14203

**RE:** ***TOTEM ENHANCED DELIVERABILITY PROJECT***

Dear Sir or Madam:

After reviewing your request under the Section 106 process of the NHPA, and NEPA, our office would like to comment on the proposed project. The Northern Arapaho Tribal Historic Preservation Office makes the following determination:

***The Northern Arapaho THPO concurs with the determination***

Site Visit: No Tribal Monitor: No

Our office has come to this determination by drawing conclusions from the survey and file search from maps depicting the provenience of sites regarding the Direct and Visual APE.

Within the Area of Potential Effect, there are:
Cultural Resources: NONE
Eligible Historic Properties: NONE
Probability of properties of religious and cultural significance to the Northern Arapaho: LOW

If traditional cultural properties, rock features, or human remains are found during excavation with any new ground disturbance, we request to be contacted and a report provided.

Thank you for consulting with the Northern Arapaho THPO.

Sincerely,
Crystal C'Bearing
THPO Director
crystal.cbearing@northernarapaho.com

Colorado Interstate
Gas Company, L.L.C.
a Kinder Morgan company

Docket No. CP24-124-000
Responses to 5/31/24 Environmental Data Request

# ATTACHMENT NO. 2

**From:** Anderson, Stephen
**To:** Marques - HC, Matthew
**Cc:** Donnelly, Mike
**Subject:** Re: FERC Docket No. CP 24-124-000
**Date:** Friday, June 7, 2024 10:32:17 AM

---

Thanks Matthew.

Have a great weekend!

**Stephen Anderson, M.A. R.P.A | Principal Archaeologist**
Direct: 303.980.3601 | Fax: 303.980.3539 | Cell: 720.256.6843
stephen.anderson@tetratech.com

**Tetra Tech, Inc. |Sciences**
350 Indiana St., Suite 500, Golden, CO 80401|www.tetratech.com

---

**From:** Marques - HC, Matthew <matthew.marques@state.co.us>
**Sent:** Friday, June 7, 2024 7:58:48 AM
**To:** Anderson, Stephen <Stephen.Anderson@tetratech.com>
**Cc:** Donnelly, Mike <Mike.Donnelly@tetratech.com>
**Subject:** Re: FERC Docket No. CP 24-124-000

**CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments.

Hi Stephen,

Thank you for providing the point of contact. FERC has not addressed our questions. It is ultimately the responsibility of FERC. I, however, will follow up with them. If you have not already updated Brad, I recommend updating them on the status of the consultation and the information request.

Best,

## Matthew Marques

**Section 106 Compliance Manager**

History Colorado

State Historic Preservation Office

Phone Number: 303-866-4678

Email Address: matthew.marques@state.co.us

Address: 1200 Broadway, Denver, Colorado 80203

Under the Colorado Open Records Act (CORA), all messages sent by or to me on this state-owned email account may be subject to public disclosure

On Thu, Jun 6, 2024 at 12:27 PM Anderson, Stephen <Stephen.Anderson@tetratech.com> wrote:

> Matthew,
>
> Have you ever received any response back from Paul on FERC Docket No. CP 24-124-000?
>
> We were recently informed that the FERC archaeologist assigned to this project is Brad Wazaney. His contact info is below.
>
> FERC Archaeologist
> Brad Wazaney
> 202-502-6696
> Bradford.Wazaney@FERC.gov
>
> What are our next steps to get this process moving along?
>
> Thanks,
>
> **Stephen Anderson, M.A. R.P.A** | **Principal Archaeologist**
> Direct: 303.980.3601 | Fax: 303.980.3539 | Cell: 720.256.6843
> stephen.anderson@tetratech.com
>
> **Tetra Tech, Inc. |Sciences**
> 350 Indiana St., Suite 500, Golden, CO 80401|www.tetratech.com

Colorado Interstate
Gas Company, L.L.C.
a Kinder Morgan company

Docket No. CP24-124-000
Responses to 5/31/24 Environmental Data Request

# ATTACHMENT NO. 3

# UNANTICIPATED DISCOVERIES PLAN FOR CULTURAL RESOURCES AND HUMAN REMAINS

## Proposed Totem Enhanced Deliverability Project, Adams County, CO

**Prepared for**

Colorado Interstate Gas Company, L.L.C.
a Kinder Morgan company

Colorado Interstate Gas Company, L.L.C.
Two North Nevada
Colorado Springs, Colorado 80903

**Prepared by**

TETRA TECH

Tetra Tech, Inc.
390 Union Blvd., Suite 400
Lakewood, CO 80228

June 2024

## 1.0 INTRODUCTION

This document outlines the procedures the Colorado Interstate Gas Company, L.L.C. (CIG) will follow to prepare for and address any unanticipated discoveries of cultural resources, including archaeological sites and possible human remains. It provides direction to CIG personnel and their consultants as to the proper procedure to follow in the event that unanticipated discoveries are made during construction of the Totem Enhanced Deliverability Project (Project). This plan is consistent with the *Colorado Revised Statutes* (CRS 24-80-1301 to CRS 24-80-1305) that applies to the Project if human remains are inadvertently discovered during the course of construction.

Unanticipated cultural discoveries that trigger these procedures include:

- Building foundations or other historic structures with subsurface remains;
- Cultural features, concentrations of artifacts, or evidence of human occupation, such as fire hearths, middens and mounds, bottle or can dumps, clusters of stone tools or pottery fragments, and charcoal-stained soil;
- Human remains, including evidence of human burial, such as gravestone and other funerary objects, casket hardware, ceremonial grave goods, soil staining in the outline of a grave, or any other evidence that suggests the presence of a human interment.

## 2.0 TRAINING AND IDENTIFICATION

Training will be provided to all construction personnel outlining CIG's commitment to cultural resources compliance and to provide an overview of the types of human-made artifacts, cultural features, and structures that may be encountered during construction of the Project. The training will emphasize the exact procedures to be followed, as outlined in this plan, in the event unanticipated cultural resources are discovered during construction.

The Environmental Project Managers (PMs) will provide training as part of the pre-construction on-site training program for foremen, company inspectors, and construction supervisors. The Construction Manager (CM) will be responsible for advising construction-contractor personnel on the procedures to follow in the event unanticipated discoveries are encountered.

## 3.0 PROCEDURES WHEN CULTURAL MATERIALS ARE OBSERVED

In the event that cultural materials are observed within a construction zone, the person making the discovery will immediately contact the CM. If the CM believes that an unanticipated discovery has been made:

a. CM will immediately halt all ground-disturbing activities within 100 feet (30 meters) of the discovery unless a greater distance is deemed appropriate;
b. CM will protect and secure the discovery by delineating the finds with flagging or fencing within 24 hours;
c. CM will notify the Environmental PM same day;
d. Environmental PM will notify the Project Archaeologist within 24 hours;
e. Project Archaeologist will examine the location of the discovery accompanied by CM, within 1 day of being notified;

1. If during the initial discovery examination, the Project Archaeologist determines that the discovery is not a significant cultural resource, the Project Archaeologist will immediately notify the CM and/or PM, either of whom will have the authority to remove the stop-work order. The Project Archaeologist will prepare a letter report of findings to CIG within 10 business days.
2. If the Project Archaeologist determines that the discovery may be a significant cultural resource, the Project Archaeologist will immediately advise CIG.

f. In the event that the Project Archaeologist has determined the discovery may be a significant cultural resource, Tetra Tech will develop a Scope of Work and in consultation with CIG , the Colorado Office of Archaeology and Historic Preservation, and FERC, will prepare to conduct an archaeological investigation that will conform to the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 Federal Register 44716-42, September 29, 1983), and the Colorado Office of Archaeology and Historic Preservation's *Survey Manual* (2007).

g. If the discovery is determined to be eligible for listing on the National Register of Historic Places (NRHP) and Project construction cannot avoid the resource, Tetra Tech's Project Archaeologist will work with CIG to develop a Treatment Plan for review and approval by FERC and the Colorado Office of Archaeology and Historic Preservation.

h. FERC will consult with interested Native American Tribes that have historical and cultural associations with the Project Area and solicit their comments on the findings.

## 4.0 UNANTICIPATED DISCOVERY OF HUMAN REMAINS

The following procedures will be conducted in the event human remains are discovered during Project construction.

a. Should human remains be encountered during construction, all work will be immediately halted within 100 ft (30 m) of the discovery.

b. The CM and Environmental PM will be immediately notified of the discovery of skeletal remains, even if there is uncertainty about the identification of the remains as human. The Environmental PM will immediately notify CIG, the Colorado Office of Archaeology and Historic Preservation, and FERC of the discovery.

c. CRS § 24-80-1302 mandates that anyone who discovers, on any land, suspected human skeletal remains must contact the county coroner and local law enforcement officials (see Contacts below). This task will be the responsibility of the Environmental PM.

d. The CM will ensure that the suspected human remains are safeguarded, covered, not disturbed, and treated with respect. The CM will ensure that fencing is installed around the location of the discovery.

e. The coroner will determine if the human remains possess forensic value and if so, will take legal custody of the remains. If determined that the human remains do not possess forensic value, the coroner will notify the State Archaeologist into whose care the remains will be moved.

f. The State Archaeologist will select a qualified archaeologist to examine the remains to determine: 1) the general age of interment, 2) the integrity of the archaeological context, and

3) whether the remains are representative of a Native American individual. If the remains are determined to be of Native American origin, the State Archaeologist will notify the State Commission of Indian Affairs (Commission).

g. The remains will be disinterred unless the landowner, the State Archaeologist, and the Commission Chair unanimously agree to leave the remains in situ.
h. Disinterment will occur within ten days after the State Archaeologist has received initial notification from the coroner.
i. After disinterment is complete, and with the approval of the State Archaeologist, the stop-work order can be removed.

**CONTACTS**

| CIG will provide contact names for **Construction Manager** | |
|---|---|
| **CIG Construction Manager** | **CIG Environmental PM**<br>Mike Bonar<br>Two North Nevada<br>Colorado Springs, CO 80903<br>(719) 520-4817 (office)<br>(719) 466-3617 (cell)<br>Mike_Bonar@kindermorgan.com |
| **Project Archaeologist**<br>Rachel Egan, Ph.D.<br>Tetra Tech<br>(303) 291-6271 (office)<br>(734) 223-7754 (cell)<br>Rachel.Egan@tetratech.com | **Adams County Coroner**<br>Monica Brancucia-Jordan<br>330 N. 19th Ave.<br>Brighton, CO 80601<br>(303) 659-1027 (Ph)<br>(303) 659-4718 (fax)<br>CoronerQuestions@adcogov.org |
| **Colorado State Archaeologist**<br>Dr. Holly Norton<br>Deputy SHPO<br>(303) 866-2736<br>Holly.norton@state.co.us | **Adams County Sheriff**<br>Gene R. Claps<br>4430 S. Adams Co. Pkwy, 1st Floor, Suite W5400<br>Brighton, CO 80601<br>(303) 288-1535<br>communityconnections@adcogov.org |
| **FERC Archaeologist**<br>Brad Wazaney<br>202-502-6696<br>Bradford.Wazaney@FERC.gov | **FERC PM**<br>Sydney Harris<br>202-502-6151<br>Sydney.Harris@ferc.gov |

Colorado Interstate
Gas Company, L.L.C.
a Kinder Morgan company

Docket No. CP24-124-000
Responses to 5/31/24 Environmental Data Request

# ATTACHMENT NO. 4

# Colorado Interstate Gas Company, L.L.C.
# Totem Enhanced Deliverability Project
# Summary of Estimated Construction Emissions (tons for Project)

| Project Location | CO | $NO_x$ | $SO_2$ | VOC | HAPs | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tie-In Venting Emissions | | | | 0.00 | 0.00 | | | 0.02 | 0.23 | | 5.89 |
| Well Backflow Flare Emissions | 4.98 | 1.09 | 0.00 | 11.47 | 0.02 | | | 2,366.49 | 0.11 | 0.02 | 2,375.48 |
| Fugitive Dust | | | | | | 41.90 | 4.46 | | | | |
| Non-Road Equipment Engines | 5.57 | 9.43 | 0.02 | 0.80 | 0.01 | 0.16 | 0.15 | 2,366.34 | 0.07 | 0.00 | 2,368.15 |
| On-Road Engines | 7.60 | 4.40 | 0.03 | 1.07 | 0.02 | 0.30 | 0.21 | 3,164.30 | 0.07 | 0.00 | 3,165.93 |
| **Project Construction Totals** | **18.15** | **14.92** | **0.05** | **13.35** | **0.05** | **42.35** | **4.82** | **7,897.15** | **0.48** | **0.02** | **7,915.44** |

NOTE: “0.00” indicates emissions are <0.01 tons.

NOTE: Sums in table are based on Excel spreadsheet/multiple decimal places, and may differ from sums added from table due to rounding.
NOTE: Emissions are in tons for the entire project.
NOTE: Project is estimated to take one year or less; thus emissions presented are also in tons per year.

**Colorado Interstate Gas Company, L.L.C.**
**Totem Enhanced Deliverability Project**
**Tie-In Venting Emission Estimates (tons)**

| Activity | Tie-In Location | Gas Temperature | Gas Pressure[1] | Total Volume of Gas[2, 3] | Emission Estimate[4, 5, 6, 7, 8] | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | VOC | HAPs | $CO_2$ | $CH_4$ | $CO_2e$ |
| | | (F) | (psi) | (cf) | (tons) | (tons) | (tons) | (tons) | (tons) |
| *Pipeline Tie In Venting* | Segment 254F-1 | 65 | 900 | 70.75 | 0.0014 | 0.0002 | 0.0053 | 0.0790 | 1.9815 |
| | Segment 254F-2 | 65 | 900 | 139.51 | 0.0027 | 0.0003 | 0.0104 | 0.1559 | 3.9072 |
| | | | | | | | | | |
| | **TOTAL** | | | | **0.0040** | **0.0005** | **0.0157** | **0.2349** | **5.8887** |
| | | | | | | | | | |

1. Gas pressure based upon operating pressure of the line to 900 psig.
2. Total gas volume based on line volume, temperature, and pressure corrected to standard conditions.
3. Segment 254F-1 and 254F-2 volume provided by client.

4. Emission Rate (tons) = ((wt% of compound x average molar mass (lb/lb-mol) of gas x pressure of gas at venting x total volume of gas (scf)) / (Ideal Gas Law Constant * Temp Deg R)) / 2000 (tons/lb)
4. Gas constituent weight percentages based on CIG representative gas analysis.
5. CO2e calculated from the following global warming potentials: CO2 = 1, CH4 = 25.
7. Gas information based on CIG representative gas analysis.
8. Total HAPs based on estimated wt. %.

**Colorado Interstate Gas Company, L.L.C.**

**Totem Enhanced Deliverability Project**
**Well(s) BackFlow Flaring Emission Estimates (tons)**

| Source | Description | Pre Control (T/yr)[a] | SCF/yr | BTU/SCF | Total MMBTU/yr | Pollutant | Emission Factor (EF) or Analysis[b,c,d] | EF or Analysis Units | Control Efficiency Flare | Rate Annual (T/yr) |
|---|---|---|---|---|---|---|---|---|---|---|
| Flare | New Wells Backflow | 573.65 | 30,000,000 | 1,070 | 32100.00 | $NO_x$ | 0.068 | lb/MMBtu | 98% | 1.09 |
| | | | | | | CO | 0.310 | lb/MMBtu | 98% | 4.98 |
| | | | | | | $SO_2$ [c] | 0 | ppm $H_2S$ | 98% | <0.01 |
| | | | | | | VOC | 1.31% | Wt% | 98% | 11.47 |
| | | | | | | $H_2S$ | 0 | ppm $H_2S$ | 98% | <0.01 |
| | | | | | | HAPs [e] | 0.17% | Wt% | 98% | 0.02 |
| | | | | | | $CO_2$ | 147.4452 | lb/MMBtu | 98% | 2,366.49 |
| | | | | | | $CH_4$ | 0.0066 | lb/MMBtu | 98% | 0.11 |
| | | | | | | $N_2O$ | 0.0013 | ppm $H_2S$ | 98% | 0.02 |
| | | | | | | $CO_{2e}$ | 1.31% | Wt% | 98% | 2,375.48 |

[a] Uncontrolled VOC Emission Rate (tons) = ((wt% of compound x average molar mass (lb/lb-mol) of gas x pressure of gas at venting x total volume of gas (scf)) / (Ideal Gas Law Constant * Temp Deg R)) / 2000 (tons/lb)

[b] NOx & CO emissions based on AP-42 Chapter 13.5. CH4 and N2O emission factors (kg/MMBtu) are based on the default emission factors presented in 40 CFR Part 98 Subpart C, Table C-2 for Petroleum (All fuel types in Table C-1).

[c] Emissions calculated for $SO_2$ and $H_2S$ are based on $H_2S$ mole% are estimated (0% is expected) to determine the vent gas composition.

[d] Total HAPs based on estimated wt. %.

[e] CO2e calculated from the following global warming potentials: CO2 = 1, N20 = 298, CH4 = 25.

# Colorado Interstate Gas Company, L.L.C.
# Totem Enhanced Deliverability Project
# Construction Fugitive Dust Emissions

| Project Location | Acres Affected | Duration (months) | Emission Factor (ton/acre-month) [1] | | Dust Control Efficiency[3] | Uncontrolled Emissions (tons) | | Controlled Emissions (tons) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | $PM_{10}$ | $PM_{2.5}$ [2] | | $PM_{10}$ | $PM_{2.5}$ | $PM_{10}$ | $PM_{2.5}$ |
| | | | | | | | | | |
| Construction[4] | 74.01 | 9.0 | 1.10E-01 | 1.10E-02 | 50% | 73.27 | 7.33 | 36.63 | 3.66 |
| Wind Erosion - Pipe/Contractor Yard/Temp Work Space[5,6] | 74.01 | 9.0 | 1.58E-02 | 2.38E-03 | 50% | 10.52 | 1.59 | 5.26 | 0.79 |
| | | | | | | | | | |
| **Total Fugitive Dust Emissions** | | | | | | **83.79** | **8.91** | **41.90** | **4.46** |

1. WRAP Fugitive Dust Handbook, Contess Environmental, September 2006, Table 3-2, Level 1, average conditions
2. PM2.5/PM10 = 0.10 (WRAP Fugitive Dust Handbook, Section 3.4.1, pg 3-11)
3. Water and other approved dust suppressants would be used at construction sites. Assumed control efficiency of 50%.
4. Wind erosion of exposed areas (seeded land, stripped or graded overburden) = 0.38 ton TSP/acre/yr (WRAP Fugitive Dust Handbook, Table 11-6). PM10/TSP = 0.5, PM2.5/PM10 = 0.15, (WRAP Fugitive Dust Handbook, Section 7-2). Emission factor (0.38 ton TSP/acre/yr) converted from ton/acre-year to ton/acre-month by dividing by 12.
5. Wind erosion of exposed areas (seeded land, stripped or graded overburden) = 0.38 ton TSP/acre/yr (WRAP Fugitive Dust Handbook,
6. Wind erosion of exposed areas (seeded land, stripped or graded overburden) = 0.38 ton TSP/acre/yr (WRAP Fugitive Dust Handbook, Table 11-6). PM10/TSP = 0.5, PM2.5/PM10 = 0.15, (WRAP Fugitive Dust Handbook, Section 7-2). Emission factor (0.38 ton TSP/acre/yr) converted from ton/acre-year to ton/acre-month by dividing by 12.

# Colorado Interstate Gas Company, L.L.C.
# Totem Enhanced Deliverability Project
# Construction Emission Summary - Nonroad Engines

| Project Location | CO | $NO_x$ | $SO_2$ | VOC | HAPs | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| New Wells | 5.57 | 9.43 | 0.02 | 0.80 | 0.01 | 0.16 | 0.15 | 2,366.34 | 0.07 | 0.00 | 2,368.15 |
| Compressor Station | 0.19 | 0.14 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 47.04 | 0.00 | 0.00 | 47.09 |
| | | | | | | | | | | | |
| **Project Total (tons)** | **5.76** | **9.57** | **0.02** | **0.82** | **0.01** | **0.16** | **0.16** | **2,413.38** | **0.07** | **0.00** | **2,415.24** |

NOTE: “0.00” indicates emissions are <0.01 tons.
NOTE: Sums in table are based on Excel spreadsheet/multiple decimal places, and may differ from sums added from table due to rounding.

**Colorado Interstate Gas Company, L.L.C.**
**Totem Enhanced Deliverability Project**
**New Wells Construction**
**Nonroad Pollutant Emissions**

| Equipment Type[1] | Engine Rating (hp)[1] | Operating Hours[1] (hr) | Pollutant Emission Factor[2] (lb/hr) | | | | | | | | | | | Pollutant Emissions (tons) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CO | $NO_x$ | $SO_2$ | VOC | HAPs[6] | $PM_{10}$[3] | $PM_{2.5}$[3] | $CO_2$ | $CH_4$ | $N_2O$[4] | $CO_2e$[5] | CO | $NO_x$ | $SO_2$ | VOC | HAPs[6] | $PM_{10}$\ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
| Tractors/Loaders/Backhoes | Composite | 1788 | 0.3586 | 0.1857 | 0.0008 | 0.0336 | 0.0004 | 0.0059 | 0.0057 | 66.7965 | 0.0030 | 0.0000 | 66.87 | 0.3206 | 0.1660 | 0.0007 | 0.0300 | 0.0003 | 0.0053 | 0.0051 | 59.7161 | 0.0027 | 0.0000 | 59.78 |
| Roller | Composite | 300 | 0.3763 | 0.2501 | 0.0008 | 0.0410 | 0.0005 | 0.0122 | 0.0119 | 67.0308 | 0.0037 | 0.0000 | 67.12 | 0.0564 | 0.0375 | 0.0001 | 0.0061 | 0.0001 | 0.0018 | 0.0018 | 10.0546 | 0.0006 | 0.0000 | 10.07 |
| Excavator | Composite | 1188 | 0.5086 | 0.2269 | 0.0013 | 0.0559 | 0.0006 | 0.0086 | 0.0083 | 119.5792 | 0.0050 | 0.0000 | 119.71 | 0.3021 | 0.1348 | 0.0008 | 0.0332 | 0.0004 | 0.0051 | 0.0050 | 71.0301 | 0.0030 | 0.0000 | 71.10 |
| Scraper | Composite | 300 | 0.7187 | 0.8387 | 0.0027 | 0.1495 | 0.0017 | 0.0335 | 0.0325 | 262.4827 | 0.0135 | 0.0000 | 262.82 | 0.1078 | 0.1258 | 0.0004 | 0.0224 | 0.0003 | 0.0050 | 0.0049 | 39.3724 | 0.0020 | 0.0000 | 39.42 |
| Skid Steer Loader | Composite | 3093 | 0.2104 | 0.1354 | 0.0004 | 0.0186 | 0.0002 | 0.0019 | 0.0018 | 30.2740 | 0.0017 | 0.0000 | 30.32 | 0.3255 | 0.2093 | 0.0006 | 0.0287 | 0.0003 | 0.0029 | 0.0029 | 46.8188 | 0.0026 | 0.0000 | 46.88 |
| Drill Rigs | 1000 | 3456 | 1.6437 | 3.8912 | 0.0093 | 0.2115 | 0.0024 | 0.0364 | 0.0354 | 928.2827 | 0.0191 | 0.0000 | 928.76 | 2.8403 | 6.7240 | 0.0161 | 0.3654 | 0.0041 | 0.0630 | 0.0611 | 1604.0725 | 0.0330 | 0.0000 | 1604.90 |
| Completion Rigs | Composite | 1512 | 0.5007 | 0.2864 | 0.0017 | 0.0428 | 0.0005 | 0.0042 | 0.0040 | 164.8678 | 0.0039 | 0.0000 | 164.96 | 0.3785 | 0.2165 | 0.0013 | 0.0324 | 0.0004 | 0.0031 | 0.0031 | 124.6400 | 0.0029 | 0.0000 | 124.71 |
| Rubber Tired Dozers | Composite | 2793 | 0.6620 | 1.0824 | 0.0025 | 0.1672 | 0.0019 | 0.0419 | 0.0406 | 239.0780 | 0.0151 | 0.0000 | 239.46 | 0.9245 | 1.5116 | 0.0034 | 0.2335 | 0.0027 | 0.0585 | 0.0567 | 333.8725 | 0.0211 | 0.0000 | 334.40 |
| Air Compressors | Composite | 378 | 0.3027 | 0.2104 | 0.0007 | 0.0349 | 0.0004 | 0.0088 | 0.0085 | 63.6073 | 0.0031 | 0.0000 | 63.69 | 0.0572 | 0.0398 | 0.0001 | 0.0066 | 0.0001 | 0.0017 | 0.0016 | 12.0218 | 0.0006 | 0.0000 | 12.04 |
| Side Boom Crane | Composite | 294 | 0.3738 | 0.4223 | 0.0014 | 0.0681 | 0.0008 | 0.0143 | 0.0139 | 128.6241 | 0.0061 | 0.0000 | 128.78 | 0.0549 | 0.0621 | 0.0002 | 0.0100 | 0.0001 | 0.0021 | 0.0020 | 18.9077 | 0.0009 | 0.0000 | 18.93 |
| Dryers | Composite | 378 | 0.3474 | 0.2021 | 0.0013 | 0.0442 | 0.0005 | 0.0069 | 0.0067 | 122.5051 | 0.0040 | 0.0000 | 122.60 | 0.0656 | 0.0382 | 0.0002 | 0.0084 | 0.0001 | 0.0013 | 0.0013 | 23.1535 | 0.0008 | 0.0000 | 23.17 |
| Generators | Composite | 7093 | 0.0391 | 0.0466 | 0.0001 | 0.0066 | 0.0001 | 0.0018 | 0.0018 | 6.3955 | 0.0006 | 0.0000 | 6.41 | 0.1385 | 0.1653 | 0.0004 | 0.0235 | 0.0003 | 0.0065 | 0.0063 | 22.6815 | 0.0021 | 0.0000 | 22.73 |
| **Total Emissions** | | | | | | | | | | | | | | **5.57** | **9.43** | **0.02** | **0.80** | **0.01** | **0.16** | **0.15** | **2,366.34** | **0.07** | **0.00** | **2,368.15** |

1. Equipment type, quantity, and operating hours were provided by client. HP rating based on data provided by client and available emission factors, if no HP rating provided "composite" HP rating was used.
2. Emission factors for the land-based nonroad engines were estimated using SCAB Fleet Average Emission Factors 2025 emission model providing a conservative estimate.
   Emission Factors for each vehicle type (ton/VMT) are derived from CARB's Web Database http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/off-road-mobile-source-emission-factors Accessed February 2024.
3. All PM emissions to be less than 10 microns in diameter and PM2.5 factors are 97% of PM10 factors per EPA guidance ("Exhaust and Crankcase Emission
   Factors for Nonroad Engine Modeling - Compression-Ignition," EPA420-R-10-018/NR-009d, July 2010; and "Exhaust Emission Factors for Nonroad Engine Modeling - Spark-Ignition," EPA420-R-10-019/NR-010f, July 2010).
4. N2O emission factor conservatively presumed to be equal to CH4 emission factor as SCAB Fleet Average Emission Factors did not provide an N2O factor for nonroad engines.
5. The global warming potentials used for CO2, CH4, and N2O are 1, 25, and 298, respectively.
6. Hazardous Air Pollutant (HAP) emission factors are based on AP-42, Chapter 3.3 (revised 10/96) and Chapter 1.3 (revised 5/10) for metal HAP.

**Colorado Interstate Gas Company, L.L.C.**
**Totem Enhanced Deliverability Project**
**Compressor Station Construction**
**Nonroad Pollutant Emissions**

| Equipment Type[1] | Engine Rating (hp)[1] | Operating Hours[1] (hr) | Pollutant Emission Factor[2] (lb/hr) | | | | | | | | | | | Pollutant Emissions (tons) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CO | $NO_x$ | $SO_2$ | VOC | HAPs[6] | $PM_{10}$[3] | $PM_{2.5}$[3] | $CO_2$ | $CH_4$ | $N_2O$[4] | $CO_2e$[5] | CO | $NO_x$ | $SO_2$ | VOC | HAPs[6] | $PM_{10}$\ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
| Excavators | Composite | 80 | 0.5086 | 0.2269 | 0.0013 | 0.0559 | 0.0006 | 0.0086 | 0.0083 | 119.5792 | 0.0050 | 0.0000 | 119.71 | 0.0203 | 0.0091 | 0.0001 | 0.0022 | 0.0000 | 0.0003 | 0.0003 | 4.7832 | 0.0002 | 0.0000 | 4.79 |
| Aerial Lifts | Composite | 80 | 0.1646 | 0.1366 | 0.0004 | 0.0184 | 0.0002 | 0.0048 | 0.0046 | 34.7217 | 0.0017 | 0.0000 | 34.76 | 0.0066 | 0.0055 | 0.0000 | 0.0007 | 0.0000 | 0.0002 | 0.0002 | 1.3889 | 0.0001 | 0.0000 | 1.39 |
| Tractors/Loaders/Backhoes | Composite | 120 | 0.3586 | 0.1857 | 0.0008 | 0.0336 | 0.0004 | 0.0059 | 0.0057 | 66.7965 | 0.0030 | 0.0000 | 66.87 | 0.0215 | 0.0111 | 0.0000 | 0.0020 | 0.0000 | 0.0004 | 0.0003 | 4.0078 | 0.0002 | 0.0000 | 4.01 |
| Generators | 120 | 80 | 0.4585 | 0.3022 | 0.0009 | 0.0340 | 0.0004 | 0.0122 | 0.0118 | 77.9494 | 0.0031 | 0.0000 | 78.03 | 0.0183 | 0.0121 | 0.0000 | 0.0014 | 0.0000 | 0.0005 | 0.0005 | 3.1180 | 0.0001 | 0.0000 | 3.12 |
| Welders | Composite | 320 | 0.1745 | 0.1373 | 0.0003 | 0.0214 | 0.0002 | 0.0052 | 0.0050 | 25.6027 | 0.0019 | 0.0000 | 25.65 | 0.0279 | 0.0220 | 0.0001 | 0.0034 | 0.0000 | 0.0008 | 0.0008 | 4.0964 | 0.0003 | 0.0000 | 4.10 |
| Cranes | Composite | 80 | 0.3738 | 0.4223 | 0.0014 | 0.0681 | 0.0008 | 0.0143 | 0.0139 | 128.6241 | 0.0061 | 0.0000 | 128.78 | 0.0150 | 0.0169 | 0.0001 | 0.0027 | 0.0000 | 0.0006 | 0.0006 | 5.1450 | 0.0002 | 0.0000 | 5.15 |
| Air Compressors | Composite | 80 | 0.3027 | 0.2104 | 0.0007 | 0.0349 | 0.0004 | 0.0088 | 0.0085 | 63.6073 | 0.0031 | 0.0000 | 63.69 | 0.0121 | 0.0084 | 0.0000 | 0.0014 | 0.0000 | 0.0004 | 0.0003 | 2.5443 | 0.0001 | 0.0000 | 2.55 |
| Sheepsfoot Roller | Composite | 80 | 0.3763 | 0.2501 | 0.0008 | 0.0410 | 0.0005 | 0.0122 | 0.0119 | 67.0308 | 0.0037 | 0.0000 | 67.12 | 0.0151 | 0.0100 | 0.0000 | 0.0016 | 0.0000 | 0.0005 | 0.0005 | 2.6812 | 0.0001 | 0.0000 | 2.68 |
| Hydrotorque | Composite | 40 | 0.4438 | 0.3947 | 0.0016 | 0.0747 | 0.0008 | 0.0130 | 0.0126 | 152.2399 | 0.0067 | 0.0000 | 152.41 | 0.0089 | 0.0079 | 0.0000 | 0.0015 | 0.0000 | 0.0003 | 0.0003 | 3.0448 | 0.0001 | 0.0000 | 3.05 |
| Skid Steer | Composite | 40 | 0.2104 | 0.1354 | 0.0004 | 0.0186 | 0.0002 | 0.0019 | 0.0018 | 30.2740 | 0.0017 | 0.0000 | 30.32 | 0.0042 | 0.0027 | 0.0000 | 0.0004 | 0.0000 | 0.0000 | 0.0000 | 0.6055 | 0.0000 | 0.0000 | 0.61 |
| Sand Blast Pot & Paint Eq. | Composite | 40 | 0.4438 | 0.3947 | 0.0016 | 0.0747 | 0.0008 | 0.0130 | 0.0126 | 152.2399 | 0.0067 | 0.0000 | 152.41 | 0.0089 | 0.0079 | 0.0000 | 0.0015 | 0.0000 | 0.0003 | 0.0003 | 3.0448 | 0.0001 | 0.0000 | 3.05 |
| Fork Lifts | Composite | 80 | 0.2148 | 0.0860 | 0.0006 | 0.0236 | 0.0003 | 0.0025 | 0.0024 | 54.3958 | 0.0021 | 0.0000 | 54.45 | 0.0086 | 0.0034 | 0.0000 | 0.0009 | 0.0000 | 0.0001 | 0.0001 | 2.1758 | 0.0001 | 0.0000 | 2.18 |
| Dump Trucks | Composite | 80 | 0.5385 | 0.4769 | 0.0027 | 0.1140 | 0.0013 | 0.0142 | 0.0138 | 260.0652 | 0.0103 | 0.0000 | 260.32 | 0.0215 | 0.0191 | 0.0001 | 0.0046 | 0.0001 | 0.0006 | 0.0006 | 10.4026 | 0.0004 | 0.0000 | 10.41 |
| **Total Emissions** | | | | | | | | | | | | | | **0.19** | **0.14** | **0.00** | **0.02** | **0.00** | **0.00** | **0.00** | **47.04** | **0.00** | **0.00** | **47.09** |

1. Equipment type, quantity, and operating hours were provided by client. HP rating based on data provided by client and available emission factors, if no HP rating provided "composite" HP rating was used.
2. Emission factors for the land-based nonroad engines were estimated using SCAB Fleet Average Emission Factors 2025 emission model providing a conservative estimate.
Emission Factors for each vehicle type (ton/VMT) are derived from CARB's Web Database http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/off-road-mobile-source-emission-factors Accessed February 2024.
3. All PM emissions to be less than 10 microns in diameter and PM2.5 factors are 97% of PM10 factors per EPA guidance ("Exhaust and Crankcase Emission
Factors for Nonroad Engine Modeling - Compression-Ignition," EPA420-R-10-018/NR-009d, July 2010; and "Exhaust Emission Factors for Nonroad Engine Modeling - Spark-Ignition," EPA420-R-10-019/NR-010f, July 2010).
4. N2O emission factor conservatively presumed to be equal to CH4 emission factor as SCAB Fleet Average Emission Factors did not provide an N2O factor for nonroad engines.
5. The global warming potentials used for CO2, CH4, and N2O are 1, 25, and 298, respectively.
6. Hazardous Air Pollutant (HAP) emission factors are based on AP-42, Chapter 3.3 (revised 10/96) and Chapter 1.3 (revised 5/10) for metal HAP.

**Colorado Interstate Gas Company, L.L.C.**
**Totem Enhanced Deliverability Project**
**Construction Emission Summary - On-Road Engines**

| Project Location | CO | $NO_x$ | $SO_2$ | VOC | HAPs | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| New Wells | 7.45 | 4.31 | 0.03 | 1.05 | 0.02 | 0.30 | 0.21 | 3,102.33 | 0.06 | 0.00 | 3,103.94 |
| Compressor Station | 0.15 | 0.09 | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 61.97 | 0.00 | 0.00 | 62.00 |
| | | | | | | | | | | | |
| **Project Total (tons)** | **7.60** | **4.40** | **0.03** | **1.07** | **0.02** | **0.30** | **0.21** | **3,164.30** | **0.07** | **0.00** | **3,165.93** |

NOTE: “0.00” indicates emissions are <0.01 tons.
NOTE: Sums in table are based on Excel spreadsheet/multiple decimal places, and may differ from sums added from table due to rounding.

**Colorado Interstate Gas Company, L.L.C.**
**Totem Enhanced Deliverability Project**
**New Wells Construction**
**On-Road Vehicle Pollutant Emissions**

| Vehicle | Vehicle Category Code[1] | Vehicle Miles Traveled (VMT)[1] | Emission Factor (pound/VMT)[2] | | | | | | | | | | | Emissions (total tons for project) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CO | $NO_x$ | $SO_2$ | VOC | HAPs[4] | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ [3] | CO | $NO_x$ | $SO_2$ | VOC | HAPs[4] | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ [3] |
| Commuter Vehicles | | | | | | | | | | | | | | | | | | | | | | | |
| Passenger Vehicle | PV2025 | 1,111,200 | 3.43E-03 | 2.88E-04 | 1.07E-05 | 4.35E-04 | 1.45E-05 | 9.68E-05 | 6.42E-05 | 1.11E+00 | 3.64E-05 | 0.00E+00 | 1.11E+00 | 1.9043 | 0.1603 | 0.0059 | 0.2419 | 0.0081 | 0.0538 | 0.0357 | 617.1525 | 0.0202 | 0.0000 | 617.6582 |
| Pickup Trucks - Diesel | DT2025 | 1,111,200 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 3.3078 | 3.4222 | 0.0153 | 0.5121 | 0.0058 | 0.1579 | 0.1164 | 1,600.9257 | 0.0209 | 0.0000 | 1,601.4486 |
| Pickup Trucks - Gasoline | PV2025 | 1,111,200 | 3.43E-03 | 2.88E-04 | 1.07E-05 | 4.35E-04 | 1.45E-05 | 9.68E-05 | 6.42E-05 | 1.11E+00 | 3.64E-05 | 0.00E+00 | 1.11E+00 | 1.9043 | 0.1603 | 0.0059 | 0.2419 | 0.0081 | 0.0538 | 0.0357 | 617.1525 | 0.0202 | 0.0000 | 617.6582 |
| Delivery / Removal Vehicles | | | | | | | | | | | | | | | | | | | | | | | |
| Water Trucks | HHDT-DSL | 1,950 | 4.31E-03 | 9.33E-03 | 4.02E-05 | 8.02E-04 | 9.11E-06 | 4.85E-04 | 3.63E-04 | 4.20E+00 | 3.70E-05 | 0.00E+00 | 4.20E+00 | 0.0042 | 0.0091 | 0.0000 | 0.0008 | 0.0000 | 0.0005 | 0.0004 | 4.0903 | 0.0000 | 0.0000 | 4.0912 |
| Long-Haul Trucks | HHDT-DSL | 26,580 | 4.31E-03 | 9.33E-03 | 4.02E-05 | 8.02E-04 | 9.11E-06 | 4.85E-04 | 3.63E-04 | 4.20E+00 | 3.70E-05 | 0.00E+00 | 4.20E+00 | 0.0573 | 0.1239 | 0.0005 | 0.0107 | 0.0001 | 0.0065 | 0.0048 | 55.7533 | 0.0005 | 0.0000 | 55.7656 |
| Short-Haul Trucks | HHDT-DSL | 76,500 | 4.31E-03 | 9.33E-03 | 4.02E-05 | 8.02E-04 | 9.11E-06 | 4.85E-04 | 3.63E-04 | 4.20E+00 | 3.70E-05 | 0.00E+00 | 4.20E+00 | 0.1649 | 0.3567 | 0.0015 | 0.0307 | 0.0003 | 0.0186 | 0.0139 | 160.4637 | 0.0014 | 0.0000 | 160.4991 |
| Onsite Vehicles | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Fueled | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrovac Truck | DT2025 | 200 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 0.0006 | 0.0006 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.2881 | 0.0000 | 0.0000 | 0.2882 |
| Weld Truck | DT2025 | 3,600 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 0.0107 | 0.0111 | 0.0000 | 0.0017 | 0.0000 | 0.0005 | 0.0004 | 5.1866 | 0.0001 | 0.0000 | 5.1883 |
| Pickup Truck | DT2025 | 20,700 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 0.0616 | 0.0638 | 0.0003 | 0.0095 | 0.0001 | 0.0029 | 0.0022 | 29.8229 | 0.0004 | 0.0000 | 29.8326 |
| Gasoline Fueled | | | | | | | | | | | | | | | | | | | | | | | |
| Pickup Truck | DT2025 | 20,700 | 3.43E-03 | 2.88E-04 | 1.07E-05 | 4.35E-04 | 1.45E-05 | 9.68E-05 | 6.42E-05 | 1.11E+00 | 3.64E-05 | 0.00E+00 | 1.11E+00 | 0.0355 | 0.0030 | 0.0001 | 0.0045 | 0.0002 | 0.0010 | 0.0007 | 11.4966 | 0.0004 | 0.0000 | 11.5061 |
| Coating Truck | DT2025 | 1,800 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **TOTAL** | | | | | | | | | | | | | | **7.45** | **4.31** | **0.03** | **1.05** | **0.02** | **0.30** | **0.21** | **3,102.33** | **0.06** | **0.00** | **3,103.94** |

1. Vehicle Categories and total project distance were provided by client.
2. Emission Factors for each vehicle type (pound/VMT) are derived from CARB's Web Database http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road) Accessed February 2024.
3. The global warming potentials used for CO2, CH4, and N2O are 1, 25, and 298, respectively.
4. Hazardous Air Pollutant (HAP) emission factors are based on AP-42, Chapter 3.3 (revised 10/96) and Chapter 1.3 (revised 5/10) for metal HAP.

**Colorado Interstate Gas Company, L.L.C.**
**Totem Enhanced Deliverability Project**
**Compressor Station Construction**
**On-Road Vehicle Pollutant Emissions**

| Vehicle | Vehicle Category Code[1] | Vehicle Miles Traveled (VMT)[1] | Emission Factor (pound/VMT)[2] | | | | | | | | | | | Emissions (total tons for project) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CO | $NO_x$ | $SO_2$ | VOC | HAPs[4] | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ [3] | CO | $NO_x$ | $SO_2$ | VOC | HAPs[4] | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ [3] |
| Commuter Vehicles | | | | | | | | | | | | | | | | | | | | | | | | |
| Passenger Vehicle | PV2025 | 22,000 | 3.43E-03 | 2.88E-04 | 1.07E-05 | 4.35E-04 | 1.45E-05 | 9.68E-05 | 6.42E-05 | 1.11E+00 | 3.64E-05 | 0.00E+00 | 1.11E+00 | 0.0377 | 0.0032 | 0.0001 | 0.0048 | 0.0002 | 0.0011 | 0.0007 | 12.2186 | 0.0004 | 0.0000 | 12.2287 |
| Pickup Trucks - Diesel | DT2025 | 22,000 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 0.0655 | 0.0678 | 0.0003 | 0.0101 | 0.0001 | 0.0031 | 0.0023 | 31.6958 | 0.0004 | 0.0000 | 31.7061 |
| Pickup Trucks - Gasoline | PV2025 | 22,000 | 3.43E-03 | 2.88E-04 | 1.07E-05 | 4.35E-04 | 1.45E-05 | 9.68E-05 | 6.42E-05 | 1.11E+00 | 3.64E-05 | 0.00E+00 | 1.11E+00 | 0.0377 | 0.0032 | 0.0001 | 0.0048 | 0.0002 | 0.0011 | 0.0007 | 12.2186 | 0.0004 | 0.0000 | 12.2287 |
| Delivery / Removal Vehicles | | | | | | | | | | | | | | | | | | | | | | | | |
| Heavy Duty Truck | HHDT-DSL | 800 | 4.31E-03 | 9.33E-03 | 4.02E-05 | 8.02E-04 | 9.11E-06 | 4.85E-04 | 3.63E-04 | 4.20E+00 | 3.70E-05 | 0.00E+00 | 4.20E+00 | 0.0017 | 0.0037 | 0.0000 | 0.0003 | 0.0000 | 0.0002 | 0.0001 | 1.6781 | 0.0000 | 0.0000 | 1.6784 |
| Short-Haul Trucks | HHDT-DSL | 800 | 4.31E-03 | 9.33E-03 | 4.02E-05 | 8.02E-04 | 9.11E-06 | 4.85E-04 | 3.63E-04 | 4.20E+00 | 3.70E-05 | 0.00E+00 | 4.20E+00 | 0.0017 | 0.0037 | 0.0000 | 0.0003 | 0.0000 | 0.0002 | 0.0001 | 1.6781 | 0.0000 | 0.0000 | 1.6784 |
| Long-Haul Trucks | HHDT-DSL | 800 | 4.31E-03 | 9.33E-03 | 4.02E-05 | 8.02E-04 | 9.11E-06 | 4.85E-04 | 3.63E-04 | 4.20E+00 | 3.70E-05 | 0.00E+00 | 4.20E+00 | 0.0017 | 0.0037 | 0.0000 | 0.0003 | 0.0000 | 0.0002 | 0.0001 | 1.6781 | 0.0000 | 0.0000 | 1.6784 |
| Onsite Vehicles | | | | | | | | | | | | | | | | | | | | | | | | |
| Diesel Fueled | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrovac Truck | DT2025 | 200 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 0.0006 | 0.0006 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.2881 | 0.0000 | 0.0000 | 0.2882 |
| Weld Truck | DT2025 | 200 | 5.95E-03 | 6.16E-03 | 2.76E-05 | 9.22E-04 | 1.05E-05 | 2.84E-04 | 2.10E-04 | 2.88E+00 | 3.76E-05 | 0.00E+00 | 2.88E+00 | 0.0006 | 0.0006 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.2881 | 0.0000 | 0.0000 | 0.2882 |
| Gasoline Fueled | | | | | | | | | | | | | | | | | | | | | | | | |
| Tool Van | PV2025 | 400 | 3.43E-03 | 2.88E-04 | 1.07E-05 | 4.35E-04 | 1.45E-05 | 9.68E-05 | 6.42E-05 | 1.11E+00 | 3.64E-05 | 0.00E+00 | 1.11E+00 | 0.0007 | 0.0001 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.2222 | 0.0000 | 0.0000 | 0.2223 |
| **TOTAL** | | | | | | | | | | | | | | **0.15** | **0.09** | **0.00** | **0.02** | **0.00** | **0.01** | **0.00** | **61.97** | **0.00** | **0.00** | **62.00** |

1. Vehicle Categories and total project distance were provided by client.
2. Emission Factors for each vehicle type (pound/VMT) are derived from CARB's Web Database http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road) Accessed February 2024.
3. The global warming potentials used for CO2, CH4, and N2O are 1, 25, and 298, respectively.
4. Hazardous Air Pollutant (HAP) emission factors are based on AP-42, Chapter 3.3 (revised 10/96) and Chapter 1.3 (revised 5/10) for metal HAP.

Colorado Interstate
Gas Company, L.L.C.
a Kinder Morgan company

Docket No. CP24-124-000
Responses to 5/31/24 Environmental Data Request

# ATTACHMENT NO. 5

# DISPERSION MODELING ANALYSIS OF $NO_2$, $PM_{10}$, $SO_2$ AND CO

## COLORADO INTERSTATE GAS
## TOTEM COMPRESSOR STATION AND DEW POINT CONTROL PLANT
## ADAMS COUNTY, COLORADO

**January, 2010**


Prepared by:

URS

8181 East Tufts Avenue
Denver, Colorado 80237

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# 1.0 EXECUTIVE SUMMARY

Colorado Interstate Gas Company (CIG), a subsidiary of El Paso Corporation, is seeking to convert a depleted oil and gas field to a natural gas storage facility located about 34 miles northeast of the City of Denver in eastern Adams County, Colorado. The new project is the Totem Gas Storage Field Project (Storage Facility or Project) and is intended to provide natural gas storage to meet the existing peak day and load growth needs for local gas distribution in the Denver market area.

Conversion of the existing depleted oil and gas field to the Totem Gas Storage Facility would require a compressor station with approximately 9,400 horsepower to inject and withdraw the natural gas from the storage field. A water/hydrocarbon liquids dew point control plant would be constructed in order to remove water and liquid hydrocarbons from the gas stream during storage gas withdrawal phases.

In conjunction with that permit application, an ambient air modeling analysis was completed to demonstrate that the proposed project would not cause violations of either the Colorado or National Ambient Air Quality Standards (CAAQS / NAAQS). Dispersion modeling was conducted using the AMS/EPA Regulatory Model (AERMOD).

As shown in the summary table below, these results demonstrate that this facility will not cause any exceedances in the CAAQS or the NAAQS.

**Summary Results:**

| Pollutant | Averaging Period | Total Projected Concentration (Modeled + Background) ($ug/m^3$) | CAAQS ($ug/m^3$) | NAAQS ($ug/m^3$) |
|---|---|---|---|---|
| $NO_2$ | Annual | 50.02 | 100 | 100 |
| CO | 1 hour | 5363.75 | 40000 | 40000 |
| CO | 8 hour | 3771.33 | 10000 | 10000 |
| PM10 | Annual | 24.45 | 50 | Revoked |
| PM10 | 24 hour | 91.53 | 150 | 150 |
| $SO_2$ | Annual | 5.35 | N/A | 80 |
| $SO_2$ | 3 hour | 96.27 | 700 | 1300 |
| $SO_2$ | 24 hour | 29.59 | N/A | 365 |

Total modeled concentrations are due to emissions from the Totem facility, other "nearby" sources and background concentrations.

## 2.0 PROPOSED FACILITY DESCRIPTION

Colorado Interstate Gas Company (CIG), a subsidiary of El Paso Corporation, is seeking to convert a depleted oil and gas field to a natural gas storage facility located about 34 miles northeast of the City of Denver in eastern Adams County, Colorado. The new project is the Totem Gas Storage Field Project (Storage Facility or Project) and is intended to provide natural gas storage to meet the existing peak day and load growth needs for local gas distribution in the Denver market area. The proposed Storage Facility would have a total gas inventory of approximately 10.7 billion cubic feet (Bcf), comprised of 7.0 Bcf of working gas and 3.7 Bcf of base gas.

Conversion of the existing depleted oil and gas field to the Totem Gas Storage Facility would require a compressor station with approximately 9,400 horsepower to inject and withdraw the natural gas from the storage field. A water/hydrocarbon liquids dew point control plant would be constructed in order to remove water and liquid hydrocarbons from the gas stream during storage gas withdrawal phases. CIG is proposing to install two Caterpillar 3616 natural gas-fired reciprocating engine compressors totaling approximately 9,400 horsepower (ISO) within a single compressor building. A third natural gas-fired reciprocating engine compressor (Caterpillar 3606 1775 ISO horsepower) will be used as a propane refrigeration compressor as part of the dew point control plant. These Caterpillar engines along with another Caterpillar engine to be used as an emergency generator, a 4.0 MMBtu/hr utility boiler and a flare are the emission sources to be located at this proposed facility. A detailed emission inventory is included with this permit application. Figure 1 shows the proposed Totem facility location with respect to the Denver area and Figure 2 shows the proposed Totem facility with respect to surrounding topography.

## 3.0 SURROUNDING SOURCES

The U.S. EPA recommends that, at a minimum, all "nearby" sources should be explicitly modeled as part of the National Ambient Air Quality Standard (NAAQS) analysis; sources within a 10 kilometer radius of the proposed facility were considered. Table 1 provides a complete list of sources which includes the "nearby" source inventory provided to URS by the Colorado Department of Public Health and Environment (CDPHE). These surrounding sources have a source id beginning with "NAAQS" and Figure 3 shows the "nearby" sources relative to the modeling domain.

**Table 1 - Sources Included In Air Quality Modeling**

| [2]Source Id | Source Description | [1]X- Coordinate (m) | [1]Y - Coordinate (m) | Stack Height (m) | Exit Temp. (K) | Exit Velocity (m/s) | Diameter (m) | $NO_2$ Emission Rate (g/s) | CO Emission Rate (g/s) | $SO_2$ Emission Rate (g/s) | PM Emission Rate (g/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| flare | Flare Pilot | 555331.1 | 4414836.0 | 1.00 | 1273.00 | 20.00 | 0.20 | 0.00126 | 0.00106 | 0.00001 | 0.00010 |
| reboil | Utility Boiler - 4.0 MMBtu/hr | 555429.4 | 4414954.9 | 4.88 | 677.44 | 4.57 | 0.61 | 0.06881 | 0.06301 | 0.00050 | 0.00630 |
| EG | Emergency Generator - 1340 hp Caterpillar G3516 | 555429.4 | 4414972.0 | 7.62 | 644.11 | 135.66 | 0.20 | 0.03330 | 0.04217 | 0.00004 | 0.00001 |
| Comp_1 | Compressor Engine - Caterpillar G3616TALE | 555442.6 | 4414924.6 | 13.72 | 738.00 | 7.08 | 1.83 | 0.92069 | 0.65764 | 0.00236 | 0.00031 |
| Comp_2 | Compressor Engine - Caterpillar G3616TALE | 555449.8 | 4414924.6 | 13.72 | 738.00 | 7.08 | 1.83 | 0.92069 | 0.65764 | 0.00236 | 0.00031 |
| Pro_Comp | Propane Compressor Engine - Caterpillar G3606LE | 555422.0 | 4414843.9 | 10.06 | 727.44 | 38.45 | 0.46 | 0.34514 | 0.24653 | 0.00087 | 0.00011 |
| NAAQS1 | 694 hp Natural Gas Engine | 557159.5 | 4414824.7 | 18.00 | 1139.00 | 46.30 | 0.83 | 0.80800 | 2.13500 | 0.00040 | 0.00700 |
| NAAQS5 | 333 hp AJAX DPC 2802LE Engine | 557159.5 | 4414824.7 | 22.00 | 433.00 | 0.30 | 1.10 | 0.23000 | 0.23000 | 0.00020 | 0.00300 |
| NAAQS9 | 75 hp Waukesha VRG310U Engine | 564247.1 | 4413200.0 | 6.00 | 1000.00 | 108.70 | 0.30 | 0.24600 | 0.03300 | 0.00003 | 0.00100 |
| NAAQS13 | Gravel Pit | 551379.6 | 4407251.2 | 0.00 | 70.00 | 0.01 | 1.00 | 0.00000 | 0.00000 | 0.00000 | 0.05500 |
| NAAQS14 | Sand and Gravel Pit | 552471.9 | 4408294.8 | 0.00 | 70.00 | 0.01 | 1.00 | 0.00000 | 0.00000 | 0.00000 | 0.01100 |
| NAAQS15 | 42 hp AJAX EA-42 Engine | 565215.0 | 4415759.9 | 2.00 | 800.00 | 0.10 | 0.33 | 0.31300 | 0.51300 | 0.00010 | 0.00100 |
| NAAQS19 | Flare - Condensate Storage | 561207.4 | 4412865.5 | 20.00 | 700.00 | 10.00 | 2.00 | 0.00200 | 0.00600 | 0.00000 | 0.00000 |

[1] UTM - NAD83 Zone 13 North
[2] "Source Ids" match source descriptors in AERMOD

## 4.0 BUILDINGS INFORMATION

EPA's Building Profile Input Program with PRIME (BPIPPRIME) was used to provide AERMOD with model ready data that represents building / stack relationship for the Totem facility. Table 2 provides the proposed facility's buildings dimensions that could affect ambient pollutant concentrations due to aerodynamic effects.

| Table 2 - Structures Included For Downwash | | | | |
|---|---|---|---|---|
| [1] Building Id | Building Description | Building Height (m) | [2]Southwest Corner X - Coordinate (m) | [2]Southwest Corner Y - Coordinate (m) |
| Comp | Compressor Building | 11.01 | 555434.0 | 4414916.0 |
| Dew | Dew Point Control Building | 7.27 | 555385.4 | 4414816.4 |
| Control | Control Auxillary Building | 6.1 | 555424.9 | 4414950.1 |

[1] "Building Id" matches building descriptor in BPIPPRIME

[2] UTM - NAD83 Zone 13N

Figure 4 is a representative diagram of the Totem facility used for modeling that shows buildings, stacks and the property boundary.

## 5.0 METEOROLOGICAL DATA

Meteorological surface data was collected from a National Weather Service (NWS) pre-ASOS tower at Denver Stapleton Int'l Airport located 39.768N, 104.869W for 5 years (1990 – 1994). Upper air radiosonde data was collected by the National Weather Service in Denver, Colorado located 39.77N, 104.88W. These two data sets were merged and processed by the Colorado Department of Public Health and Environment (CDPHE) using AERMET and provided to URS in AERMOD - ready format. Figure 5 is the corresponding wind rose.

## 6.0 MODEL SELECTION AND RECEPTORS

Dispersion modeling was conducted using the AMS/EPA Regulatory Model (AERMOD) version 07026. AERMOD is currently approved and recommended for near-field air quality permitting. AERMOD technical option - the *regulatory default option* was turned "on" which includes accounting for building downwash and complex terrain.

The receptor grid for the near-field analysis follows these dimensions:

- 50-meter intervals around the fence-line
- 100 meter-intervals from the facility center out to 1000 meters
- 250-meter intervals from the facility center out to 3000 meters
- 500-meter intervals from the facility center out to 10000 meters

7 ½ minute DEM output (elevations) were extracted for receptors, buildings and sources using the AERMAP program.

Table 3 contains the property boundary receptors used in AERMOD.

| Table 3 - Property Boundary Receptors | |
|---|---|
| [1] X - Coordinate (m) | [1] Y - Coordinate (m) |
| 555308.24 | 4415010.11 |
| 555358.24 | 4415010.11 |
| 555408.24 | 4415010.11 |
| 555458.24 | 4415010.11 |
| 555508.24 | 4415010.11 |
| 555308.24 | 4414813.10 |
| 555358.24 | 4414813.10 |
| 555408.24 | 4414813.10 |
| 555458.24 | 4414813.10 |
| 555508.24 | 4414813.10 |
| 555308.24 | 4414863.10 |
| 555308.24 | 4414913.10 |
| 555308.24 | 4414963.10 |
| 555509.84 | 4414863.10 |
| 555509.84 | 4414913.10 |
| 555509.84 | 4414963.10 |

[1] UTM - NAD83 Zone 13N

## 7.0 DISPERSION MODELING RESULTS

The $NO_2$ (considering 100% of $NO_x$ is converted to $NO_2$), $SO_2$ and $PM_{10}$ maximums of the annual averaged concentration for each receptor, and CO, $SO_2$ and $PM_{10}$ maximums of the highest short term averaged concentration values for each receptors (H1H) was added to the associated background values and is reported in Table 4. The modeled impact value in Table 4 is due to emissions from the Totem facility as well as other “nearby” sources.

| Table 4 - Maximum Modeled Concentrations | | | | | | |
|---|---|---|---|---|---|---|
| **Pollutant ID** | **Averaging Period** | **Dispersion Model Output Concentration ($ug/m^3$)[1]** | **Background Ambient Concentration ($ug/m^3$)** | **Total Modeled Concentration ($ug/m^3$)** | **CAAQS ($ug/m^3$)** | **NAAQS ($ug/m^3$)** |
| **SO2** | **3 hour** | 0.47 | 95.8 | **96.27** | 700 | 1,300 |
| | **24 hour** | 0.29 | 29.3 | **29.59** | NA | 365 |
| | **Annual** | 0.05 | 5.3 | **5.35** | NA | 80 |
| **CO** | **1 hour** | 707.35 | 4,656.4 | **5,363.75** | 40,000 | 40,000 |
| | **8 hour** | 279.03 | 3,492.3 | **3,771.33** | 10,000 | 10,000 |
| **$PM_{10}$[2]** | **24 hour** | 25.53 | 66.0 | **91.53** | 150 | 150 |
| | **Annual** | 2.45 | 22.0 | **24.45** | na | na |
| **$NO_2$** | **Annual** | 19.42 | 30.6 | **50.02** | 100 | 100 |

1. Maximum modeled value; high first high for averaging periods other than annual

2. Dispersion modeled output concentrations represent predicted $PM_{10}$ and $PM_{2.5}$ concentrations (NAAQS for $PM_{2.5}$ are 15 $ug/m^3$ for annual period and 35 $ug/m^3$ for 24 hr average period)

Figures 6 through 13 show the maximum modeled concentrations, as well as the source locations. The modeled concentrations shown in Figures 6 through 13 are due to emissions from all sources ("nearby" sources, the Totem facility and background concentrations).

Maximum impacts for CO and $PM_{10}$ emissions do not occur within 500 meters of the Totem facility and are primarily due to the "nearby" sources.

All modeling files are included on the supplemental CD-ROM.

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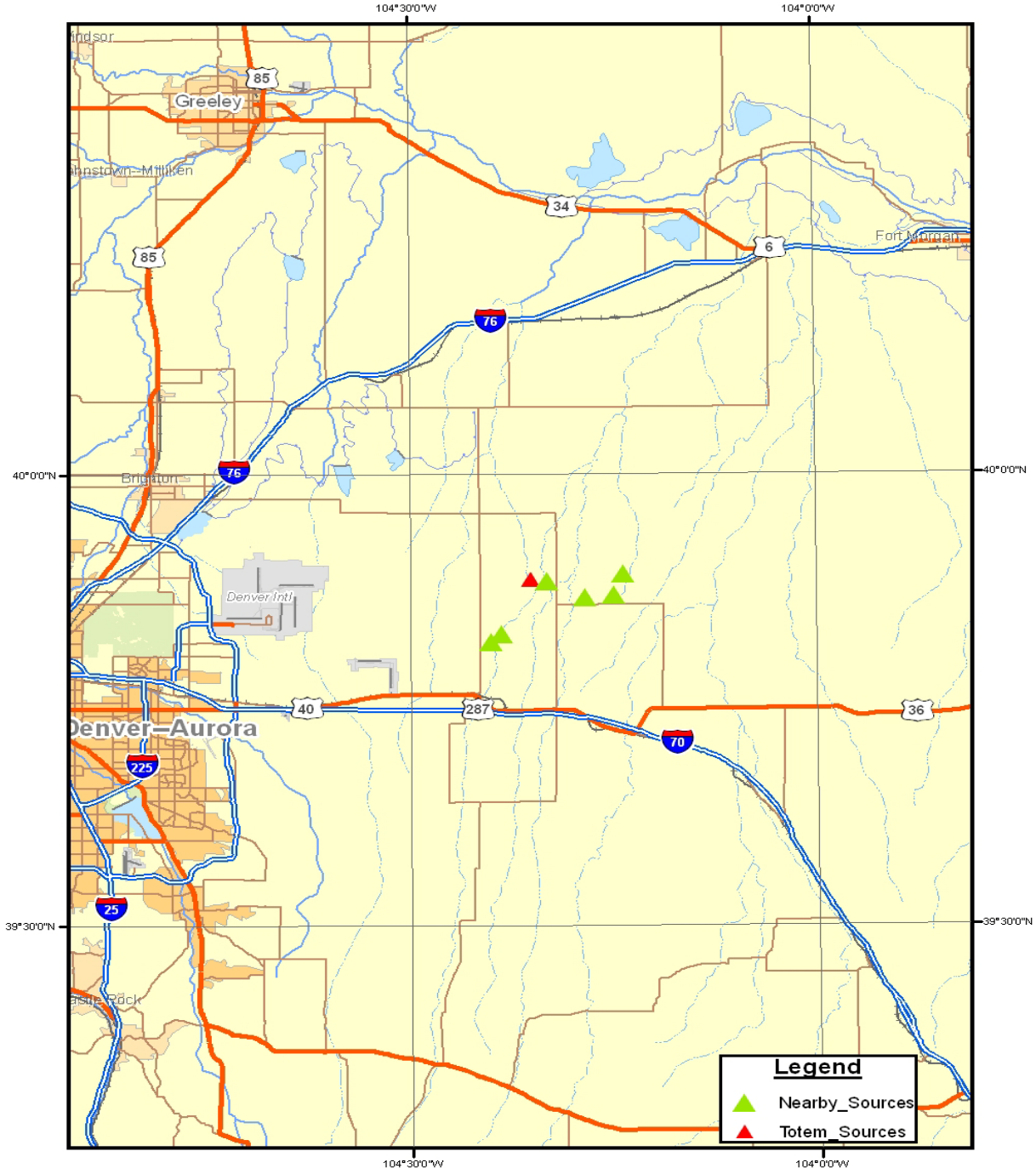



**Figure 1 – Facility Location and Surrounding Denver Area**

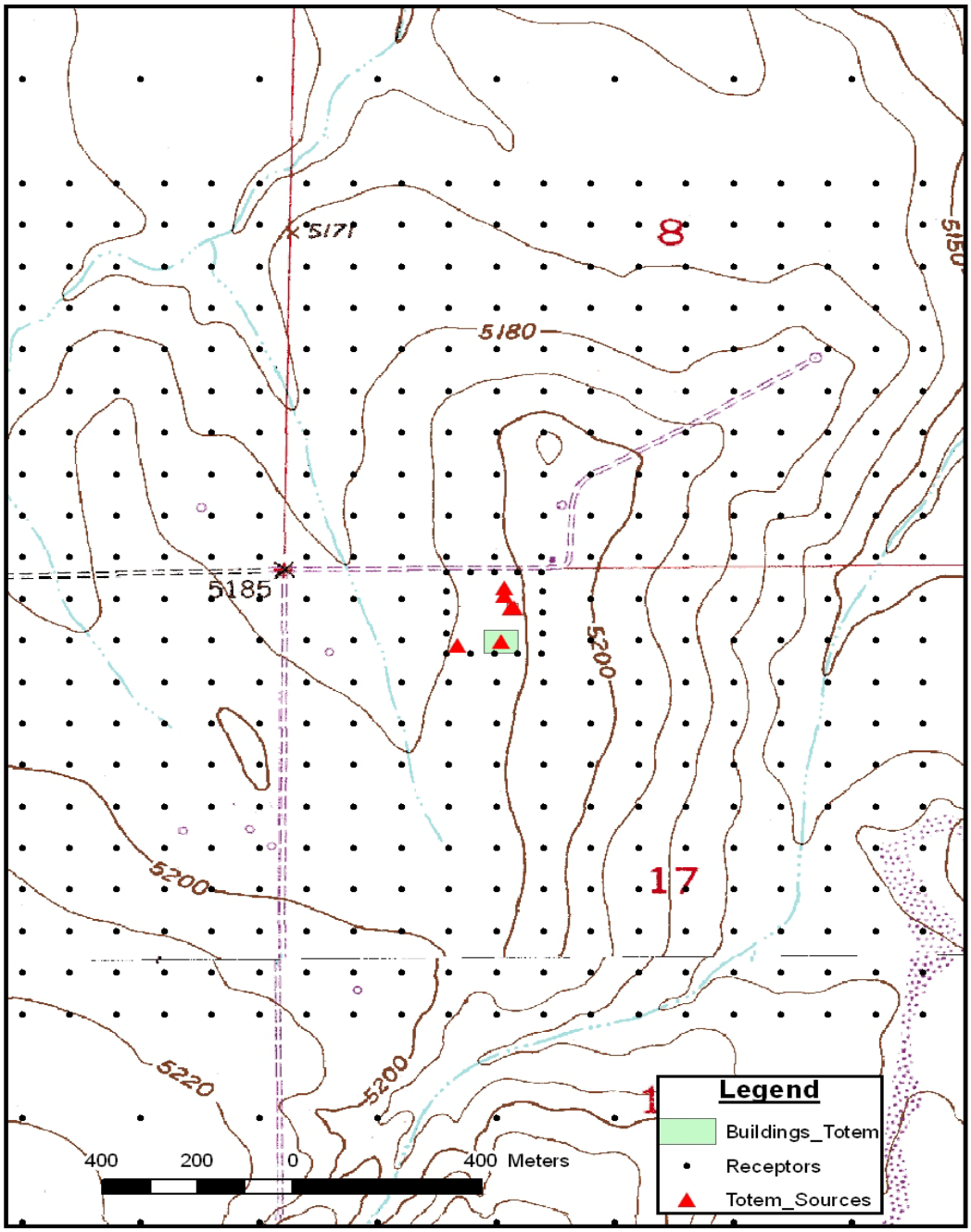



**Figure 2 - Surrounding Topography**

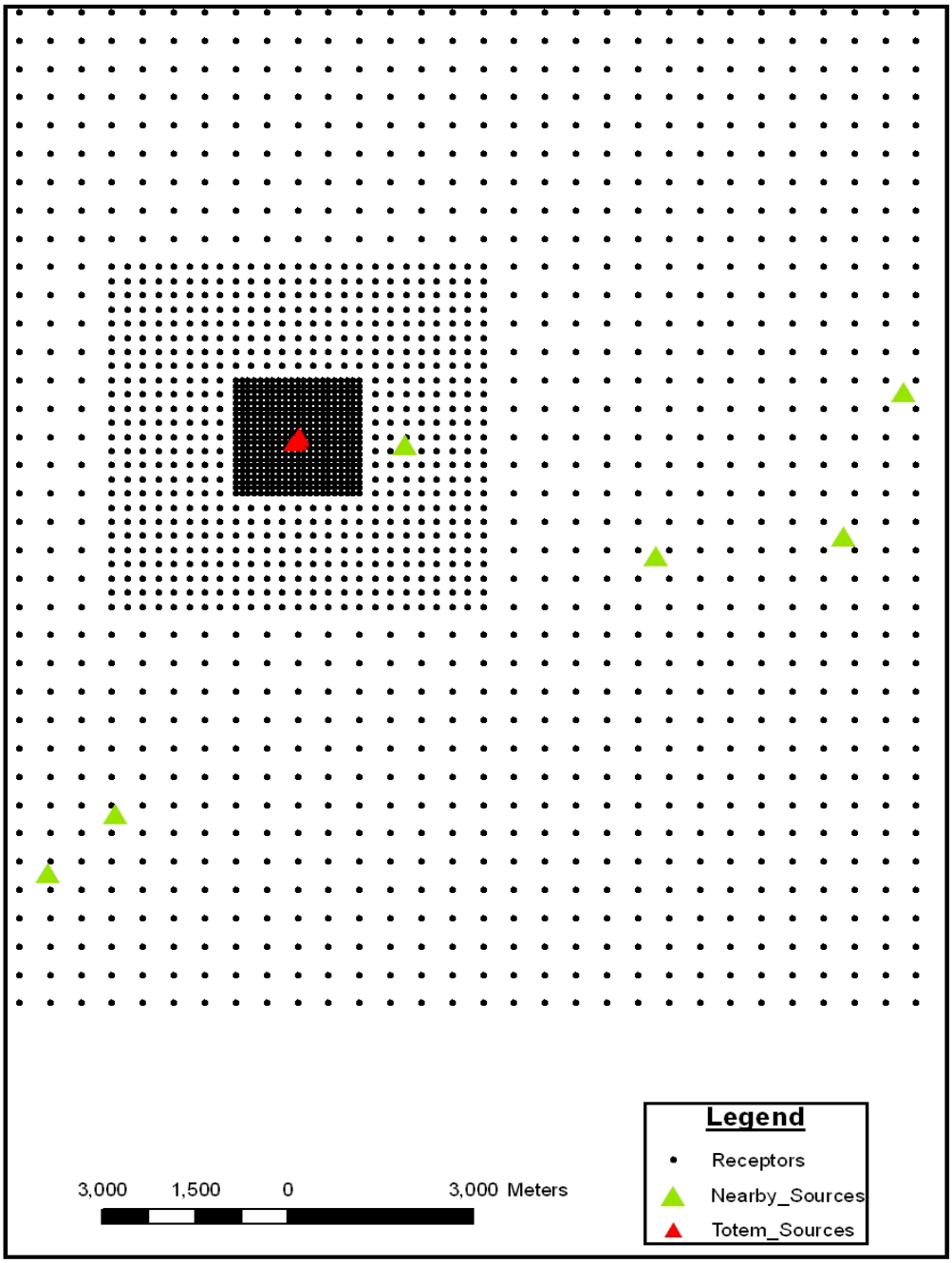



**Figure 3 - All Sources**

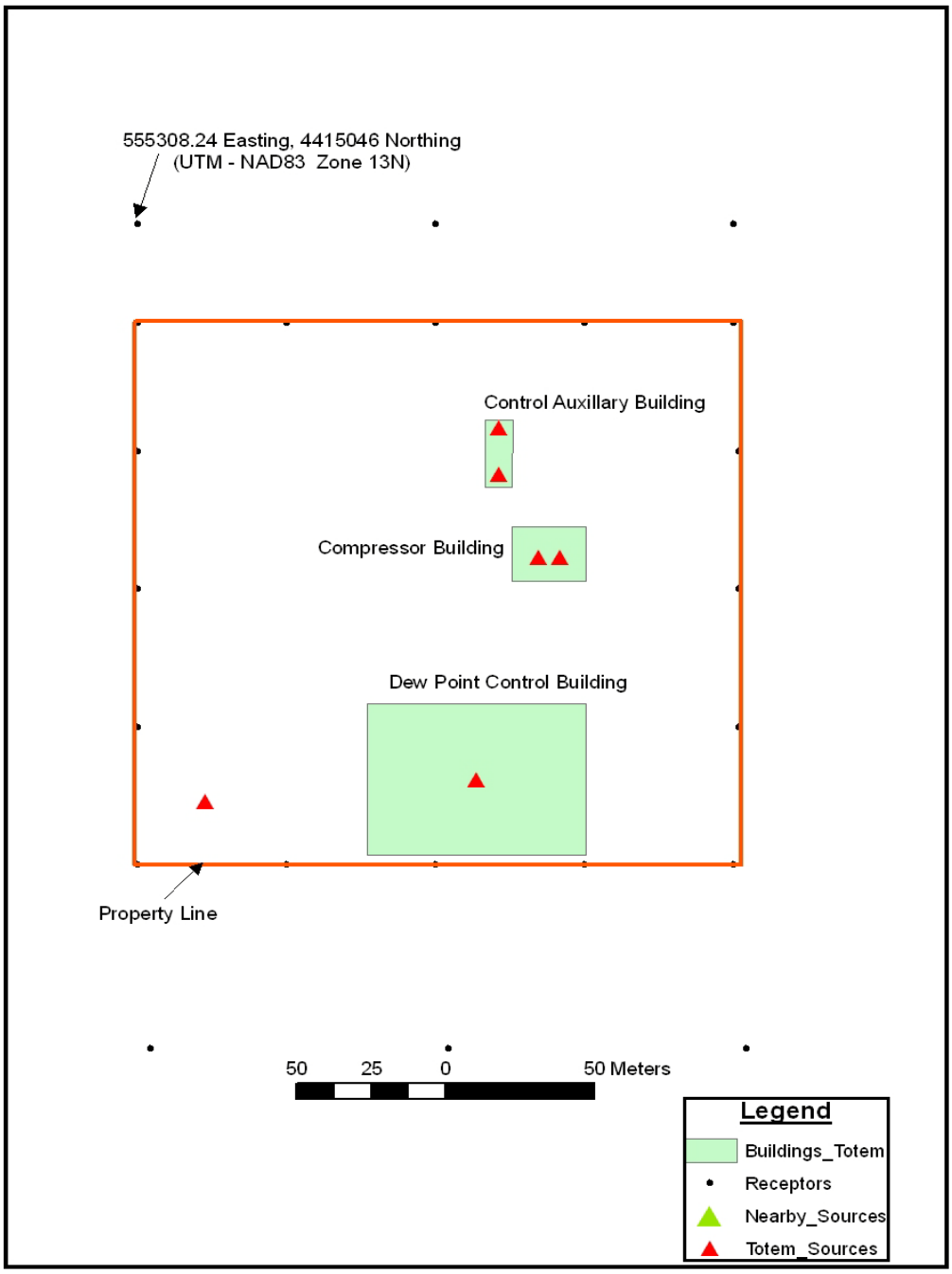
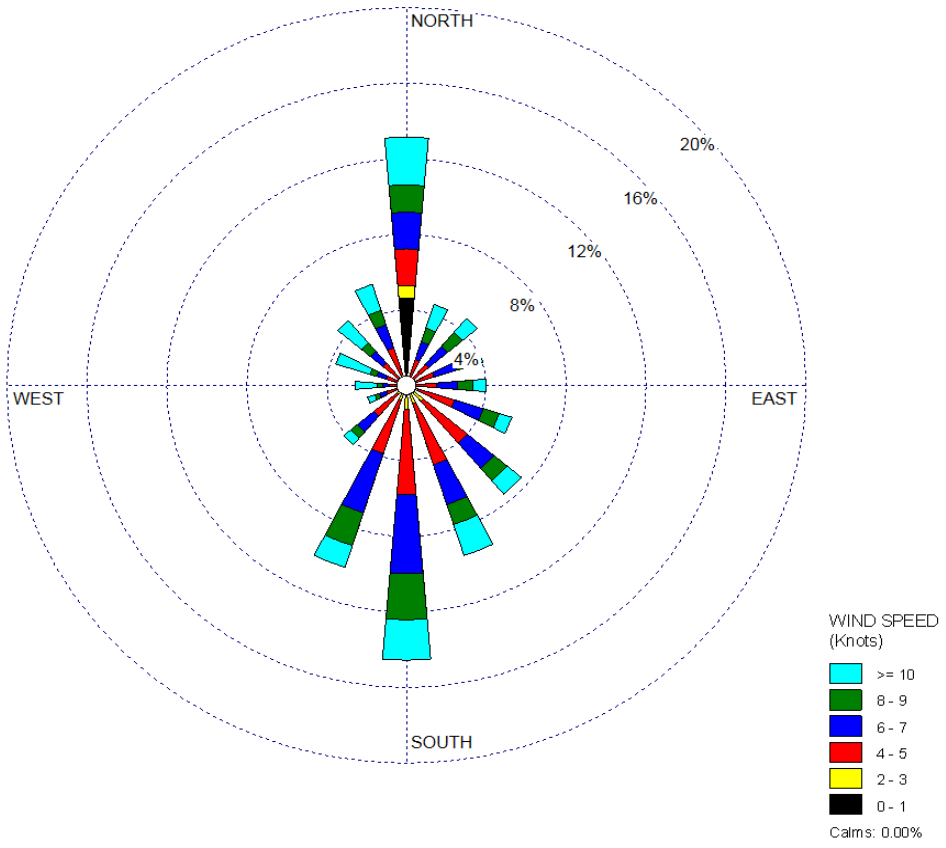



**Figure 4 - Facility Layout**

WIND ROSE PLOT:
**Denver - Stapleton Int'l Arpt. (1990-1994) Wind Rose**

DISPLAY:
**Wind Speed**
**Direction (blowing from)**




| COMMENTS: | DATA PERIOD: | COMPANY NAME: | |
|---|---|---|---|
| Totem Compressor Station air dispersion modeling meteorology | **1990-1994 Jan 1 - Dec 31 00:00 - 23:00** | **URS** | |
| | CALM WINDS: **0.00%** | TOTAL COUNT: **43824 hrs.** | |
| | AVG. WIND SPEED: **6.81 Knots** | DATE: **10/18/2007** | PROJECT NO.: |

WRPLOT View - Lakes Environmental Software

**Figure 5 - Wind Rose**

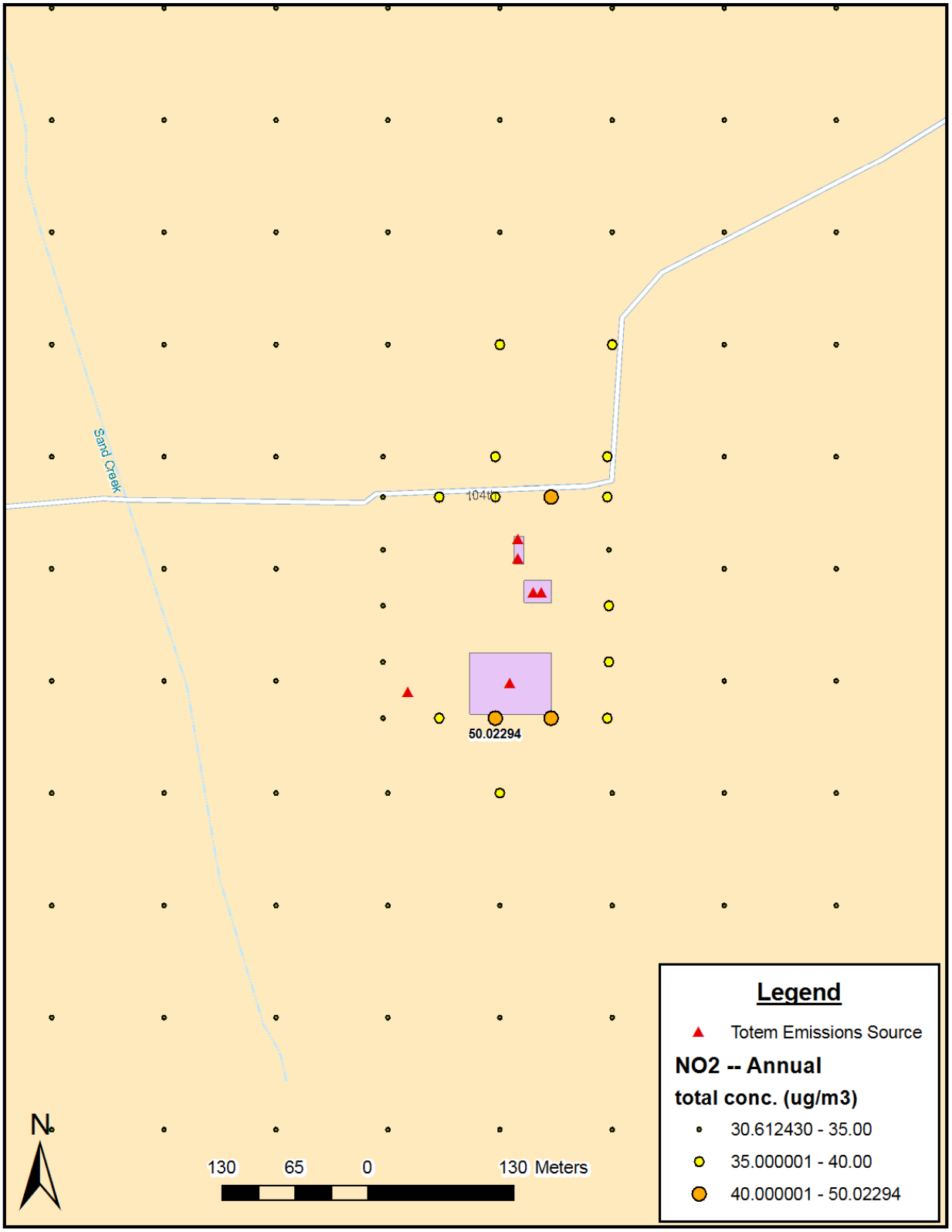



**Figure 6 – $NO_2$ Annual**

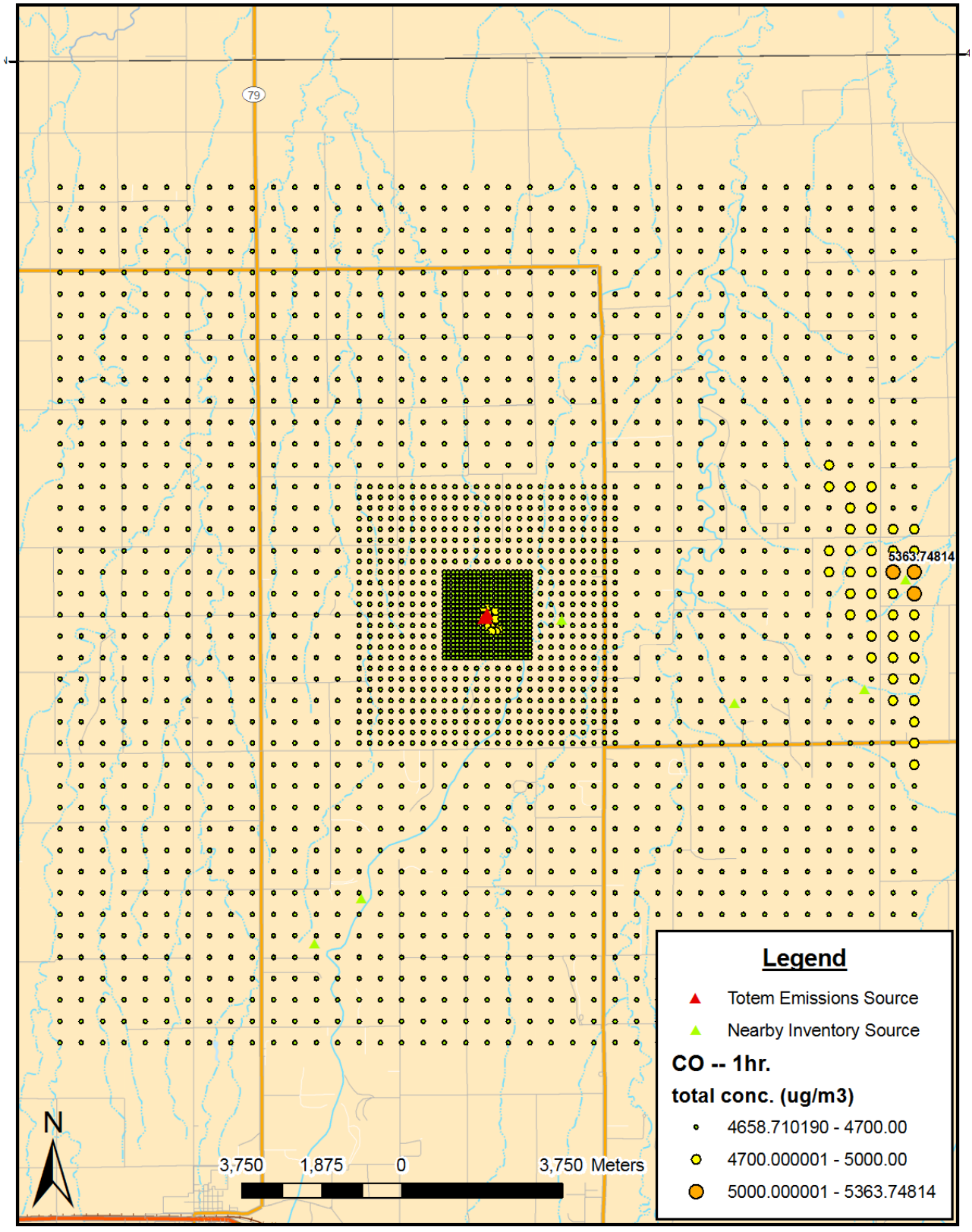



**Figure 7 - CO 1 hour**

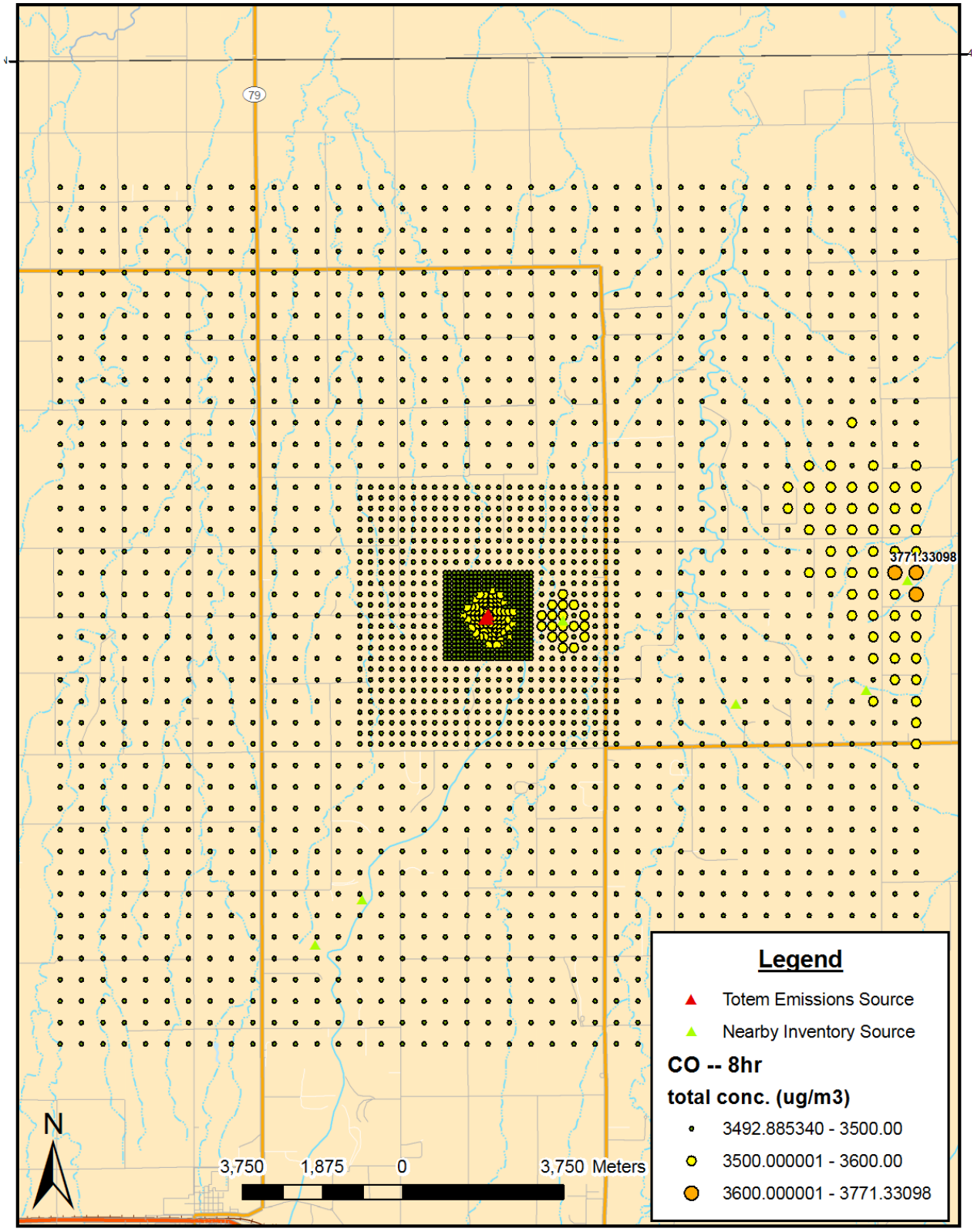



**Figure 8 - CO 8 hour**

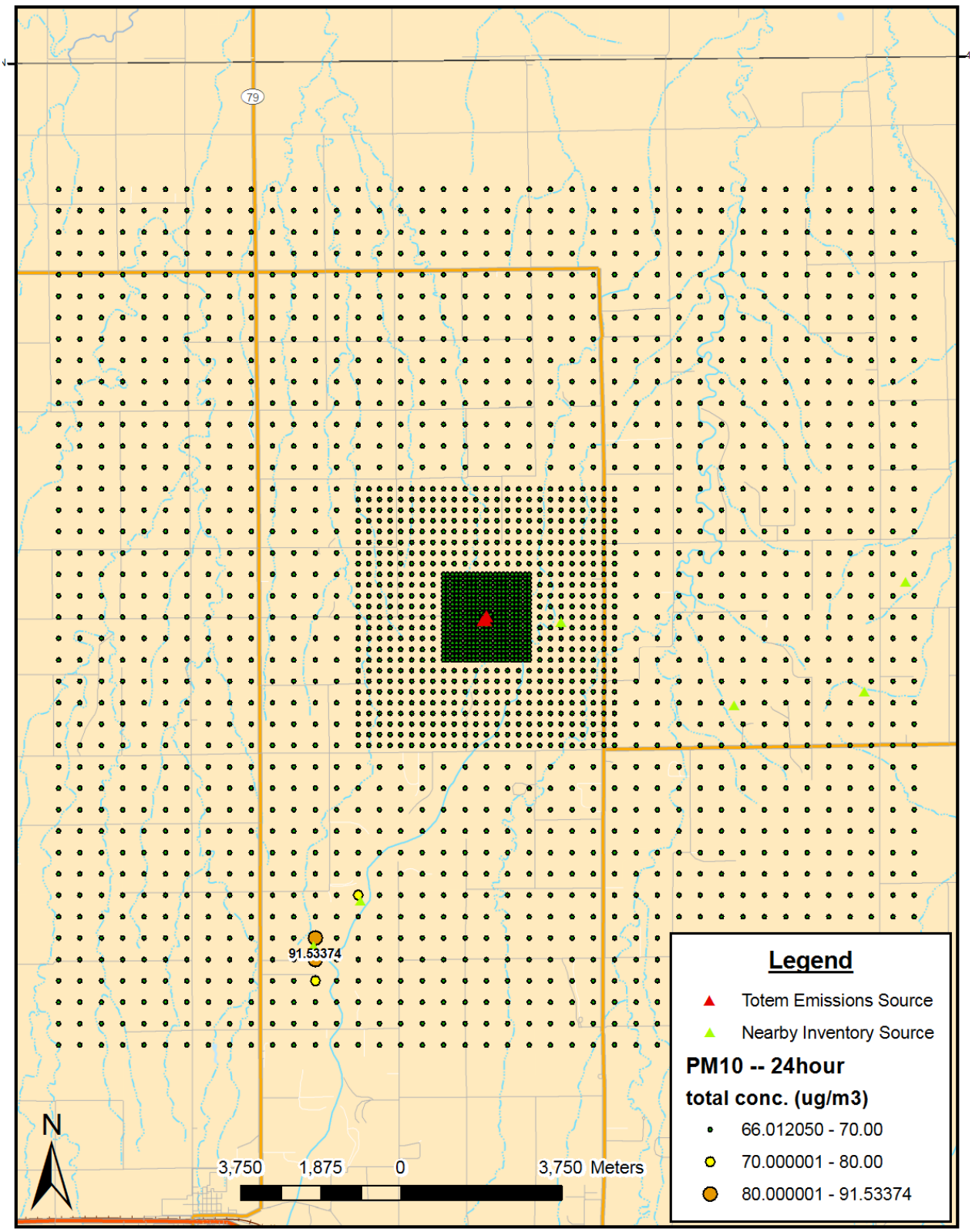



**Figure 9 – $PM_{10}$ 24 hour**

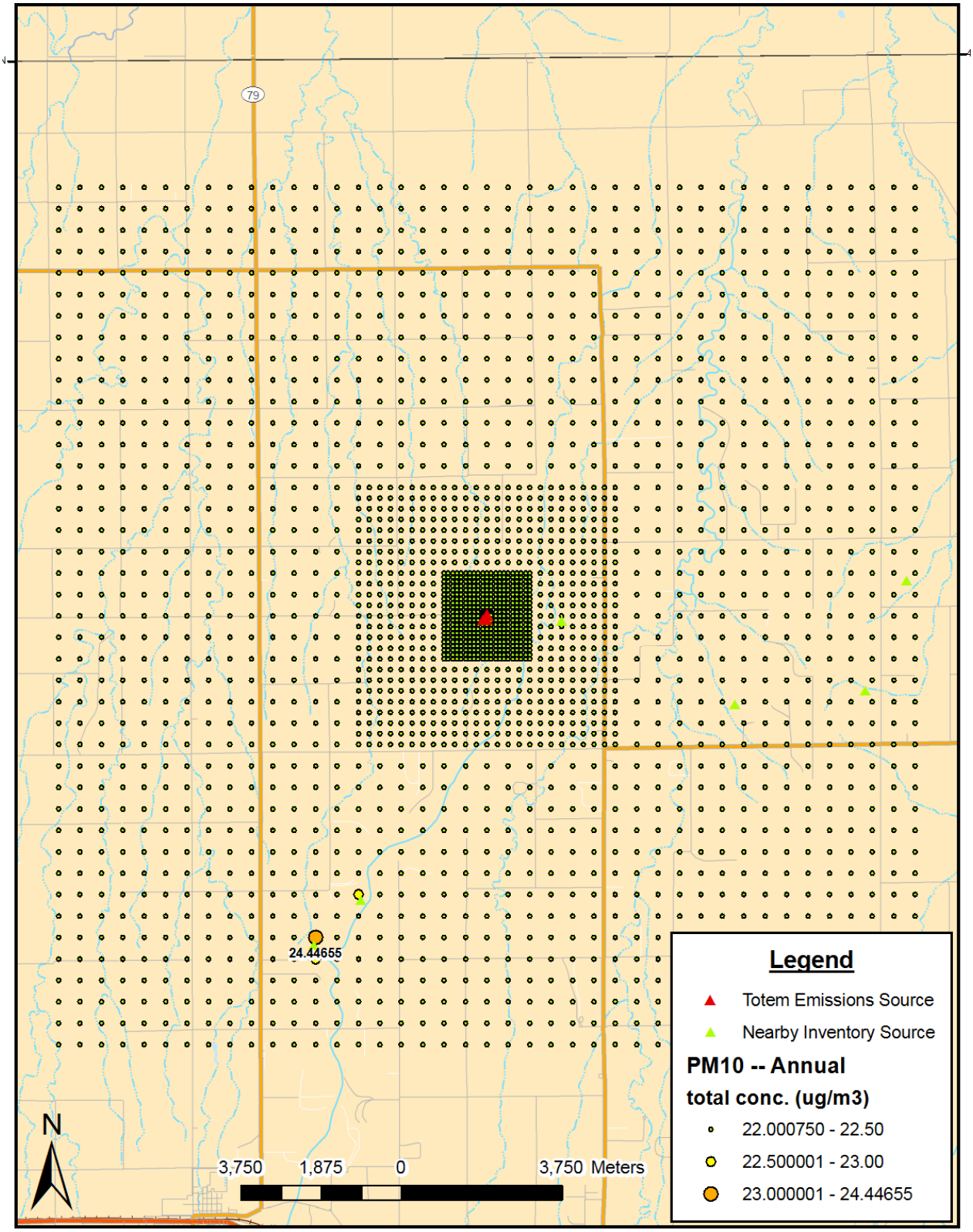



**Figure 10 – $PM_{10}$ Annual**

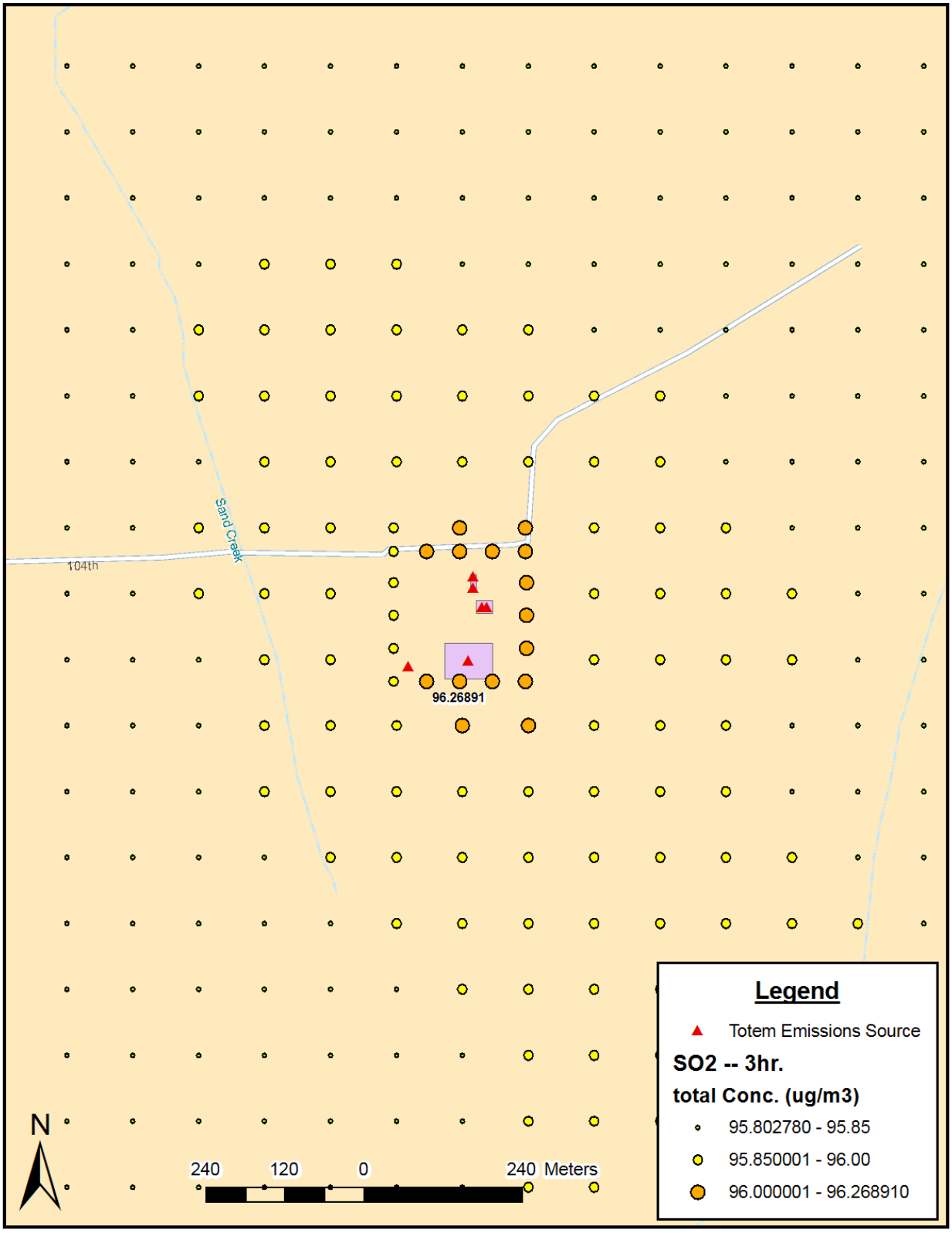



**Figure 11 – $SO_2$ 3 hour**

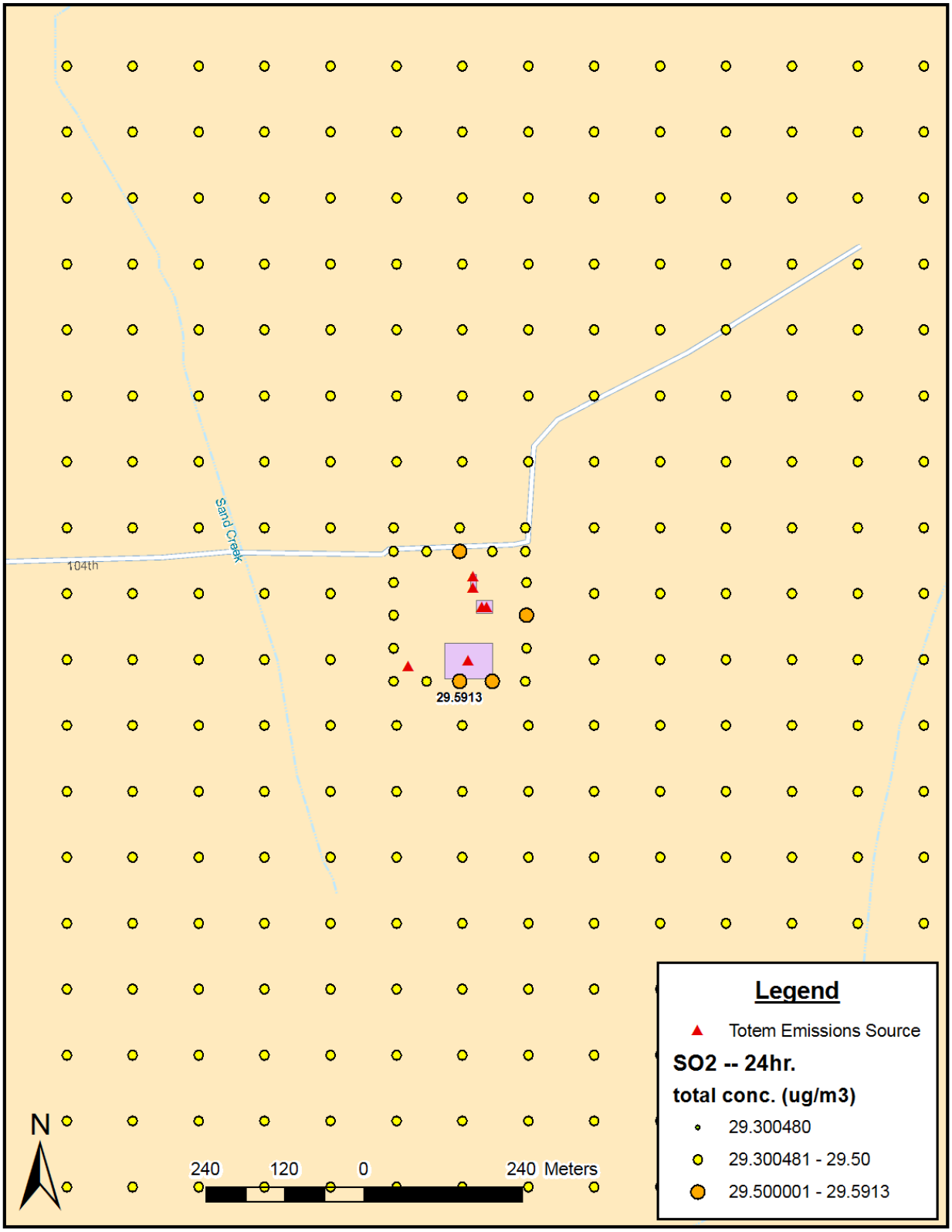



**Figure 12 - $SO_2$ 24 hour**

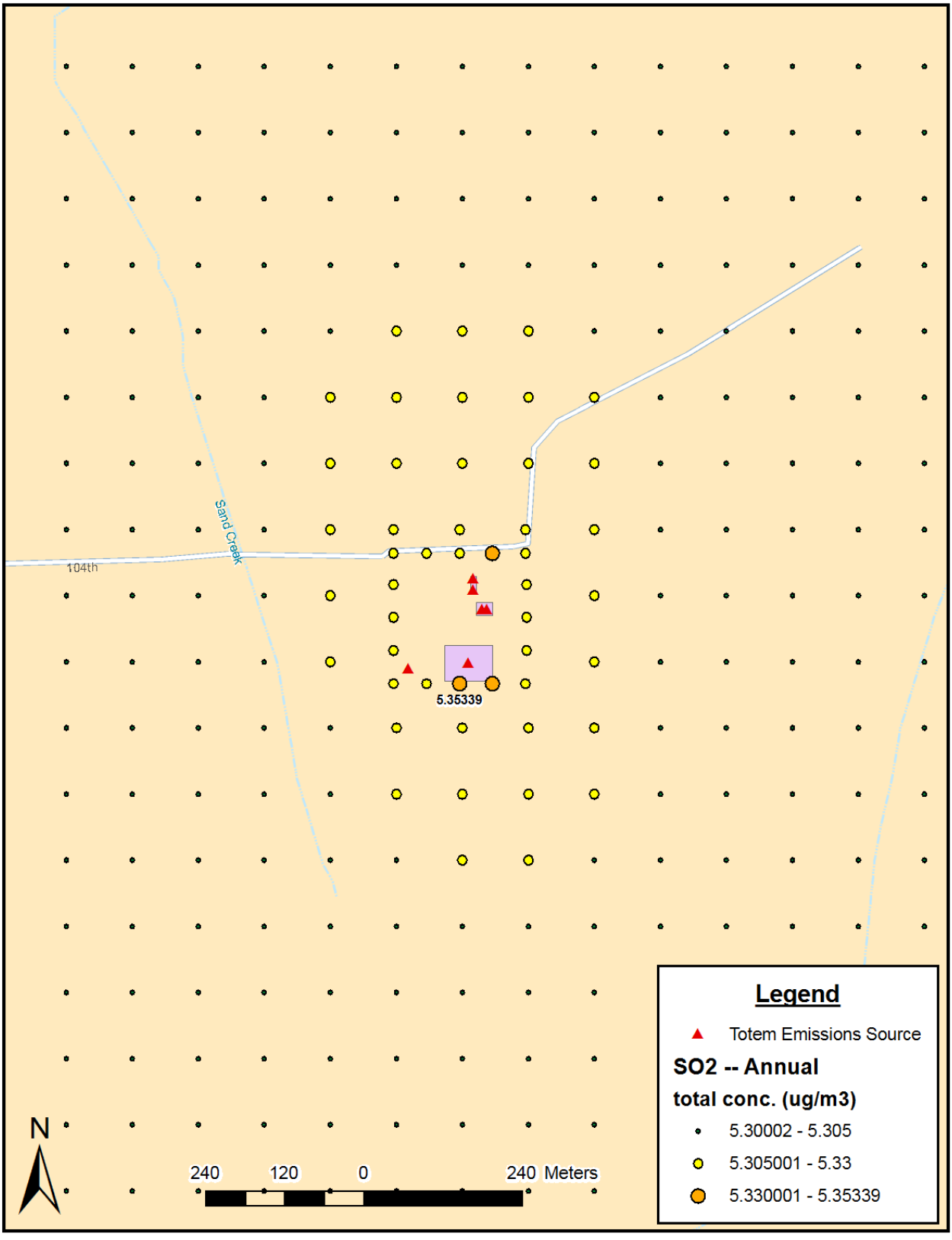



**Figure 13 – $SO_2$ Annual**

STATE OF TEXAS )
)
COUNTY OF EL PASO )

FRANCISCO TARIN, being first duly sworn, on oath, says that he is the Director of the Regulatory Department of Colorado Interstate Gas Company, L.L.C.; that he has read the foregoing Response to the Office of Energy Projects' Data Request dated May 31, 2024 in Docket No. CP24-124-000, that as such he is authorized to verify the Response, that he is familiar with the contents thereof; and that the matters and facts set forth therein are true to the best of his information, knowledge and belief.

Francisco Tarin

SUBSCRIBED AND SWORN TO before me, the undersigned authority, on this 20th day of June 2024.

Notary Public, State of Texas

My Commission Expires:

MAJAYRA A. PEREZ
My Notary ID # 131884335
Expires February 28, 2027

## Certificate of Service

I hereby certify that I have this day caused a copy of the foregoing documents to be served upon each person designated on the official service list compiled by the Commission's Secretary in this proceeding in accordance with the requirements of Section 385.2010 of the Federal Energy Regulatory Commission's Rules of Practice and Procedure.

Dated at Colorado Springs, Colorado as of this 20th day of June 2024.

/s/
Francisco Tarin

Two North Nevada Avenue
Colorado Springs, Colorado 80903
(719) 667-7517